The Effect of Metaphoric Framing on Attitudes toward Diversity Policies in the Face of Racial Shift

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Abstract

The United States is undergoing a series of transitions both in politics and its demographic composition. Recent research suggests that these demographic shifts may influence attitudes towards public policies. Additionally, public policies are often presented using polarizing figurative language, particularly metaphors, that may sway voter attitudes more than the actual parameters of these policies. Understanding how these factors may influence public opinion is critical to ensuring that voters can make informed choices. Through four experiments, this dissertation investigates whether the metaphoric framings used to describe diversity policies influence political attitudes, particularly when individuals are made aware of the imminent demographic changes. Experiments 1 and 2 explored whether using positive-sum or zero-sum metaphors for affirmative action would moderate the effects of racial shift information on attitudes toward diversity polices, and this hypothesis was partially supported. Experiment 3 asked participants to evaluate a university applicant while considering the university's positive-sum or zero-sum approach to affirmative action and found some evidence that these metaphorical framings affected perceptions of applicant merit, but not quality. Finally, Experiment 4 attempted to reduce the susceptibility of participants to metaphorical framings by informing them that metaphors could influence their attitudes. This intervention was unsuccessful and alternatives are discussed. Overall, this dissertation adds to the body of research examining the influence of political metaphors on attitudes toward public policies while accounting for changes that may be tied to demographic and societal shifts.

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The Effect of Metaphoric Framing on Attitudes toward Diversity Policies in the Face of Racial Shift

The political structure and climate in the United States is complex and politicians often use figurative language to make the meaning of proposed or existing policies more accessible to the public. Metaphors, in particular, may help individuals infer information about a topic by applying concepts within a metaphor to new subjects (Ottati & Renstrom, 2010). During the first presidential debate of 2016, both candidates frequently described their policies using metaphoric framings. For example, when discussing border security Donald Trump said, "We are a nation that is seriously troubled. We're losing our jobs. People are pouring over our borders." By using the word "pouring," Mr. Trump likened undocumented immigrants to a body of water exceeding the boundaries of the Mexican-American border. This comment also presented the idea that Americans are under threat and this threat is posed by a specific group of people. As the United States becomes more racially and ethnically diverse, individuals who have previously held racial majority status may experience feelings that their group is under threat. This dissertation examines how metaphors used to describe social policies and issues can affect political attitudes, particularly when voters are made aware of pending demographic shifts, hereafter referred to as racial shift.

Metaphors are conceptual devices that allow us to explain one thing, the target, in terms of another, the source (Cameron, 2008). Depending on the context, we tend to use 20-60 metaphors per every 1000 words (Cameron, 2008). Conceptual Metaphor Theory argues that we understand and structure abstract concepts (targets)

through dissimilar, concrete concepts (Cameron, 2008; Lakoff & Johnson, 1980; Landau, Robinson, & Meier, 2014). For example, we can think of love, a relatively abstract concept, as a battlefield (Knight & Chapman, 1983). We can use more than one source for the same target. In addition to a battlefield, love has also been described as a dance, and a journey. Depending on which metaphor, or source, is being used different aspects of a target will be emphasized. Thinking of love as a battlefield emphasizes the vulnerability and unpredictability of relationships. However, thinking about love as a dance might highlight feeling in sync, yet sometimes stepping on one another's toes.

Using metaphors intentionally helps to convey arguments and make complex concepts more accessible. Asserting a particular metaphor can allow us to better comprehend another person's perspective on a topic. This is similar to perspective-taking, but different in that instead of trying to understand something from someone else's perspective we are able to conceptualize an issue in terms of the same metaphor and thus expand our own perspective, even if we do not agree (Todd & Galinsky, 2014). While the present studies focus on linguistic metaphors as they are the most prevalent in political speech, there has been extensive research suggesting that metaphors expressed in the form of smells, tactile experiences, and visual media can influence our perceptions of others, ourselves, and objects (Cherkasskiy, Song, Malahy, & Bargh, 2012; Kaspar, 2013; Lee & Schwarz, 2012; McQuarrie & Phillip, 2005; Sun, Wang, & Li, 2011).

Why Metaphors Often Appear in Political Speech

Political speech is intended to be informative and persuasive. Those wishing to attain elected offices must be able to communicate how they would serve their

constituents and the kinds of policies they would implement or support. The results of a meta-analysis suggest that metaphors are more persuasive than literal communications, are most effective at the beginning of communications so that they can be used to interpret the following information, and are the most beneficial to speakers with low credibility (Sopory & Dillard, 2002). Further, one of the most prominent persuasion theories, the Elaboration Likelihood Model, proposes that attitude change occurs along two routes, the central which uses careful reasoning to consider facts and evidence and the peripheral route which relies on superficial indicators of an arguments merit, such as the expertise of the speaker (Cacioppo & Petty, 1983). Individuals are more likely to take the "central route" to persuasion when they are likely to be affected by the topic discussed or are highly involved (Petty & Cacioppo, 1979). However, most people are never directly affected by the policies they are being asked to consider. Even if a policy is implemented, at the personal level, we rarely notice changes in our everyday lives, suggesting low involvement and that we may be more likely to take the peripheral route to persuasion. Though outside the political domain, one experiment found that metaphors tended to increase how cognitively involved participants felt when evaluating arguments leading to more attitude change (Kendall, 2010). This may be one of the ways in which metaphors may lead individuals to undergo political attitude change.

With regard to metaphors in politics, research suggests that metaphors first work to shape the understanding of a particular policy, and then begin to affect endorsement (Lau & Schlesinger, 2005). Further, and in line with the findings of Sopory and Dillard (2002), individuals with the least political knowledge are the most

likely to be swayed by metaphors in political discourse, particularly when these metaphors appear at the end of communication and provide them with a framework for interpreting information they have already been exposed to (Hartman, 2010). Thus, metaphors in political speech may be especially powerful and useful tools when communicating to the public.

Construal level theory can also speak to the prevalence of metaphors in political communications. When describing policies, there are typically two broad categories of language used, abstract and concrete. Construal level theory suggests that when events or items are psychologically near we think of them in more concrete terms, while when they are psychologically distant we think of them in abstract terms (Trope & Liberman, 2010). For example, when we consider something that is psychologically near such as what to have for lunch tomorrow, we might think concretely about whether we have bread to make a sandwich or whether there will be lunch served at a colloquium. However, when we consider what to have for lunch next week, we might think about our broader dietary goals, and think, "something healthy" or "definitely not pizza."

In the political domain, abstract language tends to focus on values and why a policy should be implemented, while concrete language tends to focus on how a policy could be enacted and what the consequences would be. Abstract communication tends to be most effective when we anticipate that our audience is large, far away, or very diverse such as at a televised town hall meeting or a political rally. Abstract language in these circumstances tends to be more accessible and relatable to more people (Joshi & Wakslak, 2014; Joshi, Wakslak, Raj, & Trope, 2016). Also impacting perceptions of policies is that there seems to be a preference

for abstract political speech when a vote is psychologically distant, while concrete political speech seems to be preferred when a vote is psychologically near (Kim, Rao, & Lee, 2009). Though these studies focused on literal language, similar findings have been observed when considering metaphorical speech.

Jia and Smith (2013) examined whether construal level theory could predict when we were likely to be influenced by metaphors in political speech (Jia & Smith, 2013) . Participants read an article suggesting that airborne bacteria were either harmful or harmless and then read an article regarding immigration to the United States in which the United States was described as a body. Participants then indicated their attitudes toward a series of social issues as part of an ostensible pilot study. Participants were asked to imagine responding to the items in a few days (psychologically near condition) or next year (psychologically distant condition). In the psychologically distant condition, participants who believed bacteria were harmful were more likely to support more restrictive immigration policies, in line with protecting the body, than those in the harmless condition. However, for those in the psychologically near condition, there was no effect of the metaphoric framing on the attitudes toward these policies. When something seems abstract we are more likely to rely on metaphors to understand them and this may influence our policy attitudes.

Research has demonstrated that the effects of the metaphoric framing of an issue can affect attitudes toward policies that affect crime, immigration, organ donation, obesity, and the environment (Barry, Brescoll, Brownell, & Schlesinger, 2009; Blewitt, 2005; Foster, 2005; Landau, Sullivan, & Greenberg, 2009; Lauri, 2009; Thibodeau & Boroditsky, 2011). For example, in one study participants read

descriptions of a city's rising crime rate in which crime was described as either a "beast" or a "virus" (Thibodeau, & Boroditsky, 2011). Participants who were told that crime was a beast were more likely to endorse addressing the crime rate with increased enforcement measures, in line with "caging a beast," than were those who were told crime was a virus. Similarly, when given the opportunity to look for more information about ways to address the crime rate participants in the beast condition selected more information on enforcement strategies, while participants in the virus condition selected more information on reform strategies which are more in line with "preventing the spread of a virus." Throughout these studies, participants were not aware that the metaphors had influenced their attitudes.

Regarding issues of diversity and immigration, the metaphors we use to describe people we consider outgroup members can have serious consequences for their well-being, treatment, and the attitudes individuals develop towards them. Evidence suggests that in times of economic stability, increasing immigration to the United States is typically viewed favorably as immigrants are viewed as a source of labor for unskilled tasks, like those in agriculture and mining (Ana, 1999). However, in times of economic uncertainty or decline, immigrants tend to be viewed as having taken jobs and as posing a threat to citizens. In both cases immigrants are often dehumanized by being described using animal metaphors (Ana, 1999; O'Brien, 2003). Examples found in news articles included "luring" immigrants to the United States under the guise of pursuing the American dream, describing immigrants as predators that "prey" on natural citizens by taking advantage of their kindness, and as "mules" that bring drugs and discord to unsuspecting neighborhoods. While other groups, such as businesspeople or athletes are also described using animal

metaphors, such as being "beasts on the field" or "sharks in the boardroom," this type of language did not appear in the news articles reviewed and was limited to relevant contexts (Ana, 1999). In comparison, describing immigrants in terms of animals was prevalent in theoretically factual and objective news articles, which can exacerbate negative attitudes (Ana, 1999).

The use of animal metaphors to describe people may also have serious consequences for people who have not immigrated to the United States. In a series of studies, researchers found that there may be a persistent metaphor between Blacks and apes (Goff, Eberhardt, Williams, & Jackson, 2008). This metaphor, though largely absent from present day explicit communications, persists in word choices. In one study, they found that when participants were primed with apes they were more likely to view violence against a Black, but not White suspect, as justified. They also found that in news coverage of death-eligible cases in Pennsylvania, Black defendants were more likely to be described using ape representations than were White defendants. Further, even after controlling for a series of factors that can predict sentencing outcomes, they found that Black defendants that were sentenced to death were more likely to have been described using ape-related words (e.g., barbaric, stalk, prowl) in the news than those whose lives were spared. These researchers proposed that this association between blacks and apes had a dehumanizing effect on judgments that is exacerbated because most individuals are not aware that they hold this metaphorical mapping. Findings like this further recommend the need to investigate how the metaphors used in political discourse may be subtly influencing the decisions of the public and policy makers.

The Transition to a More Diverse Nation

Historically, the majority of the United States population has been White, non-Hispanic, (hereafter referred to as "White") but recent projections suggest that by 2060 the United States will have transitioned to a plurality in which no racial or ethnic group will constitute a majority (Colby & Ortman, 2015). This change in the demographic composition of the United States has been dubbed the shift to a "Majority-Minority" nation. Much of this change is due to immigration and to differing birth rates along racial lines. As the nation becomes more diverse, the number of people that can be targeted by metaphorical political speech related to racial and ethnic minorities will increase. Understanding how metaphors in political speech can influence political attitudes during this transition, particularly regarding policies that address diversity, will become increasingly important.

There is a growing body of research examining the consequences of the transition to a racial and ethnic plurality. Much of this research suggests that when Whites are presented with such racial demographic projections they demonstrate increased anger and hostility toward members of all minority groups and increased sympathy for other Whites (Craig & Richeson, 2014a; Outten, Schmitt, Miller, & Garcia, 2012; Skinner & Cheadle, 2016). Most relevant to the present research is evidence that when Whites are presented with information about racial shifts they tend to exhibit more conservative attitudes toward public policies, like affirmative action (Craig & Richeson, 2014b). A recent study further suggests that White participants exposed to racial shift information reported more perceived group threat, particularly if they were high in ethnic identification (Major, Blodorn, & Major Blascovich, 2016). These participants were also marginally more likely to hold

positive attitudes toward Donald Trump, significantly more likely to report intending to vote for him, and less likely to support immigration than those in the control condition. This is likely because Donald Trump's policy stances seemed the most likely to protect the current status of White Americans and limit immigration. These increasingly negative attitudes toward racial and ethnic minorities and conservative shifts may be explained by the perception that increasing racial and ethnic diversity constitutes a threat to Whites as a group.

Perceptions that the racial shift poses a threat to Whites may be related to past research suggesting that discrimination is perceived as a zero-sum game in which any advantages gained by a group will be marked by similar disadvantages for other groups (Norton & Sommers, 2011; Wilkins & Kaiser, 2014). Wilkins and Kaiser (2014) found that when White participants who endorsed status-legitimizing beliefs, beliefs that our place in the social hierarchy is the result of our own efforts, were presented with evidence of racial progress they were more like to report perceiving anti-White bias. This effect however, was eliminated when participants were allowed to self-affirm after being exposed to information about racial progress, suggesting that racial progress is seen as a threat to Whites. Similarly, Whites who were primed with status legitimizing beliefs were more likely to report perceiving anti-White bias, holding zero-sum beliefs, and opposing affirmative action (Wellman, Liu, & Wilkins, 2016).

In many cases, increased representation is used as a marker of progress. However, in terms of gender diversity, some findings suggest that as gender diversity in leadership increases, so do sexist beliefs (Georgeac & Rattan, 2017). If the same holds true for racial representation, perceptions that racial diversity has increased

may lead to the misperception that diversity policies, like affirmative action, are no longer needed though systemic barriers to entry may persist. In states where affirmative action policies have been revoked, the representation of racial and ethnic minorities has dropped precipitously at the university level and has yet to recover (Chinoy, 2016).

Background on Diversity Policies

Affirmative action policies facilitate the entry of minority and underrepresented students into higher education and the workplace. Affirmative action policies date back to the 1960s and while originally thought of as a temporary solution to providing equal educational and employment opportunities to racial and ethnic minorities, the disparities in higher education and hiring persist today (American Psychological Association Presidential Task Force on Educational Disparities, 2012). Thus, despite the changing racial composition of the United States, many would argue that affirmative action and other initiatives are still needed. While what constitutes affirmative action has changed over time and has been, and will continue to be, reviewed by the United States Supreme Court, what remains consistent is that how affirmative action is presented affects whether someone supports it and its beneficiaries. The present studies focus on how the metaphors used to describe affirmative action policies (AAPs) and the racial shift can influence attitudes toward these policies and social issues as the representation of racial and ethnic minorities increases.

Attitudes toward affirmative action have varied. At the time of Gamson's 1992 book, *Talking Politics*, many Whites and people of color were opposed to AAPs, though for very different reasons (Gamson, 1992). Framed as reverse racism by

opponents, affirmative action can activate feelings of unfairness for some. Affirmative action policies force individuals to confront the (uncomfortable for some) idea that there is no equality of opportunity for all people. AAPs are also opposed because they are seen as creating discord between racial and ethnic minorities and other disadvantaged groups, such as those of low socioeconomic status. Poor Whites and minority individuals may have similar experiences of poverty that limit their opportunities in the workplace and education. While disparities by socioeconomic class are significant, the present studies focus on AAPs targeting race as this is what most individuals think of when considering AAPs and what has gained the most attention in the court system.

How attitudes toward AAPs are assessed also seems to influence opinions. In 2014, the Pew Research Center conducted a telephone survey and asked respondents whether they believed affirmative action used to increase the representation of Blacks and other minorities on college campuses was a "good thing" or a "bad thing" (Drake, 2014). Their results suggested that 63% of respondents thought affirmative action was a good thing. However, a more recent Gallup poll suggests the opposite: 65% of their respondents disagreed with the United States Supreme Court 2016 decision to uphold the University of Texas' affirmative action policy (Jaschik, 2016). Further, their respondents believed that economic circumstances, athletic ability, first-generation status, and whether a parent is an alumnus should all be considered prior to race or gender. The Gallup pollsters do acknowledge, however, that considering some of these factors (i.e., athletic ability and parent alumni status) could systematically advantage those with more resources, who may also be White.

Many of the objections to affirmative action are based on feelings that it is detrimental to Whites. Across three studies, researchers found that when AAPs were presented as not affecting outcomes for Whites, the support for AAPs was related to how beneficial they would be to racial and ethnic minorities (Lowery, Unzueta, Knowles, & Goff, 2006). However, when the policy was framed as being hurtful to Whites, how helpful it would be to racial and ethnic minorities did not influence support. Further, in some cases the desire to protect group interests can be presented in disingenuous ways (O'Brien, Garcia, Crandall, & Kordys, 2010). Many individuals object to affirmative action because it can harm beneficiaries by making them doubt their qualifications and hurting their self-esteem. However, O'Brien, et al. (2010) found that this objection was only raised by Whites when the AAP was presented as hurting Whites, this objection was not raised when the policy was described as having no effect or being helpful to Whites. Therefore, even seemingly altruistic objections may have self-interested underpinnings.

While affirmative action policies are generally unfavorably viewed, attitudes toward these policies tend to be most positive among the young, people of color, liberals and those who have personal experience with discrimination (Kravitz et al., 2000; Sniderman & Piazza, 1993). This may also be related to findings that there is little agreement about what affirmative action is and who should qualify for it (Arriola & Cole, 2001; Kravitz & Klineberg, 2000). Arriola and Cole (2001) asked participants to report their beliefs about and attitudes toward affirmative action. While a majority of the sample reported wanting AAPs abolished, 40% thought that it consisted of quotas, a practice that has not been legal since 1978. Still another 38% could not provide a single example of what affirmative action is. This suggests

that while there are many opinions toward affirmative action, these attitudes may not be based on accurate information, if they are based on information at all.

Framing Diversity Policies

There is substantial evidence to suggest that attitudes toward AAPs are affected by framing effects. Fugère (2016) asked participants what they believed affirmative action was and what they believe diversity policies were. While both kinds of policies were associated with race and equal opportunities, affirmative action policies were more likely to be associated with unfairness and discrimination and were viewed as having similar numbers of positive and negative qualities. Diversity policies, alternatively, were viewed as having more positives than negatives and were preferred to affirmative action policies. Participants tended to prefer diversity policies to affirmative action policies reporting that they believed affirmative action policies were based on quotas and that diversity policies were based on equality and non-discriminatory practices. Experimentally, even when the exact policy was presented with only the label being manipulated (i.e., affirmative action policies or diversity policies) affirmative action policies were viewed neutrally while diversity policies were viewed favorably, especially among White participants.

Similarly, the value placed on affirmative action policies was higher when they were framed as "equal rights" policies, as opposed to "affirmative action" policies (Plumm, Borhart, & Weatherly, 2012). Knight and Hebl (2005) found that the belief that affirmative action is beneficial was higher when it was justified by emphasizing benefits to both students of color and White students, rather than a single justification, though the actual policy remained the same (Knight & Hebl, 2005). While the issue frame, either remedying past injustices or as diversity

benefiting everyone, used to justify affirmative action did not directly affect support for affirmative action, the diversity frame did reduce the effect of past interracial attitudes on support for affirmative action and increase pro-Black affect (Richardson, 2005). These studies suggest that some of the opposition to affirmative action largely derives from the perceived asymmetry of its benefits. When the benefits or fairness to all racial and ethnic groups are emphasized, as though it were a positive-sum game, opposition tends to wane.

The difference in policy label can also influence how candidates are perceived (Awad, 2013). In one study, researchers manipulated whether the social policy that an African American candidate was hired under was described as "affirmative action" or a "diversity initiative" (Awad, 2013). They then measured how favorably White participants viewed the candidate's resume. White participants viewed the candidate that was hired under a diversity initiative as being much more favorable and competent than the candidate that was hired under affirmative action, though the candidate's credentials were exactly the same. These results further support that the framing of AAPs is a strong predictor of attitudes. If the conversation about affirmative action changes from one considering it a zero-sum game to one considering it a positive-sum game, in which everyone can win, negative reactions and emotions that are evoked by the phrase affirmative action may be reduced.

The Present Research

The present studies assessed how participants viewed affirmative action and its intended beneficiaries when the policies were framed using metaphors and participants were exposed to information about the projected racial and ethnic shifts in the United States. Study 1 assessed whether using zero-sum versus positive-sum

metaphors to describe AAPs would affect the extent of the conservative shift that is typically observed when Whites are presented with racial shift information.

Study 2 replicated Study 1 with new zero-sum and positive-sum metaphors for affirmative action policies and extends it by using metaphors to describe the pending racial shifts to determine if this can negate the effects of this information on attitudes toward social policies. The demographic shift is described using either a pessimistic metaphoric framing—suggesting that the outcomes of the racial shift will definitely be negative for Whites—or an optimistic metaphoric framing—suggesting that the racial shift might improve outcomes for minorities. This study also recruited a more diverse sample to verify that the effects extend beyond the college student population

Study 3 examined how applicants to colleges that employ affirmative action policies are perceived and evaluated. In this study, college student participants were informed of the pending racial shifts and their university's affirmative action policy, either using a positive-sum metaphor or zero-sum metaphor. They were then asked to review the college application of high school students whose race was manipulated as either Black or White. Of primary interest was how the metaphor used to describe the affirmative action policies affected how qualified and likely to succeed, academically and socially, the Black applicants were perceived.

Study 4 examined one potential way to counter the effects of metaphorical framings on political attitudes. Past research on stereotype threat suggests that teaching an individual about stereotype threat can reduce its effect on their performance (Johns, Schmader, & Martens, 2005). Similarly, we examined whether informing individuals that their policy attitudes can be affected by metaphorical

framings can reduce the likelihood that their attitudes will be swayed. While metaphors can make policies more accessible to the public, their ability to influence attitudes and shape the kind of information that is retained may limit the ability of the public to make informed choices, especially since participants are often unaware that metaphors are influencing them (Thibodeau & Boriditsky, 2011). In sum, the present research examines how metaphors in policy descriptions can affect political attitudes, perceptions of applicants that are affected by these policies, and how these effects can be moderated.

Experiment 1

Study 1 examines whether metaphorical policy framings can moderate the political attitude shifts observed when White participants are presented with racial shift information.

Method

Design

Experiment 1 was a 2 (Projection Condition: Racial Shift or Control) by 3(Affirmative Action Frame: Literal, Positive-Sum, or Zero-Sum Metaphor) between-subjects design. Participants were randomly assigned to one of six conditions and completed all tasks individually and anonymously.

