

1-1-2020

'They're discriminated against, but so are we': White Australian-born perceptions of ingroup and immigrant discrimination over time are not zero sum

Zoe Leviston
Edith Cowan University

Justine Dandy
Edith Cowan University

Jolanda Jetten

Follow this and additional works at: <https://ro.ecu.edu.au/ecuworkspost2013>



Part of the [Social and Behavioral Sciences Commons](#)

[10.1111/bjso.12384](https://doi.org/10.1111/bjso.12384)

This is the peer reviewed version of the following article:

Leviston, Z., Dandy, J., & Jetten, J. (2020). 'They're discriminated against, but so are we': White Australian-born perceptions of ingroup and immigrant discrimination over time are not zero sum. *British Journal of Social Psychology*, 60(1) 146 - 170, which has been published in final form at <https://doi.org/10.1111/bjso.12384>.

This article may be used for non-commercial purposes in accordance with Wiley Terms and Conditions for Use of Self-Archived Versions.

This Journal Article is posted at Research Online.
<https://ro.ecu.edu.au/ecuworkspost2013/8258>

‘They’re discriminated against, but so are we’: White Australian-born perceptions of ingroup and immigrant discrimination over time are not zero-sum

Suggested running head: Zero-sum perceptions of discrimination

Abstract: We examined whether zero-sum thinking explains White Australian-born people’s perceptions of discrimination toward their ingroup and an outgroup (immigrants), and the relationships among perceived discrimination and support for multiculturalism and immigration. Two cross-sectional studies were conducted among self-identified White Australians (Study 1, N = 517), and White Americans (Study 2, N = 273), as well as an experiment among White Australians (Study 3, N = 121) in which we manipulated discrimination toward immigrants over time. Our findings did not support a zero-sum account but revealed that perceptions of group discrimination were positively correlated: a case of ‘they’re discriminated against, but so are we’ rather than ‘if they gain, we lose’. Moreover, concerns about future discrimination of the ingroup were most predictive of opposition to multicultural policy and immigration. We argue our findings are more consistent with a competitive victimhood account of intergroup relations than a zero-sum thinking account.

Keywords: zero-sum thinking, discrimination, intergroup prejudice, immigration, multicultural ideology

‘They’re discriminated against but so are we’: White Australian-born perceptions of ingroup and immigrant discrimination over time are not zero-sum

There is evidence that, as ethnic and cultural diversity within western countries has accelerated and become increasingly salient, traditionally privileged ethnic group members have perceived discrimination toward their own group as having increased (Pettigrew et al., 2008; Wilkins, Wellman, & Kaiser, 2013). For instance, a 2012 survey of 2,450 Americans found a majority of white respondents agreed that discrimination against ‘White Americans’ had become as large a problem as discrimination against minority groups (Jones, Cox, Galston, & Dionne Jr, 2012). The relationship between perceptions of discrimination toward ingroup members and outgroup members is often characterised as ‘zero-sum thinking’, reflecting the idea that outgroup gains (such as declines in discrimination) necessarily come at the equivalent expense of the ingroup (Norton & Sommers, 2011). In this paper, we examine how perceptions of discrimination toward a historically advantaged ‘ingroup’, Australian-born ‘White’ Australians and American-born ‘White Americans, *by that group*, relate to their perceptions of discrimination toward an outgroup, immigrants to their country. Specifically, we explore whether these patterns of perceptions are consistent with zero-sum thinking, including whether outgroup gains and ingroup losses are perceived as equivalent, and whether perceptions of outgroup gains *drive* perceptions of ingroup losses. Moreover, we test whether these perceptions predict ingroup members’ views about immigration and multiculturalism.

The construct of ‘zero-sum thinking’ (alternatively called ‘zero-sum beliefs’, ‘zero-sum bias’, or ‘zero-sum game’) is usually defined as reflecting a subjective interpretation, belief, or conviction, that the amount of goods and resources in society is fixed (Różycka-Tran, Boski, & Wojciszke, 2015). Hence, one person’s (or group’s) gain in their share of resources necessarily comes at another person’s (or group’s) expense. In a striking example

of how zero-sum thinking operates with relation to ethnic/racial groups and discrimination, Norton and Sommers (2011) asked American Whites and American Blacks to rate their perceptions of discrimination toward both groups over the last several decades up until the present day. A clear pattern emerged among White respondents; they judged that Whites had historically suffered low levels of discrimination, and Blacks high levels, but that this pattern had reversed over the ensuing decades to the point where Whites currently endured more discrimination than Blacks. Further, judgements of levels of discrimination toward the two groups in each decade, and judgements about temporal changes in discrimination between the two groups, were consistently negatively correlated for White respondents. The authors reason that this majority-culture response constitutes evidence of ‘zero-sum thinking’ – declines in discrimination against American Blacks over time were judged to be *at the expense of* Whites. Over time the levels of aggregate discrimination remained constant; only the *distribution* of discrimination fluctuated. Whites, they conclude, see racism in zero-sum terms.

The Norton and Sommers (2011) finding is compelling. Their figure plotting White perceptions of discrimination toward their own group and toward Black Americans has the appearance of a clear zero-sum pattern. Their research raises intriguing insights into the drivers of prejudice, but some important questions remain unanswered. First, while zero-sum thinking might adequately describe the way that American Whites consider the discrimination they have faced over time relative to American Blacks, it is not clear whether this relationship can be found for other majority-minority contexts. Here, we investigate the generalisability of the effect by examining whether zero-sum thinking operates for ingroup members of the receiving society when considering immigrants in two national contexts (Australia, Study 1, and the U.S., Study 2). Second, it is not clear from the Norton and Sommers’ findings whether these perceptions of discrimination predict anything of

consequence for intergroup relations. Here, we investigate whether zero-sum thinking patterns meaningfully predict attitudes toward immigration levels, policies designed to ameliorate systemic discrimination toward immigrants, and multicultural ideology. Third, a stronger case for zero-sum thinking using their conceptualisation, and its corollaries, could be made if this relationship were to be established causally. Here, we experimentally test the assumption that it is changes in discrimination toward outgroups that trigger perceptions of increased discrimination to the ingroup.

Conceptualisations of zero-sum thinking and generalizability to ethnic intergroup relations

Among the most prominent examples of the application of zero-sum thinking in intergroup relations research is its inclusion in the ‘Instrumental Model of Group Conflict’, later to become the ‘Unified Instrumental Model of Group Conflict’ (Esses, Jackson, & Armstrong, 1998; Esses, Jackson, Dovidio, & Hodson, 2005). The model, which has been applied to a variety of cultural contexts, suggests that prejudiced behaviours and attitudes toward outgroups reflect strategic attempts to remove the source of competition from something deemed valuable when it is perceived to be under threat. Critically, perceptions of threat hinge on the notion that resources accrued by the outgroup are at the expense of the ingroup – that is, that resources are zero-sum.

This conception of threat (as predicated on zero-sum thinking) has been applied to a range of intergroup contexts, most notably to immigrant/non-immigrant relations (Esses, Dovidio, Jackson, & Armstrong, 2001; McLaren, 2003). This research suggests the zero-sum thinking pattern found by Norton and Sommers should generalise across intergroup contexts.

However, zero-sum thinking in this social-psychological research tradition is usually evidenced by the strength of endorsement of attitudinal statements, rather than inferring zero-

sum beliefs through statistical patterns of the relative condition of the ingroup and the outgroup, as Norton and Sommers do. The former method of assessment, perhaps more accurately termed zero-sum attitudes, may partially account for the robust relationships found between zero-sum thinking and attitudes toward (especially) minority outgroups. Responses to attitudinal statements such as “immigrants are taking our jobs” arguably reflect a general positive or negative orientation toward the other group, rather than measuring true endorsement that competition over resources is zero-sum. Indeed, the term ‘Instrumental’ denotes that endorsement has a strategic function, a method to rhetorically justify group-based dominance. In this light it is unsurprising that endorsement of such attitudinal statements is generally highly correlated with prejudice items.

Elsewhere, zero-sum thinking has been conceptualised by cross-cultural researchers as a general dispositional tendency toward zero-sum beliefs (e.g., Różycka-Tran et al., 2015). These researchers have found greater prevalence of zero-sum thinking within cultures where competition for scarce resources is greater, and where interdependency is high, suggesting that situational factors are important in determining tendencies toward zero-sum thinking. The same researchers suggest zero-sum thinking is prevalent across a wide range of cultures and, accordingly, may be considered a social-axiomatic worldview. Here again, zero-sum thinking is typically measured by assessing respondent agreement with a series of attitudinal statements.

Other researchers have investigated some of the limitations with these measurements of the zero-sum concept. Smithson and Shou (2016) show that endorsement of zero-sum statements is dependent on how a proposition is formed, with different permutations of a proposition leading to systematically unequal endorsement. For instance, the authors found that a proposition stating that increases in immigration rates decrease available jobs, was more strongly endorsed by participants than a proposition stating that decreases in

immigration will increase available jobs. This is somewhat problematic for traditional attitudinal measures of zero-sum thinking, which typically include measurement items containing both an antecedent and a consequent. Moreover, Smithson and Shou find that a consistent endorsement of zero-sum thinking under all possible permutations is remarkably uncommon, even in cases where an objectively logical case can be made that a zero-sum trade-off exists (2016). These measurement considerations make the findings of Norton and Sommers, who use a more indirect, sociological method to detect zero-sum patterns, perhaps more remarkable, and it is their conceptualisation of zero-sum thinking we use in the present research; that an object (i.e., discrimination) is truly viewed as having a fixed amount, varying only in its distribution over time. This conceptualisation arguably negates the problems of attitude congruency demands and post-hoc justifications in driving associations between zero-sum attitudes and outcome variables (e.g., prejudice) closely related to those attitudes. The indirect nature of inferring zero-sum thinking also negates any order-effects associated with measurement items containing antecedents and consequences. Whether the observed hydraulic relationship found by Norton and Sommers is evidenced in other intergroup contexts is not at all clear, however. There is reason to suggest it might not be evidenced.

