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Folk economic beliefs moderate the effects of majority group status threat

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Abstract

Folk theories guide behavior and shape how people make sense of their environment. We investigated whether folk economic beliefs would moderate the widely publicized finding that people show a conservative shift in their politics when their majority status in society is threatened. Across three experiments, participants read about either projected demographic changes (*threat*) or changes in online dating (*control*), indicated whether they viewed the economy as a zero- or non-zero-sum system, and responded to measures of sociopolitical attitudes. Compared to controls, participants in the *threat* condition who conceptualized the economy in zero-sum terms supported more conservative policies. However, those who conceptualized the economy in non-zero-sum terms actually endorsed more liberal positions in this condition. These effects obtained only when participants expressed their economic views *before* their political attitudes. This suggests folk economic beliefs shape how people respond to threats to their majority status, provided those beliefs are first made explicit.

Keywords: folk theories; folk economics; zero-sum bias; group threat; demographics shifts; political attitudes; metaphor

Introduction

Cloistered academics aren't the only ones who contemplate complex subjects like physics, biology, economics, and psychology (despite what the lonely feelings aroused by lecturing to a hall of disinterested undergraduates seem to suggest). As we go about our daily lives, we all develop intuitive *folk* (or *lay*) theories (i.e., organized conceptual schemas) for how the world works that guide behavior and organize how we make sense of, respond to, and learn from our environments (Furnham, 1988). Folk theories are often markedly different from formal scientific theories and they can vary across individuals and groups, though research suggests their structure is constrained by well-understood cognitive, developmental, and evolutionary mechanisms (Boyer & Peterson, 2017; Gelman & Legare, 2011).

While a great deal of work has focused on illuminating the origins and nature of folk theories in a variety of domains (e.g. biology, physics, psychology, etc.), relatively little attention has been paid to the role that individual folk theories play in shaping how people respond to social information. Consider the important and widely publicized finding that members of majority groups tend to show a conservative shift in their politics and an increase in racial hostility when they are exposed to information that threatens their majority group status (e.g. Craig & Richeson, 2014a; 2014b; Danbold & Huo, 2015; Major, Blodorn, & Blascovich, 2016; Outten, Schmitt, Miller, & Garcia, 2012). For example, White

Canadians who viewed a graph where Whites were estimated to eventually comprise less than 50% of the national Canadian population expressed more anger and fear of racial minorities compared to respondents who viewed a graph depicting a projected future White majority (Outten et al., 2012). Similarly, Craig and Richeson (2014a, 2014b) found that exposure to changing racial demographics in the US led to greater explicit and implicit racial bias, as well as a conservative shift in White Americans' social and political attitudes. This literature has now demonstrated that a broad range of threatening circumstances—including group status threat, threats to the stability of the social system, terrorism, rising immigration, and death anxiety—are all associated with various manifestations of political conservatism (e.g. Jost, et al., 2003; Major, et al., 2016).

Theories of *legitimacy* in the social and political sciences argue that anti-minority attitudes and a shift toward conservatism are reactions to a perceived challenge that racial diversity represents to White Americans' position and power in the current system (Jost, Glaser, Kruglanski, & Sulloway, 2003). This possibility is supported by the observation that telling White Americans that impending demographic changes will not impact the existing power structure amongst racial groups in the US eliminates the conservative shift in these studies (Craig and Richeson, 2014).

Interestingly, one recent study suggests that impending demographic changes in the US are only perceived as a threat by Americans who identify strongly with their White ethnicity (Major et al., 2016). Specifically, for Whites high in ethnic identification, exposure to information on the imminent increase in US diversity predicted increased support for Donald Trump and anti-immigrant policies and caused more concern for the future of Whites in America. For Whites low in ethnic identification, on the other hand, exposure to data on impending demographic changes had, if anything, the opposite effect—causing a decrease in support for Trump. This reveals that demographic changes are not threatening in and of themselves to White Americans, even if they do signal a loss in majority position and power. Rather, the perceived threat depends in a principled way on how White Americans conceptualize their own ethnic identity.