Participants

Three hundred and eighty-six participants were recruited through the course credit and paid participant pools at a university in the Northeast (137 men, 246 women, 3 unreported, 62% White, M_{age} = 19.59, SD = 4.26). Three hundred and thirty-one participants (115 men, 214 women, 2 unreported, 62% White, M_{age}= 18.91, SD = 1.26) were from the course credit pool and 55 (22 men, 32 women, 1

unreported, 61% White, M_{age} = 23.74, *SD* = 10.01) were from the paid participant pool. Fifty-five percent of all participants identified as Democrats, 4% as Republicans, 21% as Independents, 16.1% as undecided, and 3.1% as not listed. On average, participants reported their political ideology as between "liberal" and "slightly liberal." On a measure of social status (1 = people with the fewest resources, education, and influence to 7 = people with the most resources, education, and influence in society), participants on average reported themselves as being of higher social status (*M* = 5.48, *SD* = 1.18). Additional participant demographic information is included in Table 1. Participants were compensated with either partial course credit or entry into a drawing for one of four $25.00 Amazon gift cards. All participants provided informed consent.

As the projection manipulation was only expected to affect White participants, the primary analyses were conducted using data from the 239 White participants (95 men, 141 women, 3 unreported, M_{age} = 19.61, *SD* = 4.34). Fifty-nine percent of the participants identified as Democrats, 6% percent as Republicans, 22% percent as Independents, 8% as undecided, and 4% as not listed. On average, participants reported their political ideology as between "liberal" and "slightly liberal." Participants on average reported being of higher social status (*M* = 5.74, *SD* = 1.00). The results of the analyses when people of color are included are provided in Appendix A.

Materials

Pre-screen questions. To determine if one's political ideology and previous attitudes toward public policies predicted the degree to which the projection and affirmative action frame manipulations influenced attitudes, all participants

completed a series of items to assess their political ideology, political affiliation, and attitudes towards issues such as the death penalty, healthcare reform, affirmative action, and gun control. The primary question of interest was their support for affirmative action. Responses to this item were included in the analysis of the primary dependent variables: attitudes toward affirmative action and the politicians that support affirmative action.

Table 1
Additional Demographic Information on Participants in Experiment 1

		All Participants	White
		n	*n*
Race			
	White	239	239
	Black	17	
	Asian	73	
	Latino/Hispanic	16	
	Biracial/Multiracial	23	
	Not Listed	17	
	Total	394	
Education			
	High School	8	
	Some College	32	
	College Graduate	12	
	Advanced degree	3	
	Total	55	
Income			
	$10,000 or less	9	3
	$10,000 to $29,999	27	9
	$29,000 to $49,999	17	7
	$50,000 to $74,999	23	16
	$75,000 or more	227	155
	Total	303	238
English Proficiency			
	Average	2	1
	Good	32	11
	Excellent	351	226
	Total	394	238
Participant Sample			
	Course Credit Participant Pool	331	206
	Paid Participant	55	33
	Total	386	239

Note. Totals vary because participants were free to decline to answer any question they wished. Participants who were recruited from the credit participant pool did not respond to the education question, as they were current undergraduates.

Projection condition manipulation. To manipulate the presence of racial shift information, participants were randomly assigned to read a description of the pending shift to a "Majority-Minority" nation by 2042 or a description of increasing geographic mobility. These descriptions were adapted from Craig and Richeson (2014b) and have been used previously to assess the responses of Whites to projected shifts in the racial and ethnic composition of the United States. Examples of how someone might explain these social issues to others were generated and provided at the end of these passages to be consistent with the format of the affirmative action descriptions. After reading the passage describing increasing geographic mobility (control condition), participants read:

> I think the geographic mobility issue is basically that people are moving more frequently now than they have in the past, especially to the suburbs. A lot of people are talking about it because we don't know what will happen if too many people move to the suburbs and it could affect our daily lives.

After reading the racial shift passage participants read:

> I think the majority-minority issue is basically that within our lifetimes Whites will no longer be the majority in the United States. A lot of people are talking about it because we don't know what will happen when minorities actually outnumber Whites for the first time and it could affect policies and how we think about America moving forward.

Affirmative action frame manipulation. Each participant was provided with a passage describing affirmative action. Each passage was followed by an example description of how someone might explain affirmative action to someone else. Each example description began with:

> Affirmative action is how colleges try to increase campus diversity. To do this they treat minority status as an additional factor when they're making admissions decisions. In the past, Black people faced

> Jim Crow and discrimination, so they had to work a lot harder to get into colleges…

In the control condition this example did not include a metaphorical frame:

> This made the chance that minorities would get into college a lot lower, and minority students were therefore underrepresented at most colleges. With affirmative action, they treat minority status as another quality, like being a legacy or an athlete, and take that into consideration when deciding between applicants.

In the positive-sum condition participants read the following example:

> It was basically like if everyone was racing toward a college acceptance on a round track, where the people in the inner lanes have a shorter distance to run than people in the outer lanes; the White people were in the inner lane to get into colleges and the Black people were in the outer lane. This made the chance that minorities would get into college a lot lower, and minority students were therefore underrepresented at most colleges. Now, to make up for this, colleges give special consideration to Black students' applications. It's like letting minorities start from further down in their lane on the outside of the track so that everyone has to run the same distance.

In the zero-sum condition participants read the following example:

> It was basically like if everyone was racing toward a college acceptance on a round track, where the people in the inner lanes have a shorter distance to run than people in the outer lanes; the White people were in the inner lane to get into colleges and the Black people were in the outer lane. This made the chance that minorities would get into college a lot lower, and minority students were therefore underrepresented at most colleges. Now, to make up for this, colleges give special consideration to Black students' applications. It's like switching the places of minorities and Whites, so that Whites are in the outer lanes and minorities are in the inner lanes.

These metaphors were pre-tested prior to use in this experiment.

Affirmative action framing pre-test. The selected metaphors were evaluated by a naive sample of 35 participants from the course credit participant pool (7 men, 28 women, 60% White). Fifty-seven percent of the participants identified as

Democrats, 4% as Republican, 21% as Independent, and 18% as not listed. On average, participants reported their political ideology as between "liberal" and "slightly liberal." Results of the pre-test suggest that the zero-sum and positive-sum metaphors tended to be perceived similarly in terms of clarity, conciseness, accuracy, and the author's gender (see Appendix B for results). The selected metaphors did differ in tone in that the positive-sum metaphor (M = 3.29, SD =0.71) was perceived as more positive in tone than the zero-sum metaphor (M = 2.54, SD = 0.92), F (4, 136) = 20.26, $p < 0.01$. This difference was anticipated as zero-sum metaphors are likely perceived as more negative as someone "loses."

Similarly, the zero-sum metaphor was perceived as more likely authored by an ideologically conservative person (M = 3.31, SD = 0.93) and the positive-sum metaphor was perceived as more likely authored by an ideologically liberal person (M = 2.71, SD = 0.67), F (4, 136) = 16.96, p = 0.054, but this difference was marginally statistically significant. Further, perceiving affirmative action as a zero-sum endeavor, like reverse racism, is more consistent with the conservative ideology, while perceiving affirmative action as creating opportunities for people from underrepresented groups, is more consistent with the liberal ideology. Thus, we moved forward with these descriptions despite these differences. In the zero-sum condition participants read that affirmative action shifted advantage from Whites to Blacks, while in the positive-sum condition participants read that affirmative action provided equal opportunities for Blacks and Whites.

Dependent measures. The primary dependent measures were the participants' attitudes toward affirmative action policies and the politicians that support these policies. One item assessed how much participants supported

affirmative action:

> Some people say that because of past discrimination, racial minorities should be given preference in hiring and promotion. Others say that such preference in hiring and promotion of racial minorities is wrong because it discriminates against Whites. What about your opinion? Are you for or against preferential hiring and promotion of racial minorities?" (1 = *Strongly support preferential hiring and promotion for racial minorities* to 7 = *Strongly oppose preferential hiring and promotion for racial minorities*) (Craig & Richeson, 2014b).

The other asked how willing participants would be to vote for a political candidate that advocated for affirmative action, "How likely would you be to vote for a candidate that supported affirmative action?" (1 = *very unlikely* to 7 = *very likely*). Attitudes toward immigration, naturalization, defense spending, and universal healthcare were also included to distract from our hypothesis. Including these items also allowed for analyses replicating Craig and Richeson (2014b).

Manipulation check. To ensure that the manipulations were attended to, several items were included to assess the participants' memory for the article describing the state of the United States and affirmative action policies. Participants were asked to respond to the question: "Which of the following best describes the article about the United States that you read" (1= *The United States will become a Majority-Minority nation by 2042*, 2 = *Unsure*, 3 = *Geographic mobility in the United States has increased*). Similarly, to assess memory for the affirmative action frame manipulation the item, "Which of the following best describes the explanation of affirmative action that you read?" (1= *Affirmative action is just a social policy*, 2 = *Affirmative action evens the playing field for minorities*, 3 = *Affirmative action disadvantages Whites*) was included. Other items assessed the participants' perceptions of the accuracy of the metaphor used and their agreement with the metaphor.

Individual difference measures, potential mediators, and demographics. We included the McConahay, Hardee, and Batts' (1981) Modern Racism Scale, which has been found to correlate with both subtle prejudice towards Blacks and conservative attitudes toward social policies, even when accounting for political ideology (Olson, 2009). Items assessing participants' ethnic identification, system-justifying beliefs, feelings of threat to Whites, and concerns about America's future were included as in Craig and Richeson (2014b) as these may be potential mediators. Additionally, demographic markers may predict attitudes towards social policies and participants were asked to provide their social status, gender, age, race, income, English language proficiency, political party affiliation, and political ideology.

Procedure

Participants were recruited to participate in a study ostensibly investigating how students explain United States social policies and issues to international students or recent immigrants. Participants were told that after reading a brief description of each policy or issue they would be asked to write their own explanation of the policy or issue and then answer a few questions about their attitudes and beliefs. The first and second issue/policy descriptions that they reviewed constituted our projection condition and affirmative action frame manipulations, respectively. A third description of the Affordable Care Act was included to distract from the study's hypotheses. Participants then completed the dependent measures, manipulation checks, and demographic questions before being fully debriefed and compensated.

Results

Summary

Our primary hypothesis was that there would be an interaction between affirmative action frame and projection condition. Specifically, we predicted that participants who reviewed a literal description of affirmative action would report more supportive attitudes in the control condition compared to those in the racial shift condition, in line with Craig and Richeson (2014b), and that this effect would be exaggerated in the zero-sum metaphor condition. However, in the positive-sum condition, we predicted that participants who reviewed a positive-sum metaphor for affirmative action would report similarly supportive attitudes toward affirmative action regardless of control and racial shift condition. This hypothesis was partially supported.

There was a statistically significant interaction on the measure of attitudes toward affirmative action, and participants who were in the literal condition did report more support for affirmative action in the control as opposed to the racial shift condition. However, in the metaphorical conditions, the trend was that participants in the zero-sum condition reported similar attitudes regardless of projection condition and those in the positive-sum condition reported statistically significantly more support for affirmative action in the racial shift compared to the control condition (see Table 2 for descriptive statistics on all measures). A similar pattern of results was observed on the measure of attitudes toward proponents of affirmative action, but this interaction was not statistically significant.

Table 2
Adjusted Means and Standard Errors for Primary Dependent Measures in Study 1

	Affirmative Action Frame			
	Literal	Positive-Sum	Zero-Sum	
Projection Condition	*M* (SE)	*M* (SE)	*M* (SE)	Total
Support for Affirmative Action				
Control	4.21 (0.26)	3.93 (0.28) [a]	3.82 (0.27)	3.99 (0.16)
Racial Shift	3.69 (0.27) [b]	4.75 (0.27) [ab]	4.11 (0.25)	4.18 (0.15)
Total	3.95 (0.19)	4.34 (0.20)	3.97 (0.18)	
Likelihood of Voting for Affirmative Action Proponents				
Control	5.34 (0.19)	5.01 (0.21)	4.97 (0.19)	5.11(0.11)
Racial Shift	5.07 (0.20)	5.43 (0.20)	5.28 (0.19)	5.26 (0.11)
Total	5.21 (0.14)	5.22 (0.14)	5.13 (0.13)	
Overall Policy Attitudes				
Control	0.05 (0.08)	0.12 (0.08)	0.14 (0.08)	0.10 (0.05)
Racial Shift	0.12 (0.08)	-0.04 (0.08)	-0.06 (0.07)	0.00 (0.04)
Total	0.08 (0.05)	0.04 (0.06)	0.04 (0.05)	
Race-Related Policy Attitudes				
Control	0.01 (0.09)	0.14 (0.10)	0.18 (0.10)	0.11 (0.06)
Racial Shift	0.15 (0.10)	0.01 (0.10)	-0.14 (0.09)	0.00 (0.06)
Total	0.08 (0.07)	0.07 (0.07)	0.02 (0.07)	0.06(0.04) [c]
Race-Neutral Policy Attitudes				
Control	0.09 (0.10)	0.08 (0.10)	0.06 (0.10)	0.08 (0.06)
Racial Shift	0.07 (0.10)	-0.12 (0.10)	0.06 (0.09)	0.00 (0.06)
Total	0.08 (0.07)	-0.02 (0.07)	0.06 (0.07)	0.04(0.04) [c]

Note. Participant demographics were included as covariates on all measures. Participants' prior attitudes toward affirmative action were included as covariates on the measure of attitudes toward affirmative action and attitudes toward affirmative action proponents. On the overall, race-related, and race-neutral measures, higher numbers indicate more conservative attitudes. Means with matching subscripts are statistically different from each other, $p < 0.05$.

Manipulation checks

Projection manipulation. Seventy-seven percent of the participants in the control projection condition correctly identified the control prompt, addressing geographic mobility in the United States, while 87% of participants in the racial shift projection condition correctly identified the racial shift prompt. The results of a χ^2 analysis revealed that there was a marginally significant association between the projection condition manipulation and whether participants answered the manipulation check question correctly, χ^2 (1, N = 239) = 3.78, p = 0.052. The participants in the racial shift condition seemed to be somewhat better able to identify the correct prompt than those in the control condition.

Affirmative action frame manipulation. Thirty-four percent of the participants in the literal condition correctly identified the literal prompt, while 80% of participants in the positive-sum condition correctly identified the positive-sum affirmative action frame, and 30% of participants in the zero-sum condition correctly identified the zero-sum affirmative action frame. The results of a χ^2 analysis revealed that there was an association between the affirmative action frame condition manipulation and whether participants answered the manipulation check question correctly, χ^2 (2, N = 239) = 72.37, p < 0.001. It appears that participants had difficulty distinguishing between the literal condition and the zero-sum metaphor condition. This may be because lay understandings of affirmative action tend to be more consistent with a zero-sum frame. Thus, even without the metaphor participants may have been inclined to believe that affirmative action disadvantaged Whites. In future studies, we will adjust the manipulation to more clearly distinguish between the zero-sum metaphor and the literal description.

Attitudes toward Affirmative Action[1]

We conducted two regression analyses to assess whether individual differences or the pre-screen items predicted attitudes toward affirmative action. The individual differences model statistically significantly predicted whether participants supported affirmative action, (*Adj.* $R^2 = 0.24$, $F(7, 178) = 9.48$, $p < 0.01$. Participants' gender ($\beta = .14$, $p = 0.03$) and political ideology ($\beta = -0.39$, $p < 0.001$) were included as covariates in this analysis. Participants in the racial shift condition ($M = 4.18$, $SE = 0.15$) reported more support for affirmative action than participants in the control condition ($M = 3.99$, $SE = 0.16$), but this difference was not statistically significant, $F(1,192)$[2] $= 0.79$, $p = 0.38$, $\eta_p^2 = 0.00$. Participants in the positive-sum condition reported the most support for affirmative action ($M = 4.34$, $SE = 0.20$), followed by those in the zero-sum condition ($M = 3.97$, $SE = 0.18$); those in the literal condition reported the least support for affirmative action ($M = 3.95$, $SE = 0.19$), but this difference was not statistically significant, $F(2, 192) = 1.31$, $p = 0.27$, $\eta_p^2 = 0.01$.

There was a statistically significant interaction between the affirmative action frame and projection conditions, $F(2, 192) = 3.19$, $p = 0.04$, $\eta_p^2 = 0.03$ (*Figure 1*). A simple effects analysis was conducted to identify statistically significant differences. Results suggest that participants in the literal condition reported more support for affirmative action in the control ($M = 4.21$, $SE = 0.26$) as opposed to the racial shift condition ($M = 3.69$, $SE = 0.27$), $p = 0.16$, *ns*. In the positive-sum condition,

[1] An analysis of the descriptions of affirmative action provided by participants can be found in Appendix C.

[2] Degrees of freedom vary due to missing data.

participants reported more support for affirmative action in the racial shift condition (M = 4.75, SE = 0.27) than in the control condition (M = 3.93, SE = 0.28), p = 0.04. Alternatively, participants in the zero-sum condition reported more support for affirmative action in the racial shift condition (M = 4.11, SE = 0.25) than in the control condition (M = 3.82, SD =0.27), p = 0.44, *ns*. Further examination suggests that participants in the racial shift condition when presented with the positive-sum metaphor (M = 4.75, SE = 0.27) were much more supportive of affirmative action than those who saw the literal description (M = 3.69, SE = 0.27), p = 0.02. These findings may suggest that the presence of metaphors in political speech, in general, may elicit more positive attitudes, but contrary to my hypothesis this may especially be the case for positive-sum metaphors. When the covariates are not included in analyses of this measure, none of the effects are statistically significant, but the pattern of results is the same.

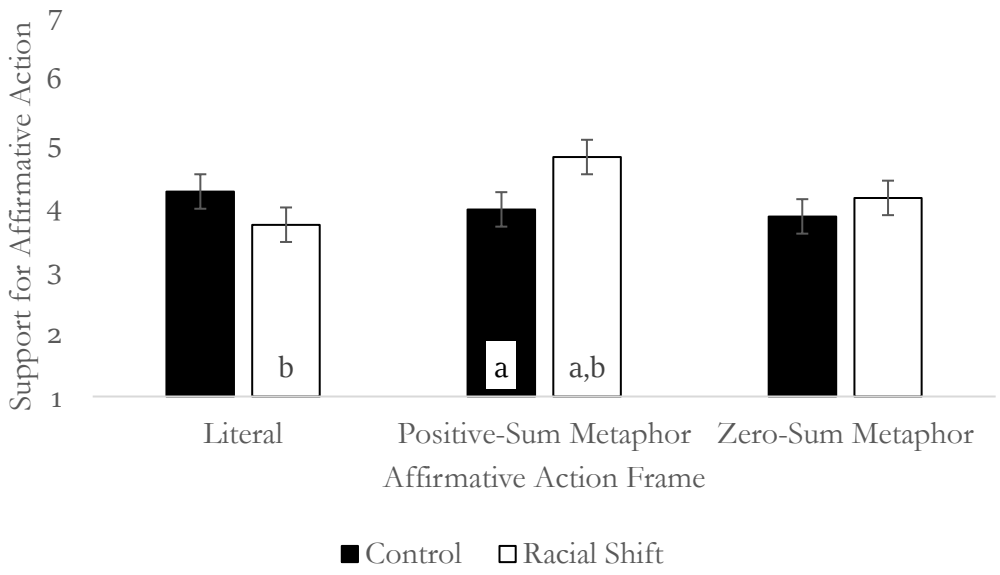

Figure 1. Support for affirmative action as a function of projection condition and affirmative action frame. Adjusted for prior attitudes toward affirmative action, participants' political ideology, and gender. Higher numbers indicate greater support. Matching notations indicate statistically significant differences.

Likelihood of Voting for Affirmative Action Proponents

The regression model predicting the likelihood of a participant voting for an affirmative action proponent was statistically significant, *Adj.* $R^2 = 0.28$, $F(7, 177) = 11.31$, $p < 0.001$. Participant gender ($\beta = 0.19$, $p = 0.003$) and ideology ($\beta = -0.43$, $p < 0.001$) predicted attitudes toward affirmative action proponents and were included as covariates in this analysis. Participants in the racial shift condition ($M = 5.26$, $SE = 0.11$) reported a greater likelihood of voting for an affirmative action proponent than participants in the control condition ($M = 5.11$, $SE = 0.11$), but this difference was not statistically significant, $F(1,191) = 0.89$, $p = 0.35$, $\eta_p^2 = 0.00$. Participants in the positive-sum condition ($M = 5.22$, $SE = 0.14$) reported the greatest likelihood of voting for affirmative action proponents, followed by those in the literal condition ($M = 5.21$, $SE = 0.14$); those in the zero-sum condition reported the lowest likelihood of voting for an affirmative action proponent ($M = 5.13$, $SE = 0.13$), but this difference was not statistically significant, $F(2, 191) = 1.13$, $p = 0.88$, $\eta_p^2 = 0.00$. There was no observed statistically significant interaction between affirmative action frame and projection condition, $F(2, 191) = 1.78$, $p = 0.17$, $\eta_p^2 = 0.02$. When the covariates are not included in analyses of this measure, the pattern of results is the same.

Overall Policy Attitudes

The responses that each participant provided to the public policy related questions were standardized and averaged to compose a measure of attitudes toward all policies ($\alpha = 0.74$), race-related policies ($\alpha = 0.63$), and race-neutral policies ($\alpha = 0.62$) as in Craig and Richeson (2014b). Higher numbers indicate more conservative attitudes. We conducted a two-way ANCOVA with projection condition and

affirmative action frame as fixed factors, overall policy attitudes as the dependent measure and gender and political ideology as covariates[3]. There were five outliers on this measure, but their removal did not affect results and the results with their inclusion are reported here. Participants in the control condition reported more conservative policy attitudes (M = 0.10, SE = 0.05) than participants in the racial shift condition (M = 0.00, SE = 0.04), but this trend was not statistically significant F (1, 229) = 2.29, p = 0.13, η_p^2 = 0.01. Participants in the literal condition reported the most conservative policy attitudes (M = 0.08, SE = 0.05), while those in the zero-sum (M = 0.04, SE = 0.05) and positive-sum (M = 0.04, SE = 0.06), condition reported somewhat more liberal policy attitudes, F (2, 229) = 0.21, p = 0.81, η_p^2 = 0.00.

While the interaction between affirmative action frame and projection condition on overall policy attitude was not statistically significant the trends are described here as they qualify the unexpected trend observed when examining the main effect of projection condition on overall policy attitudes, F (2, 229) = 1.74, p = 0.18, η_p^2 = 0.02. In the literal condition, as in Craig and Richeson (2014b), participants in the racial shift condition (M = 0.12, SE = 0.08) reported more conservative attitudes than those in the control condition (M = 0.05, SE = 0.08). However, among participants in the positive-sum condition those in the control condition (M = 0.12, SE = 0.08) reported more conservative attitudes than those in the racial shift condition (M = -0.04, SE = 0.08). Similarly, among participants in the

[3] In Craig and Richeson (2014b) age and education were also included as covariates, but these factors did not influence our results.

zero-sum condition, those in the control condition (M = 0.14, SE = 0.08) reported more conservative attitudes than those in the racial shift condition (M = -0.06, SE = 0.07). When the covariates are not included in analyses of this measure, the pattern of results is the same.