One major consideration is the composition of the outgroup. In Norton and Sommers' study, the outgroup was 'Black Americans'. The groups 'White Americans' and 'Black Americans' are clearly established in American culture. The abolition of slavery, the civil rights movement, and declining systemic discrimination toward African Americans represent outgroup gains with which White Americans are familiar. A cultural narrative is arguably less established with regard to immigrants and subgroup members of the host nation. Countries such as the US and Australia have host populations largely comprised of second and third generation immigrants, and new immigrants to these countries are comprised of many distinct

ethnic subgroups. These considerations might blur ingroup/outgroup boundaries, in comparison to the more distinct boundaries characterised by White American/Black American intergroup relations.

Other research also suggests the hydraulic relationship found in the Norton and Sommers study might not be replicated for all minority/majority contexts. Research on ‘competitive victimhood’ suggests that claims of discrimination toward the ingroup can coexist with recognition or acceptance of outgroup discrimination. Sullivan, Landau, Branscombe, and Rothschild (2012) propose that competing claims of victimhood occur as groups strive to maintain a positive moral evaluation of themselves. A recognition that one’s group is responsible for illegitimate discrimination toward another group threatens this positive moral evaluation. Therefore, rather than simply refuting the existence of outgroup discrimination, responding with counter claims of discrimination is thought to be a means of effectively restoring the group’s moral identity, reducing guilt, bolstering ingroup cohesiveness, and avoiding responsibility for repatriation (Noor, Shnabel, Halabi, & Nadler, 2012; Young & Sullivan, 2016; Zitek, Jordan, Monin, & Leach, 2010). For instance, Sullivan et al. (2012) found that presenting men with evidence of discrimination toward women caused men to *bolster* claims that they themselves were discriminated against, but at the same time they were able to maintain acknowledgement of discrimination toward women. Their findings run counter to a simple sociological zero-sum function, suggesting that recognition of an outgroup’s ongoing disadvantaged condition can coexist with perceptions of changing conditions for the ingroup in certain intergroup contexts. It also raises additional temporal considerations; claims of discrimination by members who are part of a clearly more privileged subgroup of the host-culture may be more easily maintained with reference to what *might* occur in the future, rather than with reference to past and present conditions for which

contrary evidence is more readily available. Claims about future ingroup conditions may therefore play a unique role in predicting intergroup attitudes.

Zero-sum thinking and predicting meaningful outcomes

The utility of the zero-sum thinking concept depends on its ability to predict outcomes that are meaningful for intergroup relations, such as acceptance or rejection of multicultural policies or ideology, or preferences to restrict or increase immigration. Research employing the Instrumental Model of Group Conflict suggests the concept, as they measure it, does have predictive utility. Esses et al. (2001), and others subsequently, have found that zero-sum attitudes about competition over resources mediate the relationship between legitimising ideologies (usually social dominance orientation) and negative attitudes toward immigrants, including an unwillingness to empower immigrants. Similarly, Louis, Esses, and Lalonde (2013) found that zero-sum thinking was associated with dehumanising beliefs and emotions about immigrants. Again, it is of interest whether these attitudinal relationships can be replicated with a more objective measure of zero-sum thinking patterns.

Zero-sum thinking and causality

The Instrumental Model of Group Conflict depicts zero-sum thinking as the tendency to view benefits to the outgroup as accruing at the expense of the ingroup. Similarly, Meegan (2010) summarises zero-sum thinking as the “irrational aversion to outgroup gains” (p.6); irrational because of a mistaken assumption of the flow-on consequences for the status of the ingroup. Under both these characterisations, as in the Norton and Sommers’ example, causality is implied; perceptions of outgroup gain precede and prompt perceptions of corresponding ingroup loss. This assumption of causality is worth unpacking. Notably, in Norton and Sommers’ study, White Americans were asked to provide their estimates of discrimination to Black Americans before they were asked about White Americans. As no

counter-balance was employed, drawing conclusions about causality is problematic. They acknowledge their correlational pattern does “not necessarily reveal that Whites believe that decreases in anti-Black bias cause increases in anti-White bias; future research should explore the causal nature of the robust link we observed” (p.217). This is the aim of our third study.

The current study

We apply the approach used by Norton and Sommers to test whether zero-sum thinking patterns are generalizable to other intergroup contexts. In doing so, we extend their approach in several ways. In Studies 1 and 2, we examine whether zero-sum thinking is evidenced with relation to ingroup perceptions of discrimination to their own group (Study 1: White Australians; Study 2: White Americans) and to immigrants to that country. Further, we test whether patterns of group-based discrimination can predict multicultural policy support, multicultural ideology, and attitudes to current immigration rates. In particular, we examine the relative role of perceptions of ingroup versus outgroup discrimination in predicting these outcome variables, and the relative roles of past, current, and future estimates of discrimination. To test the role of causality in zero-sum thinking, in Study 3 we test whether manipulating discrimination toward immigrants influences subsequent perceptions of ingroup discrimination.

Study 1

In Study 1, we examined discrimination perceptions over time of Australian-born ‘White Australians’ with regard to both their own group and to an outgroup – immigrants to Australia. Our aim in Study 1 was to test whether we could replicate Norton and Sommers’ zero-sum finding in another intergroup context, and whether patterns of perceptions of intergroup discrimination could in turn could predict meaningful outcomes.

We choose our comparison groups, Australian-born self-identified ‘White Australian’ participants (ingroup), and immigrants to Australia (outgroup), in recognition of the emerging political, cultural, and media-driven narratives that warn “mainstream Australia” (often used interchangeably with the term “White Australia”) as the new targets of discrimination (McCauley, 2016). Within this narrative is the accusation that ‘others’, including immigrant groups in collusion with powerful others, are the new recipients of the advantage ‘lost’ by ‘ordinary’ Australians (e.g., Clarke & Newman, 2017; Donnelly, 2017; Mols & Jetten, 2016). Hence, we may expect zero-sum considerations to be salient in this cultural context.

Specifically, we tested the following hypotheses:

H1: Zero-sum patterns. Perceptions of discrimination toward the ingroup (White Australians) will be significantly and negatively related to perceptions of discrimination to the outgroup (immigrants to Australia), overall, and at each time point.

H2: Associations with outcomes. Perceptions of ingroup [outgroup] discrimination will be significantly and negatively [positively] related to multicultural policy support, support for increased immigration numbers, and endorsement of multicultural ideology.

We also explore the following research questions:

RQ1: Group and temporal predictive power. Are some estimates of discrimination (outgroup or ingroup; past, current, or future) more predictive of outcome variables than others?

RQ2: Order effects. As an initial inference of causality, does the order with which respondents are asked about ingroup [outgroup] discrimination influence ratings of discrimination to the other group? Specifically, if perceptions of outgroup gains precede the perception of ingroup losses, then participants who rate outgroup discrimination first (and perceive outgroup discrimination as falling over time) should have higher subsequent ingroup discrimination claims than participants who rate ingroup discrimination first.

Method

Participants. An online survey was administered to 517 Australian born people who identified as ‘White Australian’ in July 2017. Respondents were recruited through an online survey recruiting and analysis company (Qualtrics). Participants received small reimbursements for their time, including points toward shopping vouchers, gift cards, and frequent flyer points. Those who failed an embedded attention check ($n=125$) or completed the survey in an unrealistically short period of time (i.e., those who completed the survey in less than one-third of the median completion time; $n=14$) were excluded from the final sample of 517. The sample size was maximised, within the project’s budget parameters, to ensure adequate representativeness of the target population. Comparable numbers of men (47.8%) and women (51.6%) completed the survey (with 0.6% not otherwise stated). Participants ranged in age from 18 to 85 (with a mean date of birth of 1969, $SD = 17.6$).

Measures. *Perceptions of discrimination over time.* Following Norton and Sommers (2011), perceptions of discrimination over time were assessed by asking each participant to rate the estimated level of discrimination toward two groups: immigrants to Australia, and White Australians, over several decades. Respondents were asked *How much do you think immigrants to Australia [White Australians] were [are/will be] the victims of discrimination in each of the following decades? 1980s; 1990s; 2000s; 2010s; 2020s; 2030s; 2040s.* Responses were recorded on a scale from “1 – No discrimination at all” to “10 – A great deal of discrimination”. The order in which the two groups were presented was counterbalanced between respondents to test for order effects.

To test whether perceptions of discrimination could predict meaningful outcomes, the following three outcome measures were included.

