

# A Constant Competition: Sports and Zero-Sum Thinking

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Why do some people see opportunities for cooperation while others believe a situation is inherently competitive? While most research has examined people seeing group relationships as zero-sum in a particular context, in this study I examine the causes and consequences of seeing the world as zero-sum in general. I show that generalized zero-sum predicts thinking policies are zero sum for a variety of policy areas. I then show that priming people to think about sports - a competition largely unrelated to politics - makes people view the world as more zero-sum. I conclude by discussing how the competition is primed in many media contexts.

## Introduction

A major barrier to cooperation on an issue is perceiving that cooperation is not possible, and that any agreement will have a winner or a loser. In a “zero-sum game” (Von Neumann and Morgenstern 2007), the total amount of success available is fixed, and thus one player’s gains come inevitably at another player’s expense. If people mis-perceive a situation as zero-sum, they may also miss opportunities to find common ground with others and productively cooperate. Worse, they may view others with suspicion or hostility, as opponents who must be defeated for them to succeed.

Numerous studies have examined the extent to which people perceive group relations as zero-sum in a variety of contexts. For example, a White person who believes race relations are zero-sum is more likely to oppose policies that benefit Black people; not necessarily due to traditional racial prejudice, but because they believe any success for Black people hurts White people (Bobo 1999; Goldman 2017; Norton and Sommers 2011). Scholars have observed zero-sum perceptions of group relations in other domains as well, such as international trade, where one country always “wins” a trade agreement while the other “loses” (Mutz and Lee 2020; Mutz 2021); gender relations where if women are treated better, men must be treated worse (Kuchynka et al. 2018; Wellman, Liu, and Wilkins 2016); immigration, with worries about immigrants out-competing natives (Brader, Valentino, and Suhay 2008; Esses et al. 2001; Landmann, Gaschler, and Rohmann 2019); and religion, with evangelical Christians equating greater acceptance of gay rights with increased persecution against Christians (Wilkins et al. 2021). Across a variety of contexts, studies have found that people who believe that the relationship between

their group and another group is zero-sum are more likely to oppose policies that benefit the other group, even if those policies do not negatively affect their own group (Wilkins et al. 2015; Esses, Jackson, and Armstrong 1998; Kuchynka et al. 2018).

While the vast majority of past work examines perceptions that group relations are competitive in a particular domain, a new line of research has begun examining people's propensity to view life as zero-sum *in general* (Różycka-Tran, Boski, and Wojciszke 2015). This has substantial implications for how people interact with one another. People who view personal relationships as more competitive rather than cooperative in general have higher social dominance orientation, are more supportive of hostile action against political opponents, are more likely to endorse violence to achieve political aims, and express lower commitment to voting rights (Fearon et al. 2021).

Given the relationship between general zero-sum beliefs and political attitudes, it is important to understand *why* some people are more likely than others to view the world as zero-sum. Existing work in psychology has focused on individual-level psychological factors to explain the differences. One common explanation for why some people are more likely to see the world as competitive is that they feel more threatened. The theoretical mechanism is that in a threatening situation, people are motivated to take decisive action and be less interested in ambiguity (Czernatowicz-Kukuczka, Jaśko, and Kossowska 2014; Jost et al. 2007; Kruglanski et al. 2012). Thinking of the world in general as a zero-sum competition allows people to view group relations in simple, "black-and-white" terms, enabling faster and more decisive action against a potential threat. Correlational evidence supports the idea that threat is the mechanism that causes higher levels of zero-sum thinking. People higher in zero-sum thinking express lower preferences for ambiguity and higher preferences for predictability and decisiveness; they are also more likely to interpret ambiguous vignettes as hostile rather than benign (Fearon et al. 2021).

The evidence that generalized zero-sum thinking is associated with threat is thus far correlational rather than causal. Several challenges have bedeviled researchers attempting to determine the cause of zero-sum thinking. First, it has been hard to isolate the explanatory variables of interest, meaning that manipulations of proposed causes have inadvertently manipulated other possible variables. For

example, in a study examining the causes of zero-sum attitudes towards gender, the attempted manipulation failed to affect generalized zero-sum thinking but did affect ambivalent sexism (Wilkins et al. 2015). Similarly, manipulations of how threatening a potential immigrant was caused people to view immigration in more zero-sum terms (Smithson, Sopena, and Platow 2015), but threat has long been linked to prejudice (Duckitt et al. 2002); the manipulation may have made respondents more prejudiced against immigrants instead of affecting whether they viewed immigration as a zero-sum game.