We also conducted a three-way mixed-model ANCOVA to assess if the projection and affirmative action frame manipulations differentially affected attitudes toward race-related versus race-neutral policies with projection condition and affirmative action frame as the between-subjects factors, policy type as the within-subjects factor, and participant gender and political ideology as covariates. There were ten outliers on this dependent measure, but their removal did not alter the results and they are included here. There was a statistically significant main effect, such that race-related policy attitudes (M = 0.06, SE = 0.04) tended to be more conservative than race-neutral policy attitudes (M = 0.04, SE = 0.04), F (1, 229) = 19.58, $p < 0.001$, $\eta_p^2 = 0.08$. There were no statistically significant two-way interactions, p's > 0.50. The three-way interaction was also not statistically significant, F (2, 229) = 2.26, p =0.11, $\eta_p^2 = 0.02$. When the covariates are not included in this analysis, none of the effects are statistically significant, though the three-way interaction is marginally statistically significant. However, the pattern of results is the same.

Potential Mediators

Several items were included in the survey to assess mediators that might explain some of the differences we observed. We conducted a series of ANOVAs with projection condition and affirmative action framing condition as fixed factors and each potential mediator as a dependent measure in turn. Our results suggest that

neither attitudes towards Blacks, as measured by the Modern Racism Scale (α = 0.79), concerns about threats to the American way of life (α = 0.55), uncertainty about America's future, ethnic identification, agreement with the metaphor nor system-justifying beliefs were affected by projection condition or affirmative action frame condition, *p*'s > 0.2 (see Appendix D for full results). However, feelings of threat to Whites as a group did vary by projection condition such that participants in the racial shift condition (*M* = 4.57, *SD* = 1.37) reported greater feelings of threat toward Whites than those in the control Condition (*M* = 4.01, *SD* = 1.47), *F* (1, 233) = 9.44, *p* = 0.002, η_p^2 = 0.04, which is consistent with the findings of Craig and Richeson (2014b). It is possible that the metaphoric framings used in this study are countering the feelings of threat that mediate the conservative shift, but more research is needed to examine this further.

Discussion

The results of Experiment 1 provided some evidence that metaphorical framings can influence how policies are perceived when participants are presented with racial shift information. Though our results were not in the predicted pattern, we did observe a statistically significant interaction effect between projection condition and the affirmative action frame. Notably, while there were no differences in attitudes whether participants reviewed the racial shift or control passages in the literal and zero-sum conditions, there was a statistically significant effect such that those in the positive-sum metaphor condition were more supportive of affirmative action in the racial shift than in the control condition. Further, participants in the racial shift condition were more supportive of affirmative action when they were presented with a positive-sum metaphor than when presented with the literal

description. These results suggest that the positive-sum metaphor had the most effect on attitudes and did counter the conservative shifts typically observed when political attitudes are assessed after exposure to racial shift information. Interestingly, the zero-sum metaphor, which was perceived as similar to the literal condition, did not further shift attitudes in a conservative direction.

We did not observe differences in the participants reported likelihood of voting for a proponent of affirmative action. In general, participants reported being very likely to vote for a proponent of affirmative action. This may be due to party loyalty (Verkuyten & Maliepaard, 2013). During data collection, the 2016 presidential election cycle was underway and it is possible that regardless of their attitudes toward affirmative action specifically, much of the sample may have concluded that they would be voting for the democratic candidate, Hillary Clinton, who is a supporter of affirmative action (Clinton, 2016). The potential for participant ideology and political affiliation to predict attitudes toward our dependent measures was further explored in Experiment 2 where we recruited a more politically diverse sample from an online participant pool.

We also examined whether the projection and affirmative action frames would affect overall policy attitudes. Though we did not observe statistically significant effects on this measure, the trend of the interaction suggests that in the literal condition, participants in the racial shift condition reported more conservative attitudes than in the control condition, as in Craig and Richeson (2014b), while in the positive-sum and zero-sum conditions attitudes were more conservative in the control as opposed to the racial shift conditions. It may be that metaphors, in general, shifted attitudes more liberally, though more research is needed to explore

this. We also observed a main effect of policy type in that attitudes toward race-related policies were more conservative than those toward race-neutral policies. This effect was not observed in Craig and Richeson (2014b). It may be that being presented with information about a race-related policy resulted in more conservative attitudes in general. Despite the largely liberal, Democratic sample, attitudes toward affirmative action do tend to be negative and highlighting these policies may have resulted in this effect.

Experiment 2

Experiment 1 revealed that metaphorical framings may be able to moderate the effect of racial shift information on attitudes toward affirmative action. Experiment 2 extends this research by examining whether metaphorical framings can also be used to highlight or minimize the potential threat the racial shift poses to White Americans. To manipulate this, we presented participants with one of two metaphorical descriptions of the pending racial shift. In one description, the risk to Whites was emphasized, while in the other the potential benefits to racial and ethnic minorities were emphasized. A literal description was also included, as in Experiment 1. We also conceptually replicate Experiment 1 by using new, pre-tested metaphors for affirmative action to determine if there is something about sports metaphors that explain our results, or if other types of positive-sum and zero-sum metaphors could be as influential.

Method

Design

Experiment 2 was a 3(Racial Shift Frame: Literal, Optimistic Metaphor, or Pessimistic Metaphor) by 2(Affirmative Action Frame: Positive-Sum or Zero-Sum

Metaphor) between-subjects design. Participants were randomly assigned to one of six conditions and completed all tasks individually and anonymously.

Participants

Four-hundred and six participants were recruited through the TurkPrime academic interface for Mechanical Turk (231 men, 175 women, 77% White, M_{age} = 36.30, *SD* = 11.12). Forty-five percent of the participants identified as Democrats, 19% Republicans, 32% as Independents, 1.5% as undecided, and 3.2% as not listed. On average, participants reported their political ideology as between "slightly liberal" and "moderate." Participants were compensated with $2.50. All participants provided informed consent. Seventy-one percent of participants who began the survey completed it and 20% of potential participants that viewed the survey chose not to participate. As in Study 1, only responses from White participants were included in the analyses provided below. Additional participant demographic information is included in Table 3. The results when people of color are included appear in Appendix E.

Materials

Racial shift frame manipulation. To manipulate the type of metaphor used to describe the pending demographic shifts, participants were randomly assigned to read a description of the pending shift to a "Majority-Minority" nation by 2042 which was adapted from Craig and Richeson (2014b). In the literal condition, participants viewed the same description as in Experiment 1. In the experimental conditions, this passage was followed by an example description that used either an optimistic or pessimistic metaphor to describe the pending shift. The optimistic metaphor described

the shift as:

> I think the majority-minority issue is basically that within our lifetimes Whites will no longer be the majority in the United States. A lot of people are talking about it because it's like when there's a brush fire, we know it'll clear the way for new plants and trees to take root, but we don't know what the new landscape will look like. It could clear the way for less bias against minorities, but no one really knows.

While the pessimistic metaphor described the pending demographic shift as:

> I think the majority-minority issue is basically that within our lifetimes Whites will no longer be the majority in the United States. A lot of people are talking about it because it's like when there's a brush fire, we know it'll clear the way for new plants and trees to take root, but we don't know how much damage will occur in the process. It could clear the way for more bias against Whites, but no one really knows.

These metaphors were pre-tested prior to use in the present study.

Racial shift framing pre-test. Thirty participants (18 men, 12 women, 19 White, M_{age} = 32.34, SD = 7.31) were recruited using the TurkPrime academic Mechanical Turk interface. Thirty-three percent of these participants identified as Democrats, 20% as Republicans, 33% as Independents, and 13% as not listed. On average, participants reported their ideology as between "slightly liberal" and "moderate, middle of the road" (see Appendix F for complete results). The optimistic and pessimistic metaphors were perceived as similar in clarity, accuracy, conciseness, gender of the author, tone, and political ideology. The last statement of the prompts was added to further differentiate between the optimistic and pessimistic frames.

Table 3
Additional Demographic Information on Participants in Study 2

	All Participants	White Participants
	n	*n*
Race		
White	314	314
Black	30	
Asian	52	
Latino/Hispanic	20	
Biracial/Multiracial	10	
Not Listed	3	
Total	406	
Education		
High School	38	30
Vocational or 2 Year Technical School	29	26
Some College	124	91
College Graduate	175	136
Advanced degree	40	28
Total	406	311
Income		
$10,000 or less	23	19
$10,000 to $29,999	109	89
$29,000 to $49,999	96	64
$50,000 to $74,999	75	60
$75,000 or more	89	68
Total	392	300
English Proficiency		
Good	14	11
Excellent	386	296
Total	400	307
Participant Recommends Data		
Yes	404	311
No	1	0
Total	405	311

Note. Some totals may vary because participants were free to skip questions if they wished.

Affirmative action framing manipulation. Each participant was provided with a literal description of affirmative action as in Experiment 1. In the experimental conditions, the literal description was followed by an example description that used either a positive-sum or zero-sum metaphor to describe affirmative action. To ensure that the effects of Experiment 1 were generalizable to other types of metaphors we used a new set of metaphors in which receiving a college acceptance was like winning a lottery. As in Experiment 1, participants reviewed the same information about affirmative action and then in the positive-sum metaphor condition read:

> It was basically like getting a college acceptance is a lottery: based on your grades and test scores you would get tickets and maybe you'd get picked, but White people had more tickets in the lottery than Black people no matter their qualifications. This made the chance that minorities would get into college a lot lower, and minority students were therefore underrepresented at most colleges. Now, to make up for this, colleges give special consideration to Black students' applications. It's like making sure that everyone has the same amount of tickets for the same qualifications so that everyone has the same chance of getting into college.

While the zero-sum metaphor described affirmative action as:

> It was basically like, getting a college acceptance is a lottery: based on your grades and test scores you would get tickets and maybe you'd get picked, but White people had more tickets in the lottery than Black people no matter their qualifications. This made the chance that minorities would get into college a lot lower, and minority students were therefore underrepresented at most colleges. Now, to make up for this, colleges give special consideration to Black students' applications. It's like taking out some of the tickets from the White applicants, and replacing them with extra tickets from Black applicants so that it's easier for them to get into college.

These metaphors were pre-tested prior to use in the present study. In this study, we did not include a control condition for this manipulation as the literal condition was

perceived as similar to the zero-sum metaphor condition in Experiment 1.

Affirmative action framing manipulation pretest. The selected metaphors were evaluated by a naive sample recruited using TurkPrime (17 men, 13 women, 22 White, 2 Black, 4 Asian, and 2 Latino, M_{age} = 34.33, *SD* =9.73). Thirty percent of these participants identified as Democrats, 13% as Republicans, 40% as Independents, and 17% as not listed. On average, participants reported their ideology as between "somewhat liberal" and "moderate, middle of the road." Results of the pre-test suggest that the positive-sum metaphor and zero-sum metaphor were perceived as similar in clarity, accuracy, conciseness and gender of the author (see Appendix F for full results). The positive-sum metaphor (M = 3.77, SD = 0.68) was perceived as more positive in tone than the zero-sum metaphor (M = 2.93, SD = 0.74), F (4, 116) = 21.46, $p < 0.001$. The zero-sum metaphor (M = 2.87, SD = 0.94) was also perceived as being more conservative than the positive-sum metaphor (M = 2.33, SD = 0.66), F (4, 116) = 9.92, p = 0.05. As in Experiment 1, these metaphors were used despite these differences.

Dependent measures. As in Experiment 1, the primary dependent measures were the participants' attitudes toward affirmative action policies and the politicians that support these policies. We changed the item assessing affirmative action to remove the focus on preferential hiring to, "How would you describe your attitude toward affirmative action policies?" (1= *strongly oppose* to 7 = *strongly support*). The same item was used to assess the likelihood of voting for a proponent of affirmative action as in Experiment 1. However, we also asked participants to indicate the impact that they believed the shift to a "majority-minority nation" would have on the United States, "What kind of impact do you think the pending racial

shifts will have on the United States?" (1 = *extremely positive*, 7 = *extremely negative*). This item was reverse scored in the actual analysis so that higher numbers indicate more positivity.

Manipulation checks. Participants were asked to indicate, "Which of the following best describes the example of affirmative action that you read?" (1= *Affirmative action provides equal opportunities for minorities*, 2 = *Affirmative action disadvantages Whites,* 3 =*none of the above*." To assess the validity of the racial shift frame manipulation participants were asked to respond to the item, "Which of the following best describes the article about the United States that you read?" (1= *The United States will become a Majority-Minority nation by 2042 and the consequences will likely be negative for Whites*, 2 = *The United States will become a Majority-Minority nation by 2042 and this will likely be positive for minorities*, 3 = *The United States will become a Majority-Minority nation by 2042 and this will likely affect American policies*, 4 = *Unsure*).

Mediators and individual differences measures. Participants responded to the same potentially mediating items as in Experiment 1. They were also asked to report their gender, age, education level, race, income, primary language, English proficiency, political party affiliation, and political ideology, motivation to complete the study to the best of their ability and whether they believed we should use their data in our analyses. Only one of the potential mediators was statistically significantly affected by our manipulations and is discussed below, the others and are not discussed further, but are reported in Appendix H.

Procedure

The procedure was identical to that of Experiment 1, with the exception that participants were told that we were interested in how United States social policies

and issues were communicated to recent immigrants in general, not just in how students communicated them.

Results

As this study was completed online, we first examined how long it look participants to complete the study tasks. On average, participants took 18 minutes and 8 seconds to complete the study (*SD* = 00:09:14). There were five extreme points that were removed from all analyses.

Summary

Our primary hypothesis in this experiment was that there would be an interaction between affirmative action frame and racial shift frame condition on attitudes toward affirmative action. We predicted that in the literal racial shift frame condition, participants would report more support for affirmative action in the positive-sum as opposed to the zero-sum affirmative action frame condition, as in Experiment 1. We also predicted that in the optimistic racial shift frame condition, participants would report more support for affirmative action in the positive-sum as opposed to the zero-sum affirmative action frame condition. However, in the pessimistic racial shift frame condition, we predicted that there would be no difference in support for affirmative action, as the pessimistic frame would negate the effects of the affirmative action frame. This hypothesis was not supported (Table 4).

Table 4
Adjusted Means and Standard Errors for Primary Dependent Measures in Study 2

	Affirmative Action Frame		
	Positive-Sum	Zero-Sum	
Racial Shift Frame	*M* (SE)	*M* (SE)	Total
Support for Affirmative Action			
Literal	4.27 (0.22)	3.99 (0.23)	4.13 (0.16)
Optimistic	3.96 (0.23)	3.91 (0.22)	3.93 (0.16)
Pessimistic	4.09 (0.23)	4.06 (0.23)	4.08 (0.16)
Total	4.11 (0.13)	3.96 (0.13)	
Likelihood of Voting for Affirmative Action Proponents			
Literal	4.50 (0.21)	4.46 (0.22)	4.48 (0.15)
Optimistic	4.52 (0.21)	4.12 (0.21)	4.32 (0.15)
Pessimistic	4.14 (0.21)	4.49 (0.21)	4.32 (0.15)
Total	4.39 (0.12)	4.36 (0.12)	
Positivity toward the Impact of the Racial Shift			
Literal	4.14 (0.21)	4.44 (0.21)	4.30 (0.15)
Optimistic	4.19 (0.21)	3.85 (0.21)	4.02 (0.15)
Pessimistic	3.89 (0.21)	4.28 (0.21)	4.09 (0.15)
Total	4.07 (0.12)	4.19 (0.12)	
Overall Policy Attitudes			
Literal	0.00 (0.07)	-0.03 (0.07)	-0.01 (0.05)
Optimistic	-0.04 (0.07)	0.09 (0.06)	0.02 (0.05)
Pessimistic	0.03 (0.07)	-0.04 (0.06)	-0.01 (0.05)
Total	-0.01 (0.04)	0.01 (0.04)	
Race-Related Policy Attitudes			
Literal	0.02 (0.09)	-0.09 (0.09)	-0.04 (0.06)
Optimistic	-0.00 (0.09)	0.07 (0.08)	0.04 (0.06)
Pessimistic	0.03 (0.09)	-0.03 (0.09)	-0.00 (0.06)
Total	0.02 (0.05)	-0.02 (0.05)	-0.00(0.04) [a]
Race-Neutral Policy Attitudes			
Literal	-0.03 (0.08)	0.07 (0.08)	0.02 (0.06)
Optimistic	-0.10 (0.08)	0.12 (0.08)	0.01 (0.06)
Pessimistic	0.02 (0.08)	-0.05 (0.08)	-0.01(0.06)
Total	-0.04 (0.05)	0.05 (0.05)	0.01 (0.03) [a]

Note. Means are adjusted to control for participant. On the overall, race-related, and race-neutral measures, higher numbers indicate more conservative attitudes.

On the measures of attitudes toward affirmative action, proponents of affirmative action, and the racial shift, the pattern of results was such that participants in the positive-sum condition were always more supportive (positive) than those in the zero-sum condition; however, on no measure was this statistically significant. Regarding the racial shift frame manipulation, the patter of results was such that participants who viewed the literal description always reported more support (positivity) than those who were provided with metaphorical framings, though these differences were not statistically significant. The results of analyses on the manipulation checks suggest that the frames used may have been ineffective, though the qualitative analysis provides some evidence that the affirmative action frame may have influenced attitudes toward people of color (Appendix G).

Manipulation Checks

Affirmative action frame. Eighty-eight percent of participants in the positive-sum condition correctly identified the positive-sum prompt, while just 17% of participants in the zero-sum condition correctly identified the zero-sum prompt, χ^2 (1, N = 311) = 160.34, $p < 0.001$. It appears that participants tended to select the positive-sum description, "Affirmative action provides equal opportunities for minorities," in response to this question and this will be considered in the interpretation of results.

Racial shift frame. Seventy-six percent of participants in the literal condition correctly identified the literal prompt, while 36% of those in the optimistic condition correctly identified the optimistic prompt, and 28% of those in the pessimistic condition correctly identified the pessimistic prompt, χ^2 (2, N = 310) =

72.37, $p < 0.001$. It appears that participants in all conditions tended to select the literal prompt, "The United States will become a Majority-Minority nation by 2042 and this will likely affect American policies" in response to this item and this will be considered in the interpretation of results.

Attitudes toward Affirmative Action

A regression analysis with individual difference measures as predictors and attitudes toward affirmative action as a dependent measure was statistically significant, *Adj.* $R^2 = 0.34$, F (10, 284) = 15.26, $p < 0.001$. Participants' gender (β = 0.021, $p < 0.001$), political party affiliation (β = -0.16, $p = 0.002$), and political ideology (β = -0.46, $p < 0.001$), predicted attitudes toward affirmative action and were included as covariates in this analysis. Participants in the positive-sum affirmative action frame condition ($M = 4.11$, $SE = 0.13$) reported more support for affirmative action than those in the zero-sum condition, ($M = 3.99$, $SE = 0.13$), F (1, 302) = 0.44, $p = 0.51$, $\eta_p^2 = 0.00$, *ns*. Participants in the literal racial shift frame condition ($M = 4.13$, $SE = 0.16$) reported the most support for affirmative action, followed by those in the pessimistic condition ($M = 4.08$, $SE = 0.16$); those in the optimistic condition reported the least support for affirmative action ($M = 3.93$, $SE = 0.16$), F (1, 302) = 0.40, $p = 0.67$, $\eta_p^2 = 0.00$. There was no statistically significant interaction between racial shift frame and affirmative action frame, F (2, 302) = 0.18, $p = 0.84$, $\eta_p^2 = 0.00$. If the participant demographics are removed from the analysis, the pattern of results remains the same.

Attitudes toward Affirmative Action Proponents

A regression analysis with individual difference measures as predictors and attitudes toward affirmative action as a dependent measure was statistically

significant, *Adj.* $R^2 = 0.38$, F (10, 283) = 19.29, $p < 0.001$. Participants' gender (β = 0.20, $p < 0.001$), age (β = -0.11, $p = 0.03$), education (β = 0.11, $p = 0.02$), political party affiliation (β = -0.18, $p < 0.001$), and political ideology (β = -0.49, $p < 0.001$), predicted the likelihood of voting for an affirmative action proponent and were included as covariates in the analysis. Participants in the positive-sum affirmative action frame condition ($M = 4.39$, $SE = 0.12$) reported a greater likelihood of voting for an affirmative action proponent than those in the zero-sum condition, ($M = 4.36$, $SE = 0.12$), F (1, 298) = 0.02, $p = 0.88$, $\eta_p^2 = 0.00$, *ns.* Participants in the literal racial shift frame condition ($M = 4.48$, $SE = 0.15$) reported the most support for affirmative action proponents, followed by those in the optimistic condition ($M = 4.32$, $SE = 0.15$); those in the pessimistic condition reported the least support for affirmative action proponents ($M = 4.32$, $SE = 0.15$), F (2, 298) = 0.38, $p = 0.69$, $\eta_p^2 = 0.00$. There was no statistically significant interaction between racial shift frame and affirmative action frame, F (2, 298) = 1.55, $p = 0.21$, $\eta_p^2 = 0.01$. If participant demographics are not included as covariates in this analysis, the pattern of results for the racial shift frame manipulation somewhat changes in that those in the pessimistic condition ($M = 4.36$, $SD = 1.94$) reported more support than those in the optimistic condition ($M = 4.15$, $SD = 1.81$), but this was not statistically significant, F (1, 304) = 0.001, $p = 0.97$, $\eta_p^2 = 0.00$, *ns.*

Attitudes toward the Racial Shift

A regression analysis with individual difference measures as predictors and attitudes toward the racial shift as a dependent measure was statistically significant, *Adj.* $R^2 = 0.15$, F (10, 284) = 6.29, $p < 0.001$. Participants' political ideology (β = -0.41, $p < 0.001$), predicted attitudes toward the pending racial shift and was included

as a covariate in the analysis. Participants in the positive-sum affirmative action frame condition (M = 4.19, SE = 0.12) reported more positive attitudes toward the impact of the racial shift than those in the positive-sum condition, (M = 4.07, SE = 0.12), F (1, 304) = 0.45, p = 0.50, η_p^2= 0.00. Participants in the literal racial shift frame condition (M = 4.29, SE = 0.15) reported the most positive beliefs about the racial shift, followed by those in the pessimistic condition (M = 4.09, SE = 0.15); those in the optimistic condition reported the least positive beliefs about the racial shift (M = 4.02, SE = 0.15), F (2, 304) = 0.88, p = 0.42, η_p^2= 0.01. There was no statistically significant interaction between racial shift frame and affirmative action frame, F (2, 304) = 1.79, p = 0.17, η_p^2= 0.01. If the participant demographics are not included as covariates in the analysis, the pattern of results for the affirmative action frame manipulation somewhat changes in that those in the zero-sum condition (M = 4.18, SD = 1.66) reported more positive attitudes than those in the optimistic condition (M = 4.08, SD = 1.66), but this was not statistically significant, F (1, 305) = 0.35, p = 0.56, η_p^2 = 0.00, *ns.*

Overall Policy Support

As in Experiment 1, all policy attitudes were standardized and averaged to measure overall policy support (α = 0.73), and support for race-related policies (α = 0.65), and race-neutral policies (α = 0.59) as in Craig and Richeson (2014b). Higher numbers reflect more conservative policy attitudes. A regression model using individual difference measures to predict overall policy support was statistically significant, *Adj.* R^2 = 0.58, F (10, 284) = 41.21, p < 0.001. Participants' gender (β = -0.10, p <0.001), age (β = 0.13, p = 0.001), income (β = 0.08, p = 0.04), and political

ideology (β = 0.74, $p < 0.001$) predicted overall policy attitudes and were included as covariates in the analysis. Participants in the zero-sum condition ($M = 0.01$, $SE = 0.04$) reported more conservative policy attitudes than those in the positive-sum condition ($M = -0.01$, $SE = 0.04$), $F(1, 289) = 0.08$, $p = 0.78$, $\eta_p^2 = 0.00$. Participants in the optimistic racial shift frame condition ($M = 0.02$, $SE = 0.05$) reported the most conservative policy attitudes, followed by those in the pessimistic condition ($M = -0.01$, $SE = 0.04$); those in the literal condition reported the least conservative attitudes, ($M = -0.01$, $SE = 0.05$), $F(2, 289) = 0.19$, $p = 0.83$, $\eta_p^2 = 0.00$. There was no statistically significant interaction between racial shift frame and affirmative action frame, $F(2, 289) = 1.29$, $p = 0.28$, $\eta_p^2 = 0.01$. There were seven outliers on this measure, when these data points were removed the results were the same. Similarly, when participant demographics are not included as covariates, the pattern of results is the same.

