



# The Effect of Political Bias in Non-Political Strategic Interactions

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The Effect of Political Bias in Non-Political Strategic Interaction

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A Thesis in the Field of Government  
for the Degree of Master of Liberal Arts in Extension Studies

Harvard University

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## Abstract

How does political bias affect behavior in day-to-day interactions with other people? Does a person's behavior change based on the political identity of those they interact with? An important step in answering these questions is to study what types of determinants impact behavior, how behavior is affected, and to measure the extent of any observed changes that might occur. This research set up a simulation between proposers and hypothetical responders to track changes in the proposer's behavior during the strategic interaction. The results showed that when the political identity of the hypothetical responder was Republican, the behavior of two groups, No Party Affiliated proposers and Democrat proposers, was affected. There were no significant findings of positive bias in the distribution of money allocated within party groups.

## Table of Contents

Abstract .....	iii
List of Tables .....	vi
Chapter I. Introduction.....	1
Research Problem .....	2
Overview of Methods .....	3
Thesis Organization .....	4
Chapter II. Literature Review .....	5
Introduction.....	5
Game Theory .....	6
Social Identity .....	9
Political Party as a Social Identity .....	10
Chapter III. Research Methods .....	16
Introduction.....	16
Population and Sample .....	16
Sampling Procedures .....	17
Instruments.....	18
Data Analysis .....	21
Ethical Consideration.....	21
Summary .....	21
Chapter IV. Results.....	22

Description of the Sample.....	22
Hypothesis Testing.....	24
Qualitative Analysis.....	26
Chapter V. Conclusion.....	28
Discussion .....	28
Limitations .....	30
Suggestions for Further Research .....	32
Conclusion .....	33
Appendix 1: Instruments.....	34
Appendix 2: Consent Form.....	36
References.....	37

## List of Tables

Table 1. Gender of Respondents .....	22
Table 2. Political Affiliation of Respondents .....	23
Table 3 Group Assignment of Respondents .....	23
Table 4. ANOVA Ultimatum Game Allotments Grouped by Responder Political Identity .....	25
Table 5. ANOVA Ultimatum Game Allotments Grouped by Proposer Political Identity .....	26

## Chapter I.

### Introduction

The effects of political disaccord in the US may have broader reaching consequences beyond professional politics. Tensions seem to be on the rise in the public sphere as well. A reported 77% of Americans perceive the nation as divided on central values<sup>1</sup>, yet they are faced with interacting with on a daily basis in non-political contexts of problem solving and decision making<sup>2</sup> with others who may identify on a spectrum of varied political attitudes, identities, and ideologies. Are political party identities, which serve as a descriptive organizational mechanism between political ideologies and constituents, contributing to adverse consequences of implicit partisan bias in non-political decision-making? This observed polarization and increasing distance between parties reflects not just the political situation at the national and state levels but reflects the growing narrative among Americans.

This research examines whether the rising political divides breed increasing ill feelings or other negative sentiments between people on either side of the partition. Cooperation is a fundamental requirement for a productive democratic society, as the members of a single party do not entirely represent the American people by itself. It is imperative to understand what factors impede in the ability to navigate interpersonal interactions and think critically about the challenges that accompany those impediments

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<sup>1</sup> Gallup Poll. "Record-High 77% of Americans Perceive Nation as Divided", November 9- November 13, 2016, Retrieved from <http://www.gallup.com/poll/197828/record-high-americans-perceive-nation-divided.aspx>

<sup>2</sup> These types of interactions may include professional negotiations and collaborations, social interactions, and even simply in the context of regular commerce.

in the dynamics of conflict in public and private spheres. An argument can be made that political tension cannot be avoided in political dialog, which is not addressed in this research. But if political divisiveness impedes the ability to resolve conflicts and civilly engage in dispute resolution, especially when those disputes are not political in nature, the risk of escalating conflict increases while encountering more impasses without cooperative solutions. If this occurs regularly and on a wide scale, a breakdown in the willingness and ability to cooperate could lead to social disintegration and conflict.

This research addresses a very specific aspect in the field of conflict resolution, namely to gain insight on the complexities on the dynamics of decision-making.

### Research Problem

The central question of this research project is: Does political party identity (which serve as a descriptive organizational mechanism between political ideologies and constituents) contribute to adverse consequences of implicit partisan bias in non-political decision-making? Specifically, does knowing someone's political identity impact how one interacts with others when making non-political decisions?

*Research Question:* It is expected that knowing someone's political identity will impact how a person reacts to the situations they are given, reflecting the contentiousness of a growing political divide between party identity.

H1: Proposers are more likely to make more favorable offers to politically aligned responders.

H1null: There is no effect of knowing the political party on offers.

H2: Proposers are more likely to make less favorable offers to politically opposed responders.

H2null: Knowing the responders political party will not impact offers.

Further understanding these implications is relevant in the current polarizing political landscape. The implications of this research might be of particular interest to the fields of political science, psychology and sociology, because people must continue to interact with those on alternate sides of the divide, despite partisan barriers. The research in this thesis attempts to provide some insight into the challenges we may face as a society with a divisive political system, and the need for collaborative decision making to move forward in a successful society, ultimately posing the broader question; does the bipartisan system facilitate effective democratic functions or hinder people's ability to work together?

### Overview of Methods

This research uses mixed methods to address the research questions. The survey was developed to capture quantitative and qualitative data about the participants and respective interactions within the simulation. The quantitative data examines correlation between the treatment groups, measuring variations in allocation. The qualitative portion of the survey allows for themes among groups to be observed. Using a mixed methods approach supports for the sampling of a wide selection of people in the U.S. while also including information that might contribute to the narrative of the research.<sup>3</sup>

Using a baseline ultimatum game model, 257 people were surveyed from a sample of the US general population and asked to make strategic decisions that affect

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<sup>3</sup> Creswell, John W. A Concise Introduction to Mixed Methods Research. Sage Mixed Methods Research Series. Thousand Oaks, California: SAGE, 2015.

another player. By manipulating the player's knowledge of their opponent's political identification, this research project will observe how players make strategic decisions in relation to other players, specifically, the extent of partisan bias effect on the process, outcomes, and perceptions will be measured for each party. By controlling the awareness of another participant's political identity in the scenarios, we test for political bias effects in non-political decision-making.

### Thesis Organization

A literature review examines the current landscape of what is known about political bias and decision-making. Some of the seminal research is engaged to provide some foundational context of the research. The methods chapter provides the descriptive framework for the conducted research. The processes of survey development, sample selection and data gathering are detailed in this section. Findings are presented in the following chapter. Descriptive statistics about the data are organized and discuss the features of the data. Finally, the conclusion summarizes the findings in relation to the research problem and contextualizes the findings with the literature.