Second, measures of zero-sum thinking are strongly influenced by question format. Most questions have taken the form of measuring whether a given group losing implies that another group will gain; for example, asking if decreasing discrimination against women implies that discrimination against men is increasing. However, when evaluating a situation people place a higher value on losses relative to gains (Tversky and Kahneman 1974). This means that if respondents are members of group X, they are more likely to report that group Y winning implies group X is losing than they are to report that group X winning implies group Y is losing – even though from a mathematical perspective, those two statements should be identical (Smithson, Shou, and Yu 2017; Smithson and Shou 2016). For example, Americans are more likely to express that China getting richer implies that America is getting poorer than they are to express that America getting richer implies that China is getting poorer, even though both of those statements should be equivalent measures of seeing the relationship as zero-sum (Roberts and Davidai 2021).

In this paper, I first propose a new index of generalized zero-sum thinking and demonstrate that this index is strongly correlated with perceiving a variety of policy areas as zero-sum. I then use this index to show that thinking about sports - popular, non-threatening competition - increases zero-sum thinking. I conclude by discussing the implications of zero-sum thinking being caused by thinking about competition rather than threat and survey future areas of research.

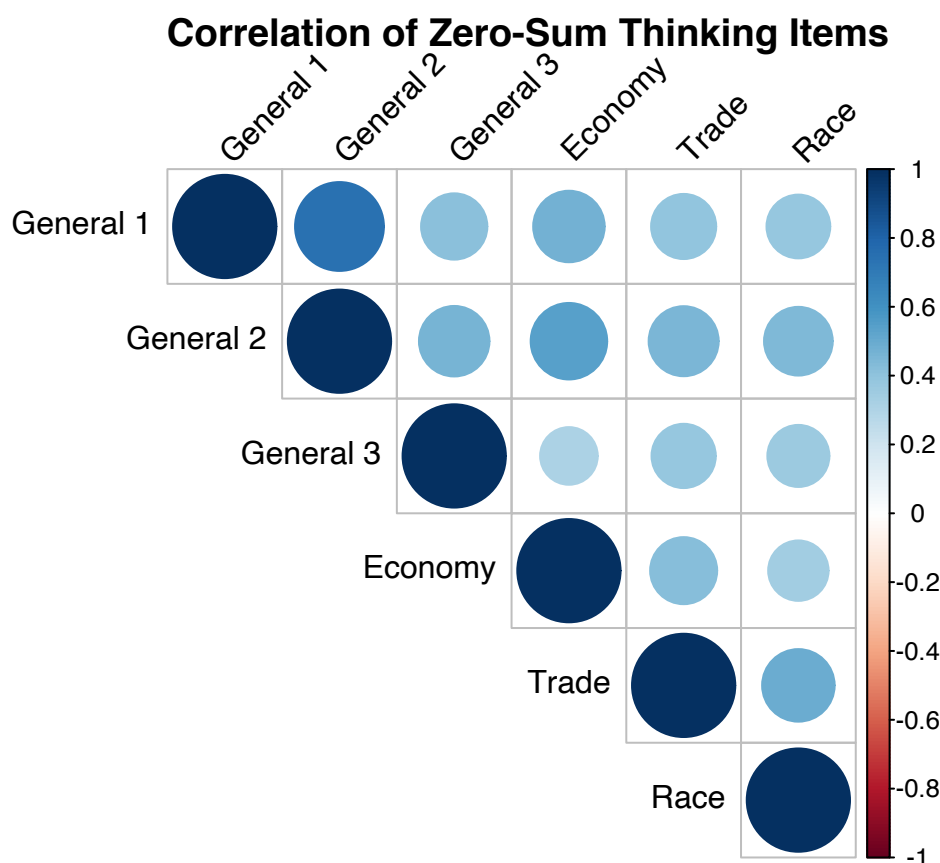
## Data and Measures

For my scale development and experimental design I used a sample of 1873 respondents recruited using the platform CloudResearch. The data on zero-sum thinking and policy attitudes was collected as part of a study examining the influence of watching the Super Bowl on political attitudes. Because the study was interested in Super Bowl viewership, participants were recruited from Los Angeles, Cincinnati, and New York City (the two cities which had a team playing in the Super Bowl as well as a third city whose team was not competing). Study participants were primarily recruited from Forthright; however, due to low numbers of responses from the Cincinnati area Forthright partnered with other survey companies to increase the sample in that area. In total, 944 respondents participated in the non-experimental study.