A three-way mixed model ANCOVA was conducted with affirmative action frame, and racial shift frame as fixed factors, policy type as a within-subjects factor, and participants' gender, age, income and political ideology as covariates. There was a statistically significant main effect of policy type in that participants reported more conservative attitudes toward race-related policies ($M = -0.01$, $SE = 0.03$) than race-neutral policies ($M = -0.00$, $SE = 0.03$), $F(1, 276) = 14.55$, $p < 0.001$, $\eta_p^2 = 0.05$. There were no statistically significant two-way interactions, p's > 0.16, and the three-way interaction was also not statistically significant, $F(1, 276) = 0.77$, $p = 0.47$, $\eta_p^2 = 0.01$. If the participant demographics are not included as covariates in the analysis,

the main effect of policy type is not statistically significant, F (1,305) = 0.001, p = 0.97, η_p^2 = 0.00, *ns*.

Agreement with the Racial Shift Frame

The results of a two-way ANOVA with racial shift frame and affirmative action frame as fixed factors and agreement with the racial shift frame as a dependent variable suggests a main effect in which participants agreed most with the literal description of the racial shift (M = 5.25, SD = 1.16), followed by the optimistic frame (M = 5.07, SD = 1.18), and lastly the pessimistic frame (M = 4.78, SD = 1.49), F (2, 305) = 3.45, p = 0.03, η_p^2 = 0.02. Simple effects tests indicate that the differences between agreement with the literal and optimistic frames (p = 0.95) and the differences between agreement with the optimistic and pessimistic frames (p = 0.32) were not statistically significant. However, the difference between agreement with the literal frame and the optimistic frame was statistically significant, p = 0.03. The potentially mediating effect of this result was not explored further as the main and interaction effects on the primary dependent variables were not statistically significant. The main effect of affirmative frame was not statistically significant, F (1, 305) = 0.35, p = 0.56, η_p^2 = 0.00, nor was the interaction effect, F (2, 305) = 0.38, p = 0.68, η_p^2 = 0.00.

Discussion

The results from this study were inconclusive as both manipulation checks indicated potential problems and there were few statistically significant effects. However, the trends in some cases did follow that of Experiment 1. For example, on the measure of attitudes toward affirmative action, in both experiments

participants who viewed the positive-sum metaphor were more supportive than those who viewed the zero-sum metaphor.

In this experiment, on both attitudes toward affirmative action and attitudes toward affirmative action proponents the trend was such that participants in the literal racial shift frame condition reported the greatest likelihood of voting for an affirmative action proponent, followed by those in the pessimistic condition, and the optimistic condition. This pattern, though not statistically significant, is interesting because we predicted that optimistic frame would be less threatening than the pessimistic frame. This might reflect the findings of Georgeac & Rattan (2017) that the more progress is reported, the more the perceived necessity of continuing efforts to reduce disparities may diminish. In the present case, it might be that highlighting the potential for the racial shift to reduce bias against minorities resulted in the perception that programs like affirmative action were no longer needed. Alternatively, Lowery and colleagues (2012) found that when White participants were presented with information that suggested that Whites were advantaged, as opposed to Blacks or minorities being disadvantaged, they tended to report greater support for policies that would disadvantage Whites (Lowery, Chow, Knowles, Unzueta, 2012). Lowery, et al.'s (2012) findings may also explain the pattern observed in the present experiment. It is possible that emphasizing the past advantages of Whites and that the racial shift may harm Whites may have lead to greater support for affirmative action than when the benefit to minorities was highlighted. However, as the effectiveness of these manipulations is unclear, this is speculation.

When examining overall policy attitudes, the observed trend was also similar to Experiment 1 in that participants who viewed the zero-sum affirmative action

frame reported more conservative attitudes toward affirmative action than those in the positive-sum condition. Additionally, and consistent with the trend discussed on the attitudes toward affirmative action measure, participants in the optimistic racial shift frame reported the most conservative attitudes followed by those in the pessimistic and literal conditions. This pattern is the opposite of what we observed in Experiment 1 in which the metaphors tended to elicit more liberal responses. It may be that the use of the brush fire metaphor, even when focusing on new growth in the optimistic frame, was too negative and generally threatening. Alternative metaphors might be examined in a future study. Another potential explanation is that there were too many novel metaphors. Perhaps, the presence of two metaphorical framings was too much information and thus neither manipulation was as effective. A future study could examine the racial shift frames independently to determine if this would have an effect on perceptions of the racial shift. Finally, as in Experiment 1, we observed a main effect of policy type in that attitudes toward race-related policies were more conservative than those toward race-neutral policies. This again may be attributed to highlighting race-relevant policies in this experiment.

Experiment 3

The previous experiments have examined how the metaphorical framings used to describe social policies can influence attitudes toward those policies when participants are made aware of the pending racial shifts. However, they do not enable us to predict whether these changes in attitude may also lead to changes in perceptions and behavior. Experiment 3 examines whether metaphorical framings can go beyond influencing attitudes toward policies and influence perceptions and attitudes toward the applicants that are considered under these policies. College

student participants were asked to evaluate the application of either a Black or White applicant that was to be considered under an affirmative action policy that used either a positive-sum or a zero-sum frame.

Method

Design

Experiment 3 was a 2(Affirmative Action Frame: Positive-Sum Metaphor or Zero-Sum Metaphor) by 2(Applicant Race: White or Black) between-subjects design. Participants were randomly assigned to one of four conditions and completed all tasks individually and anonymously.

Participants

One hundred and twenty-one participants were recruited through the course credit participant pool at a university in the Northeast (34 men, 87 women, 64 White, 10 Black, 24 Asian, 7 Latino, 4 Middle Eastern, 8 Multiracial, and 4 unreported, M_{age} = 18.94, *SD* = 1.14). All participants reported their English proficiency as average or better. Seventy-one percent of the participants identified as Democrats, five percent as Republicans, eight percent as Independents, and 16% as not listed. On average, participants reported their political ideology as between "liberal" and "slightly liberal." On average, participants reported themselves as being of higher social status (*M* = 5.22, *SD* = 1.23). Participants were compensated with partial course credit. All participants provided informed consent.

Materials

Pre-Screen measures. Participants reported their prior attitudes toward affirmative action, the pending racial shift and the use of metaphors in political discourse. To assess prior attitudes to affirmative action we modified the previous

item to remove the emphasis on preferential hiring, "Please indicate how much you support or oppose the following United States policy. Affirmative Action: A set of procedures designed to eliminate unlawful discrimination between applicants (e.g., those seeking admission to an educational program or looking for professional employment), remedy the results of such prior discrimination, and prevent such discrimination in the future" (1= *strongly oppose* to 7 = *strongly support*). Participants were also asked to indicate their attitudes toward the racial shift with the item, "Recent projections suggest that by 2060 White, non-Hispanic individuals will no longer be the majority group in the United States. Instead, there will be a plurality such that no ethnic or racial group will compose a majority of the population. What kind of impact do you think this change will have on the United States?" (1= *extremely positive* to 7 = *extremely negative*). Finally, participants indicated their attitudes toward the use of metaphors in political discourse, "How would you describe your attitudes toward the use of metaphors in political discourse? For example, describing issues related to substance abuse as the "War on Drugs" (1 = *extremely positive* to 7 = *extremely negative*).

Affirmative action frame manipulation. Prior to evaluating the ostensible common application from a high school student, participants were provided with instructions that described how their university approached admissions decisions. This document was fabricated by the researchers to suggest that in consideration of pending racial shifts, the university was re-examining its approach to diversity and was interested in the qualifications that current students believed were necessary to being successful at the university. Participants were told that the university employed affirmative action and were provided with an explanation of how the

university viewed affirmative action. This explanation included either the positive-sum or zero-sum metaphorical description of affirmative action, as used in Experiment 1 (see Appendix I for full-text of instructions participants received).

Applicant race manipulation. Participants reviewed the ostensible common application of an applicant to Tufts University whose name and racial identity was manipulated to reflect either a White, non-Hispanic, or Black, non-Hispanic, applicant. Names typically given to White or Black women in the 1990s were located on the social security website and baby naming websites. Thirteen research assistants reviewed the names and those most associated with either White or Black women were chosen for this study. Specifically, in the White applicant condition participants reviewed an application from a woman named either Diana or Jessica and in the Black applicant condition the applicant's name was either Dionne or Jada.

Common application manipulation and measures. A common application was modified to reflect a student who was ambiguously qualified for admission to Tufts University based on the profile of the admitted Class of 2020 (Tufts University, 2016; see Appendix J for example). We also used this profile to create an application that reflected the most common characteristics of a student admitted to Tufts University. Thus, this applicant was applying regular decision, interested in majoring in Political Science and Peace and Justice Studies, originally from the Boston, Massachusetts area, and had standardized test scores in the mid-range of admitted applicants. We also included information about their grade point average, class rank, academic course load, and extracurricular activities. We chose to exclude a personal statement and informed participants that they would only see part

of the applicant's materials.

Participants were asked to evaluate the quality of the application on a series of items, such as "How would you describe the quality of the applicant's…grade point average" (1= *terrible* to 7 = *excellent*). Participants were also asked to indicate how academically and socially successful they believed the applicant would be if admitted, how much they would agree with the applicant being offered a merit scholarship, and how likely they would be to recommend this applicant to the next round of review. Participants were also asked to rank how important grade point average, standardized test scores, advanced placement classes, extracurricular activities, rigor of academic course load, and honors were to their evaluation.

Additional measures. Participants were asked to indicate their attitudes toward affirmative action and the pending racial shift.

Manipulation checks. Participants responded to four items assessing the validity of the manipulations. Two of these questions addressed the affirmative action frame manipulation. One asked, "Which of the following best describes the way that Tufts University views affirmative action" (1 = *affirmative action evens the playing field for minorities*, 2 = *affirmative action disadvantages Whites*, or 3 = *neither of the above*." The second item asked, "If you had to describe Tufts University's approach to affirmative action as a game, would it be more like a zero-sum game or a positive sum game? A zero-sum game is one in which in order for one person to win another person must lose. A positive-sum game is one in which everyone can win." (1= *definitely zero-sum* to 5 = *definitely positive-sum*). The last manipulation check item asked participants, "What race was the applicant whose application you reviewed" (1 = *White*, 2= *Black*, 3 = *American Indian or Alaska Native*, 4 = *Asian*, 5= *Native Hawaiian*

or Pacific Islander, 6= *Not listed*).

Mediators and individual differences measures. Participants reported their agreement with the threat to White Americans measure used in the previous experiments, as well as their gender, age, social status, race, political party affiliation, political ideology, and if they believed we should use their data in our analyses. Individual differences did not affect the measures of quality, applicant success, or willingness to recommend the applicant to the next round of review, and are not discussed further, *p's* > 0.30. Further, items from the pre-screen only affected attitudes toward the racial shift and affirmative action and are only discussed with regard to those measures, *p*'s > 0.27.

Results

Summary

We predicted that Black applicants would be evaluated more favorably under an affirmative action policy described using a positive-sum metaphor as opposed to a zero-sum metaphor, while White applicants would be evaluated more favorably under affirmative action policies described using a zero-sum as opposed to positive-sum metaphor. This hypothesis was not supported.

The pattern of results on the dependent measures was such that applicants tended to be evaluated more favorably by participants in the positive-sum as opposed to the zero-sum condition, but this was not statistically significant. The pattern of results concerning the applicant race manipulation was not consistent across measures. We did observe an interaction effect on the measure assessing agreement with offering the

applicant a merit scholarship, but the pattern was not consistent with the hypothesis. Instead, participants evaluated the White and Black applicant similarly when considering them under a positive-sum metaphorical frame, but tended to favor the Black applicant over the White applicant when considering them under a zero-sum metaphorical frame. Further, we found evidence that participants weighted certain aspects of the application differently when evaluating White versus Black applicants, but this was not hypothesized a-priori (Table 5).

Table 5
Adjusted Means and Standard Errors for Primary Dependent Measures in Study 3

	Applicant Race		
	White Applicant	Black Applicant	
Affirmative Action Frame	*M* (*SD*)	*M* (*SD*)	Total
	Applicant Quality		
Positive-Sum Metaphor	4.68 (0.66)	4.73 (0.70)	4.71 (0.67)
Zero-Sum Metaphor	4.70 (0.47)	4.70 (0.65)	4.70 (0.57)
Total	4.69 (0.57)	4.71 (0.67)	
	Applicant Success		
Positive-Sum Metaphor	5.38 (0.83)	5.18 (1.35)	5.27 (1.13)
Zero-Sum Metaphor	5.19 (1.00)	5.21 (1.02)	5.20 (1.01)
Total	5.28 (0.92)	5.20 (1.19)	
	Recommend for Further Review		
Positive-Sum Metaphor	4.18 (1.83)	4.73 (1.79)	4.48 (1.81)
Zero-Sum Metaphor	4.48 (1.24)	4.81 (1.72)	4.65 (1.51)
Total	4.33 (1.55)	4.77 (1.74)	
	M (*SE*)	*M* (*SE*)	Total
	Offering a Merit Scholarship		
Positive-Sum Metaphor	3.34 (0.28) [†]	3.10 (0.26)	3.22 (0.19)
Zero-Sum Metaphor	2.67 (0.29) [a, †]	3.62 (0.27) [a]	3.14 (0.20)
Total	3.01 (0.20)	3.36 (0.19)	
	Support for Affirmative Action		
Positive-Sum Metaphor	5.46 (0.19)	5.13 (0.17)	5.29 (0.12)
Zero-Sum Metaphor	5.28 (0.18)	5.09 (0.18)	5.18 (0.13)
Total	5.37 (0.13)	5.11 (0.12)	
	Positivity toward the Racial Shift		
Positive-Sum Metaphor	5.30 (0.27)	5.44 (0.24)	5.40 (0.18)
Zero-Sum Metaphor	4.87 (0.26)	5.27 (0.25)	5.07 (0.18)
Total	5.09 (0.19)	5.35 (0.17)	

Note. Matching superscripts indicate statistically significant differences, $p < 0.05$. † indicates marginally statistically significant differences, $p < 0.10$

Manipulation Checks

Ninety percent of participants in the positive-sum condition correctly identified the positive-sum affirmative action frame, while just 28% of participants in zero-sum condition correctly identified the zero-sum affirmative action frame, χ^2 (1, N = 121) = 91.53, $p < 0.001$. Participants in the positive-sum affirmative action frame condition (M = 3.52, SD = 15) and those in the zero-sum affirmative action frame condition (M= 3.53, SD = 1.19) viewed the affirmative action description they reviewed as similarly likely to reflect a positive-sum game t (119) = 50.04, p = 0.97. That participants seemed to be unable to differentiate between the positive-sum and zero-sum metaphors will be considered in the interpretation of the results. Ninety-one percent of participants in the White applicant condition correctly identified the applicant as White and 97% of participants in the Black applicant condition correctly identified the applicant as Black, there was no statistically significant difference between these proportions χ^2 (1, N = 121) = 1.76, p = 0.18.

Evaluations of Applicant Quality

Evaluations of applicant quality were assessed using the average of the participants' ratings of the applicant's grade point average, standardized test scores, awards, class rank, advanced placement score, rigor of the course schedule, the number and societal impact of their extracurricular activities, and overall quality (α = 0.82). Three outliers were identified, but removing them did not affect the results and they are included here.

On the composite measure of quality, participants in the positive-sum condition (M = 4.71, SD = 0.67) indicated that the applicant was more qualified than those in the zero-sum condition (M = 4.70, SD = 0.57), F (1, 117) = 0.01, p = 0.94,

η_p^2 = 0.00, *ns.* Participants in the Black applicant condition (*M* = 4.71, *SD* = 0.67) indicated that the applicant was more qualified than the White applicant (*M* = 4.69, *SD* = 0.57), *F* (1, 117) = 0.06, *p* = 0.81, η_p^2 = 0.00, *ns.* The interaction between affirmative action frame and applicant race was not statistically significant, *F* (1, 117) = 0.06, *p* = 0.81, η_p^2 = 0.00, *ns.*

Importance of each Factor to Evaluation[4]

Participants were asked to rank how important the applicant's grade point average, standardized test scores, awards, extracurricular activities, advanced placement scores and academic schedule (application component) were to their evaluation of the applicant. A three-way, mixed-model ANOVA with affirmative action frame and applicant race as between-subjects factors and the application component as a within-subjects factor was conducted. There was a statistically significant main effect of application component on importance to the evaluation *F* (4.53, 109) = 39.66, *p* < 0.001, η_p^2 = 0.26[5]. To determine which components were the most important to evaluation, we conducted a simple effects test. The results suggest that grade point average (*M* = 4.74, *SD* = 1.33) was rated as more important than standardized test scores (*M* = 3.15, *SD* = 1.63), awards (*M* =2.41, *SD* = 1.36) and advanced placement scores (*M* = 2.54, *SD* = 1.37), *p*'s <0.001. Further, while extracurricular activities (*M* =4.12, *SD* = 1.43) and rigor of the current academic course load (*M* = 4.03, *SD* = 1.72) were rated as equally important (*p* > 0.9), both factors were viewed as more important to the applicant's evaluation than awards (*M*

[4] These scores were reverse-coded so that higher numbers indicate more importance to the evaluation.

[5] The sphericity assumption was violated and the Huynh-Feldt correction was used throughout.

=2.41, *SD* = 1.36) and advanced placement scores (*M* = 2.54, *SD* = 1.37), *p*'s < 0.001. Additionally, extracurricular activities (*M* =4.12, *SD* = 1.43) were rated as more important than standardized test scores (*M* = 3.15, *SD* = 1.63), *p* = 0.001.

There was also a statistically significant two-way interaction between application component and applicant race, *F* (4.53, 109) = 8.38, *p* = 0.02, η_p^2 = 0.03. The results of a simple effects test suggest two statistically significant effects. Specifically, grade point average was rated as more important to the applicant's quality when evaluating Black (*M* = 5.02, *SD* = 1.15) as opposed to White applicants (*M* = 4.45, *SD* = 1.46), *p* = 0.02. Alternatively, the rigor of the academic course load was rated as more important when evaluating White (*M* = 4.43, *SD* = 1.59) as opposed to Black applicants (*M* = 3.67, *SD* = 1.77), *p* = 0.02. The two-way interaction between application component and affirmative action frame was not statistically significant, *F* (4.53, 109) = 0.36, *p* = 0.86, η_p^2 = 0.00. The three-way interaction between application component, affirmative action frame, and applicant race was not statistically significant, *F* (4.53, 109) = 0.82, *p* = 0.53, η_p^2 = 0.00. There were fourteen outliers on this measure, when these data points are removed the results were the same.

Anticipated Applicant Success

Participants were asked to indicate how academically and socially successful they believed the applicant would be if admitted to Tufts University. These scores were averaged to create a measure of general success (α = 0.70). We identified three outliers and one extreme data point on this measure, but results did not differ and these data points are included here. Participants in the positive-sum condition (*M* = 5.27, *SD* = 1.13) indicated that the applicant would be more successful at Tufts

University than those in the zero-sum condition (M = 5.20, SD = 1.01), F (1, 117) = 0.16, p = 0.69, η_p^2 = 0.00, *ns*. Participants in the White applicant condition (M = 5.28, SD = 0.62) indicated that the applicant would be more successful than those in the Black applicant condition (M = 5.20, SD = 1.19), F (1, 117) = 0.19, p = 0.66, η_p^2 = 0.00, *ns*. The interaction between affirmative action frame and applicant race was not statistically significant, F (1, 117) = 0.29, p = 0.59, η_p^2 = 0.00, *ns*.

Recommend for Further Review

Participants were asked to indicate how likely they would be to recommend this applicant to the next round of review[6]. Responses to this question were submitted to a two-way ANOVA with affirmative action frame and applicant race condition as fixed factors. Participants in the positive-sum condition (M = 4.48, SD = 1.81) were somewhat more likely to be recommended to the next round of review than those in the zero-sum condition (M = 4.65, SD = 1.50), F (1, 117) = 0.40, p = 0.53, η_p^2 = 0.00, *ns*. Participants who reviewed a Black applicant (M = 4.77, SD = 1.74) were somewhat more likely to recommend them to the next round of review than those who considered White applicants (M = 4.33, SD = 1.55), F (1, 117) = 2.07, p = 0.15, η_p^2 = 0.02, *ns*. The interaction between affirmative action frame and applicant race was not statistically significant, F (1, 117) = 0.14, p = 0.71, η_p^2 = 0.00, *ns*.

[6] These scores were reverse-scored so that higher numbers indicate greater likelihood of recommendation.