Support for multicultural policy. A Multicultural Policy scale consisting of seven items assessed participants' support for policies and initiatives designed to assist new immigrants settle in Australia. These items were derived from the Australian Federal Government's Multicultural Statement (Australian Government, 2017), which details policies and initiatives currently enacted by the government. Participants were asked the degree to which they agreed with government investing in a series of initiatives, including *A Government multicultural access and equity policy that provides additional social services for people from different cultural backgrounds; Resettlement services to help improve employment outcomes for immigrants.* Responses were provided on a 5-point scale, from "1 – Strongly disagree" to "5 – Strongly agree" ($\alpha = .88$, not improved with the removal of any items).

Attitudes to current immigration levels. Attitudes to current immigration levels were assessed with the following question: *Do you think current levels of immigration to Australia are:* with the response options *1 - Much too low; 2 - Slightly too low; 3 - About right; 4 - Slightly too high; 5 - Much too high.* Responses were reverse coded so that higher scores indicated higher support for increasing immigration levels, and lower support for reducing immigration levels.

Multicultural ideology. A multicultural ideology scale (Berry, 2006) consisting of 10 items assessed the extent to which participants viewed cultural diversity as good for a society and its members (*e.g., A society that has a variety of ethnic and cultural groups is more able to tackle new problems as they occur*). Responses were provided on a 5-point scale, from "1 – Strongly disagree" to "5 – Strongly agree" ($\alpha = .88$, not improved with the removal of any items).

Results

Ratings of perceived discrimination toward immigrants to Australia and toward White Australians are shown in Figure 1. There was a significant decrease in ratings of discrimination toward immigrants to Australia between the 1980s ($M = 6.31$; $SD = 2.61$) and the 2040s ($M = 5.45$; $SD = 2.77$; $p < .001$). There was a significant increase in ratings of discrimination toward White Australians between the 1980s ($M = 3.36$; $SD = 2.67$) and the 2040s ($M = 4.47$; $SD = 3.10$; $p < .001$). Ratings of discrimination toward immigrants to Australia and toward White Australians were significantly different from one another in each decade, with ratings of discrimination toward immigrants higher in each time period (Table 1).

INSERT FIGURE 1 ABOUT HERE

H1: Zero-sum patterns. To test whether perceptions of discrimination toward the outgroup (immigrants) were significantly and negatively related to perceptions of discrimination toward the ingroup (White Australians), correlations were run between the two ratings at each decade (following Norton and Sommers' approach). Relationships between ratings given to each group were significant and *positive* for each decade, except for the 2010s where the correlation did not reach statistical significance ($p = .07$; Table 1).

To further test *RQ1*, again following Norton and Sommers' approach, perceptions of changes in discrimination over time for each group were calculated by subtracting discrimination ratings at 1980s from discrimination ratings at 2040s, so that positive scores indicated increases in perceived discrimination over time, and negative scores indicated perceived decreases in discrimination over time (with scores of 0 indicating no change between the two time points). The relationship between perceptions of change over time in

immigrant discrimination and White Australian discrimination from the 1980s to the 2040s was positively correlated at $r = .31, p < .001$. That is, perceptions that discrimination toward one group had increased was moderately associated with perceptions that discrimination toward the other group had increased. The zero-sum thinking hypothesis that perceptions of ingroup versus outgroup discrimination are negatively correlated was not supported.

Further, when ratings of discrimination toward both groups were combined, overall levels of discrimination were perceived as increasing over time between the 1980s ($M = 9.68; SD = 4.06$) and the 2040s ($M = 9.92; SD = 4.66; p < .001$). This suggests that aggregate levels of ingroup and outgroup discrimination are not seen as fixed over time, but as variable.

INSERT TABLE 1 ABOUT HERE

H2: Associations with outcomes. Combined across all time points, levels of perceived discrimination toward immigrants to Australia and toward White Australians differentially predicted support for multicultural policy, attitudes to current immigration levels, and multicultural ideology, in the expected directions. Higher aggregate perceptions of discrimination toward immigrants were associated with increased support, while higher aggregate perceptions of discrimination toward White Australians were associated with increased opposition (Table 2).

As Table 2 shows, perceptions of temporal changes in discrimination toward both groups were significantly correlated with each of the outcome variables. Specifically, perceptions that discrimination was *increasing* over time, to both White Australians *and* to immigrants, was associated with stronger rejection of multicultural policy, multicultural ideology, and increasing immigration numbers. Put another way, both perceptions of ingroup

losses over time *and* perceptions of outgroup losses over time were associated with greater rejection of multiculturalism and a desire to reduce immigration.

INSERT TABLE 2 ABOUT HERE

RQ1: Group and temporal predictive power. To assess the relative influence of overall perceptions of discrimination toward each group on support for multicultural policy, current immigration levels, and multicultural ideology, simultaneous regressions were run. Perceptions of discrimination predicted 19% of the variance in multicultural policy support ($R^2=.19$, $F(2,514)=58.95$, $p<.001$), with discrimination toward Whites ($\beta^1 = -.37$, $p < .001$) recording a higher beta value than discrimination toward immigrants ($\beta = .28$, $p < .001$). Perceptions of discrimination predicted 14% of the variance in support for increased immigration levels ($R^2=.12$, $F(2,514)=45.43$, $p<.001$), with discrimination toward Whites ($\beta = -.34$, $p < .001$) recording a higher beta value than discrimination toward immigrants ($\beta = .22$, $p < .001$). Perceptions of discrimination predicted 26% of the variance in multicultural ideology ($R^2=.26$, $F(2,514)=89.55$, $p<.001$), with discrimination toward Whites ($\beta = -.45$, $p < .001$) recording a higher beta value than discrimination toward immigrants ($\beta = .31$, $p < .001$).

To assess the relative influence of perceptions of past, current, and future discrimination toward each group on outcome variables, six discrimination ratings were calculated. Two *past discrimination* ratings – one for past immigrant discrimination and one for past White discrimination – were calculated by combining and averaging discrimination

¹ All in-text reporting of betas (β) refer to the standardised beta coefficient

scores for the 1980s, 1990s, and 2000s. Scores for the current decade – 2010s – constituted the two rating scores for *current levels of discrimination*. Two *future discrimination* ratings – one for immigrant discrimination and one for White discrimination – were calculated by combining and averaging discrimination scores for the 2020s, 2030s, and 2040s.

Simultaneous regressions was performed to determine the relative influence of each of these discrimination ratings on our outcome variables. Table 3 shows that perceptions of discrimination predicted 22% of the variance in multicultural policy support ($R^2=.22$, $F(6,510)=24.06$, $p<.001$), with future discrimination toward Whites and current discrimination toward immigrants the only significant predictors. Perceptions of discrimination predicted 19% of the variance in views on immigration levels ($R^2=.19$, $F(6,510)=19.71$, $p<.001$), with future discrimination toward Whites and past discrimination toward immigrants the only significant predictors. Perceptions of discrimination predicted 30% of the variance in multicultural ideology ($R^2=.30$, $F(6,510)=35.63$, $p<.001$), with future discrimination toward Whites and past immigrant discrimination the only significant predictors.

INSERT TABLE 3 ABOUT HERE

RQ2: Order effects. The order in which participants were asked to make their estimates of discrimination had no significant influence on discrimination ratings for White Australians or immigrants, either overall or at any time point (Table 4). Further, the relationship between perceptions of change over time in immigrant discrimination and White Australian discrimination from the 1980s to the 2040s was significantly positively correlated for both groups (immigrants rated first: $r = .32$, $p < .001$; Whites rated first: $r = .27$, $p < .001$),

suggesting that failure to find zero-sum patterns was not contingent on the order of assessment.

INSERT TABLE 4 ABOUT HERE

Discussion

In contrast to the findings of Norton and Sommers (2011), we found perceptions of discrimination toward an outgroup (immigrants to Australia) and toward an ingroup (White Australians) were positively correlated. Positive correlations were found for discrimination ratings for each time point (except for the current decade), and for perceptions of changes in discrimination over time. These initial findings suggest most Australians did not view group-based discrimination as zero-sum in an immigration context.

As expected, perceptions that discrimination toward White Australians had increased over time (an indicator of ‘ingroup losses’), significantly predicted rejection of multicultural policy and multicultural ideology, as well as rejection of increasing immigration levels. Contrary to expectations, perceptions that discrimination toward immigrants had *decreased* (indicating ‘outgroup gains’), also significantly predicted these outcome variables in the same direction (reflecting the ‘coupled’ rather than ‘hydraulic’ relationships found between discrimination ratings).

Regressions to assess the relative impact of group assessments on our outcome variables showed that, while assessments about both groups were significant, assessments about the ingroup was the stronger predictor. Moreover, temporal ratings for each group revealed that future expectations of the ingroup were the only consistent predictor of attitudes

toward multiculturalism and immigration levels. While recognition of past and current outgroup discrimination predicted some unique variance in views on immigration levels and multicultural policy, it was anticipated future ingroup discrimination that uniquely predicted all three outcome variables. Further, we failed to identify effects based on whether respondents made outgroup or ingroup assessments first.

To explore whether these initial findings could be replicated in another cultural context, we repeated the study with a sample of participants identifying as ‘White Americans’ in the United States.