## Chapter II.

### Literature Review

#### Introduction

Political polarization and bias are complex multidimensional issues discussed in contemporary literature. Numerous factors contribute to the development of a person's political ideology. Social factors can include education, environmental shifts, economic security, religion and culture.<sup>4</sup> Through exposure and socialization, these determinants may be fluid and develop through a person's lifetime to reflect their motivations. Some research has expanded this discussion to account for non-social sources such as genetics<sup>5</sup> and biological factors<sup>6</sup> included in the consideration of determinants in a person's ideology. While there is no unanimous consensus of how political ideology is formed, there is a unifying theme among the research that acknowledges the futility of reducing determinants down to a single factor.

Existing bodies of work, separately, address aspects of the research presented in this study, but none of them fully encompass the scope of this study's research question; does political bias affect non-political strategic decision-making? Key elements of this study come from the fields of political identity, bias, polarization, social identity and

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<sup>4</sup> Feldman, Stanley, and Christopher Johnston. "Understanding the Determinants of Political Ideology: Implications of Structural Complexity." *Political Psychology* 35, no. 3 (2014): 337-58.

<sup>5</sup> Hatemi, Peter K., Medland, Sarah E., Klemmensen, Robert, Oskarsson, Sven, Littvay, Levente, Dawes, Christopher T., Verhulst, Brad, McDermott, Rose, Norgaard, Asbjorn Sonne, Klofstad, Casey A., Christensen, Kaare, Johannesson, Magnus, Magnusson, Patrik K. E., Eaves, Lindon J., and Martin, Nicholas G. "Genetic Influences on Political Ideologies: Twin Analyses of 19 Measures of Political Ideologies from Five Democracies and Genome-Wide Findings from Three Populations." *Behavior Genetics* 44, no. 3 (2014): 282-294.

<sup>6</sup> Amodio, David M., John T Jost, Sarah L Master, and Cindy M Yee. "Neurocognitive Correlates of Liberalism and Conservatism." *Nature Neuroscience* 10, no. 10 (2007): 1246-1247.

behavioral game theory. To frame the research design used in this study, a review of the foundational research, as well as a review of recent literary contributions provides context for the research questions posed.

Direct partisan bias research provides evidence that partisan bias is more evident among individuals who identify strongly with a party ideology source.<sup>7</sup> This brings to light a theme from social identity theory that appears throughout much of the research relating to political ideologies. Social identity theory provides a framework that describes a phenomenon that I hope to capture.

### Game Theory

Game theory helps explain human behavior in strategic interactions.<sup>8</sup> Two categories among game theory include games with perfect information, where the players know all the information, the rules are fixed, information about the players is known, there is a mutually recognized object, and boundaries are regulated. The second category is a game without perfect information, contrasted by having imperfect collection of information; unknown and unknown players, the objectives may be disparate to each of the players.<sup>9</sup>

These models help explain and predict how people interact in conflict. During these interactions, there are multiple levels of analysis each player engages in that determines subsequent steps respectively. Each player must engage a strategy to achieve

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<sup>7</sup> Giessing, Ann, and Jesper Nielson. "Physiological Responses and Partisan Bias: Beyond Self-Reported Measures of Party Identification." PLoS One 10, no. 5 (2015): E0126922.

<sup>8</sup> Wynn C Stirling, and Teppo Felin. "Game Theory, Conditional Preferences, and Social Influence." PLoS ONE 8, no. 2 (2013): E56751.

<sup>9</sup> Brown, Garrett, Iain McLean, and Alistair McMillan. "Game Theory." The Concise Oxford Dictionary of Politics and International Relations, 2018, The Concise Oxford Dictionary of Politics and International Relations.

his or her ultimate goal. To gain insight on what factors influence decision-making within strategic interactions, we can look to some of the research that has conducted these experiments and simulations.

The use of game theory has long been a tool for research in the social sciences. ultimatum games, in particular are well utilized in economic, political, psychological and sociological research. The simplicity of the ultimatum game makes it a logical choice for controlling variables. It is well tested, and the parameters of the design make it especially suitable for testing social preferences.<sup>10</sup> The ultimatum game is one type of game theory experiment, and it provides the foundation for this study. The ultimatum game has been an experimental tool in many studies addressing behavioral game theory, and variations on the basic design are still being used today. The basic design is a process in which two payers are presented with information about a situation where there are only two possible final outcomes, in this case, they both get money, or neither gets money.<sup>11</sup>

This model is valuable because it has the ability to highlight isolated aspects of bargaining behavior. Recent data from baseline ultimatum game experiments are limited as the standard range was well established in the years following its introduction to academic fields. Data measured across over 45 ultimatum game experiments established that the most common mean offers range from 41-47% of the original allocated amount.<sup>12</sup>

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<sup>10</sup> Schmitt, David R., and Gerald Marwell. "Stimulus control in the experimental study of cooperation 1." *Journal of the Experimental Analysis of Behavior* 11, no. 5 (1968): 571-74.

<sup>11</sup> Güth, Schmittberger, and Schwarze. "An Experimental Analysis of Ultimatum Bargaining." *Journal of Economic Behavior and Organization* 3, no. 4 (1982): 367-88.

<sup>12</sup> Camerer, Colin. *Behavioral Game Theory: Experiments in Strategic Interaction*. Roundtable Series in Behavioral Economics. New York: Princeton, N.J.: Russell Sage Foundation; Princeton University Press, 2003.

Contemporary literature engages variations of the ultimatum game to gain further insight about how and why behavior in these interactions changes. Cramer established five categories for variations to the baseline ultimatum game: methodological, demographic, culture, descriptive and structural.<sup>13</sup> A robust body of multidisciplinary work has resulted from adapting the baseline design in each of these categories to examine multiple facets of behavioral phenomena in strategic interactions including gender,<sup>14</sup> race,<sup>15</sup> age,<sup>16</sup> and other determinant factors.<sup>17</sup>

Zultan (2011) examines the effects of pre-play communication adapted the baseline design of the ultimatum game by varying the structure of the experiment and introducing an additional treatment component.<sup>18</sup> The results suggested that communication between the parties before the game improve cooperation during the game. This is a substantial finding because if a social identity factor, such as political bias, affects behavior and outcomes in an ultimatum game, these findings may help

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<sup>13</sup> Camerer et al., 2003

<sup>14</sup> Multiple studies on gender have been consulted. See below:  
Chew, Soo Hong, Richard P. Ebstein, and Songfa Zhong. "Sex-hormone Genes and Gender Difference in Ultimatum Game: Experimental Evidence from China and Israel." *Journal Of Economic Behavior & Organization* 90 (2013): 28-42.