Agreement with Offer of Merit Scholarship[7]

A regression model predicting this measure using individual differences was statistically significantly, *Adj.* $R^2 = 0.12$, $F\ (8, 106) = 2.88$, $p = 0.006$. Participant race, specifically, predicted this measure ($\beta = -0.29$, $p = 0.002$) and was included as covariate. Participants were asked to report whether they would agree with offering the applicant a merit scholarship if they were admitted. There were two outliers on this measure, and the results with them excluded from the analysis are reported here. When these data points are included the two-way interaction is marginally statistically significant. Participants in the positive-sum condition ($M = 3.22$, $SE = 0.19$) reported more agreement with the offer of a merit scholarship than those in the zero-sum condition ($M = 3.14$, $SE = 0.20$), $F\ (1, 114) = 0.08$, $p = 0.77$, $\eta_p^2 = 0.00$, *ns.* Participants who reviewed a Black applicant ($M = 3.36$, $SE = 0.19$) were more likely to agree with an offer than those who reviewed White applicants ($M = 3.01$, $SE = 0.20$), $F\ (1, 114) = 1.63$, $p = 0.20$, $\eta_p^2 = 0.01$, *ns.* There was a statistically significant interaction on this measure, $F\ (1, 114) = 4.74$, $p = 0.03$, $\eta_p^2 = 0.04$. Among participants in the positive-sum condition, those who reviewed a White applicant ($M = 3.34$, $SE = 0.28$) reported more agreement with the offer of a merit scholarship than those that reviewed a Black applicant ($M = 3.10$, $SE = 0.26$), $p = 0.53$. However, in the zero-sum condition, there was more agreement with offering the Black applicant ($M = 3.62$, $SE = 0.28$) a merit scholarship than there was with offering a White applicant a merit scholarship ($M = 2.67$, $SE = 0.29$), $p = 0.02$ (see Figure 2). When participant race is not included as a covariate the interaction is

[7] These scores were reverse-scored so that higher numbers indicate more agreement with the offer.

marginally statistically significant, F (1, 115) = 2.81, p = 0.10, η_p^2 = 0.02. The main effect for applicant race also becomes marginally statistically significant, F (1, 115) = 3.15, p = 0.08, η_p^2 = 0.03.

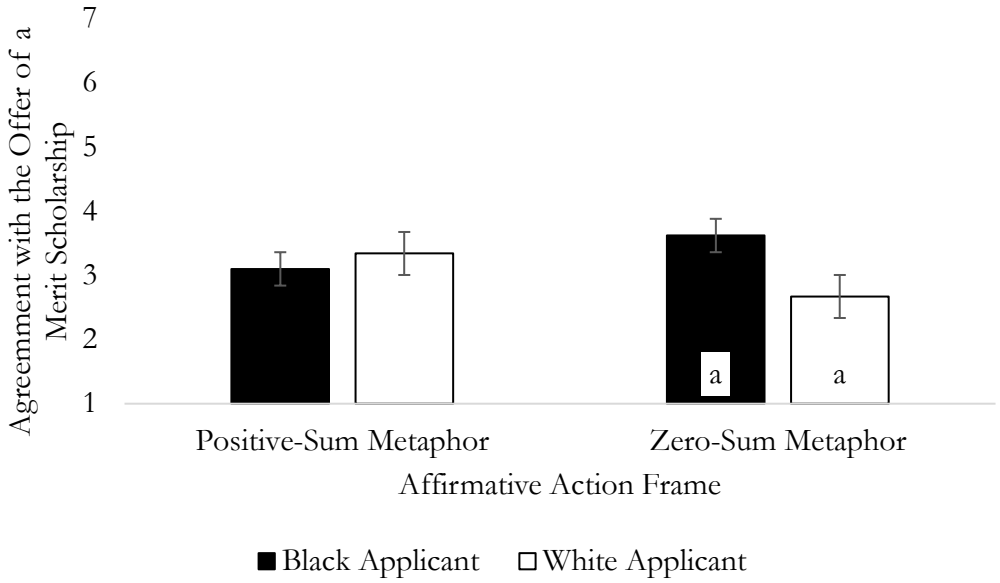

Figure 2. Agreement with an offer of a merit scholarship as a function of affirmative action frame and applicant race. Adjusted for participants' race. Higher numbers indicate more support for gun control. Matching notations indicate statistically significant difference, $p < 0.01$.

Attitudes toward Affirmative Action

The model predicting attitudes toward affirmative action was statistically significant, *Adj.* R^2 = 0.11, F (8, 106) = 2.82, p = 0.007. Participant race (β = 0.25, p = 0.01), English proficiency (β = 0.19, p = 0.05), and political ideology (β = -0.24, p = 0.02) predicted attitudes toward affirmative action and were included as covariates in the analysis of this measure. A regression model predicting attitudes toward affirmative action was also statistically significant, *Adj.* R^2 = 0.43, F (5, 96) = 16.23, p < 0.001. Participant's prior attitudes toward the racial shift (β = 0.18, p = 0.03) and affirmative action (β = 0.51, p < 0.001) predicted attitudes toward affirmative action

were included as covariates in this analysis. There were eight outliers observed on this measure, when these data points are removed the results did not differ and the results with them included are reported here. Participants in the positive-sum condition (M = 5.29, SE = 0.12) reported more support for affirmative action than those in the zero-sum condition (M = 5.19, SE = 0.13), F (1, 108) = 0.37, p = 0.55, η_p^2 = 0.00, *ns*. Participants who reviewed a White applicant (M = 5.37, SE = 0.13) reported more support for affirmative action than those who reviewed Black applicants (M = 5.11, SE = 1.12), F (1, 108) = 2.01, p = 0.16, η_p^2 = 0.02, *ns*. There was no statistically significant interaction between affirmative action frame and applicant race, F (1, 108) = 0.15, p = 0.70, η_p^2 = 0.00, *ns*. Removing the covariates from this analysis did not alter results.

Attitudes toward the Racial Shift

The individual differences model predicting attitudes toward the racial shift was statistically significant, *Adj.* R^2 = 0.16, F (8, 103) = 3.56, p = 0.001. Participant ideology (β = -0.46, $p < 0.001$) predicted attitudes toward the racial shift and was included as a covariate in this analysis. A regression model using the pre-screen items to predict attitudes towards the racial was also statistically significant, *Adj.* R^2 = 0.21, F (5, 94) = 6.38, $p < 0.001$. Participant's prior attitudes toward the racial shift (β = -0.24, $p < 0.02$) and political ideology (β = -0.34, p =0.005) predicted attitudes toward the racial shift and were included as covariates in this analysis. Participants in the positive-sum condition (M = 5.37, SE = 0.18) reported stronger feelings that the racial shift would have a positive effect than those in the zero-sum condition (M = 5.07, SE = 0.18), F (1, 112) = 0.30, p = 0.25, η_p^2 = 0.01, *ns*. Participants who reviewed a Black applicant (M = 5.35, SE = 0.17) reported stronger feelings that the

racial shift would have a positive impact than those who reviewed White applicants (M = 5.06, SE = 0.19), F (1, 112) = 1.10, p = 0.30, η_p^2 = 0.01, *ns*. There was no observed statistically significant interaction between affirmative action frame and applicant race, F (1, 112) = 0.24, p = 0.63, η_p^2 = 0.00, *ns*.

Potential Mediators

We conducted a two-way ANOVA with affirmative action frame and applicant race as fixed factors and perceived threat to Whites as racial minorities increase in status as the dependent measure. Participants in the zero-sum condition (M = 4.62, SD = 1.40) reported more agreement with the statement that White individuals would lose influence as racial minorities increased in status than those in the positive-sum condition (M = 4.54, SD = 1.50), F (1, 117) = 0.04, p = 0.61, η_p^2 = 0.00. Participants in the Black applicant condition (M = 4.64, SD = 1.43) reported more agreement with the statement than those in the White applicant condition (M = 4.51, SD = 1.48), F (1, 117) = 0.27, p = 0.61, η_p^2 = 0.00. There was no statistically significant interaction, F (1, 117) = 3.01, p = 0.09, η_p^2= 0.03. We also assessed whether the manipulations affected attitudes toward sports, to determine if this predicted the persuasiveness of the metaphor, but this was not statistically significant (Appendix K).

Discussion

Experiment 3 examined whether the metaphors used to describe affirmative action policies would influence how applicants under these policies are perceived. Generally, the trend of results was that participants viewed applicants considered under a positive-sum policy more favorably than those considered under a zero-sum

policy, though these effects largely failed to meet statistical significance. The only statistically significant difference observed as it regards the applicant race manipulation was in how participants weighted application components. When viewing Black applicants, participants tended to weight grade point average more heavily than when viewing White applicants, while they tended to weight the rigor of the academic course load as more important when evaluating White, as opposed to Black applicants. This may speak to a shifting of standards, but additional research is needed to assess the reliability of this finding (Biernat & Kobrynowicz, 1997). It is worth noting that this study is somewhat underpowered and may be unable to detect some effects, and those effects that are observed may not be reliable.

There was one statistically significant interaction effect in that in the positive-sum condition, participants were equally likely to agree with the White or Black applicant being offered a merit scholarship, while in the zero-sum condition there was more agreement with Black applicants being offered a merit scholarship than White applicants. This trend is unexpected and contrary to the hypothesis. We predicted that when presented with a zero-sum explanation of affirmative action that Black applicants would be viewed less favorably because the policy would be viewed as disadvantaging White applicants. This contrary finding suggests that the effect of zero-sum metaphors may not always be negative for the targets of affirmative action. It is possible that the zero-sum metaphor emphasized the disadvantage that Black applicants might have encountered in the past and that participants were attempting to accommodate for this on this measure. However, because the manipulation check for the affirmative action frame was unsuccessful, these results are difficult to interpret.

The results of this experiment regarding policy and social issue attitudes, though inconclusive do follow the pattern observed in Experiment 1 and Experiment 2. All participants were made aware of the pending racial shifts and the trend observed was that participants who reviewed a positive-sum description reported more support for affirmative action and more positive attitudes toward the impact of the racial shift than participants who reviewed a zero-sum description.

In this experiment, the influence of racial shift information and the metaphorical frame interacted on one measure to influence perceptions of the Black applicants. These effects are interesting given that the racial shift is largely being driven by immigration and the Latino/Hispanic population, and yet its influence seems to extend to Black applicants whose demographic proportion of the United States is projected to stay roughly the same. This suggests that the influence of the racial shift on political attitudes may generalize toward racial and ethnic minority groups in general, not just those associated with the shift. However, research has yet to assess whether shifts in attitudes and perceptions of groups that are associated with the shift will be more pronounced. Future examinations of the effect of metaphorical descriptions on applicant evaluations should examine applicants of other races, and citizenship statuses.

Additionally, several participants reported that they felt their evaluation of the application was superficial because they were unable to review the applicant's essay. At Tufts University, the application essay, at least from the students' perspective, is very important to admissions decisions. Incorporating a student essay

in a future study or recruiting participants from a university where the essay is not as central to the application may yield different results.

Experiment 4

Two of the previous three experiments suggests that metaphorical frames can influence attitudes and perceptions in the face of racial shift. However, ideally, political attitudes should be based on the parameters of policies and one's values, not the metaphor a policy is presented with. In Experiment 4, we return to the influence of metaphorical framings on political attitudes and we attempt to reduce the influence of metaphorical frames by informing participants that metaphorical descriptions may influence their political attitudes. Participants were told that metaphorical descriptions could either influence their political attitudes, or not, and then reviewed either a series of ideologically conservative or ideologically liberal policy descriptions before reporting their attitudes.

Method

Design

Study 4 was a 2(Metaphor Influence Condition: Metaphors can influence political attitudes (Influence Condition) or Metaphors cannot influence political attitudes (No Influence Condition) by 2(Political Lean: Conservative-Lean or Liberal-Lean) between-subjects design.

Participants

Three-hundred participants were recruited through the TurkPrime academic interface for Mechanical Turk (164 men, 133 women, 2 not listed, 225 White, 28 Black, 15 Asian, 16 Latino/Hispanic, 9 Multiracial, 6 Not listed, M_{age} = 33.76, *SD* =10.22). Forty-three percent of the participants identified as Democrats, 24% as

Republicans, 28% as Independents, 2% as undecided, and 3% as not listed. On average, participants reported their political ideology as between "slightly liberal" and "moderate." Participants were compensated with $1.50 and all provided informed consent. Ninety-three percent of participants who began the survey completed it and 14% of potential participants that viewed the survey chose not to participate. Additional participant demographic information is included in Table 6.

Materials

Political lean manipulation. Participants reviewed four policy descriptions addressing affirmative action, the Affordable Care Act, the death penalty, and gun control. Descriptions of these policies were manipulated to reflect conservative or liberal ideologies as determined by public opinion polls (Dimock, 2017; Drake, 2014; Kirzinger, Sugarman, & Brodie, 2016; Oliphant, 2016). All descriptions were pre-tested to ensure that they were similar in clarity, accuracy, tone, metaphorical use, and gender of the speaker, but differed in political ideology (see Appendix L for results). For example, participants in the conservative-leaning condition viewed the following description of affirmative action:

> Showing preference based on race is wrong. If Blacks have had one hand tied behind their backs while they tried to apply jobs and colleges, then tying the hands of Whites doesn't make that right. Affirmative action is just another way to give one group benefits based on their race.

Those in the liberal-leaning condition read:

> Showing preference based on race is wrong. However, Blacks have had one hand tied behind their backs while they tried to apply to jobs and colleges for generations. That kind of disadvantage doesn't just go away. Affirmative action is just one to way to untie their hands and give them a chance in hiring and education.

Table 6
Additional Demographic Information on Participants in Study 4

		n
Education		
	High School	37
	Vocational or 2 Year Technical School	16
	Some College	98
	College Graduate	115
	Advanced degree	33
	Total	299
Income		
	$10,000 or less	13
	$10,000 to $29,999	63
	$29,000 to $49,999	86
	$50,000 to $74,999	75
	$75,000 or more	54
	Total	291
English Proficiency		
	Average	6
	Good	19
	Excellent	275
	Total	300
Eligibility to Vote		
	Yes	294
	No	4
	Total	298
Participant Recommends Data		
	Yes	294
	No	6
	Total	300

Note. Totals may vary as participants were free to skip any question they wished.

If descriptions differed in tone this was deemed acceptable if consistent with the political lean. For example, if the conservative-leaning description was perceived as more positive toward the death penalty than the liberal-leaning description this was deemed acceptable because in general, conservatives are more positive toward the death penalty than liberals (Oliphant, 2016). The full text of the descriptions can be found in Appendix M.

Metaphor influence manipulation. The instructions for this study were manipulated to inform participants that they would be reading descriptions of public policies that may include metaphors. Participants in the no influence condition read, "Please be aware that some of these descriptions may include metaphorical language, or describing one thing in terms of another, but this should not influence your attitudes." Participants in the influence condition read, "Please be aware that some of these descriptions may include metaphorical language, or describing one thing in terms of another, and this may influence your attitudes" (see Appendix N for full text).

Dependent measures. After reviewing each policy description, participants were asked to indicate their attitude toward the policy they had reviewed. To assess attitudes toward affirmative action and the Affordable Care Act, participants responded to the item, "How would you describe your attitude toward the affirmative action policies (Affordable Care Act)?" (1 = *very strongly support* to 7 = *very strongly oppose*). Attitudes toward gun control were assessed with the item, "How would you describe your attitude towards increasing government regulation of the manufacture, sale, and possession of fire arms (Gun Control)?" (1= *very strongly oppose* to 7 = *very strongly support*). Attitudes toward the death penalty were assessed with the

item, "How would you describe your attitude towards the death penalty?" (1= *very strongly oppose* to 7 = *very strongly support*). Finally, participants were asked to report their attitudes toward the pending racial shift with the item, "Recent projections suggest that by 2060 White, non-Hispanic, individuals will no longer be the majority group in the United States. Instead, there will be a plurality such that no ethnic or racial group will compose a majority of the population. What kind of impact do you think this change will have on the United States?" (1 = *extremely positive* to 7 = *extremely negative*).

Mediators and individual differences measures. Participants were asked to report their attitudes toward metaphors in political discourse, "How would you describe your attitudes toward the use of metaphors in political discourse? For example, describing issues related to substance abuse as the "War on Drugs" (1 = *extremely positive* to 7 = *extremely negative*). Additionally, the potential mediators from the prior studies were included assessing participants' ethnic identification, system-justifying beliefs, feelings of threat to Whites, and concerns about America's future were included as in Craig and Richeson (2014b). Participants were also asked to report their gender, age, education, race, income, English proficiency, eligibility to vote, political party affiliation, political ideology, motivation to complete the study to the best of their ability, and whether they believed we should use their data in our analyses.

Manipulation checks. Two items were included to assess the validity of the manipulations. To assess whether participants believed that metaphors would influence their political attitudes we asked, "Based on the passage you reviewed earlier, how likely is it that metaphors in political speech will influence your attitudes

toward public policies?" (1= *extremely likely* to 7= *extremely unlikely*)[8]. To assess whether participants viewed the policy descriptions as leaning toward liberal or conservative ideologies we asked, "In general, would you say that the policy descriptions you reviewed were..." (1= *extremely liberal* to 7 = *extremely conservative*).

Results

As participants completed this study online, the time to complete the study was examined. On average, participants took five minutes and fifty-eight seconds to complete the study (*SD* = 00:03:42). There were three extreme points on this measure, they were removed from all the analyses reported below.

Summary

We hypothesized that informing participants that metaphorical descriptions could influence their political attitudes would reduce the influence of metaphors on their attitudes. Specifically, we predicted that participants told that metaphorical descriptions could influence their policy attitudes would report similar levels of support for policies whether they were described using liberal or conservative metaphorical descriptions, while those told that metaphorical descriptions would not influence their policy attitudes would tend to report attitudes consistent with the policy descriptions they reviewed. This hypothesis was not supported.

In general, the pattern of results was such that participants tended to report attitudes that were consistent with the political lean condition they were exposed to, though this was only statistically significant on the measures

[8] This item was reverse-scored in the analysis below so that higher numbers indicated greater likelihood.

of attitudes toward affirmative action and the Affordable Care Act. Similarly, participants in the influence condition tended to report more support for the policies presented than those in the no influence condition, though this was only statistically significant on the measure of attitudes toward the Affordable Care Act, and was reversed on attitudes toward the death penalty. Finally, we observed a spreading interaction between the manipulations on attitudes toward gun control; however, this was counter to our prediction as participants in the no influence condition were less affected by the political lean manipulation than those in the influence condition (Table 7).

Manipulation Checks

We conducted two *t*-tests to assess the validity of the political lean and metaphor influence manipulations. Participants who viewed conservative-leaning policy descriptions ($M = 5.24$, $SD = 1.44$) viewed them as more conservative than those who reviewed liberal-leaning policy descriptions ($M = 3.11$, $SD = 1.38$), $t\ (295) = -13.00$, $p < 0.001$, indicating that the manipulation was effective. Participants who were told that metaphors in policy descriptions would influence their attitudes ($M = 3.25$, $SD = 1.50$) reported that metaphors were more likely to affect their attitudes than participants in the no influence condition ($M = 3.10$, $SD = 1.39$), but this difference was not statistically significant $t\ (295) = -0.87$, $p = 0.38$. That participants did not differentiate between these conditions will be considered in the interpretation of results.

Table 7
Adjusted Means and Standard Errors for Primary Dependent Measures in Experiment 4

	Political Lean		
	Liberal-Leaning	Conservative-Leaning	
Metaphor Influence Condition	*M* (SE)	*M* (SE)	Total
	Support for Affirmative Action		
No Influence	4.12 (0.16)	3.77 (0.19)	3.94 (0.13)
Influence	4.24 (0.20)	3.80 (0.20)	4.02 (0.14)
Total	4.18 (0.13) [a]	3.78 (0.14) [a]	
	Support for the Affordable Care Act		
No Influence	4.14 (0.16)	3.97 (0.19)	4.05 (0.12) [b]
Influence	4.71 (0.19)	4.16 (0.19)	4.44 (0.14) [b]
Total	4.42 (0.12) [a]	4.06 (0.13) [a]	
	Support for the Death Penalty		
No Influence	4.26 (0.20)	4.06 (0.24)	4.16 (0.15)
Influence	3.86 (0.25)	4.23 (0.25)	4.05 (0.18)
Total	4.06 (0.16)	4.15 (0.17)	
	Support for Gun Control		
No Influence	3.83 (0.19) [†, b]	4.39 (0.23) [†]	4.11 (0.15)
Influence	4.77 (0.23) [a, b]	4.11 (0.23) [a]	4.44 (0.16)
Total	4.30 (0.15)	4.25 (0.16)	
	Positivity toward the Racial Shift		
No Influence	4.48 (0.13)	4.42 (0.16)	4.45 (0.10)
Influence	4.64 (0.16)	4.60 (0.16)	4.62(0.11)
Total	4.56 (0.10)	4.51 (0.11)	

Note. Participant demographics are included as covariates. Means with matching subscripts are statistically different from each other, $p < 0.05$. † indicates a marginally statistically significant difference, $p < 0.10$.

Affirmative Action

A regression model using individual difference measures to predict attitudes toward affirmative action was statistically significant, *Adj.* $R^2 = 0.24$, $F(11, 272) = 9.07$, $p < 0.001$. Participants' gender ($\beta = 0.12$, $p = 0.04$) and political ideology ($\beta = -0.43$, $p < 0.001$) predicted attitudes toward affirmative action and were included in the primary analysis as covariates. We observed a main effect of political lean on attitudes toward affirmative action such that participants in the liberal-leaning condition ($M = 4.18$, $SE = 0.13$) reported more support for affirmative action policies than those in the conservative-leaning condition ($M = 3.78$, $SE = 0.14$), $F(1, 289) = 4.48$, $p = 0.04$, $\eta_p^2 = 0.02$. Participants in the influence condition ($M = 4.02$, $SE = 0.14$) reported more support for affirmative action policies than those in the no influence Condition ($M = 3.94$, $SE = 0.13$), but this was not statistically significant, $F(1, 289) = 0.17$, $p = 0.68$, $\eta_p^2 = 0.00$. There was no observed interaction effect between policy lean condition and metaphor influence condition $F(1, 289) = 0.07$, $p = 0.80$, $\eta_p^2 = 0.00$. When covariates are not included, the main effect of policy lean condition is not statistically significant, $F(1, 293) = 2.50$, $p = 0.12$, $\eta_p^2 = 0.01$.

Affordable Care Act

A regression model using individual difference measures to predict attitudes toward the Affordable Care Act was statistically significant, *Adj.* $R^2 = 0.34$, $F(11, 272) = 14.28$, $p < 0.001$. Participants' political party affiliation ($\beta = -0.11$, $p = 0.03$) and political ideology ($\beta = -0.57$, $p < 0.001$) predicted attitudes toward the Affordable Care Act and were included in the primary analysis as covariates. We observed a main effect of policy lean condition on attitudes toward the Affordable

Care Act such that participants in the liberal-leaning condition (M = 4.42, SE = 0.12) reported more support for the Affordable Care Act than those in the conservative - leaning condition (M = 4.06, SE = 0.13), F (1, 288) = 3.96, p = 0.05, η_p^2 = 0.2. There was also a main effect of metaphor influence condition such that participants in the influence condition (M = 4.44, SE = 0.14) reported more support for the affordable care act than those in the no influence condition (M = 4.05, SE = 0.12), F (1, 288) = 4.42, p = 0.04, η_p^2 = 0.2. There was no observed interaction effect between policy lean condition and metaphor influence condition, F (1, 288) = 1.14, p =0.29, η_p^2 = 0.00. When covariates are not included the main effect of policy lean condition is not statistically significant, F (1, 293) = 1.89, p = 0.17, η_p^2 = 0.01, nor is the main effect of metaphor influence condition, F (1, 293) = 1.22, p = 0.27, η_p^2 = 0.00.

