

Motivational Influences on the American Gun Rights Debate

Mark A. Conley

Submitted in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy
in the Graduate School of Arts and Sciences
COLUMBIA UNIVERSITY

2018

Copyright 2018
Mark A. Conley
All Rights Reserved

ABSTRACT

Motivational Influences on the American Gun Rights Debate

Mark A. Conley

For almost forty years gun ownership and the motivational underpinnings of why guns are valued has received little attention in psychology. The gun rights debate is an unresolved salient item that has been on the national agenda for decades, and national polls provide evidence for a slow and steady voter realignment over this issue. Motivation science tools that explain value creation, regulatory focus and regulatory fit, help to explain the salience and importance of gun rights for millions of Americans. Three field experiments, with replications and extensions, demonstrated motivational fit between the prevention orientation (marked by vigilant concern for threats) and gun ownership. This research remained agnostic regarding the legal and moral components of the gun rights debate. Instead, these experiments demonstrate the malleability of gun value as a function of fundamental motivations. This applied political psychology research made two basic contributions to regulatory fit theory. First, these field experiments found fit effects between motivational inductions and distinct field environments. Also, by incorporating a pure control condition into these regulatory fit experiments, this research pinned down that literal dollar value of motivationally relevant objects is intensified by fit (as opposed to decreased by non-fit).

TABLE OF CONTENTS

	Page
List of Figures and Tables	ii
Acknowledgments	iv
Dedication	vi
Introduction	1
Chapter 1: Issue Evolution	
Study 1: Issue Evolution: Gun Rights in America	7
Chapter 2: Linguistic Analyses of Motivation	
LIWC and the Regulatory Focus Dictionary	14
Study 2a: Linguistic analysis of Op-Eds	16
Study 2b: Linguistic analysis of Essays	19
Chapter 3: Field Experiments in Motivation Science	
Study 3: Fliers field experiment	20
Study 4: Gun Show field experiment	22
Study 5: Tattoo Convention field experiment	30
Study 6: Role of chronic prevention	37
Chapter 4: Caveats	
Study 7: Products with invariant prices	41
Study 8: Products lacking distinct motivational relevance	42
Chapter 5: Perspectives	
The role of fear in partisanship and issue positioning	44
Moral Foundations Theory	47
Conclusion	52
Appendices	57
References	62

LIST OF FIGURES AND TABLES

	Page
Table 1: Gun Rights polling questions	10
Figure 1: Gun Rights and Party Identification	11
Table 2: Regulatory Focus Dictionary for Linguistic Inquiry and Word Count	17
Figure 2: Regulatory Focus: 30 Most Recent Op-Eds on the Subject of Guns	18
Figure 3: 30 Most Recent Op-Eds on Distinct Motivational Topics	19
Figure 4: Essays on the Subject “Guns in America”	19
Figure 5: Prevention Induction Causes Intensified Value	27
Figure 6: Replication Design: Induction and DV roles split	30
Figure 7: Original Design and Replication Design	31
Figure 8: Promotion Induction Causes Intensified Value	35
Table 3: Value from Fit with Distinct Motivational Field Environments	37
Figure 9: Prevention and Gun Ownership	40

List of Appendices

Appendix A. Regulatory Focus Questionnaire	87
Appendix B. Data table to Accompany Figure 1	88
Appendix C. Raw Data for Study 4	80
Appendix D. Raw Data for Study 5	81
Appendix E. Bayesian Updating	82

ACKNOWLEDGMENTS

What follows has been my favorite section to write in this dissertation; I relish this opportunity to recognize in writing a paltry selection of the many dozens of people who have led me, accompanied me, inspired me, or ushered me along the path to this doctoral dissertation. I have come to admire in the past few years the members of my dissertation committee who have shown me how to conduct research and imbued me with the philosophic principles of science: Kevin Ochsner and Valerie Purdie-Greenaway. I appreciate Michel Pham's body research in motivation science, and I am especially thankful for Donald Green's mentorship and course in Field Experiments, which accelerated my research questions into real experiments. My first collaborator, Sudy Majd, took me off the bench into the game. My next collaborator, Dana Kanze, leveraged my skills in motivation science and experimental design in a project that surpassed our ambitions; I am very thankful for that fruitful entrée into business applications. Let me proceed to thank my fellow doctoral students. I am devoted to my role in the trio of graduate students in the Motivation Science Lab alongside Maya Rossignac-Milon and Katherine Zee, with whom I have argued the nuances of motivation science and celebrated the team's each incremental advance. Similarly, much of the content in this dissertation has been critiqued and corrected by members of the Columbia Association for Social Psychological Research, specifically Kate Turetsky, Travis Riddle, Becca Mohr, Maneeza Dawood, and Dara Huggins. The aforementioned scholars dispassionately critiqued this research and its presentation with trenchant observations that resulted in this current form; I am indebted to them all. Special thanks goes to Matti Vuorre for his friendship and also for teaching me R in a hurry at a critical juncture. Several research assistants contributed to this dissertation, especially Anne Fanta, Brian Maislin, and Michelle Shteyn. I am chiefly grateful to Tory Higgins, not only for his encouragement, direction, and mentorship, but also for his initial trust years ago in my readiness

for this lofty academic pursuit. I can only repay Tory Higgins for his wisdom, patience, and kindness by incorporating his values and his example into my future leadership style. To my loving wife Kelly, I acknowledge that all of this work has been facilitated, supported, and often explicitly suggested by you; this dissertation is perhaps as much yours as it is mine. These past five years together with the kids have been the years of our lives (so far).

Dedication

To Mom and Dad

Introduction

At the end of the 1970s, psychologist Ed Diener canvassed a suburban American neighborhood to interview gun owners. He sought to quantify their personality traits that might set them apart, but found no differences between matched participants on a variety of existing psychological inventories (Diener & Kerber, 1979). The matter closed for decades; psychologists invested little additional research into gun owners as a notable group. Perhaps the sheer ubiquity of guns in America was the reason. Nearly half of American households contained a gun (Erskine, 1974) and similar numbers persist today (Hepburn, Miller, Azrael & Hemenway, 2007; Azrael, Hepburn, Hemenway & Miller, 2017). Widespread ownership of over 300 million American guns could make gun ownership seem ordinary, almost to banal to consider psychological factors that underlie why guns are valued.

But most Americans consider guns to be a major issue (McCarthy, 2015) and other academic fields have heeded the call in *Science* for increased research on gun ownership (Underwood, 2013). Epidemiologists recently named health consequences predicted by gun ownership (Cook, Rivera-Aguirre, Cedara & Wintemute, 2017), and in a special issue of *Social Science Quarterly* political scientists addressed demographic (Filandra & Kaplan, 2017; Goss, 2017) and criminal (Pearson-Merkowitz & Dyck, 2017) factors contributing to the gun rights debate. Considering major US elections, gun ownership is also a reliable predictor of political attitudes and engagement. Some political scientists have tentatively concluded that an issue evolution has occurred regarding the gun debate (Joslyn, Haider-Markel, Baggs & Bilbo, 2017; Lindaman & Haider-Markel, 2002). This issue evolution perspective informs the motivational experiments in the present research.

Political scientists have identified factors that predict gun ownership and advocacy, but *psychological* variables driving those outcomes are the focus of this present research. Before

measuring and manipulating motivations that might drive gun ownership and advocacy, we present new evidence that the gun debate is among the most powerful issues to ever impact partisanship and political behavior. Specifically, this evidence depicts how powerful and salient the gun debate is for a major stratum of US citizens: Republican partisans. Evidence tracking slow persistent changes in partisan support for gun rights suggests that gun rights advocates select the Republican Party for its issue position on gun rights. For that reason, this research proceeds upstream of partisanship to investigate the psychological variables that drive gun advocacy. This research utilizes goal orientation theories of motivation to help explain gun-related behaviors in America. A research agenda that takes a motivational perspective on gun research can benefit from validated inductions and experimental manipulations. A trait perspective on gun research is likely to remain correlational. Motivation science can measure chronic goal orientations with questionnaires that might resemble Diener's (1979) trait inventories, but it can also take experimental control of those orientations with inductions. The present studies, using mixed methods-field inductions and chronic measures demonstrate how gun rights advocacy is underpinned by motivational orientations. In doing so, the field experiments and other studies presented herein make basic contributions to regulatory fit theory and depict a new type of voter realignment. More importantly, these studies carry implications for marketers, consumers, political scientists, and anyone interested in the American gun-rights debate.

Chapter 1: Issue Evolution

The influence of the gun rights debate on party identification

Given the predictive power of party identification (Bartels, 2001b), political scientists attempt to pin down demographic and psychological correlates of partisans (Gerber et al., 2010a). Political scientists take special interest in any changes in party identification because a

permanent shift of only five percentage points within the general electorate can have profound ramifications on major elections. These enduring shifts in the distribution of party attachments are termed realignments, and voter realignments are fairly rare (Key, 1955). Realignment researchers study the conditions under which party loyalty drifts, and dispute whether realignments are periodic, cyclical, or predictable (Mayhew, 2004). In opposition to intermittent event-based explanations, “secular realignment” describes the electorate in a constant change state, being vacated by older voters dying, and backfilled by younger people reaching voting age (Key, 1959). Given the generational divide between experienced voters and novice voters, new voters can substantially (albeit slowly) change the composition of major political parties. “[C]hanges affecting major segments of American society now in process will in due course profoundly affect the party system” (Key, 1959, p. 209). Conceptualizing a continuous and incremental process inspires the metaphor and sets the stage for the theory of Issue Evolution.

Of the known types of realignments (disputed by Mayhew (2004)), issue evolution is one particular species. Political scientists consider the primary function of issue evolution theory to aptly describe the partisan shifts that occurred decades ago regarding race relations, but the present research argues with new evidence that another issue evolution has occurred regarding gun rights in America. Issue evolution posits that a polarizing political matter, long unresolved on the national agenda, can drive massive party change, with secular realignment facilitating the change process (for a full review of issue evolution, see Carmines & Stimson, 1981; Abramowitz, 1995; Adams, 1997; and Conley (under review)). Importantly, the gun debate meets the conditions for an issue evolution; gun regulation disagreements present longstanding debates on the political agenda, voter opinions are deeply felt, and it is an easy issue for constituents to grasp.

Gun debate meets Issue Evolution Prerequisites

Salience and Longevity

Issue Evolution theory stipulates that the issue must endure with a salient position on the public agenda for a long time. Some evidence for the longevity of the gun debate among the electorate resides intertwined within raw polling data. The issue persists on polls from 1959 to the present. After decades of partisan obscurity, the issue intensified in Congress between 1980 and 2016 (see Figure 2) while more and more gun-specific surveys canvassed national samples (see Figure 1). Despite pollsters' concerns that survey research is becoming increasingly difficult due to response rate difficulties (Kohut, 2012), gun related questions and surveys continue to elicit thousands of responses per year. Among three major polling sources (GSS, Pew, Gallup), gun regulation questions have steadily increased in frequency and density since 1959; to argue against the salience of gun rights is an argument that national pollsters set (versus reflect) the national agenda (Funkhauser, 1973). To the befuddlement of some law scholars in the 1990s, the gun rights debate remained unresolved despite its salience through the 1980s without significant legislative action (Vizzard, 1994).

Pondering these decades of prolonged salience can help to explain how an issue evolution over gun rights has occurred for a specific facet of society. Abramowitz (1995) investigated a similar case where salience of the abortion issue differed between Democratic and Republican partisans, but focused that analysis on the specific 1992 Presidential election. This case of differing salience regarding gun rights demonstrates how different salience can permanently realign issue supporters. To the extent that issue evolution requires salience, realignment has driven gun rights supports asymmetrically towards Republican partisans, for whom gun rights and gun ownership is a central identity component (Cook & Goss, 2014; Stroebe, Leander & Kruglanski, 2017a). This asymmetric gain elevates the role of salience, distinct from the role of longevity, and crystalizes the importance of this previously vague condition of issue evolution.

Indeed the gun rights issue is salient at different levels to different types of Americans: gun owners versus those who do not own guns. Gun owners' individual identity and core values are connected to their support for gun rights on a daily basis (Kohn, 2004). The Republican Party frames gun rights as both anti-crime and anti-tyranny measures (Cook & Goss, 2014). Beyond the single issue immediately associated with the National Rifle Association, gun rights advocacy is frequently intertwined with a broader conservative message that emphasizes individualism and opposes most government regulation (Melzer, 2012). The axis that the gun debate turns around, laws and policies regarding gun sales, use, and ownership, generalizes to other desires for de-regulation. Adopting conservative views on a range of issues, including gun rights, reinforces partisan social identity, a powerful motivator for American voters (Greene, 1999). The Republican Party's support for gun rights is consistent with conservative philosophies about the function of government. With this advantage, Republicans cast a wide net; they appeal to partisan social identity voters concerned about specific gun-related problems such as violent crime, but also broad philosophical voters concerned about curtailing the power and influence of the federal government. Gun rights support need not stem from circumstances related to legal or pragmatic issues of gun ownership. Instead, gun rights support is a function of non-social practical concerns as well as reinforcement for political social identity. Asymmetry results, with this salient issue for Republicans (Cook & Goss, 2014).

Support for gun control, however, is not a marker for individual identity core values. Unlike gun rights advocacy, gun control lacks central advocacy grouping, recreational events, or even physical objects. Gun control supporters are less politically engaged than their gun rights counterparts, in that they are much less likely to contact public officials to express their gun debate issue position and solicit legislative representation (Parker et. al, 2017). Facing a fundamental disadvantage regarding salience, it might be tempting for the Democratic Party to

emphasize gun control and its social identity correlates. Issue trespassing like that carries risks for politicians. First, it is a tactic mostly employed by trailing candidates, so politicians are wary of this inferior ploy (Damore, 2004). Democratic Party politicians who trespass into pro-gun rights territory do so at the expense of the distinctiveness of the party's stance on the gun debate. Such a candidate risks sending a complicit but weaker (than the Republican candidate's) message. Trespassing in favor of gun rights is a treacherous approach for Democratic candidates, and so the Republican Party is likely to maintain issue distinctiveness and preserve the persistent ability to attract new voters for whom gun rights is a salient issue. Asymmetrical salience drives the novel type of issue evolution that is depicted in Figure 1.

Ease of Acquiring the Issue

The gun rights debate is an easy issue for voters. Violent crimes and suicides can elicit visceral reactions, similar to the 'gut feeling' that voters held towards abortion and race relations (Abramowitz, 1995; Adams, 1997; Carmines & Stimson, 1981). An issue is labeled "easy" if gut responses are elicited equally from experts and laymen, the interested and the apathetic (Carmines & Stimson, 1980). Voters easily understand most aspects of the gun debate. Most Americans (approximately 83 percent) acknowledge that the gun debate is a major political issue (McCarthy, 2015). Lay opinions on crime, suicide, and the Second Amendment require no expert knowledge or hands-on experience with a wide array of firearms. Furthermore, guns themselves are ubiquitous. Estimates of gun ownership in America are near fifty percent of households, amounting to over 300 million privately owned firearms (Hepburn 2007). Their ubiquity aside, the prominence of guns in the news and entertainment media convinces the electorate that guns are a major part of quotidian life via the availability heuristic (Tversky & Kahneman, 1973).

Given these numbers, I posit that the gun rights issue evolution is more visible than the abortion issue evolution. In the mid-eighties, one in five American women had undergone an abortion (Henshaw, 1987), whereas half of Americans own guns. Especially for gun owners, the gun rights debate is an easy issue. Like salience, this “ease” condition for issue evolution operates asymmetrically on gun rights supporters, and not gun control supporters.

Having found evidence for their theory with regard to race relations, Issue evolution theory authors explicitly hoped that the structure and sequence of issue evolution could generalize to other issues (Carmines & Stimson, 1986). Since then, evidence has been presented supporting an issue evolution regarding the salient and visceral abortion debate, which has sorted new members of the electorate into either major political party on the basis of their stance on reproductive rights (Abramowitz, 1995; Adams, 1997).

Previous researchers have suggested that the gun rights debate showed potential to be an issue evolution (Lindaman & Haider-Markel, 2002). This current paper tracks that suggested partisan sorting in the broadest empirical scope possible. Further, this paper elevates the role of salience in issue evolution, and shows how an issue’s salience can be one-sided, resulting in realignment gains for just one party (in a two-party system). This current paper’s treatment of the previously vague role of salience adds to issue evolution theory. Salience received cursory address in previous tests of issue evolution. The data presented herein show how an issue’s salience can operate only on one particular stratum of society, driving asymmetric realignment that benefits only one major party.

Study 1: Evidence of a Gun Rights Issue Evolution

Analytical Strategy

This paper presents polling data from 1959 through 2016 that captures voter attitudes towards gun laws. Polling evidence to support issue evolution takes decades to materialize in

aggregate, as issue evolution requires generational replacement. Expanding the empirical scope beyond the General Social Survey, this paper presents four national polls, dating back to the first national gun-control poll question in 1959. This strategy differs from recent publication tracking the link between gun ownership and presidential voting (Joslyn, Haider-Markel, Baggs & Bilbo, 2017). Those important behaviors, gun ownership and voting, are indeed crucial for understanding the role of guns in American politics. However, gun ownership does not automatically imply opposition to gun control, and presidential vote choice does not always reflect party identification. Study 1 depicts issue positions and party identification over time. We expound upon the scope of single source GSS polling and consider three additional poll questions spanning seven decades, all of which depict divergent partisan support for gun rights attitudes in the 21st century. As a result, we detect partisan sorting following decades of partisan agreement regarding gun regulations. This sorting is the partisan manifestation of the cultural significance of guns in America (Kohn, 2004; Joslyn et al., 2017).