As generalized zero-sum thinking is a relatively new concept, there is extensive ongoing debate on how best to measure it. I constructed a new index consisting of a combination of items tapping generalized zero-sum thinking and items tapping zero-sum thinking in specific domains. The three generalized zero-sum questions were based on the Belief Life is a Zero-Sum Game scale (Fearon et al. 2021; Różycka-Tran, Boski, and Wojciszke 2015) adapted to tap attitudes towards groups rather than individuals. The three domain-specific questions asked about areas where existing work has argued that zero-sum attitudes are influential: the economy (Ongis and Davidai 2021), international trade (Mutz 2021), and racial discrimination (Norton and Sommers 2011). For all questions, the groups are not specified to avoid responses being influenced by how much a respondent identifies with a particular group. The final six-item scale was as follows:

- The success of one group of people is usually the failure of another group.
- Life is such that when one group gains, another group has to lose.
- In most situations, interests of different groups are incompatible.
- When some people get richer that means other people become poorer.
- When countries trade, one country wins and the other one loses.

- If discrimination against one race decreases, discrimination against another race increases.



**Figure 1** shows the correlations between the six items in this index for the experimental study. As the figure demonstrates, all items strongly correlate with each other with an average correlation (excluding items correlated with themselves) of .44. The Cronbach's  $\alpha$  of the index is .83, indicating that these items are measuring a single concept. In the study on policy preferences this index had an  $\alpha$  of .87, with an average correlation of .51. Across two different studies and samples, this index looks remarkably coherent.

## Generalized Zero-Sum Thinking in Political Science

I first apply my six-item generalized zero-sum thinking scale to explore a range of political attitudes. The impact of generalized zero-sum thinking on political beliefs is thus far virtually unexplored in political science. This exploratory study aims to demonstrate that generalized zero-sum thinking is important as an object of study, rather than precisely estimating its relationship to policy positions.

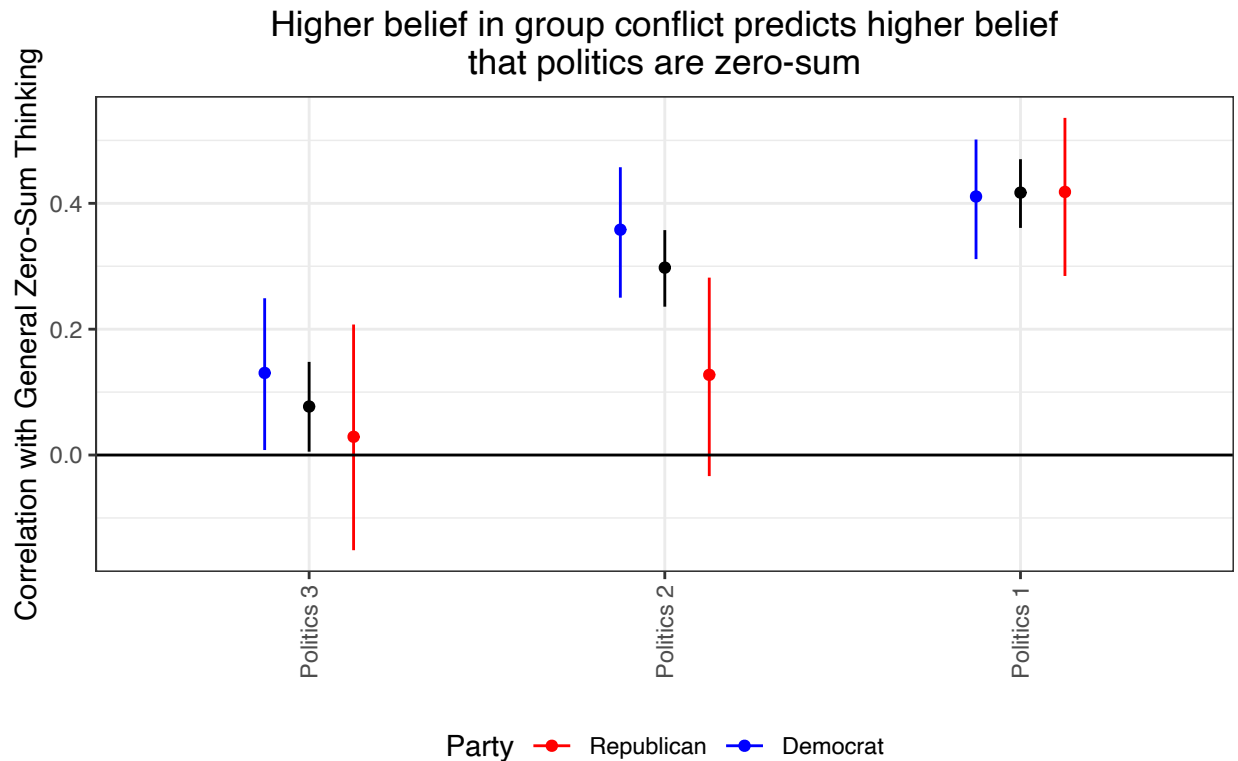
Because so many policy attitudes are highly correlated with political party identification, it is important to show that any observed relationships are not simply driven by differences in party identification. Unfortunately, due to the unusual subject recruitment in this study many respondents recruited by Forthright from other data providers did not have party identification on file with those data providers. As a result >25% of the sample is missing political party information. To address this, I report the overall correlations as well as correlations among Democrats and Republicans. Again, the goal is not to make precise claims about specific policy positions or party differences, but to demonstrate that the relationship between generalized zero-sum thinking and policy attitudes is not merely an artifact of party identification.