Death Penalty

A regression model using individual difference measures to predict attitudes toward the death penalty was statistically significant, *Adj.* R^2 = 0.12, F (11, 272) = 3.33, p < 0.001. Participants' income (β = 0.18, p <0.001) and political ideology (β = 0.28, p < 0.001) predicted attitudes toward the death penalty were included in the primary analysis as covariates. Participants in the conservative-leaning condition (M = 4.15, SE = 0.17) reported more support for the death penalty than those in the liberal-leaning condition (M = 4.06, SE = 0.16), but this difference was not statistically significant, F (1, 281) = 0.13, p = 0.72, η_p^2 = 0.00. Participants in the no influence condition (M = 4.16, SE = 0.15) reported more support for the death penalty than those in the influence condition (M = 4.05, SE = 0.18), but this

difference was not statistically significant, F (1, 281) = 0.24, p = 0.63, η_p^2 = 0.00. There was also no observed interaction between policy lean condition and metaphor influence condition, F (1, 281) = 1.50, p = 0.22, η_p^2 = 0.01. Removing the covariates from the analysis does not alter the results.

Gun Control

A regression model using individual difference measures to predict attitudes toward the death penalty was statistically significant, *Adj.* R^2 = 0.19, F (11, 271) = 6.93, p < 0.001. Participants' education (β = 0.11, p =0.05), political ideology (β = -0.30, p < 0.001), and political party affiliation (β = -0.18, p =0.002) predicted attitudes toward gun control and were included in the primary analysis as covariates. Participants in the liberal-leaning condition (M = 4.30, SE = 0.15) reported more support for gun control than those in the conservative-leaning condition (M = 4.25, SE = 0.16), F (1, 286) = 0.05, p = 0.83, η_p^2 = 0.00, *ns.* There was also no main effect of metaphor influence condition; though participants in the influence condition (M = 4.44, SE = 0.16) reported more support for gun control than those in the no influence condition (M = 4.11, SE = 0.15), F (1, 286) = 2.27, p = 0.13, η_p^2 = 0.01, *ns.*

There was a statistically significant interaction effect between policy lean condition and metaphor influence condition, F (1, 286) = 7.72, p =0.006, η_p^2 = 0.03. The results of a simple effects test suggest that among participants in the no influence condition, those who reviewed conservative-leaning policy descriptions (M = 4.39, SE = 0.23) reported more support for gun control than those who reviewed liberal- leaning policy descriptions (M = 3.83, SE = 0.19), but this difference was marginally statistically significant, p = 0.06. However, among participants in the

influence condition, those who reviewed liberal-leaning policy descriptions (M = 4.77, SE = 0.23) reported more support for gun control than those who reviewed conservative-leaning policy descriptions (M = 4.11, SE = 0.23), p = 0.04 (*Figure 3*).

Among participants who reviewed liberal leaning policy descriptions, those told that metaphors may influence their attitudes (M = 4.77, SE = 0.23) reported more support for gun control than those told that metaphors would not influence their attitudes (M = 3.83, SE = 0.19), p = 0.002. The same was pattern was not observed among participants who viewed conservative-leaning policy descriptions; participants who were told that metaphors would not influence their attitudes (M = 3.39, SE = 0.23) reported more support for gun control than those told that metaphors may influence their attitudes (M = 4.11, SD = 0.23), p = 0.38. When covariates are not included in the analysis, the interaction is still statistically significant, F (1, 292) = 7.33, p = 0.007, η_p^2 = 0.02.

Racial Shift Attitude

A regression model using individual difference measures to predict attitudes toward the death penalty was statistically significant, *Adj.* R^2 = 0.25, F (11, 272) = 9.70, $p < 0.001$. Participants' political ideology (β = -0.47, $p < 0.001$) predicted attitudes toward the racial shift and was included in the primary analysis as a covariate. Participants in the liberal-leaning condition (M = 4.56, SE = 0.10) reported more positive attitudes toward the impact of the pending racial shift than those in the conservative-leaning condition (M = 4.51, SE = 0.11), but this difference was not statistically significant, F (1, 290) = 0.10, p = 0.75, η_p^2 = 0.00. Participants in the influence condition (M = 4.62, SE =0.11) reported more positive attitudes than those in the no influence condition (M = 4.45, SE =0.10), F (1, 290) =

1.33, p =0.25, η_p^2 = 0.00. There was no observed interaction effect between policy lean and metaphor influence conditions on attitudes toward the racial shift, F (1, 290) = 0.00, p = 0.95, η_p^2 = 0.00.

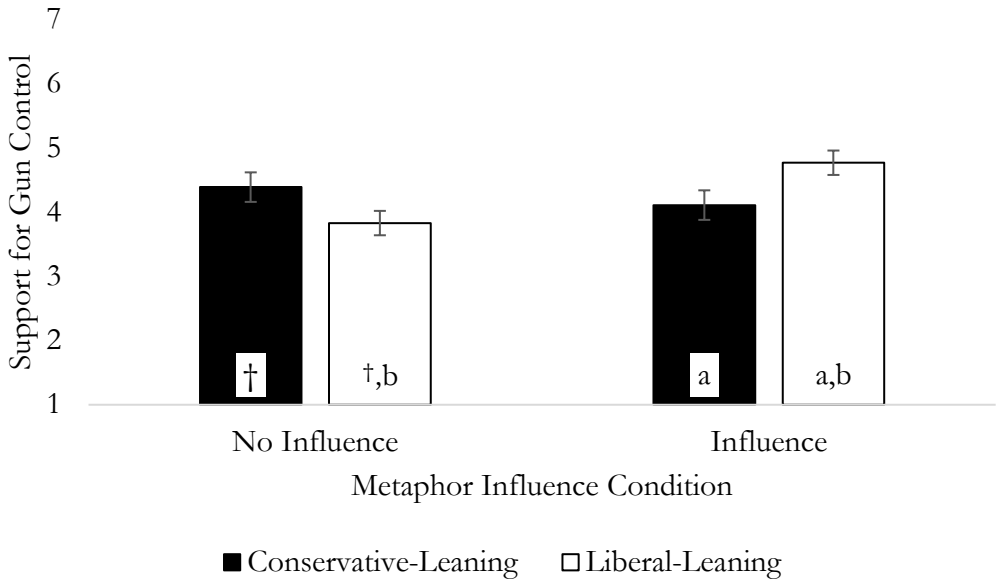

Figure 3. Attitudes toward gun control as a function of policy lean condition and metaphor influence condition. Adjusted for participants' political ideology and political party affiliation. Higher numbers indicate more support for gun control. Matching notations indicate statistically significant differences, $p < 0.05$. † indicates marginally statistically significant differences.

Potential Mediators

As in the previous studies, we examined whether policy lean condition and metaphor influence condition influenced participants' concerns about threats to the American way of life, uncertainty about America's future, ethnic identification, or system-justifying beliefs. None of these potential mediators were statistically significantly affected, p's > 0.27 (see Appendix O for full results). We also examined whether the policy lean and metaphor influence conditions affected attitudes toward

the use of metaphors in political discourse and there were no statistically significant effects on this measure, F (1, 291) = 0.23, p = 0.63, η_p^2 = 0.00.

Discussion

We hypothesized that informing participants that their attitudes could be swayed by metaphors in policy descriptions would limit the influence of these metaphors. The results of this potential intervention were inconclusive and counter to the hypothesis. On two measures, attitudes toward affirmative action and attitudes toward the Affordable Care Act, the policy lean manipulation affected reported attitudes with participants in the liberal-leaning conditions reporting more support for these policies than those in the conservative-leaning condition, when controlling for participants' individual differences. We did observe a spreading interaction effect on attitudes toward gun control in that in the participants in the liberal-leaning condition were more supportive of gun control in the influence as opposed to the no influence conditions, yet there were no differences in attitudes in the conservative-leaning conditions. This finding is contrary to our hypothesis. It appears that telling participants that metaphors might influence their attitudes made them more susceptible.

However, it may also be the case that instead of increasing susceptibility to the metaphorical frames, the influence condition may have had an unanticipated effect on attitudes, though participants did not seem aware of this effect in the manipulation check. While only statistically significant on the measure of attitudes toward the Affordable Care Act, the trend was always such that those in the influence condition tended to report more liberal attitudes than those in the no influence condition. While it is possible that this is the result of demand

characteristics, that this pattern reversed for attitudes toward the death penalty, for which more support is typically a more conservative position, might suggest that something else is at work.

In recent months, there has been much discussion about what political speech should entail, primarily because President Trump's speech is unconventional. Vice President Pence explicitly stated that President Trump is not a "polished politician" and there has been a focus on the idea that what is said is not always what is meant (Blake, 2016). Thus, it might be that believing that political speech cannot influence our attitudes is becoming a more conservative attitude, while believing that political speech is independently influential is a more liberal attitude. It might be that the influence and no influence instructions unintentionally served as an additional political ideology prime, though more empirical research is needed to assess this.

General Discussion

The present dissertation examined whether metaphors in political speech could moderate the effects of the racial shift on attitudes toward diversity policies (Experiments 1 and 2), perceptions of applicants considered under diversity policies (Experiment 3), and whether being informed of the potential influence of metaphors on political attitudes could counter their effects (Experiment 4). In Experiment 1, we found evidence that metaphorical framings, particularly positive-sum metaphors, not only countered the trend toward more conservative attitudes usually observed when White participants learn of the pending racial shift, but elicited more positive attitudes toward affirmative action than in any other condition. While this finding was not replicated in Experiment 2, the overtly destructive nature of the racial shift metaphors used may have overwhelmed any potential effects of the affirmative

action frames, though this requires further investigation. In Experiment 3 we found some evidence that while the metaphorical affirmative action frame may have influenced perceptions of merit, perceptions of applicant quality were unaffected. However, the underpowered nature of this study makes drawing further conclusions premature. Finally, Experiment 4 provides evidence, as in past studies, that metaphorical frames can shift political attitudes and that informing participants of this phenomena does not inoculate them against these frames. Overall, in three out of four experiments we provide evidence that metaphorical framings can influence attitudes and perceptions, even when considering the pending racial shifts.

Implications

Two of the present studies provide evidence that political attitudes can be easily swayed, even during this time of transition when many argue that we have never been more divided. These experiments were able to shift attitudes with very short policy descriptions and while further research is needed, the implication is that regardless of one's political leanings, attitudinal change is possible. Several recent studies suggest that as the United States approaches a racial and ethnic plurality, attitudes toward public policies may become more conservative and predict support for President Trump (Craig & Richeson, 2014b; Major, Blodorn, & Major Blascovich, 2016). This is not a negative outcome on its own, and in general, political attitudes toward highly contentious issues, like marriage equality, have evolved over time along with shifting societal norms. However, the racial shift may be one factor that contributed to the support garnered by President Trump and may help to explain why now, as the emphasis on the threats facing White Americans has

somewhat diminished, his approval/disapproval ratings (43%/51%)[9] are atypical for sitting presidents at this stage (Blanton, 2017).

Based on the present experiments, metaphors may be used to present public policies in ways that are non-threatening. This may counter the effects of fear which can result in suboptimal voter decision making. Importantly, as seen in Experiment 4, this does not only apply to race-related policies, as attitudes toward the Affordable Care Act were also shifted either more conservatively or liberally based on the metaphorical description presented. While the ability to allow voters to see alternative sides to political issues using metaphors is useful in certain circumstances, the potential for abuse is also possible. Ideally, voter decision-making would be based on facts and values, not the metaphors used in their presentation. Our efforts to eliminate the effects of metaphorical framing in Experiment 4 were unsuccessful. Rather than rendering participants less vulnerable to metaphorical framings, telling them of the potential influence of metaphors on their attitudes may have made them more vulnerable. Thus, further research is needed to determine ways to make individuals aware of the potential influence of metaphors so that they can take that into account when considering their attitudes toward political issues, without increasing their susceptibility.

Limitations and Future Directions

Despite pre-testing the affirmative action frame manipulations, the manipulation checks were inconsistent, limiting the conclusions we can draw from

[9] These ratings were reported on March 15th. Some polls report his approval rating as low as 35% from March 26-28, 2017.

the results presented. In Experiment 1, participants had difficulty distinguishing between the zero-sum affirmative action frame and the literal description of affirmative action. We attributed this to the likelihood that participants' lay understanding of affirmative action was that affirmative action is a zero-sum game. We thus predicted that when participants were forced to choose between the positive-sum and zero-sum metaphorical descriptions (Experiment 2 and 3) they would be able to correctly identify their assigned condition. This prediction was not supported in Experiment 2 or Experiment 3.

In both experiments, participants in all conditions defaulted to selecting the positive-sum metaphorical description of affirmative action as the one they had viewed. This was the case even when participants were asked to indicate whether the affirmative action description they read was more like a positive-sum or zero-sum game (Experiment 3). It may be the case that participants were concerned that "Affirmative action disadvantages Whites" was not a socially desirable response and thus opted to select the option, "Affirmative action evens the playing field for minorities" and report that it was more of a positive-sum game. However, this pattern could also be explained by the way the options were phrased. The positive-sum option included a sports metaphor, "evens the playing field," while the zero-sum option did not, "disadvantages Whites." It might be that participants remembered reading about college admissions being a race, but did not remember the nuance of how that race was affected by affirmative action, and thus selected the option that seemed most related to a race. In the future, altering these options so that they both include metaphors, or both are literal, would allow us to eliminate this

as a potential explanation for the problems observed in the manipulation checks and better understand the true effects of these metaphorical frames.

This dissertation also leaves several avenues for further research unexplored. Past research on persuasion and attitude change suggests that we can be persuaded by one of two While we found evidence that metaphorical framings can shift political attitudes, it is not clear how long these effects would persist, or if they would be more impactful with repeated exposure. In the present dissertation, participants were only exposed to the metaphorical frames once. When naturally exposed to political content it is more likely that individuals will experience repeated exposure, particularly if exposure is through the news media which follows a 24-hour cycle and frequently repeats content. To examine this, a longitudinal study could be conducted to assess the influence of metaphorical framings over time, particularly as we quickly approach racial and ethnic plurality.

Recruiting participants that are not as familiar with politics would also be an advantage to this research program, particularly in better understanding the results of the experiments that recruited online participants. In these studies, participants had the ability to search for experiments based on their interests. For example, if a participant had searched for "psychology," "policy," or "research," Experiments 2 and 4 would have been presented in their search results. This creates the potential for selection bias and those already interested in these topics might have been more likely to participate which could be associated with other factors we did not account for in our results. Recruiting participants that are younger and have not had as much exposure to political content or who are from countries in which they would not

have been exposed to American politics would help to clarify the effects of metaphors on political attitudes.

Additionally, there was limited representation of conservatives and Republicans across the studies, thus recruiting more participants from these populations, or recruiting participants who have yet to align with a political party or ideology, would help to ensure that the results are generalizable. Similarly, recruiting a more racially diverse sample would allow us to investigate if people of color react similarly to racial shift information and metaphorical frames. We would speculate that being presented with information that one's group would no longer be a numerical minority might be empowering. However, this could lead to either more liberal attitudes toward diversity policies as individuals recall some of the difficulties that racial and ethnic minorities have faced, and likely will continue to face, or more conservative attitudes as diversity policies targeting racial and ethnic minorities may be viewed as no longer needed. Further investigation is needed to assess this.

Another limitation of the present dissertation is that in general, the metaphors used in the present experiments were novel and generated by the researchers. It is unclear whether more conventional metaphors, such as the "war on drugs" or "trickle-down economics" would have elicited similar results. In Experiment 4, the death penalty was described using the more conventional metaphor of justice needing to "balance the scales." This was the only policy on which we did not observe statistically significant effects. It could be that the death penalty has been such a longstanding issue in the United States that attitudes were not as easily swayed, or that there was something about the metaphor used that was not persuasive. It is also possible that participants are so accustomed to justice being

described in terms of "balance" that they did not realize that this was a metaphorical description, but more research is needed to assess whether this would apply to other, more familiar, metaphors.

Finally, as previously mentioned, most exposure to political content is through the news and broadcast media which is often presented in multiple mediums. Typically, individuals are exposed to visual, audio, and written (through captions) political content simultaneously. The present dissertation was limited to written metaphors which may not be as salient, or as familiar a presentation, as visual and verbal metaphors, like those presented in political advertisements. Future research should examine if the medium of presentation influences how persuasive the metaphors are. It is also important to assess whether presenting racial shift information in the form of a video would moderate feelings of threat.

Conclusion

Issues of race and politics are considered some of the most divisive topics in the United States. Parents urge their children not to discuss such things over dinner and many dread the holidays when they will yet again encounter distant relatives who they see as unreachable, yet this dissertation investigated both topics and provides evidence for hope. Since the 2016 presidential election, people have been encouraged to "cross the aisle" and exit our political "echo chambers." However, doing this may be difficult, especially if the effort is perceived as futile. This dissertation presents some of the first evidence that even in this time of transition and uncertainty, minds can be changed. With brief passages, we were able to change the conversation around one of the most contentious race-related policies in the United States. This provides evidence that inter-party conversations can be effective

and persuasive, and perhaps, that fears surrounding the demographic and political shifts can be overcome. Former President Barack Obama once said, "we have to remember that we're actually all on one team…We're not Democrats first, we're not Republicans first, we are Americans first. We're patriots first. We all want what's best for this country" (President Obama, 2016). This dissertation provides further evidence that using metaphors to present political content can moderate changes in attitudes that are tied to transitions in the United States. While we aim to find ways to prevent the unintended influence of metaphors on political attitudes, they can be used intentionally to foster dialogue between people with differing political views.

Appendix A
Adjusted Means and Standard Errors for Primary Dependent Measures in Study 1 with People of Color Included in Analyses

	Affirmative Action Frame			
	Literal	Positive-Sum	Zero-Sum	
Projection Condition	*M* (SE)	*M* (SE)	*M* (SE)	Total
Attitudes toward Affirmative Action				
Control	4.38(0.22)	4.26 (0.24)	4.29 (0.22)	4.31 (0.13)
Racial Shift	4.15 (0.22)	4.58 (0.22)	4.20 (0.23)	4.31 (0.13)
Total	4.27 (0.15)	4.42 (0.16)	4.25 (0.16)	
Likelihood of Voting for Affirmative Action Proponents				
Control	5.38 (0.15)	5.16 (0.16)	5.28 (0.15)	5.27 (0.09)
Racial Shift	5.17 (0.15)	5.36 (0.15)	5.36 (0.16)	5.30 (0.09)
Total	5.27(0.11)	5.26 (0.11)	5.32 (0.11)	
Overall Policy Attitudes				
Control	0.03 (0.07)	0.08 (0.08)	-0.01 (0.07)	0.03 (0.04)
Racial Shift	0.05 (0.07)	-0.04 (0.07)	0.01 (0.07)	0.01 (0.04)
Total	0.04 (0.05)	0.02 (0.05)	0.00 (0.05)	
Race-Related Policy Attitudes				
Control	-0.02 (0.08)	0.02 (0.09)	-0.01 (0.08)	0.11 (0.06)
Racial Shift	0.07 (0.08)	-0.03 (0.08)	-0.10 (0.08)	0.00 (0.06)
Total	0.03 (0.06)	-0.01 (0.06)	-0.05 (0.06)	-0.01(0.03) [a]
Race-Neutral Policy Attitudes				
Control	0.01 (0.08)	-0.01 (0.08)	-0.16 (0.08)	0.08 (0.06)
Racial Shift	-0.01 (0.08)	-0.07 (0.08)	0.04 (0.08)	0.00 (0.06)
Total	0.00 (0.06)	-0.04 (0.06)	0.01 (0.06)	-0.008(0.03) [a]

Note. Means are adjusted for participant demographics and prior attitudes toward affirmative action where applicable. On the affirmative action measures, higher numbers indicate greater levels of support. On the overall, race-related, and race-neutral measures, higher numbers indicate more conservative attitudes. Means with matching superscripts are statistically different from each other, $p < 0.05$.

Appendix B
Demographic Information on Participants in Study 1 Pre-Testing

	n
Gender	
Man	7
Woman	28
Total	35
Race	
White	21
Black	0
Asian	12
Latino/Hispanic	0
Biracial/Multiracial	1
Not listed	1
Total	35
English Proficiency	
Average	1
Good	4
Excellent	30
Total	35
Political Party Affiliation	
Democrat	16
Republican	1
Independent	6
Not listed	5
Total	28
Measure	*M* (*SD*)
Age	18.63 (0.81)
Social Status	5.31 (1.08)
Political Ideology (1= Extremely Liberal to 7 = Extremely Conservative)	2.83 (0.79)

Note. Totals may vary as participants were free to skip any question they wished.

Appendix B
Study 1 Pre-testing Results for Affirmative Action Frame

Affirmative Action						
	Positive-Sum Metaphor	Zero-Sum Metaphor				
Measure	*M (SD)*	*M (SD)*	*df*	*F*	*p*	p^*
Clarity	3.06 (1.03)	3.46 (0.92)	4,136	8.49	< 0.001	0.14
Accuracy	2.94 (0.94)	2.23 (1.03)	4,136	15.62	< 0.001	0.06
Concise	2.63 (1.06)	2.89 (1.05)	4,136	19.20	< 0.001	>0.95
Gender	2.94 (0.59)	2.80 (0.53)	4,136	1.15	0.34	0.054
Tone	3.29 (0.71)	2.54 (0.92)	4,136	20.26	< 0.001	0.003
Political Ideology	2.71 (0.67)	3.31 (0.93)	4,136	16.96	< 0.001	0.25

Note. Multiple metaphors were tested and submitted to a one-way repeated measures ANOVA for each dependent measure above. While the omnibus test may have been statistically significant, the difference between the selected positive-sum and zero-sum metaphor may not have been statistically significant, thus p^* is reported as the *p*-value of the simple effects test between the selected metaphors, unless the omnibus test was not statistically significant, in which case p^* is not reported.