National Polls: 1959 - 2017

The gun rights debate revolves around the axis of regulation. Gun rights supporters generally favor less government gun regulations, and gun control supporters advocate for more. Using polling data from the General Social Survey (GSS), Gallup, and Pew Research, we sketch partisan coherence, schism, and divergence from 1959 to the 2016. These polls asked gun regulation questions and party affiliation questions too. Since these questions had different possible responses, we identified the responses that supported gun control as opposed to the responses that supported gun rights. This analysis departs from sole reliance on the General Social Survey and consults other polls in order to fully illustrate decades of partisan agreement on gun regulations followed by steady divergence. The addition of these three additional polls

broadens the scope of previous issue evolution research and depicts steady and widespread diverging attitudes about gun laws and party identification.

Table 1: Gun Rights polling questions

	Gun Opinion	Partisanship	Since
General Social Survey	<i>Would you favor or oppose a law which would require a person to obtain a police permit before he or she could buy a gun?</i> (Favor, Oppose).	<i>Generally speaking, I think of myself as a</i> (Democrat, Republican, Independent)	1972
Pew	<i>What do you think is more important: to protect the right of Americans to own guns, OR to control gun ownership?</i> (to protect the right of Americans to own guns, to control gun ownership)	<i>In politics TODAY, do you consider yourself a</i> Republican, Democrat, or Independent? (Republican, Democrat, Independent)	1993
Gallup	In general, should laws covering firearms be made more strict/less strict” (More Strict, Less Strict, Kept as they are now).	<i>In politics TODAY, do you consider yourself a</i> Republican, Democrat, or Independent? (Republican, Democrat, Independent)	1990
Gallup	<i>Do you think there should or should not be a law that would ban the possession of handguns, except by the police and other authorized persons?</i> (Should be a law, Should not be a law)	<i>In politics TODAY, do you consider yourself a</i> Republican, Democrat, or Independent? (Republican, Democrat, Independent)	1959

Criteria for adding other polls to analyze alongside the General Social Survey were simple and few. In order to chart issue evolution, especially in the most recent decades, polls must sustain consistent language just as the General Social Survey posed the same gun rights question from the early 1970s to the present. Seeking to expand upon the suggestion that a gun-rights issue evolution was underway in 2000, it was necessary to gather polling that collected consistent gun-rights and partisan data prior to 2000 to the present. A poll question was only included in our analysis if it was introduced prior to 2000, was still being asked in the most recent iteration, and was asked in at least five different years. Those criteria narrowed possible questions down to the four polls in this analysis.

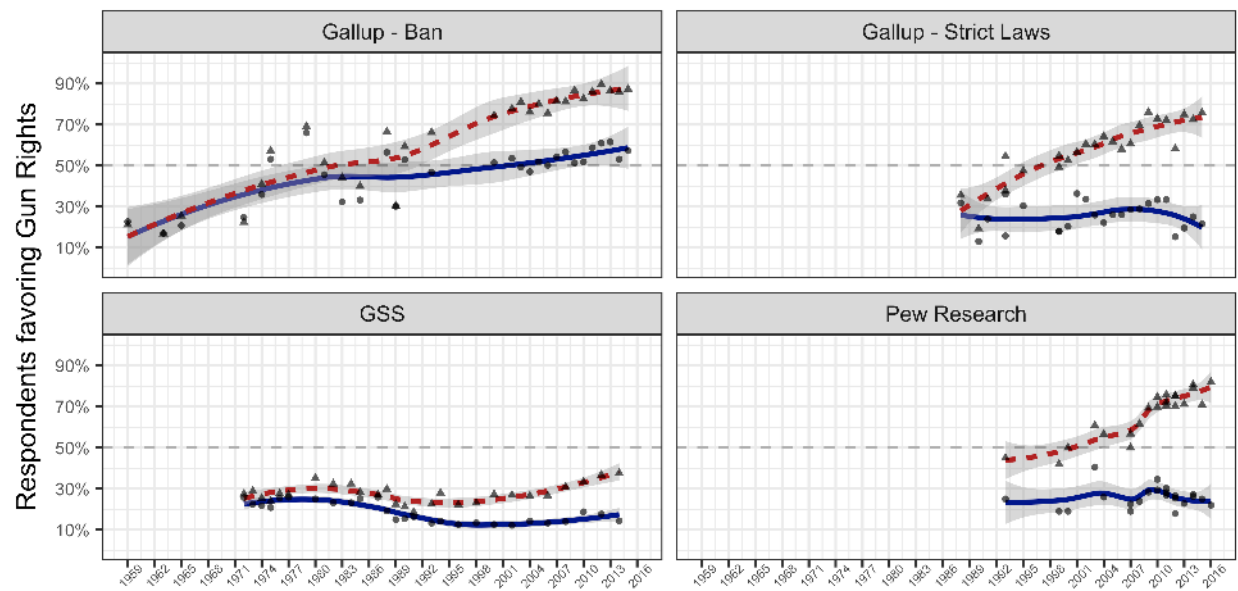


Figure 1: Gun Rights and Party Identification

Triangular points and the dotted lines represent Republicans; Circular points and the solid lines represent Democrats

The use of four major national adult polls insulates the interpretation of their consistent divergent pattern from criticisms pointing to the nuances of question verbiage. This present realignment research is concerned with the divergence between how partisans answer these questions, not the absolute values of the answers themselves. Steady divergence across nationally representative samples and different questions points to issue evolution. For decades, the majority of Americans supported gun control measures. In the political era predating gun controversies, gun rights supporters were a reliable minority, stimulating social science research into their demographic markers, with the conclusion that the level of gun rights support in America was “a constant” (Smith, 1980). Because voters from both major US political parties supported gun control at similar levels for over 30 years, we focus our analysis of issue evolution on pro-gun rights. Issue Evolution theory authors note the importance of a reliable public opinion baseline, “[O]bserved trends do establish a baseline against which changes among subgroups can be judged.” (Carmines & Stimson, 1981, p. 110). In that baseline era before gun regulations were a controversial partisan issue, a historian noting the firmness of support for gun

control and the lack of gun regulations described the United States as “the most passive of all the major countries in the matter of gun control” (Hofstadter, 1970).

Decades of support for gun control, and not for increased gun rights, orients this analysis as we trace the emergence of this issue evolution to the decade when major partisan differences appeared in the mid-1990s. Previous polling showed minor differences between partisans, but those differences widened to stable chasm by 2016. In accordance with similar research, independents are excluded from this analysis (Bullock, 2011; Carmines & Stimson, 1981; Druckman, 2013; Levendusky, 2010). Because issue evolution research analyzes party identification, inclusion of self-reported independents would undercut the central point of issue evolution –partisans are recruited into a party on the strength of a singular issue. This focus facilitates analysis of true partisanship and its association with gun rights over time. The present analysis offers the now wide and stable partisan gulf over gun rights following decades of agreement as evidence for an issue evolution. The gun debate, which was non-partisan in the 1960s and 70s, has sorted partisans for decades, and the sorting has steadily shifted towards one major political party since 2000.

Longevity, consistency, and density provide the rationale for the selection of these major polls. Gallup polling has investigated gun opinions since 1959. Likewise, Pew Research’s consistency and density of asking a gun related question, especially in the 21st century, make those data useful and appropriate for depicting this issue evolution. These four questions from three major national adult polling sources provide respondents’ party identification in conjunction with their opinions on gun rights. These polls depict the importance of the gun rights debate in America, and this debate has slowly transformed the partisan landscape. By 2017, the state of partisan opinion on gun rights has grown fundamentally different from the non-partisan agreement that marked the 1960s and 1970s. The gradual process by which new voters

joined the Republican Party on the merits of gun rights portrays a rare form of voter realignment, and this debate's imbalanced salience has driven asymmetric gains for the Republican Party. An issue evolution understanding on the gun rights debate in America is crucial to understand before launching a psychological investigation. Issue evolution explains how a new voter selects the Republican Party for its contemporary position on gun rights; a motivational investigation must begin upstream of that partisan sorting. In other words, it is incorrect to assume that gun ownership and advocacy stems from partisan loyalty. It is more likely that gun rights supporters choose the Republican Party. Psychologists should examine those motivations independent of partisanship.

Chapter 2: Linguistic Analyses of Motivation

Regulatory Focus

Greek philosophers Democritus and Aristippus characterized human motivation as the hedonic pursuit of pleasure plus avoidance of pain (Elliot & Covington, 2001), but motivation scientists attempt to explain goal directed behaviors *beyond* pleasure and pain (Higgins, 2011). Regulatory focus theory describes motivation as the independent goal orientations of promotion and prevention, where promotion approaches gains and avoids non-gains and prevention approaches non-losses and avoids losses (Higgins, 1997; 1998). Promotion is concerned with moving from a current status quo "0" to a better state "+1", whereas prevention is concerned with maintaining a satisfactory status quo "0" against a worse state "-1". Promotion and prevention predict engagement in major areas of human behavior, including professional performance (Brockner & Higgins, 2001; Plessner et. al, 2009), relationships (Bohns, Lucas, Molden, Finkel, Coolsen, Kumashiro, Rusbult & Higgins, 2013) and emotions (Strauman, Socolar, Kwapil, Cornwell, Franks, Sehnert & Higgins 2015). Promotion and prevention have distinct strategies. Eager strategies "feel right" to the promotion state, while vigilant strategies

“feel right” to the prevention state (Cesario, Grant & Higgins, 2004; Cesario & Higgins, 2008).

Given promotion’s preference for eager strategies and prevention’s preference for vigilant strategies, regulatory focus can be used to induce regulatory *fit*, with measurable causal effects.

Regulatory Fit

Regulatory fit occurs when the manner of goal pursuit sustains, rather than disrupts, an actor’s goal pursuit orientation (Higgins, 2000, 2005). Regulatory fit affects how an actor perceives the monetary value of objects (e.g., Avnet & Higgins, 2006; Higgins, Idson, Freitas, Spiegel, & Molden, 2003; Freitas & Higgins, 2002) through strengthening the engagement in the decision making process (Higgins, 2006) and making the decision maker “feel right” about what they are doing (Higgins, 2000). When the object of a decision is positive, regulatory fit will intensify that positivity. Literal dollar value of a positive focal object will increase from regulatory fit. The present research induced fit in distinct environments for a total of four field experiments using the value from fit postulate proposed by regulatory fit theory (Higgins, 2005; Higgins, 2000). We use regulatory fit inductions to conduct field experiments that contribute to our understanding of the motivational underpinnings of support for gun ownership. For almost forty years, gun ownership and the motivational underpinnings of why guns are valued have received little attention in psychology, perhaps due to a lack of relevant theory to measure and manipulate the relevant motivations. These studies address gun ownership and advocacy in terms of motivation science mechanisms that have been used to study value creation, specifically, regulatory focus and regulatory fit. This research remains agnostic regarding the legal, historical, and moral components of the gun rights debate. Instead, it examines the malleability of gun appraisals as a function of psychology theories at the vanguard of motivation science.

Support for Hypotheses

We hypothesized that gun ownership and support for gun rights are driven by the prevention orientation. Prevention is primarily concerned with safety and security, approaches non-loss, and maintains the status quo (Higgins, 1997, 1998; Higgins & Cornwell, 2016). Vigilance, which is a goal-directed strategy for maintaining a satisfactory status quo, is the preferred strategy of the prevention state (Higgins, 1997; Spiegel, Grant, & Higgins, 2004), and this remains true in political contexts (Mannetti, Brizi, Giacomantonio, & Higgins, 2013). Gun lobbyists and gun advocacy groups explicitly urge *vigilance* on the individual level and within legal and policy spheres (Meltzer, 2012).

Despite the concerns for safety and vigilance that gun related discussions conjure, conceptual development of this link between guns and the prevention orientation is not sufficient by itself. Some tenuous connections exist between the promotion orientation and gun ownership, such as the possibility that gun enthusiasts are attracted to guns as devices of elegant design and functionality, or because they advance the activity of hunting. But the popularity of hunting in America continues to decline. Only approximately 11.5 million gun owners report hunting (US Fish and Wildlife Services, 2017), whereas over 65% of gun owners claim “personal and home defense” as their primary reason for gun ownership (Dimock

, Doherty & Christian, 2013; Burbick, 2006; Diener, 1979). Thus, it seems that there is a fit between prevention and gun ownership. Intrigued by this potential fit, which is central to our field experiments, we turned to automated linguistic analysis to support this connection.

Lexical Analyses Inform Hypotheses

LIWC, the Linguistic Inquiry and Word Count, calculates the frequencies of word categories, parts of speech, and other specific lexicons in order to quantify the psychological content in written text (Pennebaker, Booth, & Francis, 2007). The software tallies emotional

words and analytic words in proportion to the total word count of a given text, and yields continuous scores for each category, expressed as a percentage of total words. Psychologists can create custom dictionaries for LIWC in order to find and analyze specific lexical content that reveal text writers' social, cognitive, and emotional attributes (Pennebaker et al., 2015). Management researchers validated a dictionary containing 27 promotion word stems and 25 prevention word stems¹ in order to quantify the motivations embedded within CEOs' periodic letters to shareholders (Gamache et al., 2015). The regulatory focus scores of those communications as measured by LIWC reliably predicted firm-level outcomes, especially the number and value of acquisitions.

Management researchers have used the same regulatory focus dictionary to measure promotion and prevention language in question-and-answer sessions of venture capital pitch competitions (Kanze et al., 2018). LIWC and the regulatory focus dictionary have already made precise focus measurements that informed large experiments. Like management researchers, we used the LIWC regulatory focus dictionary to identify the motivations underpinning issue positions on the American gun rights debate.

¹Gamache and colleagues constructed the regulatory focus dictionary by plumbing existing survey measures of focus, administering word fragment completion tests, and consulting regulatory focus researchers. These dictionaries and subscales were then subjected to tests of convergent and divergent validity. For more discussion on the construction of the LIWC regulatory focus dictionary see Gamache et al., 2015; Kanze et al., 2018.

Table 2. Regulatory Focus Dictionary for Linguistic Inquiry and Word Count (LIWC)

Promotion Focus		Prevention Focus	
1. Accomplish	15. Improve	28. Accuracy	42. Obligation
2. Achieve	16. Increase	29. Afraid	43. Ought
3. Aspire	17. Momentum	30. Anxious	44. Pain
4. Aspiration	18. Obtain	31. Avoid	45. Prevent
5. Advancement	19. Optimistic	32. Careful	46. Protect
6. Attain	20. Progress	33. Conservative	47. Responsible
7. Desire	21. Promotion	34. Defend	48. Risk
8. Earn	22. Promoting	35. Duty	49. Safety
9. Expand	23. Speed	36. Escape	50. Security
10. Grow	24. Swift	37. Escaping	51. Threat
11. Gain	25. Toward	38. Evade	52. Vigilance
12. Hope	26. Velocity	39. Fail	
13. Hoping	27. Wish	40. Fear	
14. Ideal		41. Loss	

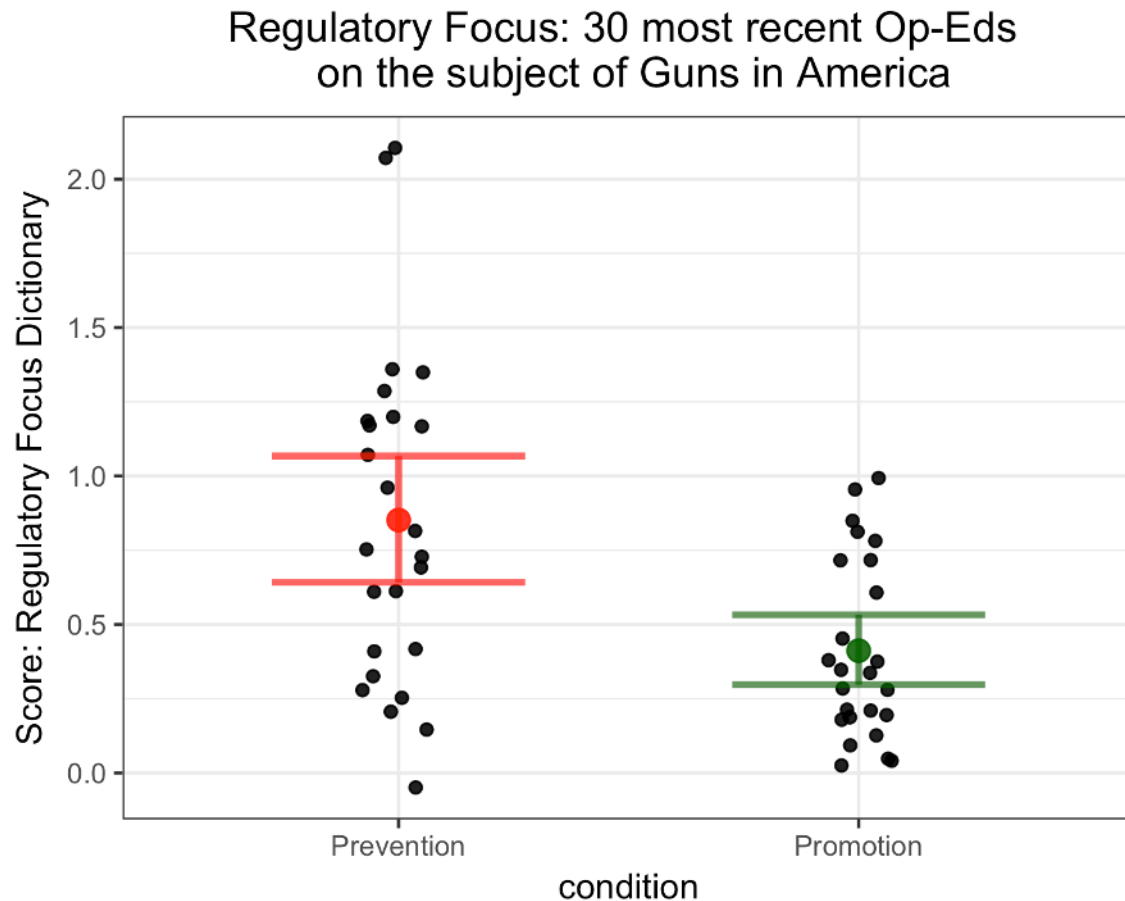
Study 2a: LIWC Op-Eds

The psychologists who developed the psychometric properties of the newest LIWC 2015 software consulted speeches, blogs, and newspaper articles to calibrate the lexicon associated with a variety of psychological and demographic factors (Pennebaker et al., 2015). We patterned our analysis after the LIWC authors' use of opinion-editorial writings (op-eds). We collected the thirty most recent op-eds about the gun rights debate. Next, we ran that corpus of writings through the regulatory focus dictionary within LIWC. This automated method does not identify or consider the valence of the writing (i.e., whether or not the writer supports gun rights or gun control). Instead, this reproducible method broadly quantifies the regulatory focus orientation usually associated with the gun debate. This disinterested approach informs our hypotheses beyond mere intuition.