### *Belief Politics is Zero-Sum*

To assess the extent to which respondents thought politics was a zero-sum game, three questions were asked:

- In politics, there is always a winner and a loser.
- Politics is inherently competitive, not cooperative.
- It is possible to reach political agreements where all sides are happy (reverse coded).

These questions did not hold together well as an index ( $\alpha < 0.5$ ), so they were analyzed independently. **Figure 2** shows the correlations between the generalized zero-sum thinking index and these items. Overall, the relationship is stronger for Democrats than it is for Republicans, but whether examining all respondents or splitting by party, those who view the world as more zero-sum in general also view politics as more zero-sum.



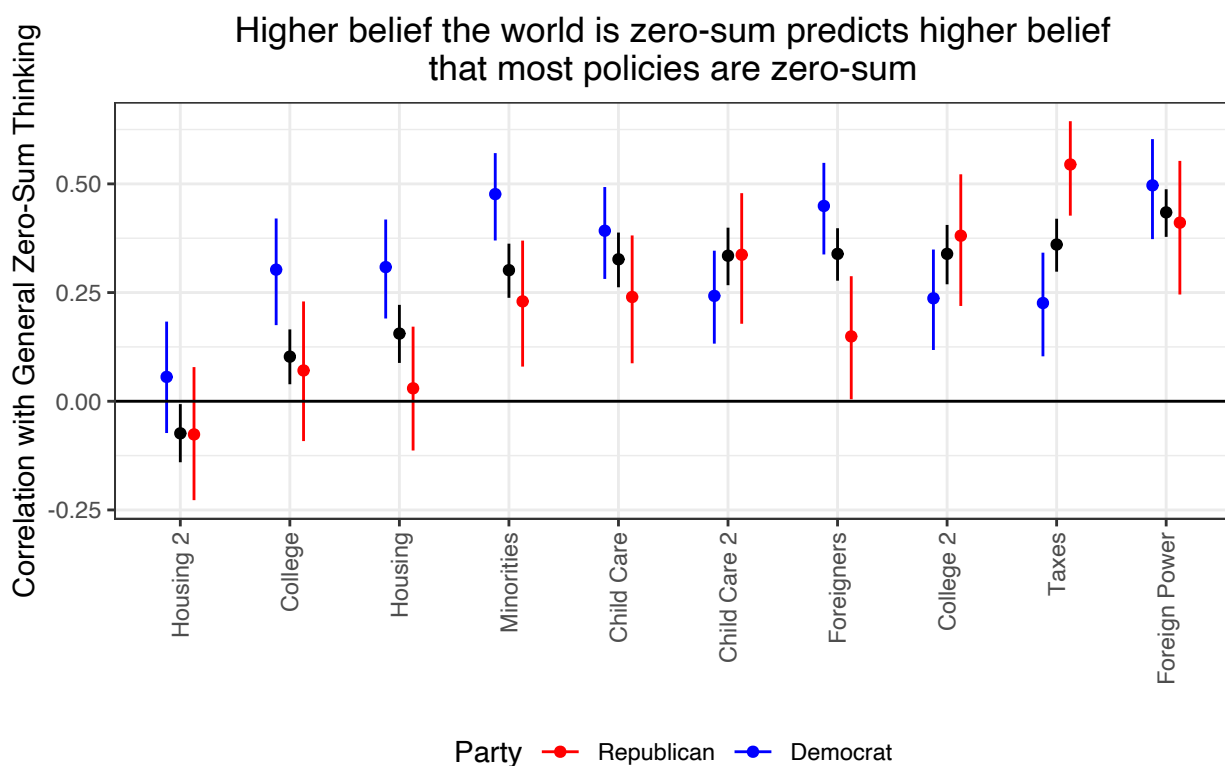
Black dots represent estimate for all respondents, including those with unknown party ID.  
Error bars represent 95% bootstrapped confidence intervals.