Mcgee, and Constantinides. "Repeated Play and Gender in the Ultimatum Game." *Journal of Socio-Economics* 42, no. C (2013): 121-26.

Sarlo, Michela, Lorella Lotto, Daniela Palomba, Simona Scozzari, and Rino Rumiati. "Framing the Ultimatum Game: Gender Differences and Autonomic Responses." *International Journal of Psychology* 48, no. 3 (2013): 263-71.

<sup>15</sup> Multiple sources have been consulted for race. See below:  
Kubota, Jennifer T, Jian Li, Eyal Bar-David, Mahzarin R Banaji, and Elizabeth A Phelps. "The Price of Racial Bias." *Psychological Science* 24, no. 12 (2013): 2498-504.

Griffin, Nickerson, and Wozniak. "Racial Differences in Inequality Aversion: Evidence from Real World Respondents in the Ultimatum Game." *Journal of Economic Behavior and Organization* 84, no. 2 (2012): 600-17.

<sup>16</sup> Bailey, Phoebe E, Ted Ruffman, and Peter G Rendell. "Age-related Differences in Social Economic Decision Making: The Ultimatum Game." *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences* 68, no. 3 (2013): 356-63.

<sup>17</sup> Karagonlar, Gokhan, and David Kuhlman. "The Role of Social Value Orientation in Response to an Unfair Offer in the Ultimatum Game." *Organizational Behavior and Human Decision Processes* 120, no. 2 (2013): 228-39.

<sup>18</sup> Zultan, Roi. "Strategic and Social Preplay Communication in The Ultimatum Game." IDEAS Working Paper Series from RePEc, 2011, IDEAS Working Paper Series from RePEc, 2011.

provide a framework for a strategy to mitigate and remedy negative effects that result from such biases.<sup>19</sup> While the study was limited to non-political strategic interaction, it allows for the possibility for future research to consider further reaching implications of the role of pre-strategy communication in political strategic decision-making interactions.

Most of the existing research using ultimatum games in the political sciences has been attempts to understand the motivations that drive and explain party behavior in strategic interactions. This is helpful for understanding why people make varied decisions when faced with similar situations. The strength of these types of studies lie in their contribution to a developing narrative that identifiable attributes may anticipate a player's behavior in predictable ways.<sup>20</sup>

Further extensions of research on political factors as indicator predictions of behavior examine the impact of player's political ideology, revealing that players positioned at different points along the political ideology spectrum display differences in their decisions.<sup>21</sup>

### Social Identity

While the studies discussed so far developed an understanding of how political factors impact behavior, they do not directly address why such phenomena occurs. Research on social identity contributes the emerging narrative. Social identity theory can help us understand behavior and establishes a framework for explaining how a

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<sup>19</sup> Ahler, Douglas J. "The Group Theory of Parties: Identity Politics, Party Stereotypes, and Polarization in the 21st Century." *The Forum* 16, no. 1 (2018): 3-22.

<sup>20</sup> Wynn C Stirling, and Teppo Felin. "Game Theory, Conditional Preferences, and Social Influence." *PLoS ONE* 8, no. 2 (2013): E56751.

<sup>21</sup> Hibbing, Smith, and Alford. "Differences in Negativity Bias Underlie Variations in Political Ideology." *37*, no. 3 (2014): 297-307.

person's shared attributes with people from another group help establish membership to that group, and how this impacts behavior across multiple dimensions of that person's life.<sup>22</sup>

One of the key aspects to consider from social identity theory is the risk of bias from membership affiliation.<sup>23</sup> By identifying features or characteristics of a given group, a person will evaluate those features in relation to themselves and determine if the group features are aligned with their own. Upon this determination, when a person is considered a member of a group, there is a potential for increased bias toward members outside the group. This phenomenon is referred to as affective polarization.<sup>24</sup> This emerging research suggests that the policy issues become less important in affective polarization and further isolation from individuals from the out-group. Political parties attempt to encompass many of the strong social identity qualifiers such as religious, cultural, economic and social attributes. If social identity is strong enough to create a dislike for out-group individuals, then we must consider the potential effects it could have on problem solving and interactions with both in-group and out-group members.

### Political Party as a Social Identity

To understand how political parties affect behavior, a brief historical summary of the role of early political parties may provide some context. During the formative period establishing the American government, political elites held disparate views on the ideal organization of government. Despite sharing unanimous resistance against the

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<sup>22</sup> Kalin, Sambanis. "How to Think About Social Identity." *Annual review of political science*, 21 (2018): 239-257.

<sup>23</sup> Rothschild, Jacob, Adam Howat, Richard Shafranek, and Ethan Busby. "Pigeonholing Partisans: Stereotypes of Party Supporters and Partisan Polarization." *Political Behavior*, 2018, 1-21.

<sup>24</sup> Rothschild et. al

establishment of political divisions after having been on the forefront of tumultuous and destructive British tension between political factions, political parties emerged from mounting tension between Federalists and Anti-federalists to reflect opposing attitudes toward the role of government. Post 1789, national unity was ultimately sacrificed for the sake of political alignment and political parties in America commenced.<sup>25</sup>

Social and cultural characteristics have permeated modern political parties. Issue-based political groups have evolved to reflect not only the dispositions of political elites and legislative players but have established social groups that include average citizens in America. In attributing a causal determinant of party identification, Gerber, Huber, and Washington noted that active party identification reinforces partisanship, arguing that the evidence shows that parties are not just summaries of positions toward issues, but rather have a causal role in the formation of attitudes.<sup>26</sup> This is helpful in understanding how political attitudes are formed, and the relationship between party identification and political issue preferences, but it leaves the issue of out-group interactions unaddressed.

Ahler (2018) argues that exaggerated stereotypes regarding political social groups results in a greater polarizing divide between people and their perception of the political counterpart (out-group individuals).<sup>27</sup> While we do not know how the effects of this research would impact strategic interactions, we can expect that a polarizing divide between people might infer potential problems in interactions and conflict. Ahler (2018) discusses a mitigation strategy that corrects hyperbolic perceptions and recalibrates them

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<sup>25</sup> Hershey, Marjorie Randon. U.S. Political Parties. Thousand Oaks, California: CQ Press, 2014.