In a parallel fashion, we hypothesized that the perceived threat of demographic changes should also depend on how people conceptualize the economy. In his 2016 campaign for president, Donald Trump painted a bleak picture of society, where limited resources are being taken away by immigrants, damaging the lives of hard-working Americans. This reflects a competitive, zero-sum conception for how the economy

works, which is an especially common *folk economic* belief (Pascal & Boyer, 2017; Rubin, 2003). In contrast, in his final address to the public as President, Barack Obama argued that the changing demographic landscape could be viewed as an economic opportunity that would lead to a prosperous future. This reflects a more cooperative, non-zero-sum conception of the economy.

In the run up to the 2016 general election, we reasoned that the impending increase in ethnic diversity in the US would only feel threatening to those who, like Trump, view the economy as a competitive, zero-sum game. For others, following Obama, the idea of a more diverse America might signal the advent of new ideas, growth, and prosperity. In other words, we hypothesized that the effect of exposure to impending demographic shifts on social and political attitudes may depend on people’s folk economic beliefs, and on whether they view the economy as a competitive or cooperative system.

We tested this possibility across three experiments. Following Craig and Richeson (2014a; see also Major et al., 2016), White Americans read about either projected racial demographic changes (*threat* condition) or changes in online dating statistics (*control* condition) before responding to a series of measures of social and political attitudes. They also indicated whether they saw the US economy as a competitive, zero-sum system or a more cooperative, non-zero-sum system by selecting between two metaphors for thinking about the current state of the economy. Our results offer new insights into the relationship between folk beliefs and the perception of threat associated with challenges to majority status. Data and materials for all three experiments are available on the Open Science Framework (osf.io/d5fpm/).

Experiments 1a & 1b

Methods

Participants We recruited 400 people for each Experiment through Amazon’s Mechanical Turk in exchange for payment. Participants who identified as White were submitted to all analyses (300 in Experiment 1a and 303 in Experiment 1b). See Table 1 for a summary of demographic information for all experiments.

Table 1: Demographic information for each experiment

	Expt 1a	Expt 1b	Expt 2
Sampled	400	400	400
Analyzed	300	303	279
Female	44%	51%	48%
Mean Age	37.5	34.5	34.9
Democrats	40%	44%	38%
Independents	37%	36%	40%

Stimuli & Procedures In Experiment 1a, participants first read one of two Pew Research Center reports that described

¹ Participants overwhelmingly chose the non-competitive *forest* metaphor to represent the *ideal* economy across our three experiments (>82% in each study). Because our primary concerns

either impending changes to the demographic profile of the United States (*threat* condition) or recent changes to the demographic profile of online daters (*control* condition). Specifically, the threatening report described an increase in the U.S. population by 2050 and attributed it largely to immigrants and their descendants, leaving Whites with a majority-minority share of the U.S. population. The report on online dating was selected from the Pew Research Center’s website to serve as a neutral contrast to the threatening report. It was edited to parallel the threatening report in overall structure and described a recent increase in the number of Americans using online dating websites and apps.

Experiment 1b only differed from Experiment 1a with respect to the details of the control report, which was modified to better match the threatening report. Specifically, all numbers were changed to match those in the threatening report, the text was altered to describe expected *future* changes to the demographic profile of online daters, and the increase in online daters amongst 18-24-year-olds was described as happening at the expense of the other group (25-54-year olds) to mirror the tradeoff in population share between Hispanics and non-Hispanic Whites in the threat condition.

After reading the report, participants in Experiment 1a filled in the values of some of the key changes described in the report. These comprehension questions were modified in Experiment 1b for both conditions in order to encourage people to read the reports. In contrast to Experiment 1a, participants in Experiment 1b did not have access to the report when answering the questions. Instead, they had to answer from memory and were asked broadly about the *direction* of expected changes as opposed to their magnitude.

Folk Economic Beliefs To efficiently capture folk beliefs about the economy, participants then chose which of two metaphors they believed best describes (1) the *current* nature of the U.S. economy, and (2) the *ideal* nature of the U.S. economy¹. People often use metaphors to communicate and think about complex and abstract subjects because they leverage structured knowledge of a familiar source domain to guide reasoning about a target domain (Lakoff & Johnson, 1980). Importantly, recent work suggests that the metaphors people endorse for a specific topic (e.g. whether police officers are *guardians* or *warriors* of a community) can reliably predict a host of structured attitudes and beliefs (Thibodeau, Crow, & Flusberg, 2016).