Study 2

In August 2017 we repeated Study 1 with a sample of 273 MTurk workers, born in America and identifying as ‘White American’. The sample size was maximised, within the project’s budget parameters, to ensure adequate representativeness of the target population. Respondents received approximately AU\$2 upon completion. Those who failed an embedded attention check or completed the survey in an unrealistically short period of time were excluded from the final sample of 273. Comparable percentages of men (53.8%) and women (46.2%) completed the survey online. Participants ranged in age from 21 to 77 (with a mean date of birth of 1978, $SD = 12.10$). Hypotheses and research questions and measures were as in Study 1, with the terms “American/America” replacing “Australian/Australia” where necessary.² Both the support for multicultural policy scale ($\alpha = .90$) and the multicultural ideology scale ($\alpha = .90$) showed acceptable reliability and were not improved with the removal of any items.

² We acknowledge that, unlike Australia, the USA does not have an official policy of multiculturalism. Nonetheless, many of the equity and diversity strategies described in our measure are evident at local and/or state levels in the US and therefore were considered relevant in this context.

Results

Ratings of perceived discrimination toward immigrants to America and toward White Americans are shown in Figure 2. As in Study 1, there was a significant decrease in ratings of discrimination toward immigrants between the 1980s ($M = 5.78$; $SD = 2.45$) and the 2040s ($M = 4.93$; $SD = 2.77$; $p < .001$); although, a significant increase in ratings of discrimination toward immigrants between the 1980s and the current decade, $M = 6.41$, $SD = 2.69$, was also observed, and a significant increase in ratings of discrimination toward White Americans between the 1980s, $M = 2.05$; $SD = 1.75$, and the 2040s, $M = 4.12$; $SD = 3.19$; $p < .001$). Again, ratings of discrimination toward White Americans and immigrants to America were significantly different from one another in each decade, with ratings of discrimination toward immigrants higher in each time period (Table 5).

INSERT FIGURE 2 ABOUT HERE

H1. Zero-sum patterns. Correlations between ratings given to each group failed to reach significance, except for the current decade (2010s) where there was a significant *negative* relationship between the two ratings (Table 5). The relationship between perceptions of change over time in White American discrimination and immigrant discrimination from the 1980s to the 2040s was not significant ($r = .03$, $p > .05$).

As in Study 1, when ratings of discrimination toward both groups were combined, there was a significant increase in aggregate levels of perceived discrimination between the 1980s ($M = 7.83$; $SD = 2.93$) and the 2040s ($M = 9.07$; $SD = 4.13$; $p < .001$). That is, aggregate levels of ingroup and outgroup discrimination are not seen as fixed over time.

INSERT TABLE 5 ABOUT HERE

H2. Associations with outcomes. Combined across all time points, levels of perceived discrimination toward immigrants to America and to White Americans were differentially associated with support for multicultural policy, attitudes toward immigration levels, and multicultural ideology, in the same directions as Study 1. Perceived immigrant discrimination was associated with support for multicultural policy ($r = .41, p < .001$), support for increasing current immigration levels ($r = .32, p < .001$), and higher multicultural ideology ($r = .40, p < .001$). Perceived White discrimination was associated with opposition to multicultural policy ($r = -.42, p < .001$), support for lower immigration levels ($r = .47, p < .001$), and rejection of multicultural ideology ($r = -.49, p < .001$).

As in Study 1, perceptions of temporal change in discrimination toward White Americans were significantly correlated with rejection of multicultural policy ($r = -.24, p < .001$), support for lower immigration levels ($r = -.39, p < .001$), and rejection of multicultural ideology ($r = -.32, p < .001$). Unlike Study 1 (where negative relationships were found), perceptions of temporal change in discrimination toward immigrants were unrelated to multicultural policy ($r = -.03, p = .68$), attitudes to immigration levels ($r = .05, p = .39$), and multicultural ideology ($r = .10, p = .10$). That is, perceptions of ingroup losses were associated with negative support for our outcome variables, while perceptions of outgroup gains were unrelated to our outcome variables.

RQ1. Group and temporal predictive power. Simultaneous regressions showed that perceptions of discrimination predicted 28% of the variance in multicultural policy support ($R^2 = .28, F(2,257) = 50.92, p < .001$), with discrimination toward Whites ($\beta = -.36, p < .001$)

recording a higher beta value than discrimination toward immigrants ($\beta = .34, p < .001$).

Perceptions of discrimination predicted 28% of the variance in support for increased

immigration levels ($R^2=.28, F(2,260)=51.59, p<.001$), with discrimination toward Whites (β

$= -.44, p < .001$) recording a higher beta value than discrimination toward immigrants ($\beta =$

$.25, p < .001$). Perceptions of discrimination predicted 35% of the variance in multicultural

ideology ($R^2=.35, F(2,257)=69.08, p<.001$), with discrimination toward Whites ($\beta = -.44, p <$

$.001$) recording a higher beta value than discrimination toward immigrants ($\beta = .33, p <$

$.001$).

The relative influence of perceptions of past, current, and future discrimination to both groups on our outcome variables is shown in Table 6. Perceptions of discrimination predicted 29% of the variance in multicultural policy support ($R^2=.29, F(6,253)=17.11, p<.001$), with past discrimination toward immigrants the only significant predictor.

Perceptions of discrimination predicted 19% of the variance in views on immigration levels ($R^2=.19, F(6,256)=18.53, p<.001$), with future discrimination toward Whites the only significant predictor.

Perceptions of discrimination predicted 36% of the variance in multicultural ideology ($R^2=.36, F(6,253)=24.01, p<.001$), with future discrimination toward Whites and current discrimination toward immigrants the only significant predictors.

INSERT TABLE 6 ABOUT HERE

RQ2: Order Effects. The order in which participants were asked to make their estimates of discrimination had no significant influence on discrimination ratings for immigrants to America or White Americans, either overall or at any time point (Table 7).

Correlations between perceptions of change over time in immigrant discrimination and White

American discrimination from the 1980s to the 2040s was non-significant for both groups (immigrants rated first: $r = .11$, $p = .19$; Whites rated first: $r = -.04$, $p = .63$).

INSERT TABLE 7 ABOUT HERE

Discussion

In Study 2 we sought to replicate our initial findings in a different cultural context. We did not replicate the series of positive correlations between ratings of discrimination toward the two groups in each decade, or over time. However, nor could we replicate the findings of Norton and Sommers that patterns of discrimination are viewed as zero-sum, excepting a small negative relationship between ratings of discrimination toward both groups in the current decade.

We found perceptions of changes to discrimination toward immigrants ('outgroup gains') was not associated with support for multicultural policy, multicultural ideology, or attitudes to current immigration levels, but, as in Study 1, perceptions of changes in White discrimination ('ingroup losses') did. As in Study 1, perceptions of White discrimination were the stronger predictor of our outcome variables. Moreover, perceptions of *future* White discrimination predicted unique variance in views on immigration levels and multicultural ideology, and was approaching significance for multicultural policy.

Taken together, the results of Studies 1 and 2 suggest that perceptions of discrimination toward the ingroup – White Australians/Americans – tell us more about attitudes to multicultural policy, current immigration levels, and multicultural ideology than perceptions of discrimination toward the outgroup – immigrants. Further, we did not find clear evidence that ingroup and outgroup discrimination are negatively related, i.e., zero-sum.

The assumed causal direction of zero-sum thinking – that recognition of outgroup gains precedes recognition of ingroup losses, did not receive initial support, as no significant differences in order effects were identified in either study. To better explore the potential causal role of the improving status of the outgroup in driving perceptions of the ingroup (and its subsequent role in shaping attitudes to multiculturalism and immigration), in a third study we manipulated information of the outgroup's condition before assessing perceptions of ingroup discrimination and attitudes to multiculturalism and immigration levels.

Study 3

To support the concept of zero-sum thinking, presenting participants with evidence of more sharply decreasing outgroup discrimination (high outgroup gains) should translate into more sharply increasing perceptions of ingroup discrimination over time, than presenting participants with more gently decreasing discrimination over time (low outgroup gains). Moreover, participants presented with evidence of sharp decreases in outgroup discrimination should subsequently show greater rejection of multicultural policy and ideology, and a greater desire to reduce immigration numbers. The aim of Study 3 was to further test the zero-sum thinking construct in three ways. First, we tested whether manipulating the degree of outgroup discrimination over time would translate to changes in the perceived degree of discrimination against the ingroup (hence testing the causal assumption that perceptions of outgroup gains precede perceptions of ingroup losses). Second, we tested whether these changes in ingroup assessments were inversely patterned with the presented conditions of the outgroup. Third, we tested whether the manipulation influenced changes in support for multicultural policy, multicultural ideology, and attitudes to current immigration levels.

Method

Study 3 was initially tested on a sample of 139 psychology undergraduate students (see Supplementary Information for a detailed account of the method and results). However, manipulation checks suggested that one of the conditions was not sufficiently attended to by the majority of respondents. Accordingly, the manipulation stimuli were revised and the study conducted with a representative sample of the target population.

Participants. An online survey was administered to 121 people who were born in Australia and identified as ‘White Australian’ in June 2018. Respondents were recruited through an online survey recruiting and analysis company (Qualtrics). Those undertaking the survey received small reimbursements for their time, including points toward shopping vouchers, gift cards, and frequent flyer points. The sample size was maximised, within the project’s budget parameters, to increase the representativeness of the target population. A minimum sample of 80 eligible respondents was determined on the basis of power analysis using G*Power in order to find medium effect sizes at the .05 level (0.7 power). The survey was pre-registered with the Open Science Framework, available at *blinded for review*. Comparable numbers of men (46.3%) and women (53.7%) completed the survey. Participants ranged in age from 18 to 88 (with a mean date of birth of 1975, SD = 15.81).