LIWC regulatory focus scores confirmed that guns represent a predominantly prevention-oriented topic. Examining the scores of the thirty most recent op-eds³ about the guns in America

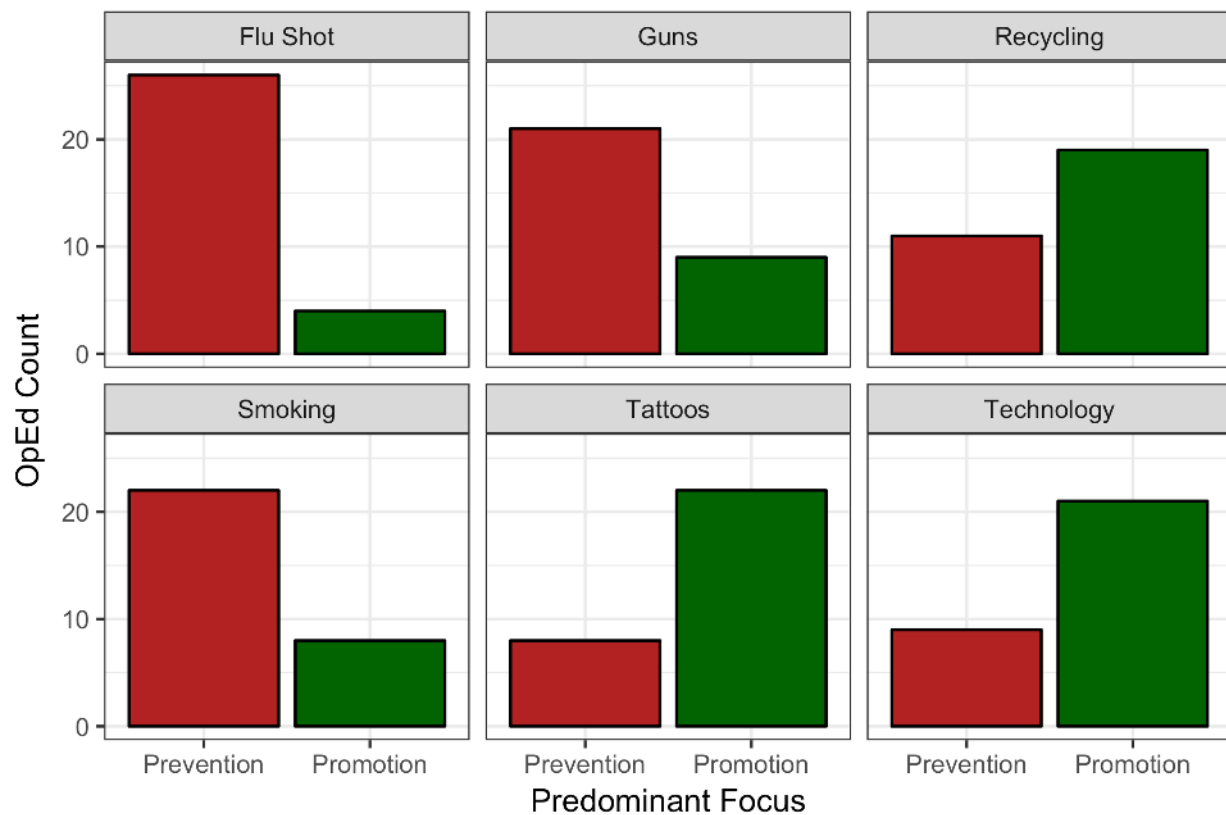
³ Our procedure for compiling a canon of op-eds on the topics of guns: We searched for "guns + op-ed" (or other topics depicted in Figure 3) in Google. The most common sources were NY times, LA times, and Washington Post. When it was necessary to expand our search for other major news sources: including Boston Herald, Chicago Tribune, and BBC. As a result, our contemporary corpus spans from June, 2008 to October, 2016.

indicated that scores were notably higher ($t(29) = 4.02, p < .001$) for the prevention subscale ($M = 0.51, SD = 0.46$) than for the promotion subscale ($M = 0.18, SD = 0.17$). Furthermore, of the 30 op-eds, 22 (73%) had a higher prevention than promotion score compared to only six with a higher promotion than prevention score (20%), with two having a tie score.



We checked the broader functionality of this method to ensure the LIWC regulatory focus dictionary was not overly sensitive to prevention at the expense of promotion for any and all writings. Using the same method as above, we assembled a similar corpus of thirty op-eds about recycling. We found that those op-eds were predominantly written in *promotion* rather than prevention, with 16 op-eds higher on promotion than prevention, 8 higher in prevention, and 6

equal. Thus, it is not the case that op-eds in general just happen to be written more in prevention than promotion.



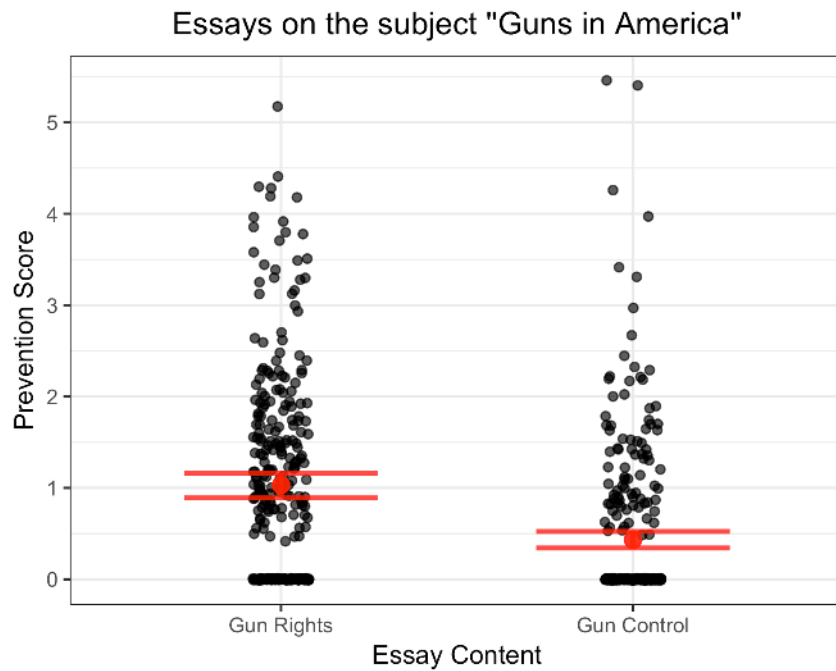
Study 2a demonstrated that the gun rights debate is strongly associated with prevention. It is possible that this debate is driven mostly by supporters of one side of the debate at the expense of the other. To examine this possibility, we conducted another linguistic analysis to measure prevention content from a large sample of gun rights supporters and gun control supporters.

Study 2b: Essays

We asked 301³ participants from Amazon Mechanical Turk to write an essay on the topic of guns in America. The content of those essays revealed whether the participant supported gun control or gun rights. Common themes in participants' essays were the Second Amendment (56 essays), self-defense (23 essays), school shootings and the protection of children (19 essays), and crime (83 essays). This count allowed for overlap. For example, if an essay emphasized both the protection of children and the second amendment, it was counted once in *each* category. The median word count of these essays was 102 words, with a mean of 111 words. All participants wrote for at least five minutes.

Again running those essays through the regulatory focus dictionary in LIWC, we found that participants supporting gun rights wrote more prevention terminology ($M = 1.34, SD = 1.27$) than participants supporting gun control ($M = 0.85, SD = 0.99$) ($t(300) = 6.93, p < 0.001$). This difference suggests that prevention fits supporters of gun rights. Notably, we also checked for the impact of the essay writers' chronic regulatory focus orientation (as measured by the standard 11-item Regulatory Focus Questionnaire; Higgins, Friedman, Harlow, Idson, Ayduk, & Taylor, 2001), and found a weak and non-significant correlation ($r = .06$) between chronic prevention and the prevention expressed in the gun-rights essays. Thus, it was not a *chronic* prevention motivation that accounted for using prevention terminology in the essays but support for gun rights (Conley & Higgins, 2018).

³ An administrative error led to 301 recruited participants instead of 300.



Chapter 3: Field Experiments in Motivation Science

This chapter presents three field experiments that incrementally help to identify the fundamental motivations driving gun rights advocacy.

Study 3: Fliers field experiment

The lexical analyses in Study 2a and 2b demonstrate a positive association between the prevention state and the topic of guns, and specifically support for gun rights. Given this prevention motivation for gun rights, we reasoned there should be a positive association between supporting a gun show and being in a prevention focus. Thus, we visited a regional gun show to conduct a field experiment on whether inducing regulatory fit in gun sellers can enhance the monetary value of a gun to that seller.

Participants

Gun shows offer an ecologically valid opportunity for testing which fundamental motivations drive support for gun rights. Vendors at these venues comprised our subject pool. At gun shows, dozens of vendors assemble explicitly to discuss their merchandise and pricing (Burbick, 2006). These shows are a window into a world that is not illicit but is also not visible

to many who protest gun ownership and live in major cities. Participants in this experiment, gun vendors, are strong gun rights supporters. The venue is a real gun show, a congregation of support for guns and gun rights. There is no need to ask subjects to “imagine being a gun owner” or to “visualize a gun show”.

Procedure

We distributed fliers advertising a website of general interest to Second Amendment supporters. Every single vendor onsite was successfully recruited, with no attrition, no experimental non-compliance. The appropriate and targeted nature of the fliers facilitated this widespread recruitment and compliance.

Two different fliers advertised the website using either promotion or prevention terminology.

Promotion: “*Aspire to the best America Can Be. Do you hope for the 2nd Amendment to be part of America’s ideal future? Eagerly promote your right to keep and bear arms.*”

Prevention: “*Vigilance for what America Should Be. It is your duty and responsibility to maintain your Second Amendment rights. Prevent the loss of your right to keep and bear arms.*”

The italicized words are listed in the regulatory focus LIWC dictionary. The promotion theme pervading the first flier highlights the potential gains that Second Amendment advocacy could garner. Conversely, the other flier written in prevention wording highlights potential losses. The fliers were distributed to all 112 vendors at the venue in a random order by focus condition (following the shuffling procedure in Hirschberger, Ein-Dor, & Almakias, 2008). The fliers read 30 and 29 words, respectively, and contained the same number of regulatory focus dictionary words: 7 each. Both fliers were pretested to ensure equivalent legibility. In this experiment, the regulatory focus wording was the independent variable, and traffic to those websites was the dependent variable. The unique URLs on each type of flier enabled measurement of which

message drove more traffic, more visitors. There was no other advertising nor links for these websites at any other venues, and the websites were created solely for the purpose of this experiment six days prior to execution.

Results

The week following the 112 vendors receiving a flier, there were 53 visits to these websites. 37 unique visitors landed on the website advertised in prevention wording, while only 16 unique visitors came to the website advertised by the promotion website. This significant difference in website traffic ($\chi^2 = 8.32, p < .01$) suggests that the prevention flier produced stronger engagement than the promotion flier, consistent with the regulatory fit prediction (Conley & Higgins, 2018). Encouraged by the results of this experiment, we sought in the next study to experimentally manipulate promotion and prevention in a similar gun show environment using a natural method of interpersonal communication: spoken questions.

Discussion of Study 3

These observed results should be contextualized by the latest research on response rates, especially research considering internet advertising. Recognizably, different modes of data collection elicit different response rates. Recent research in general social science methods compared response rates from direct mail, internet mail, and telephone requests for survey participants, and found the greatest response rate in direct mail, 4.4% (Dillman et. al, 2009).

The response rates in Study 3, however, bear no resemblance to most survey responses. Almost half of Study 3 participants responded to the flier they received; 37 out of 56 vendors who received the prevention flier visited that website, and sixteen of the 56 vendors who received the promotion flier visited that different website. Approximately ninety percent of the website visitors in Study 3 used a desktop computer, and the other ten percent used a mobile phone. These high rates of engagement are quite different from typical survey response rates,

and even higher than typical click-rates in targeted online advertising (Schumann, von Wangenheim & Groene, 2014). Why such unusually high response rates? I suggest that the stimuli in Study 3 elicited widespread engagement because each vendor was *personally handed a physical flier*. This was not one email among many in a cluttered inbox, nor a scrap of paper haphazardly stapled to a signpost. Researchers personally distributed the fliers, deliberately handing each gun vendor a gun-related flier at a gun show. The content in these fliers, general support for the Second Amendment, was plainly relevant to the venue and to each participant.

Study 4: Gun Show field experiment

Conversational dynamics between vendors and patrons at gun shows were central to our research. These organic interactions, approved by our institutional review board for study, allowed experimenters to manipulate gun-related questions posed with slight alterations as different levels of an independent variable. We collected answers to our questions as the dependent variable. Notably, this spoken questioning method is a novel technique for manipulating regulatory focus and has broader implications for future field experiments. Although the absolute numbers of participants in our field experiments are relatively modest, we included the maximum proportion of the gun vendors at each event.⁴

Participants

In order to control for different types of gun vendors at these venues, we confined the experiment to questions about a specific weapon, so a vendor was eligible for the study only if he was selling a widely popular gun—a rifle colloquially known as an “AR”. Every single AR vendor onsite was successfully recruited, with no attrition, no experimental non-compliance. In this case, the appropriate and targeted nature of the *questions* facilitated this widespread recruitment and compliance. Using simple random assignment, 100% of the eligible vendors at

⁴ Bureau of Alcohol, Tobacco, and Firearms estimate 64,583 licensed gun dealers in the United States and territories as of July, 2017.

the gun show for Study 4 were individually assigned to promotion, prevention, or control conditions. Given that vendors stayed at their designated tables and communicated with patrons, their assignment to condition and their individual outcomes were independent observations; there was no interference among experimental units.

Procedure

Using a method similar to motivational market research at grocery stores (Ramanathan & Dhar, 2010), we delivered our experimental conditions via a spoken script laden with motivational terms. Importantly, as in earlier work on value creation from regulatory fit (e.g., Higgins et al., 2003), these questions maintained the same valence towards the target object and the same intensity. The promotion induction queried the *advantages* and potential *gains* associated with standard ammunition (i.e., potential gains from choosing standard ammunition), and the prevention induction queried the *disadvantages* and potential *losses* associated with a different type of ammunition (i.e., potential losses from not choosing standard ammunition). The control induction aimed to match the level of interest portrayed by the motivational conditions without using any promotion or prevention terminology. Importantly, the topic of the induction was ammunition, not the guns, so that the differences among conditions would not convey differential attitude valence towards the target object itself. As a result, the inductions scripted below maintained stable valence and interest towards the AR, while differing only on regulatory focus dimension.

Promotion Induction: “I **am hoping to** do the ammunition conversion for an AR. What are the **advantages** of converting it to fire .22 ammunition instead of .556 ammunition? What would I **gain** by doing that conversion?”