In the present study, participants chose either (1) a competitive, zero-sum metaphor, which likened the economy to a pie of fixed size (“*The US economy can be thought of as a giant pie. Everyone is competing for the same set of jobs or the same pot of money, and not everyone will come away with their slice*”), or (2) a more cooperative, non-zero-sum metaphor, which likened the economy to a boundless forest (“*The US economy can be thought of as a forest wilderness. The more diverse the ecosystem (that is, the more unique*

related to folk beliefs about the current economy, we do not consider these data further in our analyses.

animals and plants there are), the lush it will grow and the faster it will spread to new areas”).

A norming study confirmed our intuitions about the relative competitiveness of the two metaphors. A separate set of 50 subjects rated each metaphor on a 1 (extremely competitive) to 7 (extremely cooperative) scale. People thought the pie metaphor was more competitive than not ($M_{pie}=2.10$, $SD_{pie}=1.66$; $t(49)=-8.11$, $p<.001$, $d=1.15$, 95% CI=[1.63, 2.57]), whereas the forest metaphor was more cooperative than not ($M_{forest}=5.42$, $SD_{forest}=1.70$; $t(49)=5.90$, $p<.001$, $d=1.42$, 95% CI=[4.94, 5.90]), and these ratings differed reliably from one another ($M_{diff}=-3.32$, $t(49)=-8.11$, $p<.001$, $d=1.15$, 95% CI=[-4.14, -2.50]).

Dependent Measures Next, participants completed a series of three questionnaires asking about their support for political policies, outlook for the future welfare of different groups, and nationalism. The policy questions were adapted from Craig and Richeson (2014b). Participants indicated the degree to which U.S. policies related to immigration, diversity, the economy, and social issues should be changed on a 1 (decreased) to 5 (increased) scale. Our norming study confirmed that people believe that increased immigration, diversity, federal assistance to the poor, and liberal social reforms have better implications for Americans under a non-zero-sum “forest” economy than under a zero-sum “pie” economy. The future outlook measure was adapted from a Pew Research Center poll (2014); participants used a five-point scale to rate whether they expected the next generation of specific groups of Americans to be much worse off (1) or much better off (5) than their parents. We adapted the nationalism measure from the 2013 International Social Survey Program (ISSP). Participants were asked to consider what it meant to be “truly American” across seven items. Participants rated how important each item was to them on a 1 (not important at all) to 5 (extremely important) scale.

Finally, participants completed a series of demographics questions: age, race, gender, employment status, political ideology (continuous measure on a -5=strongly liberal to 5=strongly conservative scale), political affiliation, educational background, and economic well-being.

Results

Analysis of 1a Our primary goal was to examine whether the consequences of threatening a person’s group status depends on how they conceptualize the economy. To test our hypotheses on the political policy, future outlook, and nationalism measures simultaneously, we submitted the data to a 2(condition: threat vs. control) x 2(economy metaphor: pie vs. forest) factorial MANOVA with all three dependent measures as outcome variables. The overall MANOVA revealed a significant main effect of economic metaphor preference, $F(3,294)=5.14$, $p=.002$, $\eta_p^2=.050$. The main effect of condition did not reach statistical significance ($F(3,294)=2.59$, $p=.053$, $\eta_p^2=.026$), nor did the interaction between metaphor and condition, $F(3,294)=2.62$, $p=.051$, $\eta_p^2=.026$.

Separate ANOVAs for each dependent measure revealed

that people who preferred the forest metaphor (i.e., those who hold non-zero-sum folk beliefs about the economy) held a brighter outlook for the welfare of future generations of Americans ($M_{forest}=3.14$, $SD_{forest}=0.73$, 95% CI=[3.02, 3.26]; $M_{pie}=2.92$, $SD_{pie}=0.70$, 95% CI=[2.79, 3.05]; $F(1,296)=8.09$, $p=.005$, $\eta_p^2=.027$), and expressed less nationalism ($M_{forest}=3.25$, $SD_{forest}=0.88$, 95% CI=[3.11, 3.39]; $M_{pie}=3.51$, $SD_{pie}=0.76$, 95% CI=[3.39, 3.63]; $F(1,296)=6.76$, $p=.010$, $\eta_p^2=.022$) than did people who preferred the pie metaphor (i.e., those who hold zero-sum folk beliefs about the economy). People’s views of the economy did not influence their political policy positions in this experiment ($M_{forest}=3.44$, $SD_{forest}=0.79$, 95% CI=[3.31, 3.57]; $M_{pie}=3.34$, $SD_{pie}=0.79$, 95% CI=[3.21, 3.47]; $F(1,296)=0.82$, $p=.365$, $\eta_p^2=.003$).