<sup>26</sup> Gerber, Alan S, Gregory A Huber, and Ebonya Washington. "Party Affiliation, Partisanship, and Political Beliefs: A Field Experiment." *American Political Science Review* 104, no. 4 (2010): 720-44.

<sup>27</sup> Ahler, Douglas J. "The Group Theory of Parties: Identity Politics, Party Stereotypes, and Polarization in the 21st Century." *The Forum* 16, no. 1 (2018): 3-22.

with accurate characteristics of the party, which eases negative sentiments toward the person in the out-group. This research also suggests that bias may not be as contained in specific policy and ideology differences, but rather manifest in a decline in the general dislike toward the out-group, citing evidence of research that illustrates a 12 point decline in attitudes toward individuals of the out-group. This raises a few questions; does this decline necessarily have implications on how people interact with others from the out-group? It would reason that a decline in “likability” might negatively impact cross partisan behavior, but what about in strategic interactions when the parties should behave rationally for their own best interest. Does this polarization necessarily result in increased tensions in interactions?

While political ideologies, as a social identity, is well established in the existing research, Garret, Gvirsman, Johnson, Tsfati, Neo and Dal (2014) suggest that information exposure directly considers the issue of weather in-group and out-group determinants are more important than actual differences in policy positions or policy preferences.<sup>28</sup>

Attributing some of the phenomena to heightened media exposure as a result of modern technologies, resulting in selective exposure, has an activation effect on affective polarization. To measure positive and negative evaluation of the in-group and out-group respectively, qualitative questions were given to study participants to measure partisan bias effects and if it reinforces in-group identity and favor, while simultaneously pushing the out-group further away. The addition of the qualitative questions on the survey in this thesis research project were added to find out what assumptions and evaluations

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<sup>28</sup> Garrett, R. Kelly, Shira Dvir Gvirsman, Benjamin K. Johnson, Yariv Tsfati, Rachel Neo, and Aysenur Dal. "Implications of Pro- and Counterattitudinal Information Exposure for Affective Polarization." *Human Communication Research* 40, no. 3 (2014): 309-32.

individuals were making on the hypothetical counterpart when they were in-group and out-group.

Conversely, Yair and Sulitzeanu-Kenan (2014) studied students in Israel regarding an overestimated perception in political ideological distance and a resulting increase in political bias.<sup>29</sup> This highlights a very important question in the research specifically pertaining to strategic interactions. Is there an implicit (possibly even unconscious) assumption that the other party in the scenario will have bias toward you? In other words, is the perception of anticipated bias have any impact in the player's strategic decision? Does knowing the counterpart's identity imply that they would likewise know yours, and would that factor into a person's decision-making process?

It is crucial that research extends beyond the contributing factors of bias and address substantive impacts of party identities in non-political interactions between people. This gap in the existing body of work is where this research hopes to contribute. The existing body of research related to political ideologies, political affiliation, and the ultimatum game seem to fall into one of two research categories: (1) attempting to understand how partisan bias impacts politically connected behavior (i.e. legislative voting behavior or attitudes towards candidates) or (2) attempting to describe the differences in how politically inclined individuals react to external stimuli.

The existing research tells us that bias is a byproduct inherent to the psychology of group identity dynamics. This study aims to test this critical cross-section where much of the research is unresolved; how, and to what extent, do people who identify in specific

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<sup>29</sup> Yair, Omer, and Raanan Sulitzeanu-kenan. "Biased Judgment of Political Bias: Perceived Ideological Distance Increases Perceptions of Political Bias." *Political Behavior* 37, no. 2 (2015): 487-507.

political groups show preferences towards others within and outside of that political group in non-political interactions.

The most similar research conducted to the design of this thesis was an experiment run by Fowler and Kam (2006) with students at a university, where the participants were asked to play three ultimatum games, dividing lottery tickets with an anonymous hypothetical responder.<sup>30</sup> The responder's political identity was not known for one of the games, identified as Republican for one, and Democrat for one. The findings revealed there was a preference for the in-group. Another notable finding was that social identity intensified the results. The final notable finding was that the Republican recipient was given the least among all the groups, noting a bias against Republicans. A problematic feature of this design is that it's possible that once a proposer allocates money in the first round, a precedent has been set, and they may be less inclined to vary their offer in subsequent rounds.

This research also relies heavily on the study of students. Limiting the population to academics presents its own set of problems in accurate representation of the greater population, and we believe it is important for the literature to begin to study populations that greater reflect the population.

This thesis expands on the experimental design from Flower and Kam by using the same control groups, however is divergent in the study structure. Fowler and Kam utilize a dictator game that simply asks the participant to allot money to another person. This structure is set up to measure altruism in giving allocations. My study is less

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<sup>30</sup> Fowler, James H., and Cindy D. Kam. "Beyond the Self: Social Identity, Altruism, and Political Participation." *The Journal of Politics* 69, no. 3 (2007): 813-27.

interested in altruism, and more focused on the social identity implications on the strategic interaction outcomes. The ultimatum games are used because it requires the participant to think strategically about the hypothetical reaction of the responder in the game to attempt to maximize their position.

Experiments that research how a player's political attitudes impact their decisions reveal that players positioned at different points on the political ideology spectrum make different choices.<sup>31</sup> This is helpful for understanding why various people make varied decisions when faced with similar situations. This type of research allows assumptions to be made about how, and why the players make decisions throughout the game. The research is generally in concurrence that affective polarization has increased and the implications of this are difficult to measure, and further difficult to prevent and mitigate. This study is an attempt to reproduce and measure these phenomena.

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<sup>31</sup> Hibbing, Smith, and Alford. "Differences in Negativity Bias Underlie Variations in Political Ideology." 37, no. 3 (2014): 297-307.

## Chapter III.

### Research Methods

#### Introduction

This chapter sets forth the parameters and details of how the study was conducted. The sample selection process describes the characteristics and parameters used for participant selection. Process and procedures describes how the study was conducted. The instrument section details the ultimatum game and what participants were asked to complete and what specific information can be extracted from the questions. Any finally, the data analysis section explains the statistical tests run on the data.

#### Population and Sample

The aim of this research was to draw insight about political bias in strategic decision-making; therefore, the sample parameters were developed to accurately reflect the population under study. Political systems vary between countries, therefore, the sample for this study was limited to the United States bipartisan system, and a sample located within the United States was taken. To further preserve the parameters of the study, the following eligibility criteria were established for participation in the study: U.S. citizens registered to vote as Republican, Democrat or no party affiliation. While we acknowledge variety of other possible registered party affiliation options, this study was limited to these three options to focus the scope of the study and control the variables. The other participant criterion for eligibility was that the participants be English speaking. These exclusion criteria were added because of the lack of resources in making the survey available in multiple languages.