Procedure and Measures. Participants were randomly allocated to one of two conditions – a ‘low outgroup gain’ condition, and a ‘high outgroup gain’ condition. In both conditions, participants read the following text: *“Please read the following information carefully. Researchers have attempted to map out how levels of discrimination to immigrants to Australia have changed over time. The graph below is a summary of their results. The solid blue line represents changes in levels of discrimination over the past several decades up until the present day. The dotted blue line represents projected levels of discrimination into*

the future.” In the ‘low outgroup gain’ condition, the text continued as follows: “*As you can see in the graph below, discrimination toward immigrants was high in the 1980s. Over the decades, discrimination has been only slightly declining over time, and is projected to reduce only slightly over future decades*”. These participants then viewed a graph of discrimination toward immigrants over time that presented the trend as moderate levels in the 1980s, gently declining over time until the 2040s (see Stimulus Material, Figure S1). In the ‘high outgroup gain’ condition, the text continued as follows: “*As you can see in the graph below, discrimination toward immigrants was high in the 1980s. Over the decades, discrimination has been dramatically declining, and is projected to reduce sharply over future decades.*” These participants then viewed a graph of discrimination toward immigrants over time that presented the trend as high in the 1980s, sharply declining until the 2040s (see Stimulus Material, Figure S2).

In both conditions, as a manipulation check participants were then asked to explain the nature of the pattern of discrimination as portrayed in the graph ('declining dramatically over time'; 'only slightly declining over time'; 'increasing steeply over time'). A further manipulation check asked participants to move a cursor on a scale to indicate the position that best represented the pattern of discrimination toward immigrants, from '1 – Declining slightly' to '100 – Declining dramatically'. To increase the power of the manipulation, participants were then asked to describe in a few words any evidence that came to mind that discrimination toward immigrants had only slightly declined [had declined dramatically] in the past decades.

Participants in both conditions were then asked to indicate how much they thought White Australians were the victims of discrimination in each of the following decades: 1980s, 1990s, 2000s, 2010s, 2020s, 2030s, 2040s. Responses were recorded on a scale from '1 - not at all' to '10 - a great deal'. Support for multicultural policy and higher immigration rates, and

endorsement of multicultural ideology were measured as in Studies 1 and 2. Both the support for multicultural policy scale ($\alpha = .88$) and the multicultural ideology scale ($\alpha = .90$) showed acceptable reliability, and were not improved by the removal of any items. At the conclusion of the survey, respondents were debriefed on the intent of the initial manipulation and given the opportunity to have their data deleted, for which they would not be penalised with regard to reimbursement (see Stimulus Material). No respondents chose to have their data deleted.

Results

Manipulation checks. For the ‘low outgroup gain’ condition, 81% of respondents correctly selected the response that their graph depicted a gentle decline over time of discrimination toward immigrants. For the ‘high outgroup gain’ condition, 68% of respondents correctly selected the response that their graph depicted a dramatic decline over time, with a further 32% selecting the option that discrimination was gently declining. Responses to the second manipulation check showed that 72% of those in the ‘low outgroup gain’ placed their cursor further toward the ‘declining slightly’ scale anchor, which 67% of those in the ‘high outgroup gain’ condition placed their cursor further toward the ‘declining dramatically’ scale anchor. An independent samples t-test showed a large and statistically significant difference in cursor placement based on condition and in the expected direction, ‘Low outgroup gain’: $M = 39.69$, $SD = 22.89$; ‘High outgroup gain’: $M = 62.11$, $SD = 24.70$, $t(119) = -5.17$, $p < .001$ (eta squared = .18).

Effects of Condition. Independent samples t-tests revealed no significant differences in ratings of White discrimination based on condition, for any time point, or for overall rating (Table 8). To test the effect of condition on patterns of future ingroup discrimination, ratings of White discrimination at future time points were aggregated. Again, there were no significant differences in ratings based on condition (Table 8).

Further t-tests were run to assess the influence of condition on support for multicultural policy, attitudes to immigration levels, and multicultural ideology. No significant differences based on condition were found (Table 8).

INSERT TABLE 8 ABOUT HERE

Secondary analyses replicated the results of Study 1 and Study 2. Overall perceptions of White discrimination were significantly related to rejection of multicultural policy ($r = -.34, p < .001$), support for lowering current immigration levels ($r = -.54, p < .001$), and rejection of multicultural ideology ($r = -.42, p < .001$).

Discussion

As with Studies 1 and 2, Study 3 provided no evidence for zero-sum thinking patterns. Manipulating outgroup gains had no effect on perceptions of ingroup status, nor did it influence subsequent attitudes to multiculturalism and immigration levels. Consistent with Studies 1 and 2, perceptions of the status of the ingroup predicted these attitudes; namely, higher levels of perceived ingroup discrimination predicted lower support for multicultural policy and ideology, and support for lowering current immigration levels.

Manipulation checks revealed slightly more respondents assigned to the ‘high outgroup gain’ condition failed their manipulation checks than those assigned to the ‘low outgroup gain’ condition, however this constituted under one-third of participants, and removing these participants did not effect the main findings.³

³ To test whether manipulation check fails may have masked an effect for condition, those failing the first manipulation check were removed and the major analyses re-run ($N = 90$). There were no effects for condition on ratings of overall White Discrimination (‘Low Outgroup Gain’: $M=3.66, SD=2.58$; ‘High Outgroup Gain’:

General Discussion

Taken together, the results of our three studies suggest ingroup perceptions of discrimination toward immigrants and toward their own group do not reflect zero-sum thinking as conceptualised in the present research. First, changes in discrimination ratings toward one group were not accompanied by an inverse change in discrimination ratings toward the other group. Rather, in the case of our Australian sample, there was evidence that perceptions of discrimination toward different groups were ‘coupled’ – an increase in perceived discrimination toward one group was associated with increases in perceived discrimination toward the other. Second, in both Studies 1 and 2 we found levels of aggregate discrimination were not ‘fixed’ over time, but seen as increasing. Third, in Study 3 we found manipulating information about outgroup gains over time had no corresponding influence on perceptions of ingroup discrimination, or on subsequent attitudes about immigration and multiculturalism. This is inconsistent with a zero-sum account of threat – that perceptions of the status of the outgroup hydraulically drive perceptions of the ingroup, and in turn shape antagonism toward outgroup redress. We suggest perceptions of discrimination did not so much reflect a ‘if they gain, we lose’ mentality, but are more accurately depicted as ‘they’re discriminated against, but so are we’.

Perceptions about discrimination toward an outgroup are doubtless important.

Perceptions of lower discrimination toward immigrants were indeed associated with rejection of multicultural policies and higher immigration levels. However, when tested together,

M=3.90, *SD*=2.53, *t* (88) = -.44, *p* = .66); rating of future White Discrimination (‘Low Outgroup Gain’: *M*=4.13, *SD*=3.17; ‘High Outgroup Gain’: *M*=4.42, *SD*=3.08, *t* (88) = -.44, *p* = .66); multicultural policy support (‘Low Outgroup Gain’: *M*=3.58, *SD*=0.82; ‘High Outgroup Gain’: *M*=3.43, *SD*=1.02, *t* (88) = .78, *p* = .44); immigration levels (‘Low Outgroup Gain’: *M*=3.60, *SD*=.99; ‘High Outgroup Gain’: *M*=3.65, *SD*=1.25, *t* (88) = -.23, *p* = .82); or multicultural ideology (‘Low Outgroup Gain’: *M*=3.29, *SD*=0.94; ‘High Outgroup Gain’: *M*=3.00, *SD*=0.96, *t* (88) = 1.50, *p* = .14).

perceptions of the condition of the ingroup, specifically the *future* condition of the ingroup, was the most consistent and powerful predictor of these attitudes. This finding is notable given that multicultural policy initiatives are directed solely with reference to one group – immigrants. Given this, one might expect perceptions of discrimination toward the target of the policy (immigrants) to be the chief consideration in its support or rejection. Yet the current findings resonate with accumulated evidence that concern for the ingroup is more motivating than hostility toward the outgroup (Brewer, 1999), and that rejection of ameliorative discrimination policies might be more contingent on the changing conditions of the ingroup than perceptions of the relative positions of the ingroup and outgroup (Wellman, Liu, & Wilkins, 2016; Wilkins, Wellman, Babbitt, Toosi, & Schad, 2015).

Although our findings are not consistent with a sociological account of zero-sum thinking, they are consistent with a social-psychological competitive victimhood account of intergroup discrimination. According to the latter, it is not necessary for high-status group members to deny discrimination toward an outgroup (a position that would be difficult to maintain in the face of abundant objective and anecdotal evidence to the contrary), but a competing, elevated claim of ingroup discrimination may be sufficient to reduce the ‘moral gap’ implied by acknowledgement of past and ongoing discrimination, by an ingroup toward an outgroup (Phillips & Lowery, 2015; Sullivan et al., 2012; Young & Sullivan, 2016). In the face of the reality constraints on claims of current or past victimhood to one’s own group, and constraints on outright denial of past and current outgroup discrimination, a less difficult position for majority-culture members to maintain may well be claims about what will occur to the status of the ingroup in the future.