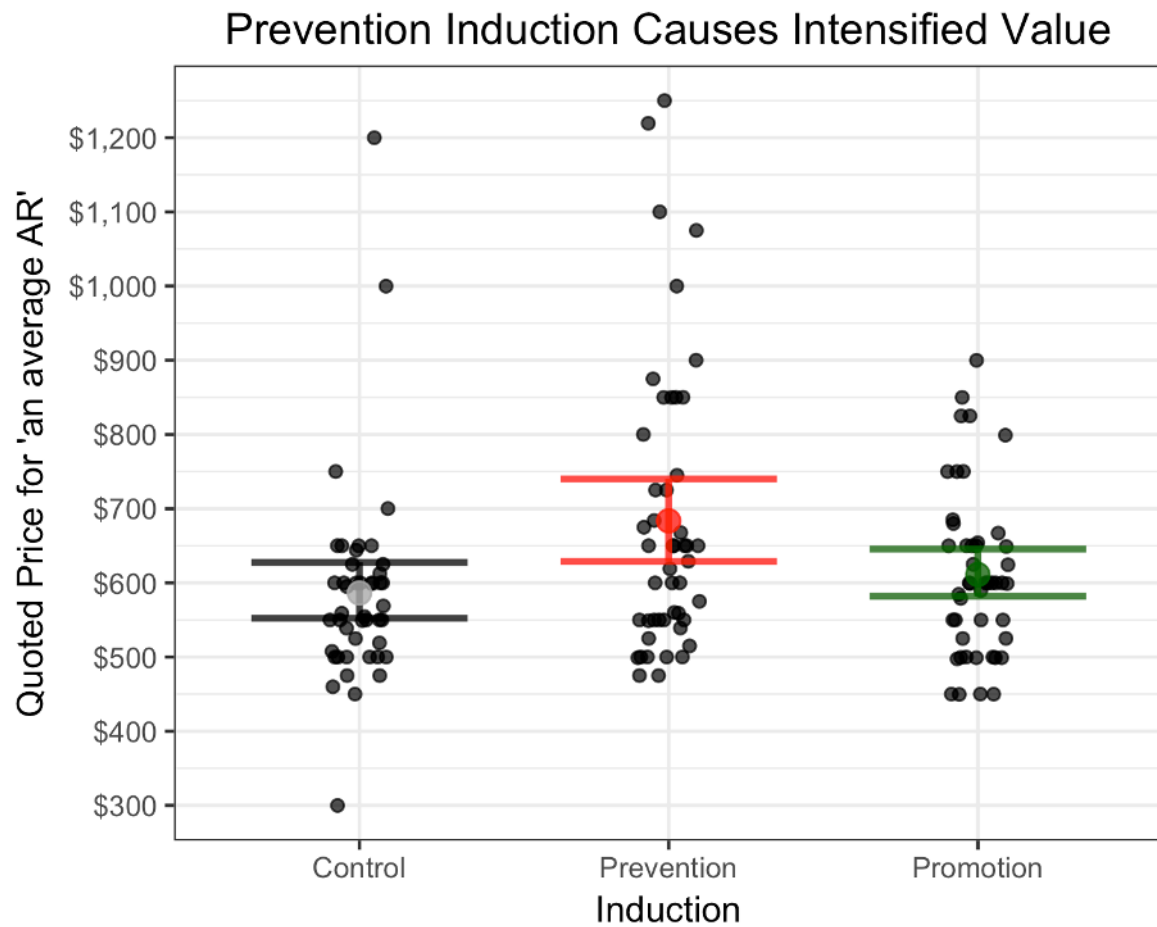
Prevention Induction: “I **should** do the ammunition conversion for an AR. What are the **disadvantages** of **not** converting it to fire .22 ammunition instead of .556 ammunition? What would I **lose** by **not** doing that conversion?”

Control: “I am **interested** in the ammunition conversion for an AR. I am **interested** in converting it to fire .22 ammunition instead of .556 ammunition. What can you tell me about that?”

Immediately after vendors answered the question, researchers asked the dependent variable, “How much for an average AR?” A rater, blind to the hypothesis and blind to conditions, rated each experimenter on each trial for multiple control measures. Further purpose and methods for the role of the rater are discussed in detail in the discussion of studies 4 and 5: Rigor to eliminate or reduce bias (Conley & Higgins, 2018).

Results

Among 140 participants in three conditions, vendors named a higher dollar value for guns following the prevention induction than the promotion induction and the control condition. Specifically, the 45 participants in the control condition named a mean price for an AR to be 586.28 dollars ($SD = 136.93$); the 47 participants in the promotion induction condition named a mean price of 611.23 dollars ($SD = 111.61$), and the 48 participants in the prevention induction condition named a mean price of 683.54 dollars ($SD = 193.80$). The effect size between control and prevention was an increase of approximately 97 dollars with exactly 35 dollars of associated standard error ($F(2, 137) = 5.18, p > .01, R^2 = .06$). Figure 6 depicts the positively skewed distributions found in each the control, promotion, and prevention conditions.



In case extreme values drove major mean differences, we examined the medians to guard against unwarranted conclusions (Trafimow & Marks, 2015; Valentine, Aloe & Lau, 2015). Twenty-nine of 48 vendors (approximately 60%) in the prevention condition named a price equal to or above the median across all three groups. In contrast, only 19 of 47 vendors (approximately 40%) answered the promotion question with a price equal to or above the median, and only twelve of 45 vendors in the control condition supplied a price equal to or above the median. Note some data heaping in all three conditions at \$550, \$600, and \$650. Heaping at \$750 was characteristic of the promotion condition, while heaping at \$850 was characteristic of the prevention condition. Heaping was not observed in the control condition above \$650. These frequencies suggest that the prevention questions intensify gun values at gun shows above promotion and control questions. In aggregate, the medians follow the same pattern as the

means, where the difference between the control condition median and the promotion condition median was modest (less than 40 dollars), while the difference between the control median and the prevention median was over 80 dollars. Both the mean and median differences between prevention and control conditions indicate the effect prevention inductions have on intensifying gun value, and the frequencies of responses reinforce this conclusion.

The practical implications of this small effect are nuanced in the context of any political, moral, or legal debate. However, this mean effect of nearly one hundred dollars does have theoretical implications for how value is created in motivationally distinct consumer environments. Below we further discuss those implications and recommend strategies for different parties.

Replication and Extension

The results presented above from the large gun show experiment are an amalgam of one original method and a replication and extension effort. The original design employed a sole experimenter administering the independent variable (induction of either promotion, prevention, or control condition) and also collecting the dependent variable. This method could have jeopardized the results via the “Clever Hans” effect, wherein an experimenter could potentially influence the results through non-conscious facial, gestural, or even physiological signals (Pfungst, 1911). That limitation in the original method demanded a replication and extension to prevent the experimenter from eliciting a dependent variable response that would support the hypothesis. Statistical reporting follows a description of the method below.

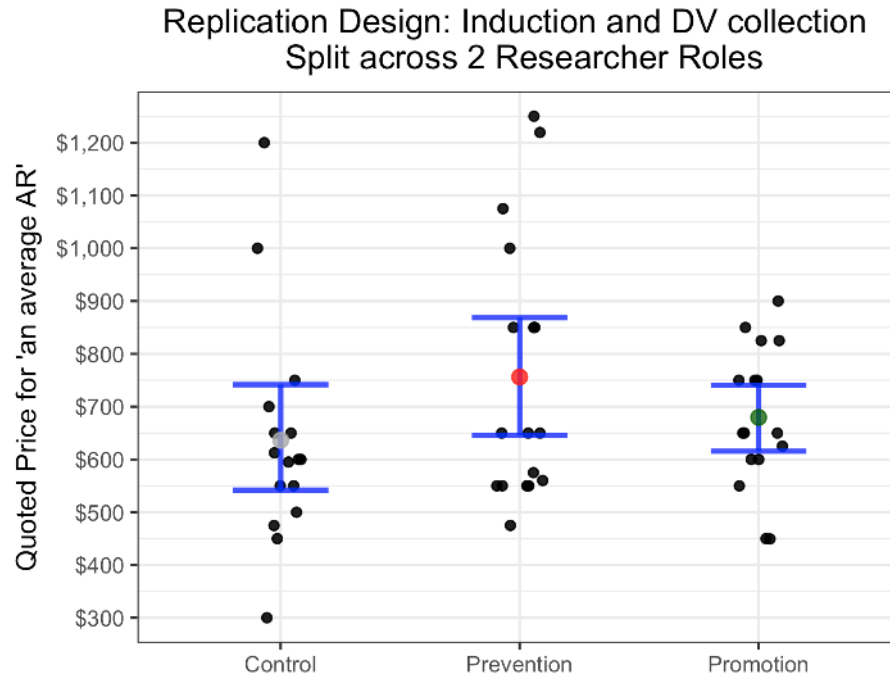
The research team conducted a replication and extension of this spoken induction experiment. Extending the original method required a second experimenter blind to condition, with no knowledge of whether a high or low price from any participant would support the hypothesis. Three researchers deployed to a similar venue. The first experimenter delivered the

induction, while the second lagged behind, out of earshot. A third experimenter maintained a random vector of condition assignment, and informed the first experimenter which induction to deliver. In order to avoid differences in approaching the vendors, the experimenter delivering the induction was informed of the condition assignment just moments prior to asking the question. After the first experimenter finished articulating the induction, the third experimenter motioned to the second experimenter (blind to condition) to join the conversation. Like in the original design, the moment that the vendor ceased answering the induction (or control) question, the second experimenter asked the dependent variable question.

This modified method served two purposes. First, divorcing the induction and dependent variable collection into two roles also protected these data from the Clever Hans effect. Second, this design allowed us to test whether a spoken induction truly places a participant into a certain motivational state, or whether instead a spoken induction conveys motivational information *about the question asker*. In other words, does the question induce the vendor, or signal to the vendor the regulatory focus state of the potential buyer. Negotiations experiments using regulatory focus for seller and buyer roles suggests that certain motivational states fit either role (Appel et al., 2012). The discussion section of this document presents a rebuttal to motivational fits with those transactional roles; instead these data suggest that environmental motivational demands elicit an appropriate regulatory focus approach.

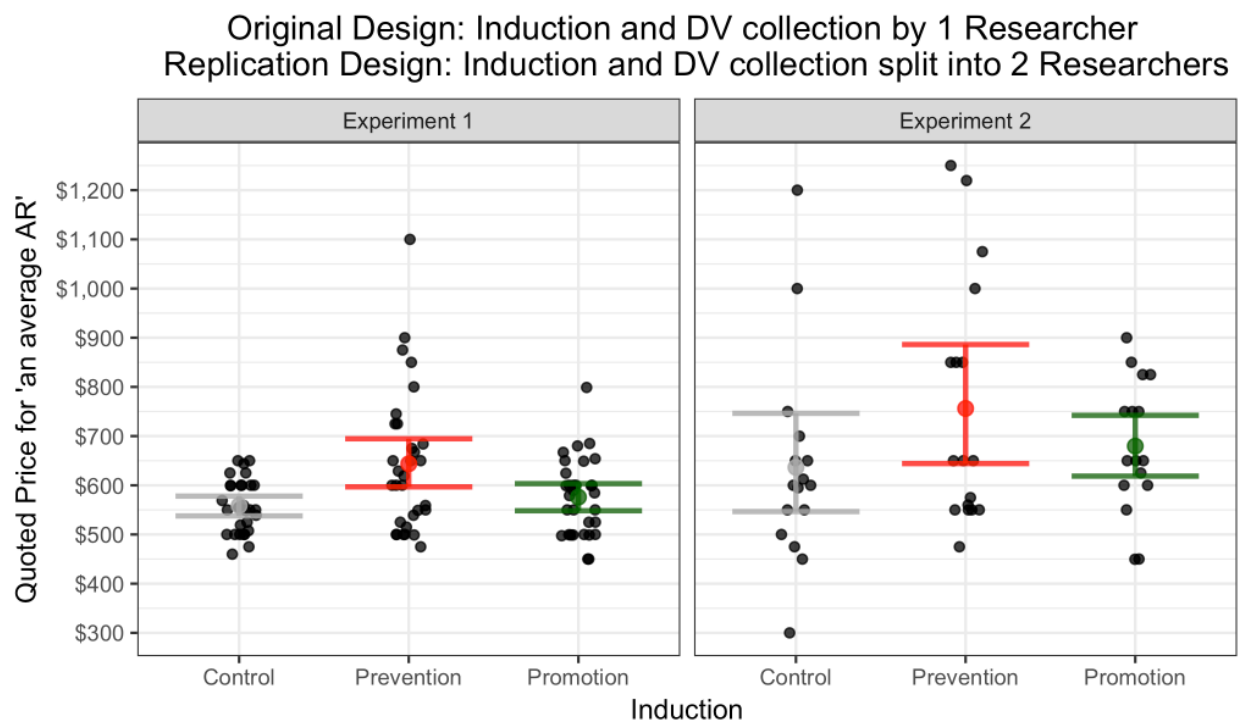
The extension experiment showed the same pattern of results as the original; the *prevention* induction (but not the promotion induction) raised the mean price quoted, but at this smaller venue ($N=49$) the results were not significant: $F(2, 46) = 1.43, p = .25$. The 16 participants in the control condition named a mean price for an average AR to be 636.41 USD ($SD = 212.85$); the 17 participants in the prevention condition named a mean price of 756.15 USD ($SD = 250.03$); the 16 participants in the promotion condition named a mean price of

679.66 USD ($SD = 135.52$). At this smaller venue replication, the increase in price from control caused by the prevention induction was 119.74 USD, with an associated standard error of 83.23 USD ($p = .16$).



Although this replication and extension did not yield the certainty associated with the first, we note the high estimated effect of the prevention induction, directionally aligned with the original experiment. In the original experiment, the estimated change in price from control to the prevention was an 85 USD increase, with an associated standard error of 28 USD. That is an estimated 15 percent increase from the estimated control price (555 USD). In the replication, the change from the control condition to the prevention condition was a 119.74 USD increase, approximately 19 percent higher than the estimated control mean of 636 USD. The effect size in the replication was not as precisely estimated, with 83.23 USD of associated standard error. However, these different increases in price could have been due to chance; the interaction between the inductions and the two different experiments was *not* significant ($p = .58$). Considering these data non-parametrically, the medians and means hold the same pattern of results across both experiments. At both venues, the highest price quoted occurred in the

prevention condition. The predicted effect of prevention is significant across the original experiment combined with the replication and extension, with an increase in prevention from control of 97.26 USD (SE = 35.00), $F(2, 137) = 5.18, p > .01$. A Bayesian approach to these experiments can address some of the remaining uncertainty left by the extension.



In order to address all of the data in these experiments, prior beliefs about regulatory fit effects provide a starting point. With a prior belief that fit effects do not effect prices, the results of our experiments can iteratively update, given some error associated with that prior belief of no effect. Of course, the prior belief and especially its error term are inherently subjective, so the following demonstrations offer different priors. The standard deviation in the control condition was 137 USD, and will be used as the error in this first round of Bayesian updating. The first experiment found that the fit condition intensified the price of the target object by 85.11 USD, with 28.32 USD of standard error. Bayesian updating the prior belief with this new data yields a posterior belief in a 81.62 USD increase with 27.73 USD of standard error. That posterior belief will serve as our prior belief before conducting the replication and extension. The fit condition

in the second experiment caused a 119.74 USD increase, with 83.23 USD of standard error. Updating the latest prior beliefs with that data yields a posterior belief of a fit effect of 93.43 USD with 26.31 USD of associated standard error. Updating these data iteratively by experiment using this procedure yielded an extremely similar interpretation as considering both experiments together. However, this interpretation of a robust fit effect rests on the error associated with the prior belief. Great uncertainty in the prior belief of no fit effect (137 USD) makes this procedure extremely malleable to new data. The more conservative analysis that follows demonstrates how the interpretation changes by reducing the prior uncertainty to ten percent of the median price of the control condition, just 56 USD. Following the first experiment, this prior belief of zero effect with 56 USD of standard error is updated to an effect of 67.78 USD with 25.27 USD of standard error. Updating those new prior beliefs again with the data from the second experiment results in a posterior belief of 72.16 USD with 25.18 USD of associated standard error, another credible non-zero fit effect. It is necessary to set the uncertainty associated with a prior belief of zero fit effects below twenty dollars in order to update so that no credible effect remains after both experiments.

Study 5: Tattoo Convention field experiment

An alternative explanation persists for the intensified value perceptions caused by prevention inductions at gun shows. Perhaps patrons who articulate prevention concerns elicit higher prices from vendors, *regardless of the motivational environment*. This price intensification from prevention could be consistent with a “bounce back effect”, where partisans asked to confront arguments against their beliefs fortify their original stance (Lord, Ross & Lepper, 1979; see also Guess & Coppock (2017) for a rebuttal regarding backlash). To resolve this possibility, we sought a different environment that would activate promotion and again measure value-from-fit effects. If prevention alone intensifies value regardless of environmental

fit, then prevention inductions at a similar venue should elicit higher prices again. However, if regulatory fit between inductions and environments intensifies value for the reasons we postulate, then it would be a promotion fit induction rather than a prevention fit induction that would intensify value in this promotion environment. To test this proposition, we sought a promotion-oriented environment that was structurally similar to, but motivationally different from the prevention-oriented gun show.

Tattoo conventions came to our attention as a potentially promotion-oriented environment. Patrons approach tattoos generally as a design or image they consider positive and want to add to their appearance. Getting a tattoo is experienced as a positive addition, a gain—moving from the current status quo to something better (better or the actor would not seek it). Prior to the 1980s, tattoos were readily associated with esoteric subcultures like sailors (Clerk, 2009). In recent decades, however, tattoos have become conventional, with 23% of all adults estimated to have at least one tattoo. 38% of millennials, 32% of Gen-X, 15% of Baby Boomers, and 6% of Silents have at least one tattoo (Taylor & Keeter, 2010, p. 57). Pew pollsters interpret tattooing as individual expressions of uniqueness, and this avenue of self-expression is extroverted and outward-facing. Extroversion is highly correlated ($r = .38$) with chronic promotion (Grant & Higgins, 2003).