Qualtrics collected information on participants from their sample pool. They already had information on all of the criteria that was used for this study (U.S. citizen registered to vote, Republican, Democrat, no party affiliation, and English Speaking), and invited those participants to complete the survey until the desired amounts for each subgroup had been fulfilled. There was no additional exclusion criterion unless the subject pool for one of the subgroups had been satisfied (i.e.: if 100 Democrats had participated in the study, we would exclude additional participants who registered as Democrat to ensure sufficient representation on the desired variables).

### Sampling Procedures

Qualtrics conducted the pre-treatment screening to ensure that the participants of the survey met the study criteria. Emails were then sent to a pool of people who matched the study criteria. This was a non-random convenience sample. Participants decided if they would like to participate based on the duration of the study and the offered compensation.<sup>32</sup> Participants interested in proceeding with the survey clicked on the survey link embedded in the email from Qualtrics. The link directed them to the survey page.

The first page of the survey was the informed consent short form.<sup>33</sup> If participants decided to proceed, they consented to participating in the study.<sup>34</sup> If participants did not consent, they indicated so and exited the study. Participants then completed the survey

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<sup>32</sup> Participants will receive compensation for completion of the study subject to their pre-selected preferences established with Qualtrics. Compensation range will be between \$0.5-\$1.5. Participants pre-select their method of compensation with Qualtrics, and the value is based on their chosen compensation type. They will be informed of the exact compensation value in the invitation link for the survey.

<sup>33</sup> See Appendix 2: Consent Form

<sup>34</sup> Logic was included for questions 1 and 4 where if the participant answered “No” they were removed from the survey. Question 1 pertained to consent, question 4 pertained to eligibility criteria. Participants were also permitted to discontinue and exit the survey at any time during the survey.

and received compensation for completion of the study subject to their pre-selected preferences established with Qualtrics.

We collected 257 participant responses to the survey. Individuals who identified as Republican and Democrat were evenly represented with 41% and the remaining 17% indicated no party affiliation. A sample size calculator was used to determine the necessary sample size and respective values.<sup>35</sup> The sample size was calculated by using a population estimate of U.S. citizens registered to vote at 157,600,000,<sup>36</sup> setting a 95% confidence level with 6.5% confidence interval, a standard error of .0316, and relative standard error is 6.33. This calculation determines a sample size of at least 227 people was necessary.

### Instruments

The ultimatum game is an instrument of behavioral game theory to test how people behave in a given strategic decision-making scenario. While there are multiple responses available to the proposer, they can be organized into two categories: fair and unfair split offers. Previous experiments have established baseline precedents of the distribution of responses.<sup>37</sup> This allowed researchers to vary the information available to the study respondents and measure the subsequent effects. This game model was adapted

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<sup>35</sup> The Sample size calculator used was provided by Creative Research Systems and accessed through [www.surveysystem.com/sscalc.htm](http://www.surveysystem.com/sscalc.htm)

<sup>36</sup> US Census Bureau. "Voting and Registration in the Election of November 2016." May 01, 2017. Accessed March 28, 2018. <https://www.census.gov/data/tables/time-series/demo/voting-and-registration/p20-580.html>.

Table 4c: Reported Voting and Registration by Age, for States: November 2016

<sup>37</sup> Camerer, Colin. Behavioral Game Theory : Experiments in Strategic Interaction. Roundtable Series in Behavioral Economics. New York : Princeton, N.J.: Russell Sage Foundation ; Princeton University Press, 2003. Table 2.2. Frequencies of ultimatum offers

through both methodological and demographic ways<sup>38</sup> for this study to learn more about the behaviors of the participants.

The traditional model of an ultimatum game tasks a person (the proposer) to divide money with another person (the responder), allowing the responder to accept or reject the offer. If the responder rejects the offer, neither party gets any money. If the responder accepts, both parties keep the proposer's determined split amount. For this study, the baseline design<sup>39</sup> of the ultimatum game model was adapted in four notable ways:

1. The ultimatum game was conducted through an online survey. An online survey was used because it allowed for a sample that was more representative of the US population.
2. Participants were only given proposer scenarios. The participants were limited to one of three variations of one aspect of the information about the hypothetical responder - their political party affiliation (Democrat, Republican, or unknown). Constructing the survey in this way allowed for greater control of all other variables in an attempt to isolate the dependent variable.
3. Hypothetical responders were included in the survey. One of three variations of the scenario was presented to the proposer. One was having no information about the hypothetical responder's political identity. This was the control group. A second variation included information that the hypothetical responder identified as the same political affiliation as the participant. The third variation included information that the hypothetical responder identified as a differing political affiliation than the proposer. The aim of the study was to measure if the proposer would act differently to politically aligned/misaligned responders.
4. Qualitative questions were added to the survey for additional information to explore themes in the responses.

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<sup>38</sup> Camerer et al., 2003

<sup>39</sup> Güth, Schmittberger, and Schwarze. "An Experimental Analysis of Ultimatum Bargaining." *Journal of Economic Behavior and Organization* 3, no. 4 (1982): 367-88.

The study consisted of eight questions.<sup>40</sup> The consent for general information was provided about the study, procedures, and contact information for the researcher as well as the administering education system for oversight. Risks and benefits to the individual were disclosed.<sup>41</sup>

Question 2-4 collected demographic characteristics information to run the analysis. Age, gender and voter registration status were collected. Participants were also asked to select their political affiliation (Democrat, Republican or unaffiliated) and self-identify their political ideology on the 7-point General Social Survey (GSS) Scale from “Extremely Liberal” to “Extremely Conservative”.

Question 5 had three variations of the same question, controlling for bias in providing limited information about the hypothetical responder. 5(a) gave no information about the responder’s political identity. 5(b) identified the responder as a Democrat. 5(c) identified the responder as republican. That was the only variation in the three questions. The participants were randomly assigned to one of the three variations of question 5. The question provided the scenario and asked the proposer to make a strategic decision based on the information provided and asked each participant to allot a certain amount of money to a hypothetical responder<sup>42</sup>. This provided the data for the quantitative analysis. Question 6-8 asked for qualitative data responses to gain further insight and context to the study and participants.

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<sup>40</sup> The first questions was administrative and obtained informed consent from the participant. See full survey in Appendix 1: Instruments.

<sup>41</sup> Risks and benefits were minimal for this study.

<sup>42</sup> Money was chosen as the value indicator because studies suggested that it more accurately reflected actual behavior than points or non-monetary currency substitutes.