### *Belief Policies are Zero-Sum*

In addition to the politics questions, I asked ten policy questions which measured the extent to which people saw various policies as zero-sum. Unlike the general zero-sum questions or the political zero-sum questions, some of these ask about a specific group winning versus a specific group losing. Because of this, these measures included a number of questions where the winners and losers were flipped, to ensure people were evaluating the questions based on whether they thought the policies were zero-sum rather than whether they identified with the winning or losing group. The ten questions were as follows:

- The best way to help the poor in America is by increasing taxes on the wealthy.
- If foreigners gain jobs, Americans lose them.
- Government assistance to minorities comes at the expense of White people.

- If other countries become increasingly powerful and successful, then America's power and success must decline.
- Companies with policies that benefit parents are unfair to employees without children.
- Companies without policies that benefit parents are not fair to employees with children.
- College admissions practices that purposely admit more students from under-represented groups hurt White students.
- College admissions practices that do not favor students from under-represented groups hurt minority students.
- Building new affordable housing damages property values for those already living in the area.
- Building new affordable housing benefits even those who do not need inexpensive housing (reverse coded).



Black dots represent estimate for all respondents, including those with unknown party ID.  
Error bars represent 95% bootstrapped confidence intervals.

**Figure 3** shows the correlations between the generalized zero-sum thinking scale and these policy questions. Once again, while there are certainly noticeable partisan differences, on the whole people who viewed the world as more zero-sum in general were more likely to see policies as zero-sum as well. Further work with a more representative pool of respondents, a broader set of policies, and



additional demographic information can better model the relationship between generalized zero-sum thinking and various policy attitudes. Nevertheless, the results consistently show that viewing group relations in general as zero-sum predicts viewing both politics and numerous policies as zero-sum as well.

## **What Causes Generalized Zero-Sum Thinking?**

Existing work has noted that generalized zero-sum thinking is associated with feeling threatened. However, studies have not succeeded in manipulating generalized zero-sum thinking. I hypothesize that thinking about competition makes people believe that the world in general is more competitive than cooperative.

### *Experimental Design*

To test whether thinking about thinking about competition made people think the world was zero-sum, I conducted a preregistered priming experiment with 5 conditions.<sup>1</sup> Respondents did a brief writing exercise where they had to write at least 20 words in response to a prompt. The control condition was to write about what they did the previous day. In two of the experimental conditions, respondents were asked to write about either a memorable sports loss or a memorable sports victory. In two other conditions, respondents wrote about a memorable sad event or a memorable happy event.

While people often find competitive situations stressful and unpleasant in their daily lives (Markovits 2019), sports allow people to observe competition without engaging in a competitive struggle themselves. Sports viewing is extremely popular, with 12% of Americans saying they watch sports daily and a majority reporting that they watch sports at least once a month (Morning Consult 2020). This means priming sports has high external validity, as most people are frequently exposed to this sort of competition, as well as being a relatively non-threatening form of competition.