Although the results of the overall MANOVA do not license further tests of the interaction between condition and metaphor, we include them here as exploratory analyses and to facilitate comparisons between patterns in the data from Experiment 1a and the results of Experiment 1b. It appears that the marginally significant interaction in the overall model was largely driven by the political policy positions measure; the conservative shift in political policy positions as a function of threat depended on one’s view of the economy, $F(1,296)=7.00$, $p=.009$, $\eta_p^2=.023$. This relationship was not statistically significant for future outlook ($F(1,296)=0.95$, $p=.331$, $\eta_p^2=.003$) or nationalism ($F(1,296)=2.98$, $p=.086$, $\eta_p^2=.010$). Descriptive statistics from all experiments are shown in Figure 1.

Analysis of 1b We submitted all the data to a 2(condition: threat vs. control) x 2(metaphor preference: pie vs. forest) factorial MANOVA with all three dependent measures as outcome variables. The overall model revealed a significant main effect of metaphor, $F(3,298)=16.13$, $p<.001$, $\eta_p^2=.140$. The main effect of condition did not reach significance ($F(3,297)=1.14$, $p=.332$, $\eta_p^2=.011$). Importantly, there was a significant interaction between condition and metaphor, $F(3,297)=5.63$, $p=.001$, $\eta_p^2=.054$.

Separate ANOVAs for each DV revealed that people who preferred the non-competitive (forest) metaphor for the U.S. economy were more liberal in their political policy position ($M_{forest}=3.61$, $SD_{forest}=0.63$, 95% CI=[3.51, 3.71]; $M_{pie}=3.30$, $SD_{pie}=0.70$, 95% CI=[3.19, 3.41]; $F(1,299)=17.11$, $p<.001$, $\eta_p^2=.054$), held a brighter outlook for the welfare of future generations of Americans ($M_{forest}=3.26$, $SD_{forest}=0.68$, 95% CI=[3.15, 3.37]; $M_{pie}=2.94$, $SD_{pie}=0.69$, 95% CI=[2.83, 3.05]; $F(1,299)=16.59$, $p<.001$, $\eta_p^2=.053$), and expressed less nationalism ($M_{forest}=3.26$, $SD_{forest}=0.64$, 95% CI=[3.16, 3.37]; $M_{pie}=3.67$, $SD_{pie}=0.78$, 95% CI=[3.55, 3.79]; $F(1,299)=25.46$, $p<.001$, $\eta_p^2=.078$) than did people who preferred the competitive, zero-sum (pie) metaphor.

An ANOVA revealed that there was a significant interaction between condition and economic metaphor preference on people’s political policy positions ($F(1,299)=11.51$, $p=.001$, $\eta_p^2=.037$) and on their outlook for the wellbeing of future generations of Americans ($F(1,299)=7.61$, $p=.006$, $\eta_p^2=.025$). Specifically, people who preferred

the pie metaphor for the U.S. economy showed a conservative shift in their political policy positions in the threat condition relative to the control condition, $t(158)=3.12$, $p=.002$, $d=0.50$, $95\%CI_{diff}=[-0.55, -0.12]$. Similarly, people who preferred the pie metaphor for the U.S. economy had a bleaker future outlook for the country in the threat condition relative to the control condition, $t(158)=2.25$, $p=.026$, $d=0.36$, $95\%CI_{diff}=[-0.46, -0.03]$. In contrast, people who preferred the forest metaphor were, if anything, slightly more liberal in their political policy positions in the threat condition relative to the control condition, though this difference did not reach significance, $t(141)=1.68$, $p=.094$, $d=0.28$, $95\%CI_{diff}=[-0.03, 0.38]$. And people who preferred the forest metaphor had, if anything, a slightly brighter (though not significantly so) future outlook for the country in the threat condition relative to the control condition, $t(141)=1.67$, $p=.097$, $d=0.28$, $95\%CI_{diff}=[-0.03, 0.41]$. There was no interaction between condition and metaphor for the nationalism measure, $F(1,299)=0.97$, $p=.326$, $\eta_p^2=.003$.