Shen, and Takahashi. "A Cash Effect in Ultimatum Game Experiments." Journal of Socio-Economics 47, no. C (2013): 94-102.

## Data Analysis

Descriptive statistics provide a summary of the sample and features of the data. Analysis of variance (ANOVA) tested the differences across the group with responses to question 5 as the dependent variable and political affiliation as the independent variable. The data from survey responses 6-8 were extracted into a separate dataset where responses were organized by the political identity of the participants and searched for themes to contribute to the overall narrative.

## Ethical Consideration

The Harvard Committee on the Use of Human Subjects conducted a review of the study, and the Institutional Review Board approved the study with minimal to no ethical considerations to the sample. A consent form was included in the study to inform participants about the nature of the research, and participants opted into the study voluntarily by agreeing with the consent form.

## Summary

The study employed a mixed method approach. Two hundred and fifty-seven people were surveyed to collect quantitative and qualitative data. The quantitative data questions determined if the proposers offered fair or unfair splits, and how the offers varied based on the proposers' knowledge of the theoretical responder's political identity. The qualitative data aimed to gain insight about the assumptions and attitudes of the proposers toward their hypothetical counterparts.

## Chapter IV.

### Results

The hypotheses of this study were that having knowledge of another person's political identity affects how that person acts in non-political strategic interactions: proposers are more likely to make more favorable offers to politically aligned responders, and are more likely to make less favorable offers to politically dissimilar responders.

This chapter will explore the findings using descriptive statistics about the quantitative and qualitative data from the research. Analysis of variances tests will be run to analyze the differences between the means of levels among the sample of the survey.

#### Description of the Sample

The sample consisted of 257 individuals. All of the participants were registered voters. The mean age for the sample was 46.72 (SD = 17.1) with a range from 18-85 years old. Seventy-one percent (183) identified as female, 28% (72) identified as male, 1 identified as gender variant/non-conforming, and 1 preferred not to answer. See Table 1.

Table 1. Gender of Respondents

	Frequency	Percent
Gender variant/non-conforming	1	0.4
Female	183	71.2
Male	72	28.0
Preferred not to answer	1	0.4

For political affiliation of the sample, there was a close to equal distribution of registered Republicans (41.6%) & registered Democrats (41.2%), with 17.1% having no party affiliation. See Table 2.

Table 2. Political Affiliation of Respondents

	Frequency	Percent
Registered Republican	107	41.6
Registered Democrat	106	41.2
No Party affiliation	44	17.1

There were three variations of the survey. The variation was to question 5, and varied the fact pattern about the hypothetical responder. The participants were nearly equally distributed across all three potential groupings for this study. See Table 3.

Table 3 Group Assignment of Respondents

	Frequency	Percent
No party affiliation provided	85	33.1
Stranger identified as Democrat	86	33.5
Stranger Identified as Republican	86	33.5

The average amount offered to the stranger when no party affiliation was provided was \$37.98 (SD=16.8). The average amount offered to the stranger when the stranger was identified as Democrat was \$43.34 (SD=22.57). The average amount offered to the stranger when the stranger was identified as being Republican was \$38.62 (SD= 19.83).

## Hypothesis Testing

Multiple analyses of variance (MANOVA) was run to test whether there were differences between Democrats, Republicans and those with no party affiliation in terms of the behavior in appropriating money with hypothetical responders. For the first MANOVA, there were three dependent variables: not knowing any information about the responder's party affiliation, knowing the person was a Democrat and the final was knowing the person was a Republican.

There was no difference when giving money to either knowing the person was a Democrat or unknown, but there was for knowing the person was a Republican. The difference was between Democrats and no affiliation  $F(2, 82) = 3.16, p = .048$ . Those with no affiliation ( $M = 47.89, SD = 22.99$ ) gave more than Democrats ( $M = 33.97, SD = 16.62$ ).

Table 4. ANOVA Ultimatum Game Allotments Grouped by Responder Political Identity

Political identity of respondent	Political identity of proposer	N	Mean	SD	SE	F	df	Sig
Money to Unknown	Republican	35	34.74	17.78	3.00	1.60	2, 82	0.209
	Democrat	34	41.82	17.06	2.93			
	No affiliation	16	36.88	12.89	3.22			
Money to Democrat	Republican	38	46.97	25.13	4.08	0.93	2, 83	0.400
	Democrat	39	40.92	21.10	3.38			
	No affiliation	9	38.44	16.11	5.37			
Money to Republican	Republican	33	37.94	19.63	3.42	3.16	2, 82	0.048
	Democrat	33	33.97	16.62	2.89			
	No affiliation	19	47.89	22.99	5.27			

For this analysis, the total given for each group was combined into a single variable and the “group” variable was created that identified which responder question participants were asked to complete. Because people were asked to be in only one direct variable group, there are no issues with group independence. Three analysis of variance tests were run. One on those who identified as Republican, one on those who identified as democrats and one for those who were not affiliated. The results are given in Table 5.

For Republicans, there was a difference in giving ( $F(2, 103)= 3.28, p= .042$ ) . Republicans gave more to Democrats ( $M=46.97, SD = 25.13$ ) than to unknowns ( $M=34.74, SD = 17.78, p=.041$ ). There was not a significant difference between what Republicans gave to Democrats or Republicans, or between Republicans and unknowns. Among Democrats, there was no statistically significant difference between giving ( $F(2, 103)= 1.82, p= .167$ ) and same with unaffiliated ( $F(2, 41)= 1.74, p= .188$ ).

Table 5. ANOVA Ultimatum Game Allotments Grouped by Proposer Political Identity

Political identity of proposer	Political identity of responder	N	Mean	SD	SE	F	df	Sig
Republicans	Unknown	35	34.74	17.78	3.00	3.28	2, 102	0.042
	Democrat	38	46.97	25.13	4.08			
	Republican	33	37.94	19.63	3.42			
Democrats	Unknown	35	34.74	17.78	3.01	1.82	1, 103	0.167
	Democrat	38	46.97	25.13	4.08			
	Republican	33	37.94	19.63	3.42			
Unaffiliated	Unknown	16	36.88	12.90	3.22	1.74	2, 41	0.19
	Democrat	9	38.44	16.11	5.37			
	Republican	19	47.89	22.99	5.27			

## Qualitative Analysis

Notable themes emerged from the qualitative questions in the survey. In response to the question “What assumptions do you have about the stranger you are offering money to?” nearly 70% of all the responses made no or neutral assumptions about the

hypothetical second party to the scenario. This remained consistent even as the responses were examined across the groups given differing information about the other party's political identity. Neutral assumptions included restating facts about the exchange, or common sense assumptions such as "they are human", or "they like money". Negative assumptive statements were where the participant made a judgment that included undesirable traits, like assumptions of greed or motivation. The most common assumptions among the negative assumptions was that the person was homeless or poor. Some of the assumptions were about the political beliefs of the hypothetical responder. For instance, multiple responses by Democrats who were asked to share money with a Republican responder made assumptions about the responder's attitude toward gun control. Some of the responses neutrally stated the positions, while others referenced the political assumptions in a hostile light.