Implications and future directions

One of the corollaries of the failure to find zero-sum thinking patterns was that the perception that *overall* levels of discrimination are increasing (a view held by the majority of our samples) was associated with negative responses to immigration and multiculturalism. Moreover, in Study 1, the perception that outgroup discrimination was increasing was also associated with these negative responses (and in Study 2 they were unrelated). The significant increase in aggregate levels of perceived discrimination between the 1980s and the 2040s suggests that the idea of an increasingly discriminatory society is widespread. This ‘declinism’ – the tendency to view society as getting worse on an array of metrics – is a common trope of populist leaders antagonistic to immigration and multiculturalism (Elchardus & Spruyt, 2014).

Our findings suggest that strategies designed to highlight the obstacles and challenges faced by immigrants, including systemic discrimination, are likely to be capped in their effectiveness if they ignore the concerns that an objectively historically high-status or privileged group has for its own group’s prospects. Critically, this might not be as simple as convincing people that these conditions are not zero-sum. Communication strategies that successfully address advantaged members’ concerns about the future might be explored. For instance, it is unclear whether people’s concerns for the future are specifically limited to concerns about discrimination, or part of a more generalised, collective angst or declinism about what the future may hold (such as expectations about employment, stagnant wage growth, and so on); (Wohl, Squires, & Caouette, 2012; Zaleski, 1996). Relatedly, future studies might test whether inclusive framing – framing that acknowledges multiple groups and not just the target group of multicultural policies – is an effective way to pre-empt counter claims of discrimination. Studies testing the influence of inclusive framing on competitive claims of discrimination would help further unpack the mechanisms involved in rejecting multicultural ideology and policy. Such research might also test whether perceived

increases in aggregate discrimination, evidenced in our study, are in fact offset by perceptions of decreased discrimination toward other subgroups, such as ‘elites’, ‘experts’, and ‘political classes’.

This last point raises broader questions about the conceptualisation of group memberships and group boundaries. We acknowledge that, within our ‘White Australian’ group (who we view as historically privileged in comparison to newly arrived immigrants), that there are indeed many subgroups who have been historically discriminated against on other grounds (e.g., gender, sexual orientation, and physical abilities). Moreover, our group categorisation on the basis of birthplace/ethnic identity is also problematic.

Our group categorisations were designed to replicate and extend Norton and Sommers’ findings within the Australian context and with reference to immigrants, because tensions around immigration and new immigrant “advantage” are evident in popular and political discourse (e.g., Mols & Jetten, 2016). However, Australia has a long history of immigration, including non-White immigration, and many young Australians identify as bicultural (Berry, Phinney, Sam, & Vedder, 2006). Similarly, in their recent review, Austin and Fozdar (2018) highlighted the growing complexity and inclusiveness of Australian national identity, including an increase in cosmopolitan and/or global identities. Such changes in national identity are said to result from increasing diversity, migration, transnationalism, and globalisation and are occurring in many national contexts (Dovidio, Gaertner, & Saguy, 2008; Van Oudenhoven & Ward, 2013). In-depth examination of Australians’ social identities – beyond identifying with the term ‘White Australian’ - was beyond the scope of the studies reported here, but our findings suggest future research would benefit from a more nuanced investigation of these social categories, including attention to potential subgroups within the Australian community and with a focus on dimensions of identification, including ethnic versus civic national identities, rather than crude

categorisation (e.g., bicultural and multicultural identification; Ward, 2006; Ward, Ng Tseung-Wong, Szabo, Qumseya, & Bhowon, 2018). Moreover, our understanding of contemporary ‘intergroup’ relations in Australia would be further enhanced if the perspectives of Indigenous (Aboriginal and Torres Strait Islander) Australians – which have long been neglected - were also considered.

Relatedly, further research could probe the influence of ‘outgroup’ subcategories in moderating any zero-sum patterns. As with the specification of our ‘ingroup’, the immigrant ‘outgroup’ contains many potential sub-categories, including groups that might heighten either symbolic or realistic threat responses from receiving host community members (Velasco González, Verkuyten, Weesie, & Poppe, 2008). These responses may in turn influence perceptions of group membership, zero-sum relationships, and multicultural attitudes (Smithson, Sopena, & Platow, 2015). Further, it is unknown whether our current findings with respect to the primacy of the ingroup’s future condition would be replicated using other operationalisations of the zero-sum thinking construct.

To conclude, our results suggest that perceptions of group-based discrimination over time do not necessarily reflect a tendency for zero-sum thinking. Put another way, the concept of zero-sum thinking does not appear to generalize beyond the White-American Black-American intergroup context investigated by Norton and Sommers. Rather, perceptions are more aligned with the notion of competitive victimhood, encapsulated in the phrase ‘they’re discriminated against, but so are we’.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Ethics Statement

The research was undertaken in accordance with Australian national Ethical Human Research Policies and with the APA's Code of Conduct. All participants provided informed consent prior to participating, and were free to withdraw at any time without penalty. All studies received ethical approval from *blinded for review* Human Research Ethics Committee (Studies 1 & 2 project number: *blinded for review*; Study 3 project number: *blinded for review*).

Data Archiving and Sharing

Participant informed consent statements did not seek consent for data to be made publicly available, however data will be made available to individual researchers upon request.

References

- Austin, C., & Fozdar, F. (2018). Australian national identity: empirical research since 1998. *National Identities, 20*, 277-298. doi: 10.1080/14608944.2016.1244520
- Australian Government. (2017). *Multicultural Australia: United, strong, successful*. Canberra: Australian Government Retrieved from https://www.dss.gov.au/sites/default/files/documents/03_2017/multicultural_policy_2017.pdf.
- Berry, J. W. (2006). Mutual attitudes among immigrants and ethnocultural groups in Canada. *International Journal of Intercultural Relations, 30*, 719-734. doi:10.1016/j.ijintrel.2006.06.004
- Berry, J. W., Phinney, J. S., Sam, D. L., & Vedder, P. E. (2006). *Immigrant youth in cultural transition: Acculturation, identity, and adaptation across national contexts*. NJ: Lawrence Erlbaum Associates Publishers.
- Brewer, M. B. (1999). The psychology of prejudice: Ingroup love or outgroup hate? *Journal of Social Issues, 55*, 429-444. doi:10.1111/0022-4537.00126
- Clarke, J., & Newman, J. (2017). 'People in this country have had enough of experts': Brexit and the paradoxes of populism. *Critical Policy Studies, 11*, 101–116. doi: 10.1080/19460171.2017.1282376
- Donnelly, K. (2017, September 29). *Multiculturalism and political correctness are killing Australia*. Daily Telegraph. Retrieved from: <https://thewest.com.au/opinion/kevin-donnelly-multiculturalism-and-political-correctness-are-killing-australia-ng-634e5aa91dc2296105926d890ad92e03>
- Dovidio, J. F., Gaertner, S. L., & Saguy, T. (2008). Another view of “we”: Majority and minority group perspectives on a common ingroup identity. *European Review of Social Psychology, 18*, 296-330. doi: 0.1080/10463280701726132
- Elchardus, M., & Spruyt, B. (2014). Populism, persistent republicanism and declinism: An empirical analysis of populism as a thin ideology. *Government and Opposition, 51*, 111-133. doi:10.1017/gov.2014.27

- Esses, V. M., Dovidio, J. F., Jackson, L., & Armstrong, T. (2001). The immigration dilemma: The role of perceived group competition, ethnic prejudice, and national identity. *Journal of Social Issues, 57*, 389-412.
- Esses, V. M., Jackson, L. M., & Armstrong, T. L. (1998). Intergroup competition and attitudes toward immigrants and immigration: An instrumental model of group conflict. *Journal of Social Issues, 54*, 699-724. doi: 10.1111/0022-4537.911998091
- Esses, V. M., Jackson, L. M., Dovidio, J. F., & Hodson, G. (2005). Instrumental relations among groups: Group competition, conflict and prejudice. In J. F. Dovidio, P. Glick, & L. A. Rudman (Eds.), *On the nature of prejudice: Fifty years after Allport*, 227-243. MA: Blackwell Publishing.
- Jones, R. P., Cox, D., Galston, W. A., & Dionne, E. J., Jr. (2012). *What it means to be American: Attitudes to an increasingly diverse America ten years after 9/11*. Public Religion Research Institute: Governance Studies at Brookings.
- Louis, W. R., Esses, V. M., & Lalonde, R. N. (2013). National identification, perceived threat, and dehumanization as antecedents of negative attitudes toward immigrants in Australia and Canada. *Journal of Applied Social Psychology, 43*, 156-165. doi:10.1111/jasp.12044
- McCauley (Producer). (2016, August 1). *Sonia Kruger calls scholarship program 'reverse discrimination'*. news.com.au. Retrieved from <http://www.news.com.au/finance/money/costs/sonia-kruger-calls-scholarship-program-reverse-discrimination/news-story/08eac2223225ce80214014712e3c400>
- McLaren, L. M. (2003). Anti-immigrant prejudice in Europe: Contact, threat perception, and preferences for the exclusion of migrants. *Social Forces, 81*, 909-936. doi: 10.1353/sof.2003.0038
- Meegan, D. V. (2010). Zero-sum bias: Perceived competition despite unlimited resources. *Frontiers in Psychology, 1*, 1-7. doi:10.3389/fpsyg.2010.00191
- Mols, F., & Jetten, J. (2016). Explaining the appeal of populist right-wing parties in times of economic prosperity. *Political Psychology, 37*, 275-292. doi: 10.1111/pops.12258
- Noor, M., Shnabel, N., Halabi, S., & Nadler, A. (2012). When suffering begets suffering: The psychology of competitive victimhood between adversarial groups in violent