Combined analysis of Experiments 1a and 1b We conducted three 3-way ANOVAs, one for each dependent measure, to test whether the interaction between condition and metaphor differed between Experiments 1a and 1b (i.e., we tested for three-way interactions between condition, metaphor, and experiment for each dependent measure). The interaction between condition and metaphor did not significantly differ between Experiments 1a and 1b on any measure (all p 's $>.250$). Therefore, we combined the data from Experiments 1a and 1b and analyzed the resulting pooled dataset. This analysis included the full factorial MANOVA structure from previous analyses.

As before, the overall model revealed a significant main effect of metaphor ($F(1,593)=3.32$, $p=.019$, $\eta_p^2=.017$), and a significant interaction between metaphor and condition ($F(1,593)=3.31$, $p=.020$, $\eta_p^2=.016$), both of which we examined further. There was no main effect of condition, $F(1,593)=1.02$, $p=.383$, $\eta_p^2=.005$.

Only on the nationalism measure did people's overall responses depend on the metaphor they chose for the U.S. economy. People who chose the pie metaphor ($M_{pie}=3.59$, $SD_{pie}=0.77$, $95\%CI=[3.50, 3.68]$) endorsed more nationalistic views than people who chose the forest metaphor ($M_{forest}=3.25$, $SD_{forest}=0.77$, $95\%CI=[3.16, 3.34]$), $F(1,595)=4.70$, $p=.031$, $\eta_p^2=.008$. Once again, the conservative shift in the threat condition relative to the control condition depended on which metaphor participants preferred for the U.S. economy on both the political policies measure ($F(1,595)=5.52$, $p=.019$, $\eta_p^2=.009$) and the future outlook measure ($F(1,595)=5.30$, $p=.022$, $\eta_p^2=.009$).

Further analyses revealed that people who preferred the pie metaphor were more conservative in their political policy positions in the threat condition ($M=3.16$, $SD=0.72$) relative to the control condition ($M=3.49$, $SD=0.73$), $t(305)=3.94$, $p<.001$, $d=0.45$, $95\%CI_{diff}=[-0.49, -0.16]$. In contrast, people who preferred the forest metaphor were significantly more liberal in their political policy positions in the threat condition ($M=3.61$, $SD=0.75$) relative to the control condition

($M=3.44$, $SD=0.68$), $t(294)=2.13$, $p=.034$, $d=0.25$, $95\%CI_{diff}=[0.14, 0.34]$. On the future outlook measure, however, people who preferred the pie metaphor had a similar (though slightly more conservative) future outlook for the country in the threat condition ($M=2.90$, $SD=0.69$) relative to the control condition ($M=2.97$, $SD=0.73$), $t(305)=0.89$, $p=.373$, $d=0.10$, $95\%CI_{diff}=[-0.23, 0.09]$. In contrast, people who preferred the forest metaphor had a significantly brighter future outlook for the country in the threat condition ($M=3.32$, $SD=0.67$) relative to the control condition ($M=3.08$, $SD=0.72$), $t(294)=3.02$, $p=.003$, $d=0.35$, $95\%CI_{diff}=[0.08, 0.40]$. The interaction between threat condition and metaphor did not depend on political ideology, and threat condition did not reliably influence metaphor preference in any experiment.

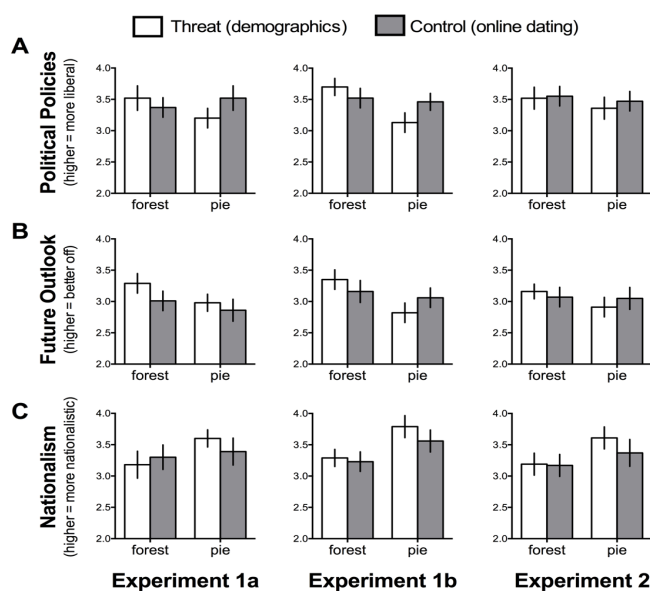


Figure 1: (A) Degree to which participants supported an increase in liberal political policies across experiments. (B) Degree to which participants thought the next generation of Americans would be better off than their parents. (C) Degree to which participants endorsed nationalistic views. Error bars represent 95% confidence intervals.