The overwhelming majority of people surveyed in the control group (with no information about the hypothetical responder's political identity), regardless of personal political identity, believed that the other party would accept the offer made to them.

Some indicated they were unsure. This theme was present across all of the groups. Only four people surveyed said that responded that they anticipated rejection of the offer. The question asking if they would accept the offer if roles were reversed reflected similar trends to the prediction of the other party's acceptance, with only either people stating they would reject their own offer if they were in the responder's position.

## Chapter V.

### Conclusion

Results of the MANOVAs showed that there was little variation in giving across political identity. The central question of this project was to consider if political bias impacted people's behavior in these simple strategic interactions when they allocated money. From the evidence of this study, it doesn't seem to have an impact across the board. People generally allocated money consistent with patterns of previous ultimatum game experiments that did not control for political bias.<sup>43</sup>

However, the findings are not completely symmetric between treatment groups. Bias toward Republicans increased as political identity was revealed. This was the case for both in-group and out-group giving. The results in this research were only able to demonstrate a bias toward Republican respondents. The political identity and ideology of the proposer did not appear to have any significant impact.

### Discussion

The research design of this thesis was modeled after an experiment conducted by Fowler and Kam (2007). Even with multiple variations on their design, this thesis was intended to expand the implications of Fowler and Kam's findings. Evident in both research findings was the bias toward Republican respondents. Republican respondents

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<sup>43</sup> Camerer, Colin. Behavioral Game Theory : Experiments in Strategic Interaction. Roundtable Series in Behavioral Economics. New York : Princeton, N.J.: Russell Sage Foundation ; Princeton University Press, 2003. Table 2.2. Frequencies of ultimatum offers

received less allocated money overall than any other group. This can be partially explained by Ahler (2018) research that attributed partisan identity with increased negative sentiments toward members of the out-group.<sup>44</sup> However, this phenomena was not observed uniformly across the groups, and was limited to bias against just the Republican party respondents.

The Fowler and Kam (2007) findings showed favorable giving to within group identity.<sup>45</sup> Our research did not observe a statistically significant effect of political bias toward proposer's in-groups. No group gave more favorably (compared to the control group) to respondents from their same political group. One explanation for these differences in findings could be attributed to the fact that we were testing for different things. Because Fowler et al. were testing for altruism through a dictator game model, the participant was only tasked with dividing the money, with no contingency conditions, whereas we were testing for strategic behavior in the simulation, which included a contingency that the proposer would only receive the money if the theoretical respondent agreed to the allocated amount proposed to them.

Reconsider Giessing and Nielson's (2015) findings regarding partisan bias, specifically that people's opinions are influenced to match what they believe is aligned with the sentiments of the respective party, independent of the actual policy merit. This could support a potential adaption to the survey conducted in this thesis project. If cues about party positions were given in relation to the strategic interaction, it might lead to more effective measures of bias. This method could include initial instructions stating

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<sup>44</sup> Ahler, Douglas J. "The Group Theory of Parties: Identity Politics, Party Stereotypes, and Polarization in the 21st Century." *The Forum* 16, no. 1 (2018): 3-22.

<sup>45</sup> Fowler, James H., and Cindy D. Kam. "Beyond the Self: Social Identity, Altruism, and Political Participation." *The Journal of Politics* 69, no. 3 (2007): 813-27.

that a certain behavior is inline with party norms (perhaps allocating a specified range).

Then, the simulation could be run and tested to determine if allocation amounts are impacted by the instructions condoning certain behavior to be align with party norms.

However, we must also consider that opinions and behavior are not interchangeable.

Giessing and Nielson's (2015) studied the bias of opinions; this behavior requires a greater threshold for activation, which may require a higher level of intervention to display observable effects.<sup>46</sup>

### Limitations

One of the weaknesses of game theory is that simulations can fail to reflect reality in important ways, and that problems are stylized in a manner that is not reflective of the circumstances one might face in real life.<sup>47</sup> This explanation can highlight weaknesses in the research deign of this thesis in multiple ways.

The first notable way was that the conditions of the ultimatum scenario are not a commonly occurring in reality. People are generally not offered sums of money and asked to split them with another person under a precise set of given instructions. To avoid participant fatigue from a long survey, the design was limited to one side of the experiment, the proposer. This omits a portion of the data that would normally be available in an experimental design with two parties interacting. This simulation was intended to reflect an effect in an interaction between two people, but only included one party. The second party of the interaction was a hypothetical responder, which obviously

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<sup>46</sup> Mendelsohn, Pine, and Schiller. "Between Thoughts and Actions: Motivationally Salient Cues Invigorate Mental Action in the Human Brain." *Neuron* 81, no. 1 (2014): 207-17.

<sup>47</sup> Kreps, David M. "The Problems of Game Theory." In *Game Theory and Economic Modelling*, Game Theory and Economic Modelling, Chapter 5. Oxford University Press, 1990.

the participant never engaged with. This part of the simulation required that the participant use their imagination to determine how they would act in the given scenario. Evidence suggests that face-to-face interactions may produce differing results than anonymous interaction.<sup>48</sup>

Players were given \$100 stakes in the simulation, however the actual payment for participation in the survey was between \$0.5 and \$1.5. If the stakes are too low, responders may feel divested in the outcome, even if a favorable offer is made because the stakes may seem trivial.<sup>49</sup> Multiple factors including economic and social variables go into determining the balance of stakes. I choose \$100.00 as the amount for the game in an attempt to set forth a mid-range stake. While in real life, this might have served as a functional stake; the nature of this simulation that uses hypothetical value of the money for the proposer may inherently reduce those stakes. These factors may have contributed in the participant being in a state of suspended reality, which may not accurately reflect how they might behave in a real-life situation.

The research sample size was met the sufficient requirements established by the sample size calculator, however a larger sample size may be warranted to improve the data's ability to properly reflect real life phenomena. A major aspect of the conversation about the division is geographical. We didn't control for geographical location, and we didn't sample within a particular geographical location.