Participants

Hypothesizing that a tattoo convention is a promotion-oriented environment, we conducted a similar field experiment to Study 4. Every tattoo artist at a major worldwide tattoo convention participated in our experiment. Researchers delivered promotion, prevention, and control inductions to tattoo artists, and then asked them for the price of a stable target tattoo. The aim of this experiment was to rule out the explanation that prevention inductions always intensify value, regardless of any fit with the environment.

Procedure

The promotion induction asked artists about the *advantages* of getting a tattoo on a shoulder versus an arm. The prevention induction asked artists about the *disadvantages* of getting a tattoo on an arm versus a shoulder. Valence in favor of the tattoo, and, notably the positive value of getting it on the shoulder rather than the arm, remained constant across the regulatory focus inductions. The control induction expressed interest in the tattoo and sought information regarding shoulder versus arm placement. Our hypothesis for this experiment was that the promotion induction, i.e., the regulatory fit condition, would elicit higher values for tattoos than the prevention induction or the control condition.

Promotion Induction: “I **am hoping to** get this tattoo. What are the **advantages** of getting it on my shoulder versus my arm? What would I **gain** by getting it on my shoulder?”

Prevention Induction: “I **should** get this tattoo. What are the **disadvantages** getting it on my arm versus my shoulder? What would I **lose** by getting it on my arm?”

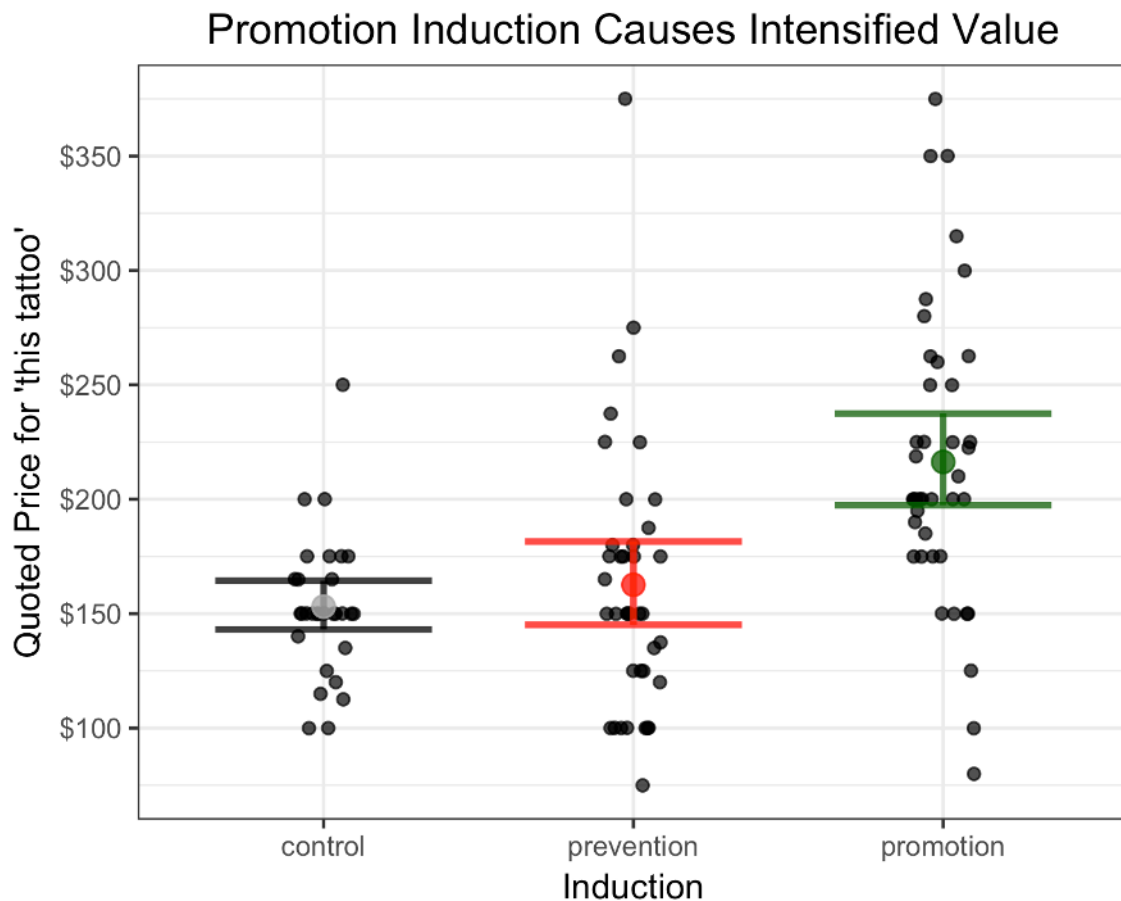
Control: “I **am interested** getting this tattoo. I **am interested** in your opinion about the placement: my shoulder versus my arm. What can you tell me about that?”

Immediately after artists gave their answer to the placement questions, researchers asked the same dependent variable for value, “How much for this tattoo?”

Experimenters used a black and white image printed on white paper as stable target tattoo. The image was an arrangement of triangles, a fractal known as the Sierpinski gasket (see Appendix). This fractal was selected for two reasons. First, cognitive psychologists tend to employ fractals as neutral visual stimuli (Ragland et al., 2002). Second, more specific to motivation, a study investigating the impact of Parkinson’s disease on motivational orientations found no bias for fractal preference by promotion or prevention predominance (Avlar, 2016).

Results

Among 109 participants in three conditions depicted by Figure 2, tattoo artists named a higher dollar value for the tattoo in the promotion induction than the control and prevention induction conditions. Specifically, the 30 participants in the control condition named a mean price of 153.08 dollars ($SD = 30.72$), the 38 participants in the prevention induction condition named a mean price of 162.63 dollars ($SD = 59.18$), and the 41 participants in the promotion condition named a mean price of 216.31 dollars ($SD = 64.18$) for the same tattoo.⁵



The ten-dollar mean difference between the prevention and control means indicate that prevention does not intensify value in all environments, and the mean difference of 63 dollars (with 11.64 dollars of standard error) between the promotion and control means suggests that in this hypothesized promotion environment, promotion inductions intensify the value of quoted

⁵ Nine participants provided their answers by quoting an hourly rate accompanied by how long it would take to complete that particular tattoo. Those data have been arithmetically transformed into dollar values, and are included in the analysis.

prices ($F(2, 106) = 13.86, p < .001, R^2 = .19$). The effect found at the promotion environment was larger than the effect found at the prevention environment (see Table 3, $R^2 = .19$ and $.06$, respectively). This is to be expected; a meta-analysis of 98 fit studies found that promotion fit effects are typically twice as large as prevention fit effects (Motyka et. al, 2014 p. 401-2).

These mean differences were not simply the result of some extreme values. The prices in the promotion condition were leptokurtic and 32 of the 41 participants assigned to the promotion induction named a price above or equal to the median (approximately 83%). In contrast, only seven of the 30 vendors in the control condition named a price above or equal to the median (approximately 23%), and only eighteen of the 38 vendors in the promotion condition named a price above the median (42%). Note some heaping in all three conditions at \$150 and \$175. Heaping above those values, at \$200 and \$225, was characteristic of the promotion condition, the fit condition at this venue. These frequencies suggest that the promotion questions intensify tattoo values at tattoo conventions above prevention and control questions. Group medians followed the same pattern as the means: similarity between control and prevention, but a major difference between control and promotion (50 dollars). In summary, promotion questions at this promotion environment drove a monetary effect that has theoretical implications for regulatory fit theory and practical implications for consumers and marketers.

Table 3: Value from Fit with Distinct Motivational Field Environments

<i>Value from Fit with Promotion and Prevention Environments</i>					
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>Median</i>	<i>R²</i>
Gun Show					.06
Control	45	586.28	136.93	559.00	
Promotion	47	611.23	111.61	600.00	
Prevention	48	683.54	193.80	639.50	
Tattoo Convention					.19
Control	30	153.08	30.72	150.00	
Promotion	38	216.31	64.18	200.00	
Prevention	41	162.63	59.18	150.00	

Note: Means, standard deviations, and medians are reported in USD.

Contribution to Regulatory Fit Theory

This motivation science program of research applies regulatory focus in novel field experiments to pinpoint what drives Americans towards guns, but these experiments also make two basic contributions to regulatory fit theory. This research adds to the motivation science literature by testing the literal interpretation of the regulatory fit summary that: “*regulatory fit occurs when an environment sustains, rather than disrupts, an actor’s underlying fundamental motivational state*” (Higgins, 2005, p. 209). To test that statement directly, we first utilized lexical software to identify strong motivational environments, and then proceeded to manipulate participants into fundamental motivation states (and control conditions). In accordance with seminal regulatory fit experiments, we again demonstrate how value increases under conditions of fit, but these experiments are the first to induce fit with an environment. Fit effects with the motivational content of a distinct environment are a contribution to regulatory fit theory.

Further, the control conditions in these large field experiments demonstrate that fit intensifies value, as opposed to non-fit conditions reducing value. Although it has been taken for granted that value derives from fit, the seminal value-from-fit experiments (Freitas & Higgins, 2002; Avent & Higgins, 2003) used only fit and non-fit conditions, with no pure control. The

pure control conditions in these field experiments show that mean and median prices of target objects remained stable between non-fit and control conditions, but were intensified by fit. Thus, regulatory fit has been refined in its postulate that value can be derived from fit.

Power

Study 4 at large gun shows revealed a small effect of value-from-fit with the prevention environment, and Study 5 at large tattoo conventions revealed another small effect of value-from-fit with promotion. Although *post-hoc* power analyses are not considered state of the art, Study 4 achieved 0.79 power, and Study 5 achieved .68. These calculations are useful insofar as they inform sample size recommendations for similar experiments in the future. In order to conduct similar experiments with an 80 percent chance of detecting these small effects, a sample size of 122 (for an $R^2 = .1$) to 138 (for an $R^2 = .2$) is required. If those environments are not as replete with participants as the present large trade shows, a potential remedy is to reduce the experimental conditions from three to two. Depending on the research aims, experimenters may care more about the differences between fit conditions and non-fit, or instead between fit conditions and control conditions. In order to gain access to an appropriately large sample of vendors for promotion or prevention environments, venues like convention halls or expo centers are preferable to venues such as motels^a or outdoor fairs. If a future experiment must take place at one of these small venues, that experiment should expand the eligibility criteria for vendors and use only two conditions in order to register a small effect.

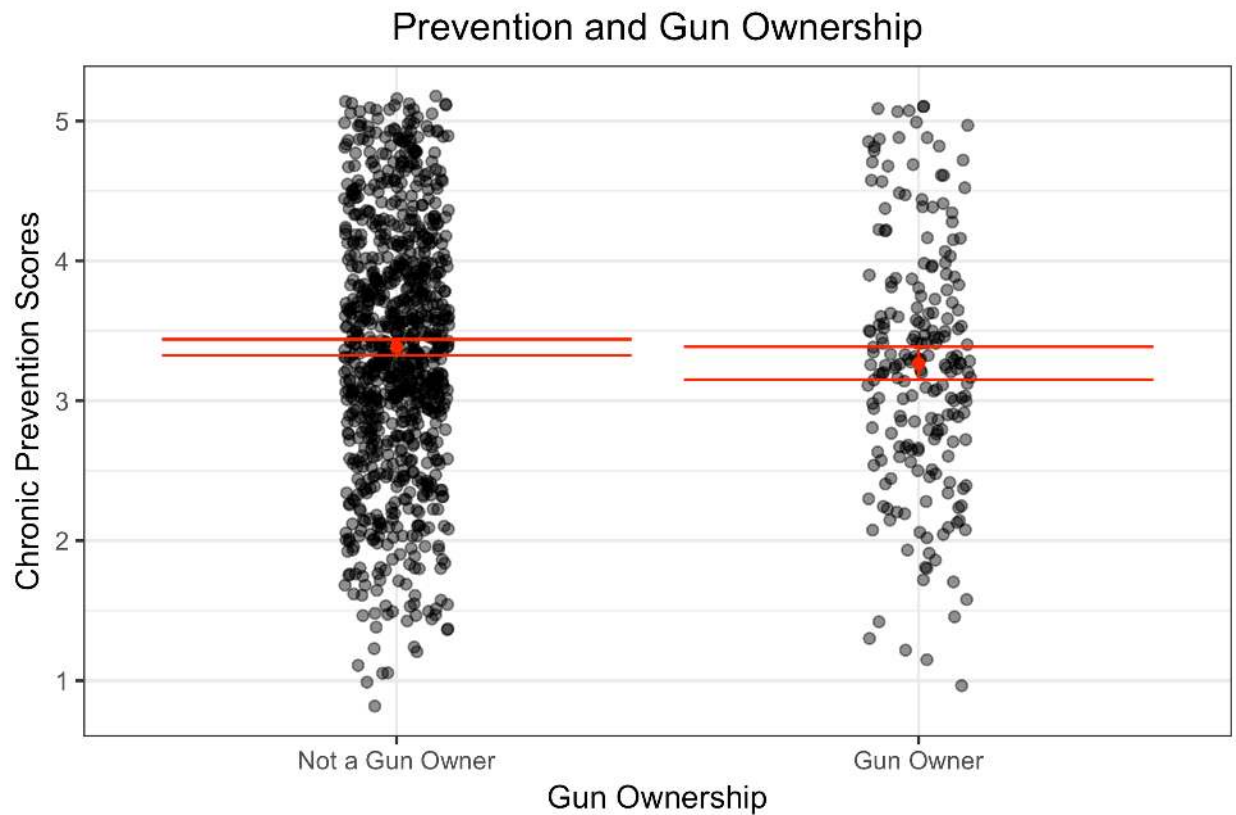
^a During the hypothesis development and background information phases of this research program, the research team visited smaller gun shows in motels. Those venues hosted approximately one tenth the number of vendors as large convention halls and expo centers.

Study 6: The role of Chronic Regulatory Focus

This study addressed another potential limitation of the gun vendor studies. Perhaps all of the effects observed in our field experiments were the result of a fit between the inductions administered and each participant's chronic regulatory focus orientation. If gun vendors themselves tend to be predominantly prevention-oriented this could contribute to or even account for the value from fit effects observed in the gun show studies. Chronic promotion and prevention are measured via the 11-item regulatory focus questionnaire (Higgins et. al, 2001), but to preserve the ecological validity of the field experiments, we could not administer an unwieldy survey onsite.

Participants and Procedure

In an online observational study, we compared gun-owning participants ($n = 212$) to those who did not own guns ($n = 870$) on those motivational dimensions. We recruited online study participants who filled out a short battery of personality and motivational questionnaires. We asked participants to indicate whether they owned a gun or not and compared the groups created by that self-reported status.



This correlational study confirmed what Diener found in the late 1970s: gun owners do not differ from the rest of the population on important psychological or motivational traits ($t(1080) = 1.73$, ns). Gun owners' prevention scores ($M = 3.27$, $SD = 0.87$) were nearly indistinguishable from non-gun owners' prevention scores ($M = 3.38$, $SD = 0.89$). These precisely estimated scores are exactly what we would expect to find between large groups who do not differ on chronic motivations. Indeed, if anything, gun owners' prevention scores were slightly lower than non-gun owners' prevention scores. Thus, the possibility that gun owners are particularly high on chronic prevention does not account for our findings because they do not generally have higher scores (Conley & Higgins, 2018).

Rigor to eliminate or reduce bias

Audit experiments confront some of the same design concerns that these present experiments raise, especially experimenter bias. We patterned our rigorous controls after retail discrimination field experiments; we conducted experimenter training, implemented observers, and measured experimenter bias (Ditlmann & Lagunes, 2014). We chose to pattern our controls after retail discrimination experiments because our gun shows and tattoo conventions presented similar retail environments. Our controls were simpler than job interview or home loan audit experiments because those investigate discrimination during prolonged interactions, whereas each of our interactions lasted only approximately two minutes (Turner, Fix & Struyk, 1991). Retail discrimination experiments typically use race as an independent variable, necessitating two different human experimenters of different races to be matched as closely as possible on various dimensions. Our experiments were even simpler; only one experimenter delivered motivational induction scripts. Still, we applied controls to reduce bias.

Researcher training began six months before the first experiment. During that time, the research team visited three small gun shows at small hotel venues in order to familiarize themselves with vendor-patron interactions. The experimenter practiced memorizing and delivering scripts for 2 hours individually before rehearsing the articulation of each script in front of two other members of the research team. These trials exposed weaknesses in memorization, articulation, and unstandardized gestures that were then suppressed via rehearsals.

On site, raters took positions with direct lines of sight to both the experimenter and the vendor, but could not hear which script was delivered. The observer rated 182 of 273 vendor-researcher interactions and quantified the researcher's behavior on three dimensions: friendliness, understandability, and timing (lingering or rushing). The rater was known to the experimenter and thus not a secret observer. The rater did not record any meaningful differences

among conditions in friendliness, understandability, and timing. There was no subject excluded from any analysis. No trials were discarded or ignored. No covariates were collected or tested either for controls or interactions

Discussion of Studies 4 and 5: Negotiations and Regulatory Focus

The ecological demonstrations of regulatory fit effects in our field experiments contribute to negotiations research. Results from the tattoo conventions complement the results from the gun shows, and when taken together, these fit experiments conflict with previous findings regarding buyer-seller roles. Previous regulatory focus research in the context of negotiations randomly assigned lab participants to buyer or seller roles in a contrived negotiation over an inexpensive spiral notebook, and found that the prevention orientation fits buyers, while promotion fits sellers (Appel et al., 2009). The present field experiments with real sellers and ostensible buyers demonstrate that motivational environments activate a regulatory focus state above and beyond those buyer and seller roles. If sellers conform to promotion, then our method should have revealed that value derived from fit with promotion at *both* the gun show and the tattoo convention. However, our externally valid results across motivationally distinct domains indicate that in the hierarchy of regulatory focus, environmental demands supersede transactional roles (Conley & Higgins, 2018).