Discussion

We reasoned that exposure to changing demographics in the US would cause White Americans who conceptualize the economy as a zero-sum, competitive system to become more conservative in their sociopolitical attitudes. The results of two nearly identical experiments supported this hypothesis, showing that participants who read about changing demographics endorsed more conservative policies than reading about changes in a more benign social domain (online dating). In addition, we found some evidence that demographic threat may also lead to a bleaker outlook for the welfare of future generations of Americans.

However, the thought of changing demographics does not cause all White Americans to feel threatened. Consistent with our hypothesis, only people who endorsed a zero-sum folk

economic theory in our combined analysis (i.e., those who selected the pie metaphor as more representative of how the economy works) showed a conservative shift in the threat condition relative to the control condition. In fact, reading about changing demographics resulted in a *liberal* shift in political policy positions for people who saw the economy as a non-competitive system (i.e., those who selected the forest metaphor). And those same people also had a brighter outlook for the future of the country in the threat condition relative to the control condition. It appears that White Americans with a competitive view of the economy see their share of the pie shrinking as the proportion of minorities in the US increases and therefore endorse policies that protect their group status. Indeed, our analysis revealed that perceiving the economy as a competitive system was associated with greater nationalism across both conditions. Conversely, White Americans with a non-competitive view of the economy see economic opportunity in a rising minority share of the US population and endorse policies that promote greater diversity.

One notable feature of the design of Experiments 1a and 1b is that we always asked the metaphor preference questions *before* gauging participants' political attitudes. It is possible, therefore, that the interaction we observed between threat condition and folk economic beliefs only obtained because people were actively thinking about how they viewed the economy before they responded to our dependent measures. To address this possibility, in Experiment 2 participants answered the economic metaphor questions *after* completing the political policy, future outlook, and nationalism measures.

If one's view of the economy must be active in mind in order to modulate the effects of demographic threat, then there should be no interaction between condition and metaphor in this version of the experiment. On the other hand, if the results of Experiment 2 study mirror the results of our first two experiments, then this would suggest that folk economic beliefs may shape responses to social information in a more pervasive and implicit fashion. This pattern of results would also be consistent with the possibility that some persistent trait of the individual, like competitiveness, accounts for the interaction between condition and metaphor that we observed in Experiments 1a and 1b (rather than folk economic beliefs per se). If the metaphor questions capture something stable about the individual, then there should still be modulation of the threat effect as a function of economic metaphor preference regardless of the order in which these tasks are administered.

Experiment 2

Methods

Participants We recruited 400 people through mTurk in exchange for payment. We used the same inclusion criteria as in Experiments 1a and 1b, which left data from 279 participants for analysis.

Stimuli and Procedure The stimuli and procedure for Experiment 2 were identical to Experiment 1b, except that the questions asking participants to choose which metaphor best describes the economy were presented *after* participants completed the political policy, future outlook, and nationalism questionnaires. These data were collected simultaneously with the data for Experiment 1b.

Results

We submitted all the data to a 2(condition: threat vs. control) x 2(metaphor: pie vs. forest) factorial MANOVA with all three dependent measures as outcome variables. The overall model revealed a significant main effect of metaphor, $F(3,273)=4.36$, $p=.005$, $\eta_p^2=.046$. The main effect of condition did not reach significance, $F(3,273)=0.71$, $p=.546$, $\eta_p^2=.008$. Nor did the interaction between condition and metaphor, $F(3,273)=1.15$, $p=.328$, $\eta_p^2=.013$. The effect of metaphor was only significant on the nationalism measure, $F(1,275)=10.88$, $p=.001$, $\eta_p^2=.038$. People who selected the pie metaphor expressed more nationalistic views ($M=3.50$, $SD=0.80$, 95%CI=[3.36, 3.64]) than did people who selected the forest metaphor ($M=3.18$, $SD=0.76$, 95%CI=[3.06, 3.30]).