Appendix C

Analysis of the Affirmative Action Qualitative Responses in Study 1

	Affirmative Action Frame			
	Literal	Positive-Sum	Zero-Sum	
Projection Condition	*M* (*SE*)	*M* (*SE*)	*M* (*SE*)	Total
Informative (α = 0.79)				
Control	4.33 (0.16)	4.78 (0.17)	4.57 (0.16)	4.56 (0.09)
Racial Shift	4.54 (0.16)	4.66 (0.16)	4.35 (0.15)	4.52 (0.09)
Total	4.44 (0.11)	4.72 (0.12)	4.46 (0.11)	
Persuasive (α = 0.84)				
Control	3.63 (0.18)	3.71 (0.20)	3.98 (0.19)	3.77 (0.11)
Racial Shift	3.68 (0.18)	3.90 (0.19)	3.85 (0.18)	3.81 (0.11)
Total	3.65 (0.13)	3.80 (0.14)	3.91 (0.13)	
Political Leaning (α = 0.71)				
Control	4.37 (0.19)	4.14 (0.20)	4.10 (0.20)	4.21 (0.11)
Racial Shift	4.44 (0.19)	4.04 (0.20)	4.10 (0.19)	4.19 (0.11)
Total	4.41 (0.14)	4.09 (0.13)	4.10 (0.13)	
Attitude toward Affirmative Action (α = 0.79)				
Control	4.80 (0.14)	4.93 (0.15)	4.87 (0.14)	4.87 (0.08)
Racial Shift	4.76 (0.14)	4.94 (0.14)	4.89 (0.13)	4.87 (0.08)
Total	4.78 (0.10)	4.94 (0.10)	4.89(0.10)	

Note. Two raters, who were blind to the experimental conditions and the hypotheses, coded the descriptions of affirmative action that were provided by participants to assess how informative and persuasive they were, as well as the extent to which they reflected conservative or liberal ideologies, and support for affirmative action. Ratings were averaged and submitted to a two-way ANCOVA with the indicated dependent measure, affirmative action frame and projection condition as fixed factors, and prior attitude toward affirmative action as the covariate. Higher numbers indicate higher levels of measure. On the political leaning measure, higher numbers indicate more conservative attitudes. On the attitude toward affirmative action measure, higher numbers indicate greater support.

Appendix D
Analysis of Potential Mediators in Study 1

Source	*df*	*F*	*p*	η_p^2
Modern Racism Scale				
Affirmative Action Frame	(2,233)	0.07	0.93	0.00
Projection	(1,233)	1.28	0.26	0.01
Interaction	(2, 233)	0.03	0.97	0.00
Feelings of Threat to the American System				
Affirmative Action Frame	(2,233)	0.24	0.19	0.00
Projection	(1,233)	0.17	0.68	0.00
Interaction	(2, 233)	0.85	0.43	0.001
Uncertainty about America's Future				
Affirmative Action Frame	(2,232)	0.20	0.82	0.00
Projection	(1,232)	0.96	0.33	0.00
Interaction	(2, 232)	1.15	0.32	0.01
Feelings of Threat toward Status of White Americans				
Affirmative Action Frame	(2,233)	0.15	0.86	0.00
Projection	(1,233)	9.44	0.002	0.04
Interaction	(2, 233)	0.22	0.80	0.00
Ethnic Identification with Whiteness				
Affirmative Action Frame	(2,233)	1.82	0.17	0.02
Projection	(1,233)	0.23	0.64	0.00
Interaction	(2, 233)	0.73	0.48	0.01
System Justifying Beliefs				
Affirmative Action Frame	(2,233)	0.33	0.72	0.00
Projection	(1,233)	1.12	0.29	0.01
Interaction	(2, 233)	0.49	0.61	0.00
Agreement with Affirmative Action Metaphor				
Affirmative Action Frame	(2,231)	0.72	0.49	0.01
Projection	(1,231)	0.11	0.74	0.00
Interaction	(2, 231)	0.24	0.79	0.00

Note. Feelings of threat toward the status of White Americans is further explored in Experiment 2.

Appendix E
Adjusted Means and Standard Errors for Dependent Measures in Study 2 with People of Color Included

	Affirmative Action Frame		
	Positive-Sum	Zero-Sum	
Racial Shift Frame	*M* (SE)	*M* (SE)	Total
Attitudes toward Affirmative Action			
Literal	4.23 (0.20)	4.28 (0.20)	4.26 (0.14)
Optimistic	4.20 (0.19)	4.15 (0.20)	4.17 (0.14)
Pessimistic	4.27 (0.19)	4.20 (0.21)	4.23 (0.14)
Total	4.23 (0.11)	4.21 (0.12)	
Likelihood of Voting for Affirmative Action Proponents			
Literal	4.45 (0.19)	4.66 (0.19)	4.56 (0.14)
Optimistic	4.68 (0.18)	4.40 (0.19)	4.54(0.13)
Pessimistic	4.40 (0.18)	4.58 (0.20)	4.49 (0.13)
Total	4.51 (0.12)	4.55 (0.11)	
Attitude toward the Impact of the Racial Shift			
Literal	4.28 (0.19)	4.43 (0.18)	4.35 (0.13)
Optimistic	4.20 (0.18)	4.04 (0.19)	4.12 (0.13)
Pessimistic	3.96 (0.18)	4.33 (0.20)	4.15 (0.13)
Total	4.15 (0.11)	4.27 (0.11)	
Overall Policy Attitudes			
Literal	0.00 (0.07)	-0.03 (0.07)	-0.01 (0.05)
Optimistic	-0.04 (0.07)	0.09 (0.06)	0.02 (0.05)
Pessimistic	0.03 (0.07)	-0.04 (0.06)	-0.01 (0.05)
Total	-0.01 (0.04)	0.01 (0.04)	
Race-Related Policy Attitudes			
Literal	0.02 (0.09)	-0.09 (0.09)	-0.04 (0.06)
Optimistic	-0.00 (0.09)	0.07 (0.08)	0.04 (0.06)
Pessimistic	0.03 (0.09)	-0.03 (0.09)	-0.00 (0.06)
Total	0.02 (0.05)	-0.02 (0.05)	-0.00(0.04) [a]
Race-Neutral Policy Attitudes			
Literal	-0.03 (0.08)	0.07 (0.08)	0.02 (0.06)
Optimistic	-0.10 (0.08)	0.12 (0.08)	0.01 (0.06)
Pessimistic	0.02 (0.08)	-0.05 (0.08)	-0.01(0.06)
Total	-0.04 (0.05)	0.05 (0.05)	0.01 (0.03) [a]

Note. Means are adjusted to control for participant demographics. On the affirmative action measures, and attitudes toward the racial shift higher numbers indicate greater levels of support (positivity). On the overall, race-related, and race-neutral measures, higher numbers indicate more conservative attitudes.

Appendix F
Demographic Information on Participants in Study 2 Pre-Testing Studies

	Affirmative Action Frame (*N* = 30)	Racial Shift Frame (*N* = 30)
	n	*n*
Gender		
Man	17	*18*
Woman	13	*12*
Race		
White	22	19
Black	2	5
Asian	4	5
Latino/Hispanic	2	1
Education		
High School	1	4
Vocational or 2 Year Technical School	2	2
Some College	12	8
College Graduate	11	14
Advanced degree	3	2
Income		
$10,000 or less	3	2
$10,000 to $29,999	7	11
$29,000 to $49,999	9	6
$50,000 to $74,999	6	5
$75,000 or more	5	4
Unreported	0	2
English Proficiency		
Good	1	1
Excellent	29	29
Political Party Affiliation		
Democrat	9	10
Republican	4	6
Independent	12	10
Unlisted	5	4
Measure	*M*(*SD*)	M(*SD*)
Age	34.33 (9.72)	32.34 (7.31)
Political Ideology (1= Extremely Liberal to 7 = Extremely Conservative)	3.07 (1.48)	3.07 (1.55)
Bounce Rate	21%	12%
Completion Rate	86%	79%

Appendix F
Study 2 Pre-testing Results for Metaphorical Framing Manipulations

Affirmative Action Metaphors						
	Positive-Sum Metaphor	Zero-Sum Metaphor				
Measure	*M (SD)*	*M (SD)*	*df*	*F*	*p*	p^*
Clarity	3.77 (1.01)	3.80 (1.00)	4,116	5.10	< 0.001	>0.95
Accuracy	3.60 (0.72)	3.13 (1.14)	4,116	4.12	< 0.001	0.14
Concise	3.27 (1.20)	3.43 (1.04)	4,116	4.71	< 0.001	0.93
Gender	2.90 (0.76)	2.80 (0.81)	4,116	2.80	< 0.001	0.98
Tone	3.77 (0.68)	2.93 (0.74)	4,116	4.02	< 0.001	< 0.001
Political Ideology	2.33 (0.66)	2.87 (0.94)	4,116	3.22	< 0.001	0.05
Racial Shift Metaphors						
	Optimistic Metaphor	Pessimistic Metaphor				
Measure	*M (SD)*	*M (SD)*	*df*	*F*	*p*	p^*
Clarity	3.43 (1.17)	3.43 (1.22)	4,116	6.66	< 0.001	>0.95
Accuracy	3.37 (1.00)	2.93 (1.17)	4,116	5.98	< 0.001	0.23
Concise	3.33 (1.09)	3.33 (1.06)	4,115	8.58	< 0.001	>0.95
Gender	2.60 (0.72)	2.48 (0.99)	4,115	1.50	0.06	
Tone	2.87 (0.82)	2.40 (1.00)	4,116	3.78	< 0.001	0.91
Political Ideology	3.03 (0.93)	3.23 (1.17)	4,116	2.72	< 0.001	0.91

Note. Multiple metaphors were tested and submitted to a one-way repeated measures ANOVA for each dependent measure above. While the omnibus test may have been statistically significant, the difference between the selected metaphors may not have been statistically significant, thus p^* is reported as the *p*-value of the simple effects test between the selected metaphors, unless the omnibus test was not statistically significant, in which case p^* is not reported.

Appendix G

Analysis of the Affirmative Action Qualitative Responses in Study 2

	Affirmative Action Frame		
	Positive-Sum	Zero-Sum	
Projection Frame	*M* (*SE*)	*M* (*SE*)	Total
Informative (α = 0.81)			
Literal	3.81 (0.16)	3.67 (0.15)	3.74 (0.11)
Optimistic	3.58 (0.15)	3.88 (0.15)	3.73 (0.11)
Pessimistic	3.96 (0.15)	3.75 (0.15)	3.86 (0.11)
Total	3.78 (0.09)	3.77 (0.09)	
Positive Tone (α = 81)			
Literal	4.10 (0.12)	3.85 (0.13)	3.97 (0.09)
Optimistic	4.09 (0.13)	4.05 (0.12)	4.07 (0.09)
Pessimistic	4.15 (0.13)	4.06 (0.13)	4.11 (0.09)
Total	4.11 (0.07)	3.99 (0.07)	
Political Leaning (α = 0.80)			
Literal	3.67 (0.15)	3.85 (0.15)	3.76 (0.11)
Optimistic	3.66 (0.15)	3.68 (0.15)	3.67 (0.11)
Pessimistic	3.71 (0.15)	3.61 (0.15)	3.66 (0.11)
Total	3.68 (0.09)	3.71 (0.09)	

Note. Two raters, who were blind to the experimental conditions and the hypotheses, coded the descriptions of affirmative action provided by participants on the above measures. Ratings were averaged and submitted to a two-way ANCOVA with the indicated dependent measure, affirmative action frame and projection frame condition as fixed factors, and participant demographics as covariates. Higher numbers indicate higher levels of each measure. On the political leaning measure, higher numbers indicate more conservative attitudes. Means with matching superscripts are statistically different from each other, $p < 0.05$. † indicates marginally statistically significant differences, $p < 0.10$.

Appendix G

Analysis of the Affirmative Action Qualitative Responses in Study 2 (continued)

	Affirmative Action Frame		
	Positive-Sum	Zero-Sum	
Projection Frame	*M* (*SE*)	*M* (*SE*)	Total
Support for Affirmative Action (α = 0.82)			
Literal	4.35 (0.15)	4.08 (0.15)	4.21 (0.11)
Optimistic	4.21 (0.15)	4.29 (0.15)	4.25 (0.10)
Pessimistic	4.20 (0.15)	4.22 (0.15)	4.21 (0.11)
Total	4.25 (0.09)	4.19 (0.09)	
Positivity toward Whites (α = 0.45)			
Literal	4.14 (0.05)	4.12 (0.05)	4.13 (0.04)
Optimistic	4.12 (0.05)	4.13 (0.05)	4.12 (0.04)
Pessimistic	4.05 (0.05)	4.10 (0.05)	4.07 (0.04)
Total	4.10 (0.03)	4.10 (0.03)	
Positivity toward People of Color (α = 0.74)			
Literal	3.88 (0.08)	3.80 (0.09)	3.84 (0.06)
Optimistic	3.73 (0.08)	3.77 (0.08)	3.75 (0.06)
Pessimistic	3.88 (0.08)	3.71 (0.08)	3.80 (0.06)
Total	3.83 (0.05)	3.76(0.05)	

Appendix G

Analysis of the Racial Shift Qualitative Responses in Study 2

	Affirmative Action Frame		
	Positive-Sum	Zero-Sum	
Projection Frame	*M* (*SE*)	*M* (*SE*)	Total
Informative (α = 0.74)			
Literal	3.92 (0.14)	3.72 (0.14)	3.82 (0.10)
Optimistic	3.71 (0.14)	4.10 (0.14)	3.90 (0.10)
Pessimistic	3.92 (0.14)	3.83 (0.14)	3.87 (0.10)
Total	3.85 (0.08)	3.88 (0.08)	
Positive Tone (α = 0.73)			
Literal	3.89 (0.08)	3.98 (0.08)	3.93 (0.06)
Optimistic	4.01 (0.08)	3.96 (0.08)	3.99 (0.06)
Pessimistic	3.87 (0.08)	3.98 (0.08)	3.92 (0.06)
Total	3.92 (0.05)	3.97 (0.05)	
Political Leaning (α = 0.74)			
Literal	4.09 (0.10)	4.04 (0.10)	4.87 (0.07)
Optimistic	3.87 (0.10)	4.01 (0.10)	4.87 (0.07)
Pessimistic	4.16 (0.10)	4.05 (0.10)	4.19 (0.07)
Total	4.03 (0.06)	4.04 (0.06)	

Note. Two raters, who were blind to the experimental conditions and the hypotheses, coded the descriptions of the racial shift provided by participants on the above measures. Ratings were averaged and submitted to a two-way ANCOVA with the indicated dependent measure, affirmative action frame and projection frame condition as fixed factors, and participant demographics as covariates. Higher numbers indicate higher levels of each measure. On the political leaning measure, higher numbers indicate more conservative attitudes. Means with matching superscripts are statistically different from each other, $p < 0.05$. † indicates marginally statistically significant differences, $p < 0.10$. There was a marginally statistically significant interaction between affirmative action frame and racial shift frame on the informative measure, F (2, 298) = 2.60, p = 0.08, 0.02.

Appendix G

Analysis of the Racial Shift Qualitative Responses in Study 2 (continued)

	Affirmative Action Frame		
	Positive-Sum	Zero-Sum	
Projection Frame	*M* (*SE*)	*M* (*SE*)	Total
Positive Attitude toward the Racial Shift (α = 0.80)			
Literal	3.93 (0.09)	3.96 (0.09)	3.95 (0.06)
Optimistic	4.10 (0.09)	4.00 (0.08)	4.05 (0.06)
Pessimistic	3.87 (0.09)	3.97 (0.09)	3.92 (0.06)
Total	3.97 (0.05)	3.97 (0.05)	
Positivity toward Whites (α = 0.70)			
Literal	4.06 (0.05)	4.03 (0.05)	4.05 (0.04)
Optimistic	4.04 (0.05)	4.16 (0.05)	4.10 (0.04)
Pessimistic	4.11 (0.05)	4.00 (0.05)	4.05 (0. 04)
Total	4.07 (0.03)	4.06 (0.03)	
Positivity toward People of Color (α = 0.71)			
Literal	3.89 (0.06)	3.94 (0.06)	3.91 (0.04)
Optimistic	3.87 (0.06)	3.93 (0.05)	3.90 (0.04)
Pessimistic	3.82 (0.06)	3.98 (0.06)	3.90 (0.04)
Total	3.86 (0.03) [a]	3.95 (0.03) [a]	

Note. Two raters, who were blind to the experimental conditions and the hypotheses, coded the descriptions of the racial shift provided by participants on the above measures. Ratings were averaged and submitted to a two-way ANCOVA with the indicated dependent measure, affirmative action frame and projection frame condition as fixed factors, and participant demographics as covariates. Higher numbers indicate higher levels of each measure.

Appendix H
Analysis of Potential Mediators in Study 2

Source	*df*	*F*	*p*	η_p^2
Feelings of Threat to the American System				
Racial Shift Frame	(2, 305)	1.73	0.18	0.01
Affirmative Action Frame	(1, 305)	2.56	0.11	0.01
Interaction	(2, 305)	0.25	0.78	0.00
Uncertainty about America's Future				
Racial Shift Frame	(2, 305)	0.31	0.73	0.00
Affirmative Action Frame	(1, 305)	0.24	0.63	0.00
Interaction	(2, 305)	2.15	0.12	0.01
Feelings of Threat toward Status of White Americans				
Racial Shift Frame	(2, 305)	0.78	0.46	0.01
Affirmative Action Frame	(1, 305)	0.46	0.50	0.00
Interaction	(2, 305)	0.23	0.79	0.00
Ethnic Identification with Whiteness				
Racial Shift Frame	(2, 304)	0.34	0.71	0.00
Affirmative Action Frame	(1, 304)	2.31	0.13	0.01
Interaction	(2, 304)	0.02	0.98	0.00
System Justifying Beliefs				
Racial Shift Frame	(2, 304)	0.63	0.53	0.00
Affirmative Action Frame	(1, 304)	2.10	0.15	0.01
Interaction	(2, 304)	0.49	0.61	0.00
Agreement with Racial Shift Metaphor				
Racial Shift Frame	(2, 305)	3.45	0.03	0.02
Affirmative Action Frame	(1, 305)	0.35	0.56	0.01
Interaction	(2, 305)	0.38	0.68	0.00

Appendix I
Instructions Participants Received in the Positive-Sum Metaphor Condition

Dear Student,

In cooperation with the Admissions Office, we are working to assess the qualifications that current students believe are necessary to be successful at Tufts University. To do this, we are asking current students to evaluate the Common Application of a student that previously applied to Tufts University. We will not disclose whether or not this student was actually admitted, but instead wish to understand your perspective on their qualifications. These students have consented to having their applications used for research purposes.

Please read all materials carefully and keep in mind that Tufts University values diversity in all its forms on campus. As the nation becomes increasingly diverse in terms of age and racial composition we wish to ensure that Tufts University is an inclusive place of learning and free expression. To encourage diversity and enrich the student body we employ affirmative action in our admissions decisions.

To us, affirmative action is one way in which we can try to increase campus diversity. To do this we treat minority status as an additional factor when making admissions decisions. In the past, minorities and underrepresented students have faced discrimination and have had to work a lot harder to get into colleges. To make this easier to conceptualize, it was basically like if everyone was racing toward a college acceptance on a track, where the people in the inner lanes have a shorter distance to run than people in the outer lanes; majority group members were in the inner lanes to get into colleges and Black people, for example, were in the outer lanes. This made the chance that minorities would get into college a lot lower, and minority students were therefore underrepresented at most colleges. Now, to make up for this, colleges like Tufts University, give special consideration to Black students' applications. *It's like letting minorities start from further down in their lane on the outside of the track so that everyone has to run the same distance.*

Please let the experimenter know if you have any questions and thank you again for your participation.

Sincerely,
The Research Team

Appendix I
Instructions Participants Received in the Zero-Sum Metaphor Condition

Dear Student,

In cooperation with the Admissions Office, we are working to assess the qualifications that current students believe are necessary to be successful at Tufts University. To do this, we are asking current students to evaluate the Common Application of a student that previously applied to Tufts University. We will not disclose whether or not this student was actually admitted, but instead wish to understand your perspective on their qualifications. These students have consented to having their applications used for research purposes.

Please read all materials carefully and keep in mind that Tufts University values diversity in all its forms on campus. As the nation becomes increasingly diverse in terms of age and racial composition we wish to ensure that Tufts University is an inclusive place of learning and free expression. To encourage diversity and enrich the student body we employ affirmative action in our admissions decisions.

To us, affirmative action is one way in which we can try to increase campus diversity. To do this we treat minority status as an additional factor when making admissions decisions. In the past, minorities and underrepresented students have faced discrimination and have had to work a lot harder to get into colleges. To make this easier to conceptualize, it was basically like if everyone was racing toward a college acceptance on a track, where the people in the inner lanes have a shorter distance to run than people in the outer lanes; majority group members were in the inner lanes to get into colleges and Black people, for example, were in the outer lanes. This made the chance that minorities would get into college a lot lower, and minority students were therefore underrepresented at most colleges. Now, to make up for this, colleges like Tufts University, give special consideration to Black students' applications. *It's like switching the places of minorities and Whites, so that Whites are in the outer lanes and minorities are in the inner lanes.*

Please let the experimenter know if you have any questions and thank you again for your participation.

Sincerely,
The Research Team

Appendix J
Example of Common Application Participants Viewed (page 1)

THE COMMON APPLICATION

FIRST-YEAR APPLICATION

APPLICANT

Legal Name [redacted] Dionne [redacted]
*Last/Family/Sur (Enter name **exactly** as it appears on official documents.) First/Given Middle (complete) Jr., etc.*

Preferred name, if not first name (only one) _____ Former last name(s) _____

Birth Date 07/01/1998 *mm/dd/yyyy* ○ Female ○ Male US Social Security Number, if any XXX-XX-XXXX
Required for US Citizens and Permanent Residents applying for financial aid via FAFSA

Preferred Telephone ○ Home ○ Cell Home (XXX) XXX-XXXX *Area/Country/City Code* Cell (XXX-) XXXX *Area/Country/City Code*

E-mail Address [redacted] IM Address [redacted]

Permanent home address [redacted] *Number & Street* *Apartment #*

Lowell	Middlesex	MA	USA	01852
City/Town	*County or Parish*	*State/Province*	*Country*	*ZIP/Postal Code*

If different from above, please give your current mailing address for all admission correspondence. (from _____ to _____) *(mm/dd/yyyy) (mm/dd/yyyy)*

Current mailing address _____ *Number & Street* *Apartment #*

City/Town County or Parish State/Province Country ZIP/Postal Code

If your current mailing address is a boarding school, include name of school here: _____

FUTURE PLANS

Your answers to these questions will vary for different colleges. If the online system did not ask you to answer some of the questions you see in this section, this college chose not to ask that question of its applicants.