- conflicts. *Personality and Social Psychology Review*, *16*, 351-374.
doi:10.1177/1088868312440048
- Norton, M. I., & Sommers, S. R. (2011). Whites see racism as a zero-sum game that they are now losing. *Perspectives on Psychological Science*, *6*, 215-218.
doi:10.1177/1745691611406922
- Pettigrew, T. F., Christ, O., Wagner, U., Meertens, R. W., van Dick, R., & Zick, A. (2008). Relative deprivation and intergroup prejudice. *Journal of Social Issues*, *64*, 385-401.
doi: 10.1111/j.1540-4560.2008.00567.x
- Phillips, L. T., & Lowery, B. S. (2015). The hard-knock life? Whites claim hardships in response to racial inequity. *Journal of Experimental Social Psychology*, *61*, 12-18.
doi:10.1016/j.jesp.2015.06.008
- Różycka-Tran, J., Boski, P., & Wojciszke, B. (2015). Belief in a zero-sum game as a social axiom. *Journal of Cross-Cultural Psychology*, *46*, 525-548.
doi:10.1177/0022022115572226
- Smithson, M., & Shou, Y. (2016). Asymmetries in responses to attitude statements: The example of “zero-sum” beliefs. *Frontiers in psychology*, *7*, 984. doi:
10.3389/fpsyg.2016.00984
- Smithson, M., Sopena, A., & Platow, M. J. (2015). When is group membership zero-sum? Effects of ethnicity, threat, and social identity on dual national identity. *PloS one*, *10*.
doi: 10.1371/journal.pone.0130539
- Sullivan, D., Landau, M. J., Branscombe, N. R., & Rothschild, Z. K. (2012). Competitive victimhood as a response to accusations of ingroup harm doing. *Journal of Personality and Social Psychology*, *102*, 778-795. doi: 10.1037/a0026573
- Van Oudenhoven, J. P., & Ward, C. (2013). Fading majority cultures: The implications of transnationalism and demographic changes for immigrant acculturation. *Journal of Community & Applied Social Psychology*, *23*, 81-97. doi:
<https://doi.org/10.1002/casp.2132>
- Velasco González, K., Verkuyten, M., Weesie, J., & Poppe, E. (2008). Prejudice towards Muslims in the Netherlands: Testing integrated threat theory. *British Journal of Social Psychology*, *47*, 667-685. doi: 10.1348/014466608X284443

- Ward, C. (2006). Acculturation, identity and adaptation in dual heritage adolescents. *International Journal of Intercultural Relations, 30*, 243-259. doi: 10.1016/j.ijintrel.2005.09.001
- Ward, C., Ng Tseung-Wong, C., Szabo, A., Qumseya, T., & Bhowon, U. (2018). Hybrid and alternating identity styles as strategies for managing multicultural identities. *Journal of Cross-Cultural Psychology, 49*, 1402-1439. doi: 10.1177/0022022118782641
- Wellman, J. D., Liu, X., & Wilkins, C. L. (2016). Priming status-legitimizing beliefs: Examining the impact on perceived anti-White bias, zero-sum beliefs, and support for affirmative action among White people. *British Journal of Social Psychology, 55*, 426-437. doi: 10.1111/bjso.12133
- Wilkins, C. L., Wellman, J. D., Babbitt, L. G., Toosi, N. R., & Schad, K. D. (2015). You can win but I can't lose: Bias against high-status groups increases their zero-sum beliefs about discrimination. *Journal of Experimental Social Psychology, 57*, 1-14. doi: 10.1016/j.jesp.2014.10.008
- Wilkins, C. L., Wellman, J. D., & Kaiser, C. R. (2013). Status legitimizing beliefs predict positivity toward Whites who claim anti-White bias. *Journal of Experimental Social Psychology, 49*, 1114-1119. doi:10.1016/j.jesp.2013.05.017
- Wohl, M. J., Squires, E. C., & Caouette, J. (2012). We were, we are, will we be? The social psychology of collective angst. *Social and Personality Psychology Compass, 6*, 379-391. doi:10.1111/j.1751-9004.2012.00437.x
- Young, I. F., & Sullivan, D. (2016). Competitive victimhood: A review of the theoretical and empirical literature. *Current Opinion in Psychology, 11*, 30-34. doi: 10.1016/j.copsyc.2016.04.004
- Zaleski, Z. (1996). Future anxiety: Concept, measurement, and preliminary research. *Personality and Individual Differences, 21*, 165-174. doi: 10.1016/0191-8869(96)00070-0
- Zitek, E. M., Jordan, A. H., Monin, B., & Leach, F. R. (2010). Victim entitlement to behave selfishly. *Journal of Personality and Social Psychology, 98*, 245-255. doi:10.1037/a0017168

Table 1. Mean difference in ratings of discrimination toward immigrants to Australia and White Australians in each decade (Study 1).

Decade	<i>M</i>	<i>SD</i>	<i>t</i>	Paired differences sig.	Paired samples correlations
1980s	-2.950	3.384	-19.820	<.001	.18**
1990s	-2.708	3.169	-19.431	<.001	.17**
2000s	-2.354	3.317	-16.135	<.001	.18**
2010s	-2.068	3.687	-12.751	<.001	.07
2020s	-1.605	3.670	-9.947	<.001	.16**
2030s	-1.273	3.570	-8.107	<.001	.21**
2040s	-.983	3.590	-6.223	<.001	.26**

* $p < .01$

** $p < .001$

Table 2. Correlation matrix for perceptions of discrimination and outcome variables (Study 1).

	1.	2.	3.	4.	5.	6.
1. Multicultural policy						
2. Views on immigration levels	.56**					
3. Multicultural ideology	.71**	.62**				
4. Perceptions of White discrim (all time points)	-.33**	-.30**	-.40**			
5. Perceptions of immigrant discrim (all time points)	.22**	.17**	.24**	.15**		
6. Increases in White discrim.	-.22**	-.26**	-.26**	.26**	-.05	
7. Increases in immigrant discrim	-.12**	-.17**	-.18**	.19**	.19**	.31**

* $p < .01$

** $p < .001$

Table 3. Simultaneous regressions assessing the relative influence of perceptions of discrimination (group and temporal) on multicultural policy, attitudes to current immigration levels, and multicultural ideology (Study 1).

		Multicultural Policy				Views on Immigration Levels				Multicultural Ideology			
		<i>b</i>	<i>SE b</i>	β	<i>t</i>	<i>b</i>	<i>SE b</i>	β	<i>t</i>	<i>b</i>	<i>SE b</i>	β	<i>t</i>
<i>Constant</i>		3.27	.12		27.36**	2.25	.15		14.71**	2.88	.11		27.03**
Perceptions of immigrant discrimination	Past	.05	.02	.12	2.13	.09	.03	.17	2.97*	.08	.02	.22	4.00**
	Current	.10	.03	.27	3.54**	.04	.03	.09	1.20	.06	.02	.18	2.44
	Future	-.03	.02	-.08	-1.27	-.01	.03	-.02	-.33	-.01	.02	-.04	-.72
Perceptions of White discrimination	Past	-.00	.02	-.0	-.18	-.00	.03	-.01	-.12	-.02	.02	-.04	-.75
	Current	-.03	.03	-.11	-1.06	.01	.01	.12	1.14	-.03	.03	-.10	-.110
	Future	-.07	.03	-.25	-2.83*	-.17	.03	-.45	-4.99**	-.09	.02	-.31	-3.65**
		R² = .22				R² = .19				R² = .30			

* $p < .01$

** $p < .001$

Table 4. Means of overall ratings of discrimination toward White Australians and immigrants to Australia, by group participant rated first (Study 1).

Discrimination rating	Order of presentation	<i>M</i>	<i>SD</i>	<i>T</i>	Significance (two-tailed)
Perception of White Discrimination	Immigrants rated first	4.00	2.52	-.02	.98
	Whites rated first	4.00	2.58		
Perception of immigrant discrimination	Immigrants rated first	5.92	2.16	.94	.35
	Whites rated first	6.10	2.02		

* $p < .01$

** $p < .001$

Table 5. Mean difference in discrimination ratings toward immigrants to America and White Americans in each decade (Study 2).

Decade	<i>M</i>	<i>SD</i>	<i>t</i>	Paired differences sig.	Paired samples correlations
1980s	-3.72	3.09	-19.89	<.001	-.06
1990s	-3.30	3.14	-17.27	<.001	-.06
2000s	-3.07	3.82	-13.26	<.001	-.14
2010s	-2.86	4.29	-10.97	<.001	-.17*
2020s	-2.13	4.34	-8.08	<.001	-.12
2030s	-1.44	4.18	-5.67	<.001	-.06
2040s	-0.82	4.30	-3.12	.002	-.04

* $p < .01$

** $p < .001$

Table 6. Simultaneous regressions assessing influence of discrimination perceptions for all time periods (Study 2).