Priming people to think about sports may prime more than just thinking about competition. A

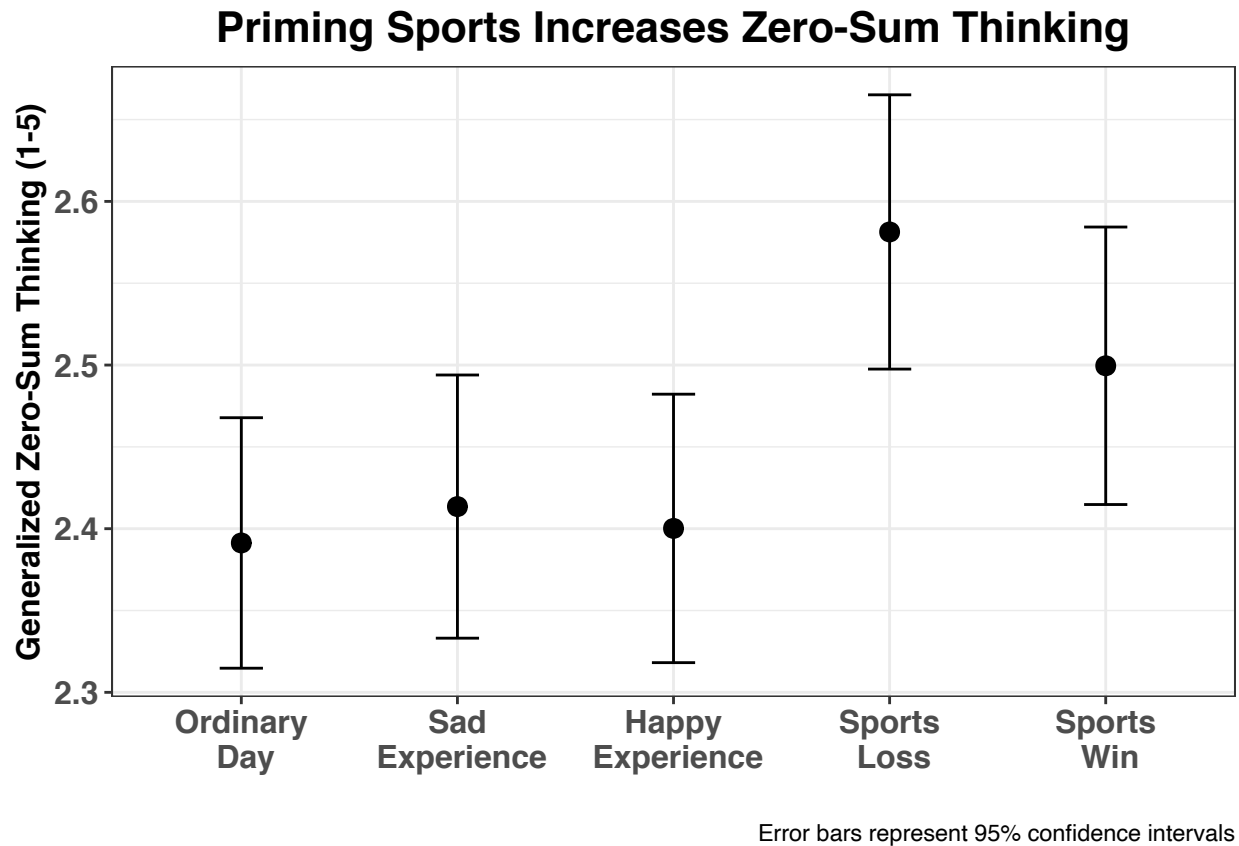
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<sup>1</sup>Preregistration available at <https://osf.io/v7hxj/>

line of work in political science has argued that sporting events cause people to feel powerful emotional reactions that can in turn influence political attitudes (Healy, Malhotra, and Mo 2010). To guard against the possibility of my primes inducing zero-sum thinking via affect rather than thinking about competition, I included two other conditions. In one, respondents were asked to write about a particularly sad experience while in the other they were tasked to write about a happy experience. This allows me to identify whether the effects of thinking about winning or losing a competition are distinct from the effects of being happy or sad without thinking about competition.

A final concern is that priming sports may prime other considerations that are closely tied to sports but are not about competition. In past studies, attempts to prime zero-sum thinking within a specific domain risked priming other potentially domain-salient considerations (Wilkins et al. 2015; Smithson, Sopeña, and Platow 2015). Viewing sports is associated with various political beliefs such as greater support for the military, possibly due to the military or nationalist symbols popular at sports games (Thorson and Serazio 2018). To guard against the possible influence of sports-specific primes, at the end of the survey respondents were asked about their sports viewing habits to test if people who watched lots of sports reacted to the prime differently than people who had less exposure.