Chapter 4: Caveats

Some caveats temper the applicability of this extension of the value-from-fit postulate. Namely, field experiments will only elicit these fit effects with an environment if the target object has some variance in its pricing, and is also motivationally relevant. Studies 6 and 7 described below clarify those parameters.

Large trade show experiments demonstrated how promotion or prevention intensify value when the environment fits those fundamental motivations; another experiment demonstrated an

important and intuitive boundary condition. The target object must have some variance in its perceived value. Simply put, even at a trade show where the final price of an object is arrived upon jointly between buyers and sellers, some objects may not show any meaningful price variance, no matter what ham-fisted manipulations are applied. Before describing an actual experiment conducted as part of this value-from-fit program with environments, consider an absurd example. Consider a music venue featuring the debut of an innovative new musician. The style of music advances previous techniques, the crowd is young and progressive, the structure is avant-garde, even a linguistic analysis of press releases and advertisements for the event reflect how strongly this environment sustains the promotion orientation. Now try to buy a beverage from a vendor there. If the price of a beverage at this promotion venue is listed as two dollars, the price is going to remain at two dollars no matter what the motivational language. The price of a beverage at any particular venue is a stable value, resistant to any motivational language that might fit or not fit the environment.

Study 7: Products with invariant prices

Similarly, some guns have stable widely-accepted prices. The same design with the same price dependent variable yielded a precisely estimated zero effect for a very basic handgun: a “Glock.” Before executing the AR value-from-fit experiments, we attempted the same experimental design at the same venue using the Glock 17 (the most common variant of this handgun) as the target of the manipulation. We asked participants to compare the 17 to another model (the Glock 19, an extremely similar product), always maintaining positive stable valence towards the 17. In the comparison, we manipulated regulatory focus by drawing attention to advantages and potential gains versus disadvantages and potential losses. There was no meaningful difference between conditions (less than five dollars, with approximately fifteen dollars of standard error). This precisely estimated zero effect ($F(2, 48) = 0.001, ns$) made two

contributions to this program of research. First, it validated the method and emboldened the research team that field experiments wielding spoken inductions of regulatory focus are indeed possible. Second, the responses revealed the crucial flaw, the lack of variance associated with this basic weapon. It was just as facile to realize this error as to arrive at its remedy: complexity. Adjusting from the simplest weapon at the venue to the most complex, we returned with the same questions for a different target object with a more variable price.

Study 8: Products lacking distinct motivational relevance

The final caveat is the most important and must be reiterated: the target of this manipulation must be a motivationally-relevant object. Consider power drill, an object in many ways similar to a handgun in shape, weight, and cost. Furthermore, power drills are designed to be held in a dominant hand and are activated by an index-finger trigger; there are hardly two more similar items than a handgun and a power drill. Despite those marked similarities, a power drill can be used to improve structures (promotion) or for repair work, to return a structure to its status quo (prevention). Power drills are not motivationally distinct in the way handguns are, and deriving value from a fit with an environment requires a motivationally relevant environment. An experiment testing value-from-fit with a power drill demonstrated the importance of a distinct motivational environment. The research team again used spoken questions as inductions of promotion, prevention, and control:

Promotion: *“I am hoping to buy a power drill. What are the advantages of a cordless versus a standard drill? What would I gain by buying a cordless power drill?”*

Prevention: *“I should buy a power drill. What are the disadvantages of a standard power drill versus a cordless power drill? What would I lose by buying a standard power drill?”*

Control: *“I am interesting in buying a power drill. I am interested in the differences between cordless and standard drills. What can you tell me about that?”*

Again, these inductions maintain stable positive valence towards a power drill, but manipulate focus by calling attention to a specific aspect of the target item. Importantly, a vendor was only eligible to be in this study if that vendor sold both standard and cordless power drills, or else the answers would have been biased towards their pursuit of a potential sale. Like studies 3 and 4, the researcher asked “How much for an average power drill?” immediately after the vendor concluded his answer to the induction question. By limiting the sample to vendors with both types of drill for sale, the manipulations of promotion and prevention had a better chance of interacting with motivations instead of signaling potential sales. This parameter limited the sample size to 30 at the approved venue.

Results

This experiment yielded a precisely estimated zero effect of focus on the price of a non-motivationally distinct target object. Although most experiments benefit from larger sample sizes, the absence of interesting fit effects between a non-motivationally distinct object obviates any intensified data collection efforts. Vendors in all three conditions reported the mean price of a power drill to be 83.66 USD with no significant differences among conditions ($F(2, 27) = 0.80$, $p = .46$).

These caveats that we tested for refine the conclusions this program of research suggests. Further, we speculate that value-from-fit with an environment would not yield price differences in conversations taking place over the phone. Similarly, we speculate that written questions read by participants on a computer terminal would not impact quoted gun values. It is imperative that studies testing for fit with an environment be tested onsite at venues with a distinct motivational character. The discussion section features some examples of distinct motivational environments for future fit (with environments) experiments.

Non-Verbal Fit Effects

The methods used in both types of large retail shows were designed to capture fit effects between the environment and a specific induced motivational state. The role of chronic motivations was ruled out by a correlational study, but another type of fit, language fit, may have driven the observed results. Prevention language might have fit the gun show environment without the actual motivational orientation being sustained by that environment, simply because those words in the induction (“should”, “disadvantage”, “lose”) are more common, more normative, more prolific in that environment. Likewise, perhaps words like advantages, gain, and hope are more common at tattoo conventions, but do not necessarily reflect any promotion character to the environment. This alternative explanation conforms to the literature on Linguistic Style Matching “LSM,”

LSM researchers study how people choose words in a nonconscious effort to coordinate with others during conversations (Gonzales, Hancock, & Pennebaker, 2009). Word matching can occur between two people and can carry over into other relevant conversations (Niederhoffer & Pennebaker, 2002). LSM explanations for fit effects, however, would haunt any motivational fit induction that uses language, whether spoken or written. Verbal inductions comprise the overwhelming majority of regulatory fit studies (Motyka et. al, 2014). However, it is possible to induce regulatory fit with a non-verbal factor. Regulatory fit researchers have demonstrated that certain motivational messages are more persuasive when accompanied by non-verbal gestures that fit prevention (vigilance) or promotion (eagerness) (Cesario & Higgins, 2008). Still, those non-verbal inductions either fit or did not fit a persuasive message that was delivered *verbally*. The verbal component of motivational inductions, even in non-verbal research, has been unavoidable. I suggest a new experimental method below that induces promotion and prevention without using motivational language.

Future research could test for non-verbal fit effects with distinct motivational environments. At a gun show, a non-verbal induction of prevention should elicit higher perceived value of a gun than non-verbal promotion inductions or control conditions. All three of those conditions could deploy the same control verbiage used at the large gun show experiment, “*I am interested in the ammunition conversion for the AR. What can you tell me about that?*” Prevention, Promotion, and control could be signaled by a political message on a researcher’s T-shirt, or even something smaller like a political button. In the prevention condition, the researcher would wear a T-shirt or a conspicuous button signaling support for an incumbent politician who supports gun rights. This maintains stable positive valence for gun rights, and also signals desire for status quo maintenance: incumbency. The promotion condition must also signal stable positive valence towards gun rights, but then also signal a departure from the status quo. An intra-party challenger to an incumbent Republican politician fits that description, given that both politicians have vociferously supported gun rights and the Second Amendment with comparable intensity.

In that scenario, stable positive valence towards gun rights can be signaled by a political button or T-shirt, but support for the Republican challenger signals a desire to depart from the status quo, aspiring for a political improvement (promotion). At the time of this writing, 2018, the political buttons or T-shirts that might signal promotion but also support for gun rights might be advertisements for the candidacies of Senator Flake (R-AZ) or former Governor Romney (R) (At the time of this writing, former Governor Romney is a Republican candidate for the US Senate in Utah). The key difference is that one choice represents the status quo; the other does not. The control condition should simply be the control question with the political button removed, or with a similar shirt, devoid of political message.

Prevention: *Incumbent* (e.g. Trump 2020)
Promotion: *Challenger* (e.g. Flake 2020)

Control: *No Message*

Question: *“I am interested in the ammunition conversion for the AR. What can you tell me about that?”*

Dependent Variable: *“How much for an average AR”*

Like the original verbal methods, I hypothesize that this non-verbal prevention induction would intensify value perceptions of guns. The non-verbal promotion induction will elicit price quotes not different from control prices. However, like the original large gun show experiment, this method requires an extension. This method might not induce the vendors, but instead non-verbally signal valuable information about the researcher, the potential buyer. The researcher in the prevention condition might appear to vendors to be the “right” kind of buyer. A modified method that separates the induction role from the dependent variable collector would add rigor and address the preceding issue.

Chapter 5: Perspectives

The Role of Fear in Partisanship and Issue Positioning

These caveats are grounded in consumer psychology and what marketing researchers discovered regarding value and motivations (Zhou & Pham, 2004). These studies depart from consumer and marketing research with their direct implications for political psychology. Below, a review of the role of fear in motivated cognition foreshadows how political scientists can interpret these regulatory fit studies that help to explain how guns are valued. Political scientists who study how fear and threats are correlated with partisanship would make similar predictions in these gun-related regulatory fit experiments. Political perspectives on this work are not necessarily alternative explanations for the results; instead they are another way to interpret similar motivations and their consequences in the political domain.

The role of fear in partisanship has been explored for decades, starting with a speculation that fear, broadly defined, motivates conservatism (Wilson, 1973). More recent political psychology research adjudicated that speculation with data, and correlated right-wing thinking in

the twentieth century with awareness of threats and fear of death (Jost, Glaser, Kruglanski & Sulloway, 2003; see Sibley & Duckitt, 2008 for a similar review). The correlations suggest that heightened concern for threats and fear of death motivate political conservatism. These analyses confirmed Wilson's (1973) motivated ideology assertion, but this research was correlational and could not attest to any directional causality. Those authors called for more research to link the prevention orientation and political conservatism, and implied the need for experiments, "*In general, research indicates that a prevention orientation, which focuses on potential threats and losses, does facilitate cognitive conservatism, but the extension to politically conservative attitudinal contents has yet to be demonstrated conclusively*" (Jost et. al., 2003 p. 364).

Responding to journalistic criticism for indicting the right wing and the US Republican party as a cabal feeding on fear, another similar research team expanded this method to an enormous meta-analysis (almost 400,000 subjects) in sixteen countries. This broader analysis of personality, psychology, and politics did not find the same reliable connection between fear (of death) and conservatism, but did find a significant correlation between perceived threats and conservatism, $r = .12$ to $.31$ (Jost, Stern, Rule & Sterling, 2017).

The connection to regulatory focus is strong. As stated above, the prevention orientation is particularly concerned with avoiding losses, threats. These concerns are not simply correlated with prevention or recently explored fringe applications; concern for threats is a central tenet of the prevention orientation (Higgins, 1997; 1998). In political contexts, the prevention orientation resembles this connection in political psychology between perceived threats and conservative thinking. And those same political psychology researchers saw that connection decades ago. The political scientists who noted that perceived threats led to support for the political status quo in the early 1970s (Wilson, 1973) were observing the consequences of the prevention orientation in the political sphere. Loss aversion (Kahneman, Knetsch & Thaler, 1991), terror management

(Greenberg, Solomon & Pyszczynski, 1997), low-effort thought (Eidelman, Crandall, Goodman & Blanchar, 2012), and authoritarian traits (Sibley & Duckitt, 2008) have all been correlationally linked to conservatism in different studies and meta-analyses. Those psychological variables each stigmatize conservatism as remarkably negative, maladaptive, or aberrant. In order to avoid a framework that is hostile to right-wing thinking, regulatory focus theory offers a different perspective for analysis of how right-wing partisans orient their attention to potential losses and use vigilant strategies to protect the status quo.

Regulatory focus has been shown to impact outcomes in various domains, including consumer purchasing behaviors (Werth & Foerster, 2007), leadership styles (Kark & Van Dijk, 2007), and even athletic performance (Plessner, Unkelbach, Memmert, Baltes & Kolb, 2009). Given its broad applicability, it comes as no surprise to motivation scientists that promotion and prevention are relevant to partisan sorting in the political sphere. While the connection between fear and right-wing thinking has been interpreted as criticism, regulatory focus can describe political conservatism as an adaptive and appropriate strategy that sustains fundamental goal orientations. Further, political conservatism as a result of prevention concerns can conform with the issue evolution sorting process described above; there is no ideological conflict presented to someone concerned with threats who is motivated to value guns and gun rights, then sorts into a modern conservative party. Unlike generalized correlations between fear and conservatism, regulatory focus demonstrates how conservatism is both rational and psychologically adaptive for gun-rights supporters, but not gun control advocates (see Quattrone & Tversky, 1988 for contrasts between rational choice and psychological variables). Regulatory focus attributes a concern for threats and approach of non-losses, avoidance of losses, as an adaptive fundamental motivation that underpins serious needs for safety and security. This packaging of some of the questionnaire variables in Jost et. al. (2013) is a reminder that concern for threats is not

tantamount to cowardice; instead, the prevention orientation is adaptive and present to some degree in everyone (Higgins, 1997).

The present regulatory focus studies address the call in Jost et. al. (2003) for an investigation of prevention's role in conservatism. A limitation of these studies (for Jost's 2003 call) is that they observationally and experimentally link the prevention orientation to just one feature of right-wing thinking: support for gun-rights. Although the validated instruments for measurement and manipulation herein are motivational inductions (Freitas & Higgins, 2002) and linguistic tools (Gamache et. al., 2015), a political psychology interpretation of these studies would consider them a narrow extension of the correlational work on motivated conservatism.

The link between gun rights advocacy and the prevention orientation is strong enough to detect even *within* the National Rifle Association. Over time, the NRA's mission changed. Once an advocate for sports shooting and outdoorsmanship, the NRA began to primarily advocate for the preservation and defense of the Second Amendment. Those priorities are reflected in the NRA mission statements. In 2018, the NRA mission statement contains more prevention language than promotion (0.69 and 0.43, respectively), whereas in their mission statement in 1871 to "promote and encourage rifle shooting on a scientific basis," contains zero prevention language and scores high on promotion (11.11). This measured rise in prevention language, and especially prevention predominance, reinforces the association between gun rights advocacy and the prevention orientation. The 2018 "about the NRA" page (accessed at <https://home.nra.org/about-the-nra/>) also quotes the 1871 mission statement verbatim. In order to disentangle that 1871 mission statement from the current mission statement, the 1871 text has been removed from the analysis of the 2018 text.

Both political and motivational frames are useful for scholars in those respective fields; these studies show how adaptable manipulations or measurements of regulatory focus can inform

political psychology research on fear and partisanship. Beyond the results of the motivational experiments using regulatory focus and regulatory fit and their connections to the role of fear in partisanship, this issue demands a less general, *categorized* inspection of which aspects of partisanship are most relevant to the gun debate.

Moral Foundations Theory

These psychology experiments regarding an applied political issue have straightforward interpretations for motivation science. Implications for the ongoing and salient political debate regarding gun rights are less clear. It is useful to compare what is known about the relationship between an established and reputable theory of political psychology, Moral Foundations Theory, and motivation science. Moral Foundations Theory attempts to address moral variance between people around five organizing pillars which each highlight differences on core intuitions (Haidt & Graham, 2007). Like regulatory focus goal orientations, these moral foundations motivate behavior (Haidt, 2007). Proliferation of the Moral Foundations Questionnaire (Graham, Nosek, Haidt, Iyer, Koleva & Ditto, 2011) enables comparisons between numerous groups of relevant interest, so it is no surprise that it was quickly employed to categorize adherents of the major US political parties (see Iyer, Koleva, Graham, Ditto & Haidt, 2009 for a treatment of the foundations that motivate libertarian morality). Indeed, liberals and conservatives report different moral concerns from each other (Graham, Haidt & Nosek, 2009), and similarly, positions on social “culture war” issues are sorted around differential concern for certain moral foundations (Koleva, Graham, Iyer, Ditto & Haidt, 2012).

Conservatives tend to organize morality, to some extent, around all of Haidt’s proposed moral foundations. In other words, all five moral considerations are relevant to conservatives’ judgments, with some variance. For liberals, just two foundations, concerns for preventing “harm” and bolstering “fairness” are the most relevant to moral judgments, and the remainder of

the moral foundations are much less relevant. For liberals, those concerns for preventing harm do indeed predict support for gun-control, ostensibly for the purpose of reducing violent crimes, suicides, and accidents. Conservatives also consider avoiding harm and caring for the weak relevant to moral judgments. Compared to the other foundations, conservatives, like liberals, think that concerns for who is harmed and cared for are paramount. The similarity with which liberals and conservatives value the prevention of harm reinforces the results in Study 2a and 2b which measured similar amounts of written prevention between gun rights and gun control advocates. They are both motivated similarly by the “Harm” moral foundation.