		Multicultural Policy				Views on Immigration Levels				Multicultural Ideology			
		<i>b</i>	<i>SE b</i>	β	<i>t</i>	<i>b</i>	<i>SE b</i>	β	<i>t</i>	<i>b</i>	<i>SE b</i>	β	<i>t</i>
<i>Constant</i>		2.82	.20		14.24*	2.50	.19		13.04*	3.29	.16		20.63**
Perceptions of immigrant discrimination	Past	.10	.04	.21	2.81**	.04	.03	.09	1.30	.00	.03	.01	.12
	Current	.04	.04	.10	.90	-.00	.04	-.01	-.05	.08	.04	.26	2.34*
	Future	.03	.04	.08	.83	.07	.04	.19	.05	.03	.03	.10	1.06
Perceptions of White discrimination	Past	-.07	.05	-.13	-1.48	.02	.05	.03	.38	-.05	.04	-.10	-1.17
	Current	-.01	.06	-.02	-.12	-.06	.06	-.17	-1.05	-.03	.05	-.09	-.60
	Future	-.08	.05	-.23	-1.75	-.11	.04	-.33*	-2.50*	-.08	.04	-.28	-2.19*
		R² = .29				R² = .19				R² = .36			

* p < .05

** p < .01

Table 7. Means of overall ratings of discrimination toward White Americans and immigrants to America, by group participant rated first (Study 2).

Discrimination rating	Order of presentation	<i>M</i>	<i>SD</i>	<i>T</i>	Significance (two-tailed)
Perception of White Discrimination	Immigrants rated first	2.99	2.28	-1.81	.07
	Whites rated first	3.50	2.36		
Perception of immigrant discrimination	Immigrants rated first	5.75	2.22	.19	.85
	Whites rated first	5.70	2.09		

* $p < .01$

** $p < .001$

Table 8. Ratings of White discrimination for each decade, and overall, by condition (Study 3).

Decade	Low outgroup gain		High outgroup gain		t	Sig. (2-tailed)
	condition		condition			
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
1980s	2.98	2.45	2.76	2.49	.49	.62
1990s	3.12	2.26	2.90	2.39	.51	.61
2000s	3.72	2.88	3.51	2.83	.42	.68
2010s	4.09	3.04	3.83	3.01	.47	.64
2020s	4.12	3.10	3.97	3.04	.27	.79
2030s	4.29	3.28	3.95	3.01	.60	.55
2040s	4.34	3.30	3.95	3.00	.69	.49
Overall	3.81	2.55	3.55	2.47	.56	.57
Future	4.25	3.20	3.96	2.98	.53	.60
discrimination						
Multicultural	3.45	.92	3.50	.96	-.30	.78
Policy						
Immigration	3.72	.99	3.67	1.26	.28	.78
Levels						
Multicultural	3.16	.93	3.10	.94	.35	.72
Ideology						

Figures.

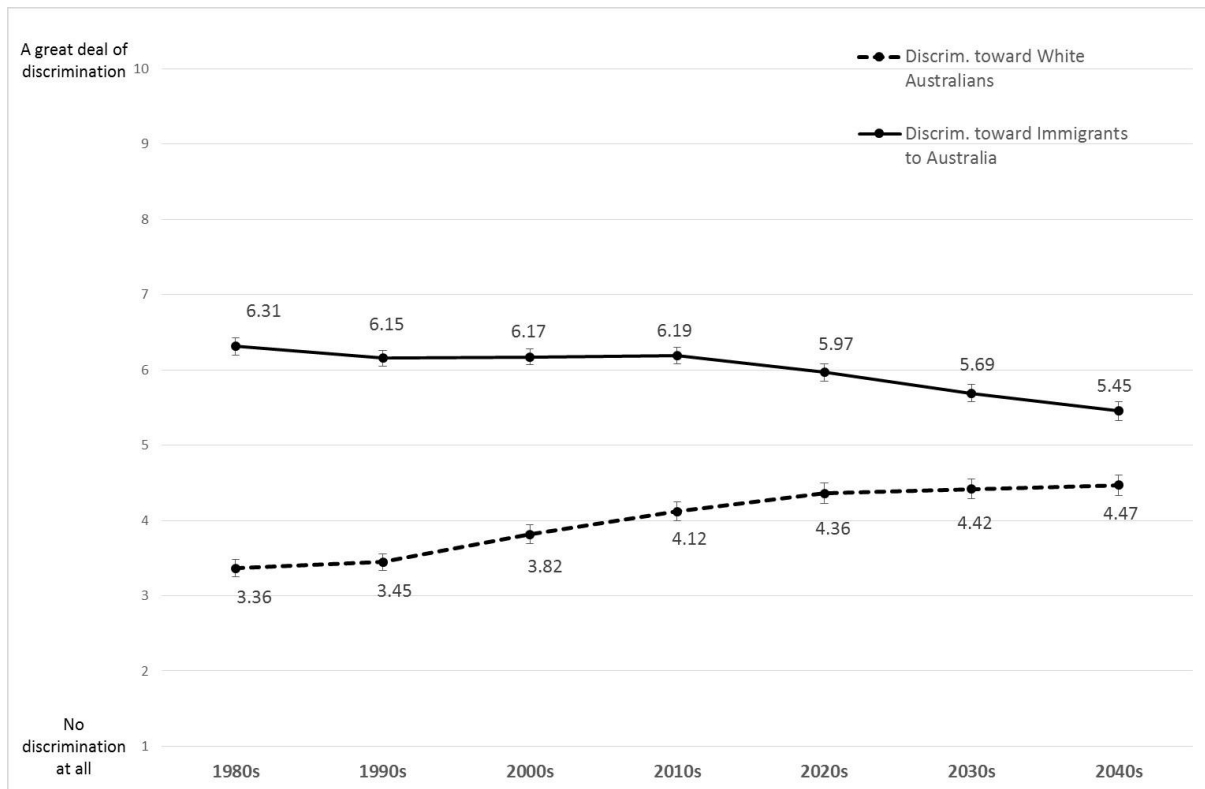


Figure 1: 'White Australian' perceptions of discrimination to own group and immigrant group over time (Study 1).

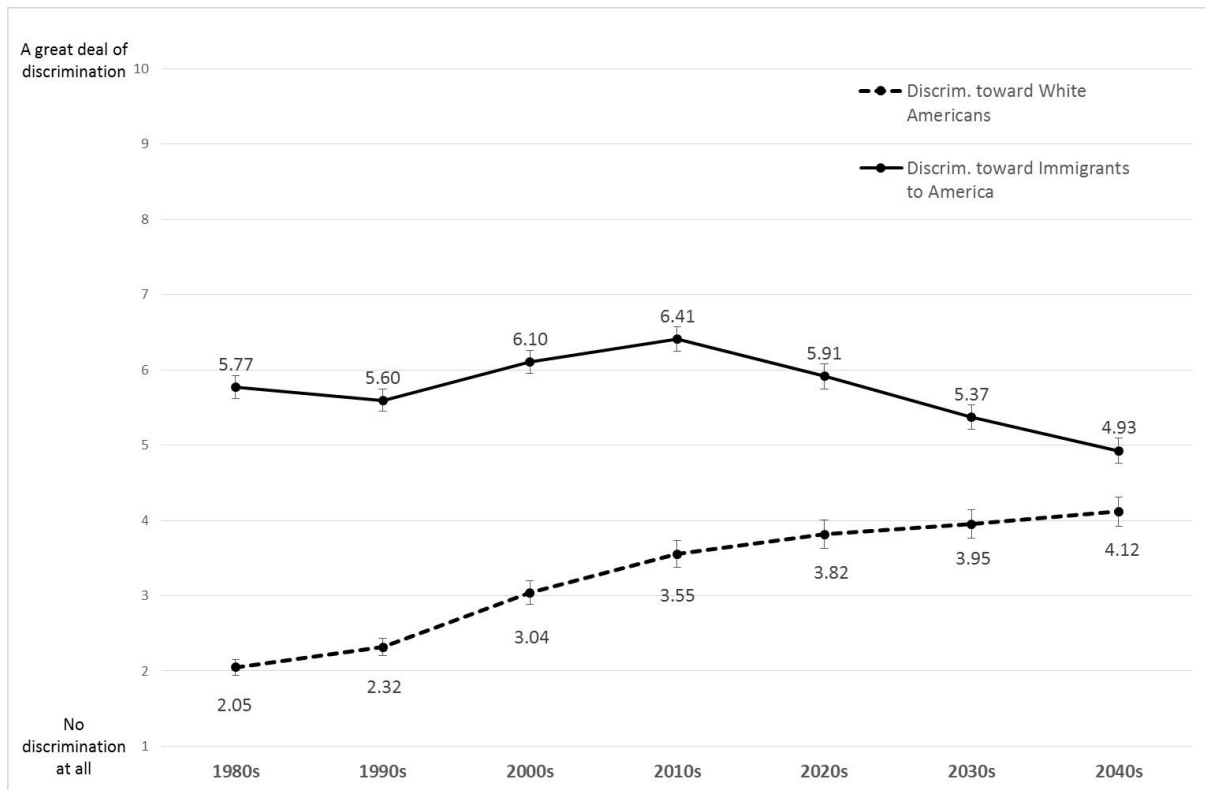


Figure 2: ‘White American’ perceptions of discrimination to own group and immigrant group over time (Study 2).