College Tufts University Deadline January 1, 2016 *mm/dd/yyyy*

Entry Term: ● Fall (Jul-Dec) ○ Spring (Jan-Jun)

Decision Plan Regular Decision

Academic Interests Political Science, Peace and Justice Studies

Career Interest Lawyer

Do you intend to apply for need-based financial aid? ○ Yes ● No
Do you intend to apply for merit-based scholarships? ● Yes ○ No
Do you intend to be a full-time student? ● Yes ○ No
Do you intend to enroll in a degree program your first year? ● Yes ○ No
Do you intend to live in college housing? Yes
What is the highest degree you intend to earn? Bachelor of Arts

DEMOGRAPHICS

Citizenship Status U.S. Citizen

Non-US Citizenship(s) _____

Birthplace Boston *City/Town* MA *State/Province* USA *Country*

Years lived in the US? 18 Years lived outside the US? 0

Language Proficiency (Check all that apply.)
S(Speak) R(Read) W(Write) F(First Language) H(Spoken at Home)

	S	R	W	F	H
English	○	○	○	○	○
_____	○	○	○	○	○
_____	○	○	○	○	○

Optional The items with a gray background are optional. No information you provide will be used in a discriminatory manner.

Religious Preference Undecided

US Armed Services veteran status Not a veteran

1. Are you Hispanic/Latino?
○ Yes, Hispanic or Latino (including Spain) ● No If yes, please describe your background.

2. Regardless of your answer to the prior question, please indicate how you identify yourself. (Check one or more and describe your background.)
○ American Indian or Alaska Native (including all Original Peoples of the Americas)
Are you Enrolled? ○ Yes ○ No If yes, please enter Tribal Enrollment Number
○ Asian (including Indian subcontinent and Philippines)
● Black or African American (including Africa and Caribbean)
○ Native Hawaiian or Other Pacific Islander (Original Peoples)
○ White (including Middle Eastern)

Appendix J
Example of Common Application Participants Viewed (page 2)

EDUCATION

Secondary Schools

Most recent secondary school attended [redacted]

Entry Date 09/2012 (mm/yyyy) Graduation Date 06/21/2016 (mm/dd/yyyy) School Type: ● Public ○ Charter ○ Independent ○ Religious ○ Home School

Address [redacted] (Number & Street) CEEB/ACT Code 221218

Lowell	MA	USA	01852
City/Town	State/Province	Country	ZIP/Postal Code

Counselor's Name [redacted] Counselor's Title Guidance Counselor

E-mail [redacted] Telephone (XXX) XXX-XXXX Ext. Fax (XXX) XXX-XXXX

(Area/Country/City Code / Number / Ext. / Area/Country/City Code / Number)

List all other secondary schools you have attended since 9th grade, including academic summer schools or enrichment programs hosted on a secondary school campus:

School Name & CEEB/ACT Code	Location (City, State/Province, ZIP/Postal Code, Country)	Dates Attended (mm/yyyy)

Please list any community program/organization that has provided free assistance with your application process:

If your education was or will be interrupted, please indicate so here and provide details in the Additional Information section:

Colleges & Universities List all college/university affiliated courses you have taken since 9th grade and mark all that apply: taught on college campus (CO); taught on high school campus, excluding AP/IB (HS); taught online (ON); college credit awarded (CR); transcript available (TR); degree candidate (DC).

College/University Name & CEEB/ACT Code	Location (City, State/Province, ZIP/Postal Code, Country)	CO	HS	ON	CR	TR	DC	Dates Attended mm/yyyy – mm/yyyy	Degree Earned
		○	○	○	○	○	○		
		○	○	○	○	○	○		
		○	○	○	○	○	○		

If you indicated that a transcript is available, please have an official copy sent to your colleges as soon as possible.

ACADEMICS

The self-reported information in this section is not intended to take the place of your official records. Please note the requirements of each institution to which you are applying and arrange for official transcripts and score reports to be sent from your secondary school and the appropriate testing agencies. Where "Best Scores" are requested, please report the highest individual scores you have earned so far, even if those scores are from different test dates.

Grades Class Rank 40 (if available) Class Size 229 Weighted? ○ Yes ● No GPA 3.5 (if available) Scale 4.0 Weighted? ○ Yes ● No

ACT Exam Dates: (past & future) (mm/yyyy) (mm/yyyy) (mm/yyyy) Best Scores: (so far) COMP (mm/yyyy) English (mm/yyyy) Math (mm/yyyy) Reading (mm/yyyy) Science (mm/yyyy) Writing (mm/yyyy)

SAT Exam Dates: 10/03/2015 (past & future) (mm/dd/yyyy) 11/07/2015 (mm/dd/yyyy) (mm/dd/yyyy) Best Scores: (so far) Critical Reading 670 11/07/2015 (mm/dd/yyyy) Math 660 11/07/2015 (mm/dd/yyyy) Writing 5 10/03/2015 (mm/dd/yyyy)

TOEFL/IELTS Exam Dates: (past & future) (mm/yyyy) (mm/yyyy) (mm/yyyy) Best Score: (so far) Test Score (mm/yyyy)

AP/IB/SAT Subjects Best Scores:

05/2015 (mm/yyyy)	AP English Literature (Type & Subject)	4 (Score)	05/2015 (mm/yyyy)	AP Calculus B (Type & Subject)	4 (Score)
(mm/yyyy)	(Type & Subject)	(Score)	(mm/yyyy)	(Type & Subject)	4 (Score)
(mm/yyyy)	(Type & Subject)	(Score)	(mm/yyyy)	(Type & Subject)	(Score)
(mm/yyyy)	(Type & Subject)	(Score)	(mm/yyyy)	(Type & Subject)	(Score)

Current Courses Please list all courses you are taking this year and indicate level (AP, IB, advanced, honors, etc.) and credit value. Indicate quarter classes taken in the same semester on the appropriate semester line.

Full Year/First Semester/First Trimester	Second Semester/Second Trimester	Third Trimester (or additional first/second term courses if more space is needed)
U.S. Government		
A.P. Calculus C		
A.P. Psychology		
A.P. Biology		
Honors English Literature 4		
World History		
Photography	Ceramics	Creative Writing

Appendix J
Example of Common Application Participants Viewed (page 3)

Honors Briefly list any academic distinctions or honors you have received since the 9th grade or international equivalent (e.g., National Merit, Cum Laude Society).
S(School) S/R(State or Regional) N(National) I(International)

Grade level or post-graduate (PG) 9 10 11 12 PG	Honor	Highest Level of Recognition S S/R N I
○ ● ● ● ○	Honor Roll	● ○ ○ ○
○ ○ ○ ○ ○		○ ○ ○ ○
○ ○ ○ ○ ○		○ ○ ○ ○
○ ○ ○ ○ ○		○ ○ ○ ○
○ ○ ○ ○ ○		○ ○ ○ ○

EXTRACURRICULAR ACTIVITIES & WORK EXPERIENCE

Extracurricular Please list your **principal** extracurricular, volunteer, and work activities **in their order of importance to you**. Feel free to group your activities and paid work experience separately if you prefer. Use the space available to provide details of your activities and accomplishments (specific events, varsity letter, musical instrument, employer, etc.). **To allow us to focus on the highlights of your activities, please complete this section even if you plan to attach a résumé.**

Grade level or post-graduate (PG) 9 10 11 12 PG	Approximate time spent: Hours per week	Approximate time spent: Weeks per year	When did you participate in the activity? School year	When did you participate in the activity? Summer/ School Break	Positions held, honors won, letters earned, or employer	If applicable, do you plan to participate in college?
○ ○ ○ ● ○	2		●	○	Member	○
Activity: National Honor Society						
○ ○ ● ● ○	3		●	○	Delegate	○
Activity: Model United Nations						
● ● ● ○ ○	10		●	●	Short Stop	●
Activity: Softball						
○ ○ ○ ○ ○			○	○		○
Activity						
○ ○ ○ ○ ○			○	○		○
Activity						
○ ○ ○ ○ ○			○	○		○
Activity						
○ ○ ○ ○ ○			○	○		○
Activity						
○ ○ ○ ○ ○			○	○		○
Activity						
○ ○ ○ ○ ○			○	○		○
Activity						

Appendix J
Example of Common Application Participants Viewed (page 4)

Instructions. The essay demonstrates your ability to write clearly and concisely on a selected topic and helps you distinguish yourself in your own voice. *What do you want the readers of your application to know about you apart from courses, grades, and test scores?* Choose the option that best helps you answer that question and write an essay of at least 250 words but no more than 650 words, using the prompt to inspire and structure your response. Remember: 650 words is your limit, not your goal. Use the full range if you need it, but don't feel obligated to do so.

- Some students have a background or story that is so central to their identity that they believe their application would be incomplete without it. If this sounds like you, then please share your story.
- Recount an incident or time when you experienced failure. How did it affect you, and what lessons did you learn?
- Reflect on a time when you challenged a belief or idea. What prompted you to act? Would you make the same decision again?
- Describe a place or environment where you are perfectly content. What do you do or experience there, and why is it meaningful to you?
- Discuss an accomplishment or event, formal or informal, that marked your transition from childhood to adulthood within your culture, community, or family.

Additional Information Please attach a separate sheet if you wish to provide details of circumstances or qualifications not reflected in the application.

Disciplinary History

① Have you ever been found responsible for a disciplinary violation at any educational institution you have attended from the 9th grade (or the international equivalent) forward, whether related to academic misconduct or behavioral misconduct, that resulted in a disciplinary action? These actions could include, but are not limited to: probation, suspension, removal, dismissal, or expulsion from the institution. ○ Yes ● No

② Have you ever been adjudicated guilty or convicted of a misdemeanor, felony, or other crime? ○ Yes ● No
[Note that you are not required to answer "yes" to this question, or provide an explanation, if the criminal adjudication or conviction has been expunged, sealed, annulled, pardoned, destroyed, erased, impounded, or otherwise ordered by a court to be kept confidential.]

If you answered "yes" to either or both questions, please attach a separate sheet of paper that gives the approximate date of each incident, explains the circumstances, and reflects on what you learned from the experience.

Note: Applicants are expected to immediately notify the institutions to which they are applying should there be any changes to the information requested in this application, including disciplinary history.

SIGNATURE

Application Fee Payment If this college requires an application fee, how will you be paying it?

● Online Payment ○ Will Mail Payment ○ Online Fee Waiver Request ○ Will Mail Fee Waiver Request

Required Signature

☑ *I certify that all information submitted in the admission process—including the application, the personal essay, any supplements, and any other supporting materials—is my own work, factually true, and honestly presented, and that these documents will become the property of the institutions to which I am applying and will not be returned to me. I understand that I may be subject to a range of possible disciplinary actions, including admission revocation, expulsion, or revocation of course credit, grades, and degree, should the information I have certified be false.*

☑ *I acknowledge that I have reviewed the application instructions for each college receiving this application. I understand that all offers of admission are conditional, pending receipt of final transcripts showing work comparable in quality to that upon which the offer was based, as well as honorable dismissal from the school.*

☑ *I affirm that I will send an enrollment deposit (or equivalent) to only one institution; sending multiple deposits (or equivalent) may result in the withdrawal of my admission offers from all institutions. [Note: Students may send an enrollment deposit (or equivalent) to a second institution where they have been admitted from the waitlist, provided that they inform the first institution that they will no longer be enrolling.]*

Signature [redacted] Date 12/01/2015
mm/dd/yyyy

Common Application member institution admission offices do not discriminate on the basis of race, color, ethnicity, national origin, religion, creed, sex, age, marital status, parental status, physical disability, learning disability, political affiliation, veteran status, or sexual orientation.

Appendix K
Analysis of Potential Mediators in Study 3

Source	*df*	*F*	*p*	η_p^2
Feelings of Threat toward Status of White Americans				
Affirmative Action Frame	(1,117)	0.04	0.61	0.00
Applicant Race	(1,117)	0.27	0.84	0.00
Interaction	(1,117)	3.01	0.09	0.03
Positivity toward Sports				
Affirmative Action Frame	(1,116)	0.25	0.62	0.00
Applicant Race	(1,116)	1.17	0.28	0.01
Interaction	(1,116)	1.97	0.16	0.02

Note. Higher numbers indicate higher levels of each measure.

Appendix L
Demographic Information on Participants in Study 4 Pre-Testing Studies

	Pre-Testing A (*N*=25)	Pre-Testing B (*N*=26)	Pre-Testing C (*N*=25)
	n	*n*	*n*
Gender			
Man	16	*14*	*14*
Woman	9	*12*	*11*
Race			
White	19	23	16
Black	1	0	1
Asian	3	1	2
Latino/Hispanic	1	2	5
Biracial/Multiracial	1	0	1
Education			
High School	1	5	4
Vocational or 2 Year Technical School	0	2	1
Some College	11	7	10
College Graduate	13	9	10
Advanced degree	0	3	0
Income			
$10,000 or less	0	2	3
$10,000 to $29,999	6	5	5
$29,000 to $49,999	7	7	8
$50,000 to $74,999	10	7	6
$75,000 or more	2	4	2
English Proficiency			
Good	2	1	1
Excellent	23	25	24
Political Party Affiliation			
Democrat	7	12	12
Republican	10	9	8
Independent	8	5	3

Note. Three pre-tests were conducted for this study. Pre-Testing A tested descriptions for affirmative action and the death penalty. Pre-Test B tested descriptions for the Affordable Care Act and gun control. Pre-Test C is an additional pre-test with a novel sample to ensure that revisions were sufficient.

Appendix L
Demographic Information on Participants in Study 4 Pre-Testing Studies
(continued)

	Pre-Testing A (*N*=25)	Pre-Testing B (*N*=26)	Pre-Testing C (*N*=25)
	M(SD)	*M(SD)*	*M(SD)*
Age	30.16(0.71)	36.38(9.52)	34.36 (9.31)
Political Ideology (1=Extremely Liberal, 7=Extremely Conservative	4.00 (1.82)	3.92(1.96)	3.12(1.42)
Bounce Rate	22%	31%	32%
Completion Rate	86%	100%	100%

Appendix L
Study 4 Pre-testing Results for Affirmative Action and the Affordable Care Act

Affirmative Action						
	Conservative-Leaning	Liberal-Leaning				
Measure	*M (SD)*	*M (SD)*	*df*	*F*	*p*	η_G^2
Clarity	4.04 (0.86)	3.92 (0.88)	1, 23	0.59	0.45	0.006
Accuracy	3.54 (1.22)	3.46 (1.25)	1, 23	0.05	0.82	0.001
Metaphorical	3.67 (1.17)	3.71 (1.16)	1, 23	0.021	0.89	0.000
Gender	2.75 (0.99)	3.13 (0.74)	1, 23	1.70	0.21	0.04
Tone	2.42 (1.14)	3.50 (0.89)	1, 23	10.83	0.003	0.21
Political Ideology	3.88 (1.12)	2.46 (1.35)	1, 23	11.32	0.003	0.25
Affordable Care Act						
	Conservative-Leaning	Liberal-Leaning				
Measure	*M (SD)*	*M (SD)*	*df*	*F*	*p*	η_G^2
Clarity	3.50(1.21)	3.62 (1.10)	1, 25	0.81	0.38	0.006
Accuracy	3.44 (1.16)	3.60 (1.00)	1, 24	1.35	0.26	0.01
Metaphorical	3.77 (1.28)	3.65 (1.16)	1, 25	1.00	0.33	0.006
Gender	2.68 (0.95)	2.95 (1.02)	1, 24	2.04	0.17	0.03
Tone	2.15 (1.08)	2.50 (1.07)	1, 25	2.61	0.12	0.04
Political Ideology	3.88(0.99)	3.46(1.07)	1, 25	4.10	0.054	0.06

Note. The results above are from a series of repeated-measures one-way ANOVAs used to assess the policy descriptions on the specified criteria. As the difference in perceived political ideology of the Affordable Care Act descriptions was statistically marginal, we added indicating that the author believed the Affordable should be repealed in the Conservative-Leaning description, and that it should not be repealed in the Liberal-Leaning description.

Appendix L
Study 4 Pre-testing Results for the Death Penalty and Gun Control

Death Penalty						
	Conservative-Leaning	Liberal-Leaning				
Measure	*M (SD)*	*M (SD)*	*df*	*F*	*p*	η_G^2
Clarity	3.92 (0.70)	4.08 (0.57)	1, 24	1.64	0.21	0.01
Accuracy	3.32 (0.99)	3.56 (0.71)	1, 24	1.00	0.33	0.02
Metaphorical	2.44 (1.19)	2.12 (1.09)	1, 24	3.16	0.09	0.04
Tone	3.40 (0.96)	2.32 (0.63)	1, 24	15.27	0.001	0.24
Gender	2.64 (0.91)	3.44 (0.77)	1, 24	8.00	0.009	0.14
Political Ideology	4.12 (0.88)	2.04 (0.89)	1, 24	54.26	< 0.001	0.53
Gun Control						
	Conservative-Leaning	Liberal-Leaning				
Measure	*M (SD)*	*M (SD)*	*df*	*F*	*p*	η_G^2
Clarity	3.67 (0.96)	3.67 (1.05)	1, 23	0.00	1.00	0.00
Accuracy	3.32 (1.07)	3.48 (1.09)	1, 24	0.66	0.43	0.009
Metaphorical	3.88 (1.27)	4.20 (1.12)	1, 24	2.24	0.15	0.03
Tone	2.96 (1.21)	3.24 (1.05)	1, 24	0.83	0.37	0.02
Gender	1.84 (0.75)	2.24 (1.09)	1, 24	6.00	0.02	0.06
Political Ideology	4.16(0.94)	3.56(1.16)	1, 24	4.32	0.05	0.08

Note. The results above are from a series of repeated-measures one-way ANOVAs used to assess the policy descriptions on the specified criteria. There was a statistically significant difference in the perceived gender of the author for the descriptions of the death penalty. The liberal-leaning description was seen as having definitely been written by a woman t (24) = 2.86, p = 0.009, while the conservative-leaning description was perceived as having been written by someone with an ambiguous gender t (24) = -1.98, p = 0.06. Thus, we included these descriptions despite this difference because they were not perceived as having been written by people of different genders. Similarly, while the gun control descriptions differed in that the conservative-leaning description was perceived as more feminine than that of the liberal-leaning description, both descriptions were perceived as having been written by a female author, p's < 0.01 and thus were included.

Appendix M
Full Descriptions of Policies used in the Policy Lean Manipulation for Study 4

Affirmative Action

Conservative-Leaning Condition: Showing preference based on race is wrong. If Blacks have had one hand tied behind their backs while they tried to apply jobs and colleges, then tying the hands of Whites doesn't make that right. Affirmative action is just another way to give one group benefits based on their race.

Liberal-Leaning Condition: Showing preference based on race is wrong. However, Blacks have had one hand tied behind their backs while they tried to apply to jobs and colleges for generations. That kind of disadvantage doesn't just go away. Affirmative action is just one to way to untie their hands and give them a chance in hiring and education.

Affordable Care Act

Conservative-Leaning Condition: The Affordable Care Act gives the government too much power over my choices and I think it should be repealed. I get that in some cases having health insurance is a good thing but there are different kinds of people in this country with different kinds of needs. Some prepare for meteor strikes and others don't, I'm someone who doesn't. I'm healthy and I plan to continue being healthy. It's not up to the government to take over my choice about whether or not I prepare for unlikely outcomes.

Liberal-Leaning Condition: The Affordable Care Act gives the government more power over my choices, but I don't think it should be repealed. I get that in some cases having health insurance isn't as useful, but there are different kinds of people in this country with different kinds of needs. Some prepare for meteor strikes and others don't, I'm someone who does. I'm healthy and I plan to continue being healthy, but I'm okay with the government helping me to prepare for unlikely outcomes.

Appendix M
Full Descriptions of Policies used in the Policy Lean Manipulation for Study 4
(continued)

Death Penalty

Conservative-Leaning Condition: If you've taken a life, the only just punishment is to forfeit your own. I support the death penalty because it has to be a life for a life. It can't be fair that someone gets to live out the rest of their days when they've cut someone's life short. The law has to set it right and balance the scales.

Liberal-Leaning Condition: I oppose the death penalty because taking a life doesn't make up for another life being cut short. If you've taken a life, the only just punishment is to forfeit your own freedom so that you can never hurt anyone else. The law has to set it right and protect the public. The death penalty just doesn't balance the scales.

Gun Control

Conservative-Leaning Condition: You can't always count on the cavalry to make it in time. Sometimes we have to protect our own castles. Who is really fit to decide who can take up arms in their own defense? We have to be able to match the weaponry that can be used against us. Gun control is just putting more strain on law enforcement; they can't protect every person all the time. Sometimes we have to save ourselves.

Liberal-Leaning Condition: You can't always count on the cavalry to make it in time. Sometimes we have to protect our own castles, but there's a difference between being able to take up arms in your own defense and being able to start your own army. Gun control is just making sure our law enforcement isn't outgunned when they try to protect us. Sometimes we have to be saved from ourselves.

Appendix N

Full Text of Instructions used in the Metaphor Influence Manipulation (Study 4)

No Effect Condition

Instructions: In light of pending demographic shifts in the United States toward a nation that is more diverse in terms of race, ethnicity, and age, we are interested in assessing whether attitudes toward United States polices will also change. On the following pages, you will review descriptions of United States public policies that have been debated at the state and national levels. Please be aware that some of these descriptions may include metaphorical language, or describing one thing in terms of another, but this should not influence your attitudes. Please carefully review each policy description as you will be asked questions about them to assess your understanding.

Effect Condition

Instructions: In light of pending demographic shifts in the United States toward a nation that is more diverse in terms of race, ethnicity, and age, we are interested in assessing whether attitudes toward United States polices will also change. On the following pages, you will review descriptions of United States public policies that have been debated at the state and national levels. Please be aware that some of these descriptions may include metaphorical language, or describing one thing in terms of another, and this may influence your attitudes. Please carefully review each policy description as you will be asked questions about them to assess your understanding.

Appendix O
Analysis of Potential Mediators in Study 4

Source	*df*	*F*	*p*	η_p^2
Attitude toward Metaphors in Politics				
Policy Lean	(1, 291)	0.98	0.32	0.00
Metaphor Influence	(1, 291)	0.76	0.38	0.00
Interaction	(1, 291)	0.23	0.63	0.00
Feelings of Threat to the American System				
Policy Lean	(1, 296)	0.01	0.92	0.00
Metaphor Influence	(1, 296)	0.10	0.75	0.00
Interaction	(1, 296)	0.22	0.64	0.00
Uncertainty about America's Future				
Policy Lean	(1, 293)	0.47	0.49	0.00
Metaphor Influence	(1, 293)	0.32	0.57	0.00
Interaction	(1, 293)	0.75	0.39	0.00
Feelings of Threat toward Status of White Americans				
Policy Lean	(1, 292)	1.86	0.17	0.01
Metaphor Influence	(1, 292)	0.15	0.70	0.00
Interaction	(1, 292)	0.36	0.56	0.00
Ethnic Identification with Whiteness				
Policy Lean	(1, 293)	0.06	0.80	0.00
Metaphor Influence	(1, 293)	0.33	0.57	0.00
Interaction	(1, 293)	1.18	0.28	0.00
System Justifying Beliefs				
Policy Lean	(1, 293)	0.18	0.67	0.00
Metaphor Influence	(1, 293)	1.15	0.29	0.00
Interaction	(1, 293)	0.79	0.38	0.00

Note. Degrees of freedom vary due to participants skipping questions.

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