Moral Foundations Theory could be utilized in an experiment to test the similar hypotheses as presented in Study 4. A Moral Foundations manipulation could experimentally induce concerns for harm in questions about gun pricing. Like prevention inductions, a harm induction would intensify the perceived value of a gun (versus control - no induction) for a gun-rights supporter. In this way, the organizing foundation regarding harm would operate in gun rights supporters similarly to the prevention orientation. If concerns for harm were induced at a similar venue to Study 3, similar results would result. This speculative experiment rests upon the challenge of operationalizing moral concerns for harm into a concise and reliable induction. Moral Foundations Theory would make similar predictions as Regulatory Focus Theory regarding the motivational influences on the American gun rights debate, with one key caveat: promotion and prevention concerns do not *necessarily* operate in the moral domain. Although recent motivation research has shown that promotion and prevention are correlated with the moral foundations (Cornwell & Higgins, 2013) and later measured key differences in the ways each regulatory foci makes moral judgments (Cornwell & Higgins, 2016), regulatory focus theory categorizes and describes fundamental motivations, not morality.

Moral foundations rhetoric can be a useful tool in cases where conservatives and liberals might share concern for a foundation, but disagree on a practical political issue. Previous research showed that liberals and conservatives can support the same issue, like certain aspects of the Affordable Care Act, if their attention is drawn to a moral foundation they support: Fairness (Miles, 2016). Regarding gun rights, liberals and conservatives could give united support to the same gun regulations if they were first united by the Harm foundation, namely the prevention of harm to children. More recent moral foundations research indicates that if both liberals and conservatives are concerned with preventing Harm, conservatives are willing to let some people become harmed in order to emphasize other moral foundations. The contention that moral foundations have a prioritized order perhaps explains why gun owners advocates are primarily concerned with self and home defense, and do not justify gun ownership in the context of broader social implications.

Future research could investigate how moral judgments, organized around those foundations predict support for either side of the gun debate in the United States. Without experimental tools those studies would remain observational. Although the regulatory foci overlap with some of the moral foundations, a regulatory focus investigation of the link between prevention and support for gun rights is more appropriate for two reasons. First, it is a deeper level of analysis; fundamental motivations may drive partisanship because of an attraction to guns and gun-rights as the Issue Evolution perspective suggests. Second, regulatory focus inductions allow for experimental manipulations of motivations that can enable causal inference.

The present work has reviewed motivated conservatism, and moral foundations theory contrasted with regulatory focus theory, and how all of those frameworks would inform research on the gun rights debate in America. While all those frameworks are pertinent to the gun debate, it is important to identify which theories can be operationalized into experiments, which can

make observational predictions, and which can only contribute speculative discussion. The political psychology that links fear and threat concerns to conservatism supports the notion that conservative gun rights supporters are primarily concerned with “home and self-defense” (Dimock, Doherty & Christian, 2013). It is important to note here that the status quo bias held by conservative thinkers might operate much differently in a country with opposite gun policies to the United States. The fictitious scenario below portrays how conservative political thinking could support gun control in an extremely alternative context.

Imagine a first-world democracy with certain reasonable stable measures of crime, employment, and economic prosperity. Imagine that this democracy, from its outset, put a constitutional ban on private gun ownership in order to protect the citizens from violent crimes, suicides, and accidents. In order to digest this contrived constitutional scenario, it is necessary to accept that this democracy’s constitutional ban on guns inside its borders was reasonably effective and resulted in acceptable levels of safety and security, both real and perceived. Now imagine that democracy weighed an internal debate, led by progressives demanding freedom of gun rights in order to equip the citizenry to violently oppose an authoritarian government. Although it is difficult to imagine, this effort would be progressive and concerned with granting more rights to citizens and aimed towards preventing harms. This proposed change represents a departure from this scenario’s constitutional status quo. Changing this fictitious status quo gun policy from gun prohibition to gun proliferation would simultaneously furnish citizens of this democracy with new threats (violent crime, suicides, and accidents), and also the opportunity for individual protections from those threats and also an additional major existential threat of government oppression tyranny. Each threat in that lineup has catastrophic consequences; violent crimes, suicides, and gun accidents all can result in the loss of human life, and most citizens of democracies would consider a tyrannical shift to be catastrophic. But in this scenario

where a government departs from the status quo to arm its citizenry, it is nonsensical to consider tyranny from that same government a legitimate threat that could be kept at bay by this newly armed citizenry. Therefore, the introduction of guns into that democracy would entail the introduction of three new threats and simultaneously the means to defend from just one of those new threats, violent crime. It is not reasonable to defend against gun suicides or gun accidents with a gun. On balance, that decision to depart from the status quo equates to an introduction of additional threats. Jost et. al. (2013), and other research linking status-quo support to conservatism would predict that in this imaginary democracy, gun-rights would be opposed by conservative right-wing thinkers. That departure from the status quo would be opposed by prevention-predominant citizens due to their concerns for threats. In this imaginary democracy, the prevention orientation would support gun control, and oppose any risky change in policy that would shift favor towards gun-rights.

In this imagined society with a reversed status quo, moral foundations makes the same predictions as the current state of American politics. No matter what the status quo, liberal and conservative concerns for harm and care are paramount to moral decision-making. Liberals and conservatives in the imagined democracy would have to judge the debate to move from gun prohibition to gun proliferation on the merits of who would be harmed by the change. In a reasonably stable democracy, it is reasonable to predict that both liberals and conservatives who consider harm relevant to their moral judgments would support the status quo in order to avoid harmful results.

The above conjectures about the moral components of the American gun rights debate are merely speculative in the absence of data or the commitment of experimental efforts. Conversely, the regulatory focus studies (studies 2 through 8) employ measurements and manipulations, but are devoid of explicit moral content. This motivational program of research

would benefit from an equally careful and rigorous morality program of research to complement, extend, or contend with these presented findings.

Regulatory Focus Implications

Regulatory Focus theory is a useful tool for the study of gun rights. Regulatory Focus, the role of fear in partisanship, and Moral Foundations frameworks all three make similar predictions about how support for gun-control and gun-rights interact with partisanship. And all of those frameworks make the opposite predictions about gun-control and gun-rights in an imagined democracy where the status quo is reversed from the reality of the US constitutional democracy. Understanding the legal and practical status quo regarding the state of gun rights in any society is an essential center of gravity and a necessary starting point for understanding the psychological variables influencing support and advocacy for either side of the debate.

A status quo reference point helps to situate these applied experiments in the context of the complete corpus of psychology literature. These are not the first *field experiments* to employ regulatory focus theory (see Ramanathan & Dhar (2010) for a marketing application, and Latimer et. al. (2008) for a health and fitness application), but these present studies emphasize the important role of the status quo. Even more, the political psychology perspectives described above rely on the status quo reference point. For those reasons, it is useful to look to other areas of psychology and theories that identify a status quo reference point and then describe deviations from that status quo. Judgment and decision-making research in cognitive psychology similarly focuses on the status quo, and deviations. Although the predictions tested by these present experiments conform to contemporary motivation science theories, theories in cognitive psychology could recognize these same predictions and results. Given this key relationship between the regulatory fit experiments and cognitive psychology, it is possible that cognition is

playing a crucial role driving the effects wherein the promotion or prevention frame takes precedence over the other, depending on the environmental context.

Cognitive Psychology Implications

Query Theory (Johnson, Häubl & Keinan, 2007; Weber & Johnson, 2009) aims to identify the cognitive mechanisms underpinning the endowment effect. Query Theory posits that preferences and ultimately decisions are constructed as people serially interrogate different choice options, and that final decisions are a result of the order and valence of those thoughts. Importantly, this theory states that the first thought a person has about an object occupies a special role of primacy. That first thought is most likely to impact a final decision about the object, specifically regarding that object's *value*. Ensuing thoughts are less powerful in affecting a later tradeoff decision about the object's value.

A series of Query Theory lab experiments have demonstrated the importance of that first thought by influencing that specific thought to change how a person values an object. Participants in those experiments were directed to list the advantages and disadvantages of objects they are either endowed with or do not possess, depending on the experimental condition. This investigation of the endowment effect showed the importance of that first thought, and suggested a manipulation: thought reversal. A thought reversal takes cognitive control of that first thought by directing participants list the disadvantages first when asked about the advantages and disadvantages of any product. Without this instruction, people list thoughts in a natural order, usually by listing the advantages first. This serial decomposition of decision-making elevates that first thought to a position of predictive importance. Decision researchers went on to test thought reversals in a wide range of decision-making scenarios, including environmental decision (Hardisty, Johnson & Weber, 2009), choice defaults (Johnson &

Goldstein, 2013), inter-temporal choices (Weber et al., 2007; Appelt, Hardisty & Weber, 2011), and food decisions (Majd, Conley & Weber, 2017).

Cognitively, the regulatory focus induction questions at field venues prompt internal reasoning and arguments. The fit conditions may cause more arguments than the non-fit conditions. In the field experiments, promotion-oriented questions fit the promotion environments and elicit promotion-oriented responses. It is reasonable that in between the promotion question and promotion answer, the subject is thinking promotion-oriented thoughts (i.e., when asked about the advantages, the vendor usually answered by listing advantages, and it is thus extremely probable that cognitively, that vendor was thinking about the advantages). This examination of the thoughts, and the order of thoughts, is a Query Theory approach to the questions posed in these field experiments.

From a cognitive perspective, the promotion inductions at the large retail show environments represent the natural order of thoughts, because the vendors are prompted to inventory the advantages of an object they own. The prevention questions, however, do not necessarily represent a typical thought reversal. Although the prevention questions are concerned with disadvantages, they are not accompanied by explicit instructions to consider those disadvantages *before* any advantages. It is plausible that questions about only disadvantages inherently prompts consideration of those disadvantages *and* advantages.

Discussion: Motivational Influences on the American Gun Rights Debate

The field methods used in our studies satisfy the four dimensions of external validity: the subjects are actual gun owners, the setting is an authentic venue, the treatments are typical of ordinary questions between patrons and vendors, and the outcomes we measure are meaningful and comprehensible (Cialdini, 2009). We believe that this strengthens the contribution of this research. Our results suggest that spoken inductions in the form of questions can affect the

perceived value of objects. We found that guns are seen as more valuable when questions fit prevention, whereas tattoos are seen as more valuable when questions fit promotion. Our studies, informed by linguistic analyses, demonstrate how expressions can vary in their regulatory focus, and by framing questions in a focus-matching manner a fit can be created that enhances the value of a focal object. That malleability has important implications.

The way that value derives from fit with distinct motivational environments is inherently retail-oriented. At the large gun show, a sign at one vendor's table announced, "Prices subject to change based on customer attitude!" We suggest the amendment: "Prices subject to change based on customers' regulatory-focused questions!" Our research demonstrated that there are distinct consumer environments that are driven by identity and motivational concerns that interact with standard marketing parameters. By attending to those motivations (in fit conditions) or ignoring them (in control and non-fit conditions), our research demonstrated that it is possible to change perceived value of the target object. And fit is not restricted to regulatory focus. Locomotion mode concerns with effecting change versus assessment mode concerns with making the right choice can also be induced (Avnet & Higgins, 2003; Kruglanski et. al, 2000). A mode induction could be similarly accomplished in a field experiment by framing questions in different locomotion or assessment terminology. Researching how questions are asked could provide new insights into how motivational orientations are induced in everyday life, which in turn can produce fit and non-fit effects that affect the value of motivationally relevant objects like guns.

Marketers already understand the power of precise motivational wording, especially the value from fit effects with regulatory focus (Grant Halvorson & Higgins, 2013; Avnet & Higgins, 2006; Pham & Avnet, 2004). However, previous marketing research showing the impact of regulatory focus on value in consumer choices has not examined how promotion and

prevention manifest organically in consumer environments as a function of the form of questions being asked. Spoken inductions of promotion and prevention can be used to impact perceived value when marketers expect a product to fit a motivational orientation. For example, it would make sense that sellers of jewelry should use promotion questions to create fit, whereas sellers of insurance should use prevention questions to create fit. Marketers could develop hypotheses about motivational fit using linguistic analyses similar to those used in our studies, expanding the corpus of text to transcriptions of real consumer product discussion groups, for example.

On the other side of this coin, consumers can constrain spending by using the opposite strategy. When shopping in a distinct consumer environment that activates and is sustained by either promotion or prevention, an individual consumer should avoid communicating in the lexicon of the motivational orientation that is likely to intensify vendors' perception of the value of their product. To avoid increasing the price quoted by sellers, consumers should avoid using fit language when asking questions (e.g., eschewing prevention language at a gun show or promotion terminology at a tattoo convention). Consumers should prepare themselves to avoid language that fits the environment, because it would be natural in these situations to use the language that matches the environment's predominant focus.

History catalogues the stories of kings and princes at the expense of attention to the daily concerns of serfs and peasants, who far outnumbered them. Similarly, recent social psychology literature tends to focus more on agenda items of interest to affluent professionals rather than what is happening among millions of others in American society. Far from an esoteric subculture, massive numbers of gun-owning Americans, half of the citizenry, informed our research questions. Gun ownership and gun rights advocacy are widespread behaviors that merit more research attention. The motivational underpinnings identified by the present research could inform efforts to understand value perceptions of guns. What produces motivational fit with gun

ownership is important for psychologists to know. Our research considered one aspect of gun ownership: how inducing regulatory fit can enhance gun value among those who support gun rights. Understanding how and why guns are valued has implications for the debate over gun rights in America.

The impact of motivational framing on price judgments suggests that gun-related attitudes could be malleable like other political opinions (Converse, 1964). By manipulating regulatory focus, we isolated how guns are valued more by prevention motivations than by promotion. We speculate that prevention similarly motivates gun rights advocacy. When a lawmaker prepares to vote on the topic of gun rights, prevention language regarding safety and security concerns, protecting the status quo, and vigilance against mistakes could intensify the value and importance of guns for that legislator. Gun control advocacy groups might unintentionally undermine their efforts by communicating within a standard gun-related lexicon that induces prevention, sustains the status quo, and intensifies the value of guns. We speculate that prevention language motivates status-quo maintenance at the policy and legal levels regarding protecting the second amendment (maintaining the status quo) and fighting against gun regulations (resisting change).

After demonstrating how prevention fundamentally underpins gun value, it is tempting to indict the strength of this motivation for the seeming intractability of the gun debate in America. Data from Studies 2a and 2b showed that gun control supporters also write in prevention lexicon to discuss guns, but with less intensity than gun rights supporters. Like issue trespassing descriptions of some political debates, matching certain aspects of a debate opponent reinforces inferior signals from the trailing side of the argument (Damore, 2004). Perhaps the intractability of the gun conflict is due to the paucity of *different* motivations represented in the dialogue and the debates themselves. Gun control supporters, rather than simply lowering the intensity of

their prevention language relative to gun rights advocates could instead emphasize promotion arguments: the advantages associated with change. It is possible that by focusing on what could be gained, who could benefit, and how things could improve with changes to gun laws, that gun control advocates could distinguish their arguments from the prevention concerns wielded by gun rights advocates.

These field experiments and correlational studies have demonstrated how gun rights support is sustained by the prevention orientation. However, I stop short of the suggestion that a simple motivational induction such as a promotion-oriented question and answer exchange could change a person's stance on gun rights. Instead, these studies could inform future interventions. An intervention aiming to destabilize a gun rights stance must avoid prevention language. Gun control advocates could wield the lexicon of promotion to debate gun rights advocates.

These speculations are testable. Field experiments could be conducted in characteristically gun-control environments (such as a gun-control march) to test whether promotion or prevention language better fits gun-control environments. The stimulus materials used in Study 3 could be adapted to advocate for gun control; researchers could manipulate promotion and prevention language in fliers passed out to gun-control advocates, and measure motivational engagement via the amount of website traffic those different fliers cause. This experiment would differ from Studies 2 and 3 because it would introduce for the first time promotion language to gun control supporters. That novel lexicon for gun control might cause a new level of advocacy and engagement. Another experiment could randomly assign debaters to argue either side of the debate and also assign those debaters to use promotion or prevention language to form their arguments. Perhaps the introduction of promotion language, versus the naturally occurring prevention language that pervades gun-related topics and environments, could create new influences and new levels of persuasion.

Future research directions like those suggested above would not follow directly from a trait perspective on gun rights advocacy and behaviors. It is difficult to imagine how an intervention would produce personality changes that would change gun rights perspectives. The motivational language used in gun debates, however, could easily be manipulated by a careful advocate. This motivational perspective suggests an intervention that a trait perspective would not.

The studies in this paper have shown how different environments fit different motivations, and specifically how prevention language intensifies value and engagement associated with guns and their environments. It is possible that promotion language could temper enthusiasm for this topic. Promotion motivations, expressed in the lexicon enumerated by the regulatory focus dictionary, could represent a new tactic for the gun control side of this longstanding political, moral, and legal debate.