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<sup>48</sup> A.E. Roth Bargaining experiments J.H. Kagel, A.E. Roth (Eds.), The handbook of experimental economics, Princeton University Press (1995), pp. 253-348

<sup>49</sup> Novakova, Julie, and Jaroslav Flegr. "How Much Is Our Fairness Worth? The Effect of Raising Stakes on Offers by Proposers and Minimum Acceptable Offers in Dictator and Ultimatum Games." PLoS One 8, no. 4 (2013): E60966.

Another aspect we did not account for was political identities beyond the three identified; Republican, Democrat and no party affiliation. Acknowledging that there are multiple additional parties, this could be integrated and examined further. There is concern for response bias from the participants since it will be apparent that the variables are designed to isolate political identity. The concern is that once this becomes apparent, participants may feel the need to respond in a socially acceptable manner, which may skew or minimize political biases affects that might otherwise be noticeable.

Criticism of the basic linear political ideology spectrum says that it is oversimplified and one-dimensional.<sup>50</sup> In response to these criticisms, researchers have begun developing progressive theoretical frameworks that include a higher level of complexities and account for a more comprehensive continuum. The growing research in this sphere points to an early emergence of a multidimensional spectrum of political ideologies, but a specific multidimensional conceptualization theory has not yet gained widespread consensus to universally reorient and replace the linear political ideology spectrum.<sup>51</sup> It is acknowledged that there are limitations to the linear political ideology spectrum.

### Suggestions for Further Research

Some of the limitations previously discussed address possible changes to the research design. There are two adaptations to the simulation that would be interesting to

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<sup>50</sup> Feldman, Stanley, and Christopher Johnston. “Understanding the Determinants of Political Ideology: Implications of Structural Complexity.” *Political Psychology* 35, no. 3 (2014): 337-358..

<sup>51</sup> Davis, James A, Tom W. Smith, Peter V. Marsden, National Opinion Research Center, and National Data Program for the Social Sciences, *General Social Surveys, 1972-1998: Cumulative Codebook*. NORC ed. National Data Program for the Social Science Series; No. 16. Chicago, IL: National Opinion Research Center, 1999.

test. First, having the parties participate as respondents instead of proposers, and offer two types of offers; fair and unfair offers. Testing whether or not the responder accepts the offer based on the political identity would be another way to test potential effects for political bias in the interaction. The second adaptation would be to include both parties have a face-to-face interaction, but instead of being told the other party's political preference, they could have some other type of identifier, like a political T-shirt bearing the party logo that would serve as the indication of that person's political identity. This might more accurately capture political bias that would be seen in real life interactions.

## Conclusion

The findings of this thesis project showed that a bias toward Republican respondents existed among the sample, however it did not show evidence of bias by way of increased favorable offers to respondents of the same political identity, nor did it show findings of negative bias resulting in decreased offers to those outside of their party identity across the board.

Having a comprehensive understanding all the determinants that go into behavior and decision making is an impossible task, but continuing research that engages these questions is important because as we understand more about interaction dynamics, we can identify the characteristics that work well and move us forward in our business, social, and even political relationships. When we are able to identify and isolate the contributing factors that lead to increased conflict and tension, there is a greater opportunity to correct those things through potential mitigation strategies.

## Appendix 1:

### Instruments

Survey Questions:

Q1. Consent

Q2. Rate yourself on the following scale:

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<i>Extremely Liberal</i>	<i>Liberal</i>	<i>Slightly Liberal</i>	<i>Moderate</i>	<i>Slightly Conservative</i>	<i>Conservative</i>	<i>Extremely Conservative</i>
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Q3. What is your current age?

Q4. To which gender do you most identify?

Female

Male

Gender variant/non-conforming

Prefer not to answer

Q5 (Version A). You are offered \$100 dollars in ten-dollar bills. You can keep the money, under one condition: You have to share some of it with another stranger. You must make a one time offer to the stranger for as much, or as little as you like, but if the stranger rejects the offer, neither of you get to keep any of the money. You know nothing about the stranger. You must now make your offer.

How much of the \$100 do you offer to the stranger? (The slider indicates your offer)

Q5 (Version B). You are offered \$100 dollars in ten-dollar bills. You can keep the money, under one condition: You have to share some of it with another stranger. You must make a one time offer to the stranger for as much, or as little as you like, but if the

stranger rejects the offer, neither of you get to keep any of the money. All you know about the stranger is that they are a Democrat. You must now make your offer.

How much of the \$100 do you offer to the stranger? (The slider indicates your offer)

Q5 (Version C). You are offered \$100 dollars in ten-dollar bills. You can keep the money, under one condition: You have to share some of it with another stranger. You must make a one time offer to the stranger for as much, or as little as you like, but if the stranger rejects the offer, neither of you get to keep any of the money. All you know about the stranger is that they are a Republican. You must now make your offer.

How much of the \$100 do you offer to the stranger? (The slider indicates your offer)

Q6. What assumptions do you have about the stranger you offered money to?

Q7. Do you think the stranger will accept the offer?

Q8. Would you accept the same offer if it was made to you?

Appendix 2:

Consent Form

**Welcome to the research study!**

We are interested in understanding how people make decisions. You will be presented with information relevant to a decision, and asked to answer some questions about it. Please be assured that your responses will be kept completely confidential.

The study should take you around 3 minutes to complete, and you will receive your payment or reward based on the method of compensation you have pre-selected with Qualtrics for your participation. Your participation in this research is voluntary. You have the right to withdraw at any point during the study, for any reason, and without any prejudice. Any identifiable data collected from this study will be kept confidential and accessible only by the research team. There are no foreseeable risks to participation. If you would like to contact the Principal Investigator in the study to discuss this research, please email Kelly Hauge, [kellyhauge@gmail.com](mailto:kellyhauge@gmail.com). You may also contact Harvard's Committee on the Use of Human Subjects (CUHS) with any questions about your rights as research participants.

1350 Massachusetts Avenue, Suite 935

Cambridge, MA 02138

Email: cuhs@harvard.edu

Phone: (617) 496-2847

By clicking the button below, you acknowledge that your participation in the study is voluntary, you are 18 years of age, and that you are aware that you may choose to terminate your participation in the study at any time and for any reason. Please print or save a copy of this consent form for your records.

Please note that this survey will be best displayed on a laptop or desktop computer. Some features may be less compatible for use on a mobile device.

- I consent, begin the study
- I do not consent, I do not wish to participate

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Table 4c: Reported Voting and Registration by Age, for States: November 2016

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