Per the preregistration, I compared the conditions where sports were primed to the control and to their respective affective conditions (loss vs. sad; win vs. happy). In this way, the sports priming conditions serve as a strong test of the effect of thinking about competition on general zero-sum thinking. By using a prime that was topically unrelated to the questions asked and including tests of priming affect without competition, I tested the effect of thinking about competition specifically on zero-sum thinking.



**Figure 4** displays the primary results from the experiment. There was no statistically significant difference between people who wrote about either a happy or a sad experience, and those who wrote about their day. However, people who wrote about a sports win or a sports loss saw the world as more zero-sum. While the magnitude of the relationship varies depending on which conditions are being compared, aggregating the sports primes relative to the non-sports primes indicates that the prime affected individuals' attitudes by an average of just over 1/6 of a standard deviation ( $p < .001$ ).

In addition, level of sports viewing did not moderate the effect of the prime. **Table 1** shows regression results of the experiment including an interaction between level of sports viewing and seeing the prime. The lack of any interaction shows that the prime did not affect major sports fans differently from those who said they viewed sports less often. This is a good sign that it worked on a level that anyone with some familiarity with sports would engage with (the excitement of competition, the frustration of a team losing) rather than any feature of sports that only a more dedicated fan would

Table 1: Priming Sports Increases Zero-Sum Thinking

	Generalized Zero-Sum Thinking
Sports Primed	0.137 (0.058) *
Sports Consumption	−0.001 (0.004)
Sports Prime x Sports Consumption	0.000 (0.006)
Num.Obs.	1873
R2	0.007
R2 Adj.	0.006

be familiar with.

### *Discussion*

This paper is a first step at applying a relatively new concept in psychology to political science, and makes two significant contributions. First, I extend previous show that generalized zero-sum thinking is correlated with a number of policy attitudes, independent of party affiliation. Second, I demonstrate that thinking about competition, even competition that seems irrelevant to policy questions, makes people believe the world as a whole is more zero-sum.

This has potentially profound implications for efforts to combat negative effects of zero-sum thinking. If zero-sum thinking arises from a feeling of threat, in line with current thinking in psychology, then efforts to foster cooperation should focus on reducing feelings of threat to make all parties amenable to negotiations. If, on the other hand, zero-sum thinking stems from thinking about competition, that implies a different set of causes and a different set of solutions. Media that portrays the world as competitive rather than cooperative would reinforce potentially inhibit cooperation. Political scientists have long accused media outlets as portraying politics as a game, creating an exciting spectacle but failing to inform the public (Cappella and Jamieson 1997; Patterson 1994). If this sort of coverage makes people think of politics, or group interactions as a whole, as inherently competitive, it may have more negative consequences than previously appreciated.

Notably, sports are not traditionally considered political media; people are exposed to a great deal of competitive messages in popular entertainment. Portrayal of competition in entertainment media

has risen dramatically. In an age of fragmented media and on-demand viewing, live sports are the last major draw for television broadcasters. In 2005, 14 out of the top 100 most watched television broadcasts in the United States were sporting events; by 2021 94 of the top 100 were (Nielsen 2015; Crupi 2022). Similarly, reality television and other competitive shows have exploded in popularity over the past several decades, and has entrenched itself as a mainstay not only among broadcast television but streaming services as well (Kim 2019; Shevenock 2021). Competition also ties into longstanding narratives such as the “American Dream” of hard work leading to surpassing success (McClosky and Zaller 1984). The success of competitive entertainment incentivizes news media to incorporate competition into its own reporting. Former CNN president Jeff Zucker worked to make news coverage more like shows on the sports network ESPN, with angry clashes between pundits and “pregame” coverage of political events (Mahler 2017).

This research is still at its very beginning. Numerous follow-up studies could help clarify the causes and impacts of generalized zero-sum thinking. Among the follow up steps would be examining the influence of different types of news media on zero-sum thinking, rather than the influence of thinking about sports. Similarly, a content analysis of news media to describe trends in framing the world as zero-sum would be helpful to understand the types of stimuli that the public receives which might influence propensity towards generalized zero-sum thinking. Finally, much of the effects of generalized zero-sum thinking have been tested via self-reports in surveys. Behavioral games that test decision-making could help clarify the consequences of thinking of the world as zero-sum.

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