To the extent that one's views of the economy must have been recently considered in order to interfere with the threat effect, the patterns in Experiment 2 should differ reliably from Experiments 1a and 1b. To test this, we conducted three 3-way ANOVAs (one for each dependent measure) that included the full structure of the models described previously, plus a factor comparing Experiment 2 with the data from Experiments 1a and 1b (collapsed). The three-way interaction was significant for the political policy positions measure ($F(1,874)=4.12$, $p=.043$, $\eta_p^2=.005$), but not for the future outlook measure ($F(1,874)=0.17$, $p=.681$, $\eta_p^2=.000$) or nationalism measure ($F(1,874)=0.00$, $p=.962$, $\eta_p^2=.000$).

Discussion

We found no evidence of an overall effect of reading the threatening report relative to the neutral report, nor did we find evidence of such an effect in either subgroup of people who saw the economy as a zero- or non-zero-sum system. Furthermore, the results differed reliably from the results from Experiments 1a and 1b on the political policy positions measure. It appears that one's view of the economy does not modulate the effect of reading a majority status threatening paragraph on political attitudes unless it has been recently explicitly considered.

Together, the results suggest that the question about how one conceptualizes the economy is not capturing some type of trait, like competitiveness, that spontaneously and automatically influences people's political and social attitudes. Rather, the results are consistent with the idea that activating one's existing schema for how the US economy works modulates the degree to which demographic changes seem threatening in schema-consistent ways.

General Discussion

The 2016 US presidential election raised important questions about the social forces that shape political attitudes (and voting behavior). As people have sought to explain Donald Trump's victory, pundits, journalists, and scholars have pointed to the threat that White Americans may feel in response to increasing ethnic diversity (and the accompanying campaign rhetoric), and how this could drive them towards conservative candidates. This possibility has been borne out in recent empirical work, which suggests that simply exposing White Americans to information about the changing demographic landscape can lead to a conservative attitude shift (Craig & Richeson, 2014b).

However, we hypothesized that this effect might depend on people's folk theories of the economy. In particular, a shift in demographics should only feel threatening to people who conceptualize the economy as a zero-sum system. Our results were largely consistent with this hypothesis. White Americans who read about the impending increase in the minority share of the population expressed more support for conservative policies and, if anything, felt that people would be worse off in the future – but *only* if they conceptualized the US economy as a competitive, zero-sum system (a metaphorical *pie*). For participants who conceptualized the economy in cooperative, non-zero-sum terms (as a metaphorical *wild forest*), reading about a shift in racial demographics had, if anything, the opposite effect. Importantly, these effects, could not be explained by participants' preexisting political affiliations and they were only reliable when participants indicated their folk economic beliefs *before* reporting their political attitudes. This suggests that the perceived threat of issues like immigration and demographic changes interacts with folk economic beliefs, provided these beliefs are first made explicit.

One concern is whether the two metaphors we used to gauge folk economic beliefs are necessarily mutually exclusive, and how this might affect how we interpret our results. For instance, a pie need not be of fixed size, and people may have more nuanced beliefs about how some sectors of the economy are more competitive and resource-limited than others. Although a fair point, we feel that, if anything, this may have caused us to *underestimate* the observed effects by preventing us from identifying people who think both views of the economy have their place.

More broadly, our findings provide encouraging evidence that impending demographic changes need not feel threatening to all White Americans, as their impact depends on people's conceptual representations of the economy. More notably, our study is the first to illustrate a *liberal* shift in attitudes when participants regard such racial demographic changes as occurring within the context of a non-cooperative economic system. That is, White Americans with a cooperative, non-zero-sum view of the world see opportunity in a rising minority share of the US and as a consequence endorse policies that promote diversity.

Of particular interest to researchers, policy makers, and political actors may be the prospect of figuring out how to

change how people think the economy works, and, as a result, how threatening the shifting demographic landscape feels to White Americans. Rubin (2003) suggests training in economics may be necessary to achieve this goal. Our work offers perhaps more efficient avenues for modulating the effects of folk theories on a range of social and political issues via metaphor framing (cf., Thibodeau et al., 2016). To the extent that we can sharpen folk economic intuitions and encourage people to conceive of society in cooperative terms, as a boundless forest, it may be possible to enable more constructive engagement between diverse groups.

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