References

- Adams, G. D. (1997). Abortion: Evidence of an issue evolution. *American Journal of Political Science*, 718-737.
- Andersen, K. (1976). Generation, partisan shift, and realignment: A glance back to the New Deal. NH Nie, S. Verba y JR Petrocik, The changing American voter, 74-95.
- Appelt, K. C., Zou, X., Arora, P., & Higgins, E. T. (2009). Regulatory fit in negotiation: Effects of “prevention-buyer” and “promotion-seller” fit. *Social Cognition*, 27(3), 365-384.
- Appelt, K. C., Hardisty, D. J., & Weber, E. U. (2011). Asymmetric discounting of gains and losses: A query theory account. *Journal of Risk and Uncertainty*, 43(2), 107.
- Avlar, B. (2016). *Dissecting Motivation: Translational Approaches and Clinical Implications*. Columbia University.
- Avnet, T., & Higgins, E. T. (2003). Locomotion, assessment, and regulatory fit: Value transfer from “how” to “what”. *Journal of Experimental Social Psychology*, 39(5), 525-530.
- Avnet, T., & Higgins, E. T. (2006). How regulatory fit affects value in consumer choices and opinions. *Journal of Marketing Research*, 43(1), 1-10.
- Azrael, D., Hepburn, L., Hemenway, D., & Miller, M. (2017). The stock and flow of US firearms: results from the 2015 National Firearms Survey. *RSF*.
- Barry, C. L., McGinty, E. E., Vernick, J. S., & Webster, D. W. (2015). Two years after Newtown—public opinion on gun policy revisited. *Preventive medicine*, 79, 55-58.
- Black, D. A., & Nagin, D. S. (1998). Do right-to-carry laws deter violent crime?. *The Journal of Legal Studies*, 27(1), 209-219.
- Blendon, R. J., Young, J. T., & Hemenway, D. (1996). The American public and the gun control debate. *Journal of the American Medical Association*, 275(22), 1719-1722.

- Bohns, V. K., Lucas, G. M., Molden, D. C., Finkel, E. J., Coolsen, M. K., Kumashiro, M., ... & Higgins, E. T. (2013). Opposites fit: Regulatory focus complementarity and relationship well-being. *Social Cognition*, 31(1), 1-14.
- Brady, D., & Schwartz, E. P. (1995). Ideology and interests in congressional voting: The politics of abortion in the US Senate. *Public Choice*, 84(1-2), 25-48.
- Brockner, J., & Higgins, E. T. (2001). Regulatory focus theory: Implications for the study of emotions at work. *Organizational behavior and human decision processes*, 86(1), 35-66.
- Burbick, J. (2006). Cultural anatomy of a gun show. *Stan. L. & Pol'y Rev.*, 17, 657- 669.
- Carmines, E. G., & Stimson, J. A. (1980). The two faces of issue voting. *American Political Science Review*, 74(01), 78-91.
- Carmines, E. G., & Stimson, J. A. (1981). Issue evolution, population replacement, and normal partisan change. *American Political Science Review*, 75(01), 107-118.
- Carmines, E. G., & Stimson, J. A. (1986). On the structure and sequence of issue evolution. *American Political Science Review*, 80(03), 901-920.
- Carmines, E. G., & Woods, J. (2002). The role of party activists in the evolution of the abortion issue. *Political Behavior*, 24(4), 361-377.
- Cesario, J., & Higgins, E. T. (2008). Making message recipients “feel right” how nonverbal cues can increase persuasion. *Psychological science*, 19(5), 415-420.
- Cesario, J., Grant, H., & Higgins, E. T. (2004). Regulatory fit and persuasion: Transfer from "feeling right." *Journal of personality and social psychology*, 86(3), 388-404.
- Chong, D., & Druckman, J. N. (2007). Framing theory. *Annu. Rev. Polit. Sci.*, 10, 103-126.
- Cialdini, R. B. (2009). We have to break up. *Perspectives on psychological science*, 4(1), 5-6.
- Clerk, C. (2009). *Vintage Tattoos: the book of old-school skin art*. Universe Pub.

- Converse, P. E. (1964). The nature of belief systems in mass publics. *Critical review*, 18(1-3), 1-74.
- Cook, P. J., & Goss, K. A. (2014). *The Gun Debate: What Everyone Needs to Know?*. Oxford University Press.
- Cook, P. J., Rivera-Aguirre, A. E., Cerdá, M., & Wintemute, G. (2017). Constant lethality of gunshot injuries from firearm assault: United States, 2003–2012. *American journal of public health*, 107(8), 1324-1328.
- Damore, D. F. (2004). The dynamics of issue ownership in presidential campaigns. *Political Research Quarterly*, 57(3), 391-397.
- Damore, D. F. (2005). Issue convergence in presidential campaigns. *Political Behavior*, 27(1), 71-97.
- Diener, E., & Kerber, K. W. (1979). Personality characteristics of American gun-owners. *The Journal of Social Psychology*, 107(2), 227-238.
- Diener, E., & Kerber, K. W. (1979). Personality characteristics of American gun-owners. *The Journal of Social Psychology*, 107(2), 227-238.
- Dillman, D. A., Phelps, G., Tortora, R., Swift, K., Kohrell, J., Berck, J., & Messer, B. L. (2009). Response rate and measurement differences in mixed-mode surveys using mail, telephone, interactive voice response (IVR) and the Internet. *Social science research*, 38(1), 1-18.
- Dimock, M. Doherty, C. and Christian, L. (2013). Why Own a Gun? Protection is Now Top Reason. *Pew Research Center*, March 12, 2013.
- Ditlmann, R. K., & Lagunes, P. (2014). The (Identification) Cards You Are Dealt: Biased Treatment of Anglos and Latinos Using Municipal-Issued versus Unofficial ID Cards. *Political Psychology*, 35(4), 539-555.

- Druckman, J. N., Peterson, E., & Slothuus, R. (2013). How elite partisan polarization affects public opinion formation. *American Political Science Review*, 107(01), 57-79.
- Elsbach, K. D., & Bhattacharya, C. B. (2001). Defining who you are by what you're not: Organizational disidentification and the National Rifle Association. *Organization Science*, 12(4), 393-413.
- Ersine, H. (1974). The polls: Politics and law and order. *Public Opinion Quarterly*, 38(4), 623-634.
- Filindra, A., & Kaplan, N. (2017). Testing theories of gun policy preferences among Blacks, Latinos, and Whites in America. *Social Science Quarterly*, 98(2), 413-428.
- Filindra, A., & Kaplan, N. J. (2016). Racial Resentment and Whites' Gun Policy Preferences in Contemporary America. *Political behavior*, 38(2), 255-275.
- Freitas, A. L., & Higgins, E. T. (2002). Enjoying goal-directed action: The role of regulatory fit. *Psychological science*, 13(1), 1-6.
- Funkhouser, G. R. (1973). The issues of the sixties: An exploratory study in the dynamics of public opinion. *Public Opinion Quarterly*, 37(1), 62-75.
- Gamache, D. L., McNamara, G., Mannor, M. J., & Johnson, R. E. (2015). Motivated to acquire? The impact of CEO regulatory focus on firm acquisitions. *Academy of Management Journal*, 58(4), 1261-1282.
- Goss, K. A. (2017). The socialization of conflict and its limits: gender and gun politics in America. *Social Science Quarterly*, 98(2), 455-470.
- Granger, C. W. (1980). Testing for causality: a personal viewpoint. *Journal of Economic Dynamics and control*, 2, 329-352.

- Grant, H., & Higgins, E. T. (2003). Optimism, promotion pride, and prevention pride as predictors of quality of life. *Personality and Social Psychology Bulletin*, 29(12), 1521-1532.
- Greene, S. (1999). Understanding party identification: A social identity approach. *Political Psychology*, 20(2), 393-403.
- Guess, A., & Coppock, A. (2015). Back to bayes: Confronting the evidence on attitude polarization. Unpublished Paper, *Yale University*.
- Haider-Markel, D. P., & Joslyn, M. R. (2001). Gun policy, opinion, tragedy, and blame attribution: The conditional influence of issue frames. *The Journal of Politics*, 63(02), 520-543.
- Halvorson, H. G. & Higgins, E. T. (2013). *Focus: Use different ways of seeing the world for success and influence*. Penguin.
- Hardisty, D. J., Johnson, E. J., & Weber, E. U. (2010). A dirty word or a dirty world? Attribute framing, political affiliation, and query theory. *Psychological Science*, 21(1), 86-92.
- Henshaw, S. K., Forrest, J. D., & Van Vort, J. (1987). Abortion services in the United States, 1984 and 1985. *Family Planning Perspectives*, 63-70.
- Hepburn, L., Miller, M., Azrael, D., & Hemenway, D. (2007). The US gun stock: results from the 2004 national firearms survey. *Injury Prevention*, 13(1), 15-19.
- Higgins, E. T. (1997). Beyond pleasure and pain. *American psychologist*, 52(12), 1280-1300.
- Higgins, E. T. (1998). Promotion and prevention: Regulatory focus as a motivational principle. *Advances in experimental social psychology*, 30, 1-46.
- Higgins, E. T. (2000). Making a good decision: value from fit. *American psychologist*, 55(11), 1217.

- Higgins, E. T. (2005). Value from regulatory fit. *Current directions in psychological science*, 14(4), 209-213.
- Higgins, E. T. (2006). Culture and personality: Variability across universal motives as the missing link. *Social and Personality Psychology Compass*, 2(2), 608-634.
- Higgins, E. T. (2006). Value from hedonic experience and engagement. *Psychological review*, 113(3), 439-460.
- Higgins, E. T., & Cornwell, J. F. M. (2016), Securing foundations and advancing frontiers: Prevention and promotion effects on judgment & decision making. *Organizational Behavior and Human Decision Processes* 136, 56-67
- Higgins, E. T., Idson, L. C., Freitas, A. L., Spiegel, S., & Molden, D. C. (2003). Transfer of value from fit. *Journal of personality and social psychology*, 84(6), 1140-1153.
- Higgins, E. T., Kruglanski, A. W., & Pierro, A. (2003). Regulatory mode: Locomotion and assessment as distinct orientations. *Advances in experimental social psychology*, 35, 293-344.
- Hirschberger, G., Ein-Dor, T., & Almakias, S. (2008). The self-protective altruist: Terror management and the ambivalent nature of prosocial behavior. *Personality and Social Psychology Bulletin*, 34, 666–678.
- Hofstadter, R. (1970). America as a Gun Culture, 21AM. HERITAGE, Oct.
- Holian, D. B. (2004). He's stealing my issues! Clinton's crime rhetoric and the dynamics of issue ownership. *Political Behavior*, 26(2), 95-124.
- Hotelling, H. (1929). Stability in competition. Reprinted in Spatial economic theory.
- Johnson, E. J., Häubl, G., & Keinan, A. (2007). Aspects of endowment: a query theory of value construction. *Journal of experimental psychology: Learning, memory, and cognition*, 33(3), 461.

- Joslyn, M. R., Haider-Markel, D. P., Baggs, M., & Bilbo, A. (2017). Emerging political identities? Gun ownership and voting in presidential elections. *Social Science Quarterly*, 98(2), 382-396.
- Kadet, L. N. (2016). Guns, Gender, Geography: Exploring Reasons for Gun Ownership.
- Kahneman, D., & Tversky, A. (1973). On the psychology of prediction. *Psychological review*, 80(4), 237.
- Kanze, D., Huang, L., Conley, M. A., & Higgins, E. T. (2018). We Ask Men to Win & Women Not to Lose: Closing the Gender Gap in Startup Funding. *Academy of Management Journal*, 61(2), 1–29.
- Key, V. O. (1959). Secular realignment and the party system. *The Journal of Politics*, 21(02), 198-210.
- Kohut, A., Keeter, S., Doherty, C., Dimock, M., & Christian, L. (2012). Assessing the representativeness of public opinion surveys. Pew Research Center, Washington, DC.
- Kruglanski, A. W., Thompson, E. P., Higgins, E. T., Atash, M., Pierro, A., Shah, J. Y., & Spiegel, S. (2000). To "do the right thing" or to "just do it": locomotion and assessment as distinct self-regulatory imperatives. *Journal of personality and social psychology*, 79(5), 793-815.
- Latimer, A. E., Rivers, S. E., Rench, T. A., Katulak, N. A., Hicks, A., Hodorowski, J. K., ... & Salovey, P. (2008). A field experiment testing the utility of regulatory fit messages for promoting physical activity. *Journal of experimental social psychology*, 44(3), 826-832.
- Levendusky, M. S. (2010). Clearer cues, more consistent voters: A benefit of elite polarization. *Political Behavior*, 32(1), 111-131.
- Lindaman, K., & Haider-Markel, D. P. (2002). Issue evolution, political parties, and the culture wars. *Political Research Quarterly*, 55(1), 91-110.

- Lindgren, J. (2014). Foreword: The Past and Future of Guns. *J. Crim. L. & Criminology*, 104, 705.
- Lord, C. G., Lepper, M. R., & Preston, E. (1984). Considering the opposite: a corrective strategy for social judgment. *Journal of personality and social psychology*, 47(6), 1231.
- Lord, C. G., Ross, L., & Lepper, M. R. (1979). Biased assimilation and attitude polarization: The effects of prior theories on subsequently considered evidence. *Journal of personality and social psychology*, 37(11), 2098-2109.
- Majd, S., Conley, M. A., & Weber, E. U. (2017). Evidence of Query Theory as a Tool to Assist Restrained Eaters. *American journal of health behavior*, 41(1), 33-41.
- Mannetti, L., Brizi, A., Giacomantonio, M., & Higgins, E. T. (2013). Framing political messages to fit the audience's regulatory orientation: How to improve the efficacy of the same message content. *PloS one*, 8(10), e77040.
- Marietta, M. (2009). The absolutist advantage: sacred rhetoric in contemporary presidential debate. *Political Communication*, 26(4), 388-411.
- McCarthy, J. (2015). "Quarter of U.S. Voters Say Candidate Must Share Views on Guns." Gallup October 19. Available at: http://www.gallup.com/poll/186248/quarter-voters-say-candidate-share-viewguns.aspx?g_source=gun&g_medium=search&g_campaign=tiles_.
- Melzer, S. (2012). *Gun crusaders: The NRA's culture war*. NYU Press.
- Miles, M. R. (2016). Presidential Appeals to Moral Foundations: How Modern Presidents Persuade Cross-Ideologues. *Policy Studies Journal*, 44(4), 471-490.
- Miller, W. E., & Stokes, D. E. (1963). Constituency influence in Congress. *American political science review*, 57(01), 45-56.

- Motyka, S., Grewal, D., Puccinelli, N. M., Roggeveen, A. L., Avnet, T., Daryanto, A., ... & Wetzels, M. (2014). Regulatory fit: A meta-analytic synthesis. *Journal of Consumer Psychology*, 24(3), 394-410.
- Niederhoffer, K. G., & Pennebaker, J. W. (2002). Linguistic style matching in social interaction. *Journal of Language and Social Psychology*, 21(4), 337-360.
- Olson, M. (1965). The logic of collective action: Public goods and the theory of groups. *Cambridge, Mass.*
- Page, B. I., & Shapiro, R. Y. (1992). The rational public: Fifty years of trends in Americans' policy preferences. University of Chicago Press.
- Pearson-Merkowitz, S., & Dyck, J. J. (2017). Crime and Partisanship: How Party ID Muddles Reality, Perception, and Policy Attitudes on Crime and Guns. *Social Science Quarterly*, 98(2), 443-454.
- Pennebaker, J. W., Booth, R. J., & Francis, M. E. (2007). Linguistic inquiry and word count: LIWC [Computer software]. *Austin, TX: liwc.net*.
- Pennebaker, J.W., Booth, R.J., Boyd, R.L., & Francis, M.E. (2015). Linguistic Inquiry and Word Count: LIWC2015. Austin, TX: Pennebaker Conglomerates (www.LIWC.net).
- Pennebaker, J.W., Boyd, R.L., Jordan, K., & Blackburn, K. (2015). The development and psychometric properties of LIWC2015 Austin, TX: University of Texas at Austin.
- Petrocik, J. R. (1996). Issue ownership in presidential elections, with a 1980 case study. *American journal of political science*, 825-850.
- Pfungst, O. (1911). *Clever Hans:(the horse of Mr. Von Osten.) a contribution to experimental animal and human psychology*. Holt, Rinehart and Winston.

- Plessner, H., Unkelbach, C., Memmert, D., Baltes, A., & Kolb, A. (2009). Regulatory fit as a determinant of sport performance: How to succeed in a soccer penalty-shooting. *Psychology of Sport and Exercise*, 10(1), 108-115.
- Ragland, J. D., Turetsky, B. I., Gur, R. C., Gunning-Dixon, F., Turner, T., Schroeder, L., ... & Gur, R. E. (2002). Working memory for complex figures: an fMRI comparison of letter and fractal n-back tasks. *Neuropsychology*, 16(3), 370-22.
- Ramanathan, S., & Dhar, S. K. (2010). The effect of sales promotions on the size and composition of the shopping basket: Regulatory compatibility from framing and temporal restrictions. *Journal of Marketing Research*, 47(3), 542-552.
- Riker, W. H. (1993). *Agenda formation*. University of Michigan press.
- Riker, W. H. (1995): Rational choice theory.
- Rostron, A. (2009). Cease Fire: A 'Win-Win' Strategy on Gun Policy for the Obama Administration. *Harvard Law & Policy Review*, 3, 347.
- Schumann, J. H., von Wangenheim, F., & Groene, N. (2014). Targeted online advertising: Using reciprocity appeals to increase acceptance among users of free web services. *Journal of Marketing*, 78(1), 59-75.
- Smith, T. W. (1980). The 75% solution: An analysis of the structure of attitudes on gun control, 1959-1977. *The Journal of Criminal Law and Criminology* (1973-), 71(3), 300-316.
- Snyder Jr, J. M., & Groseclose, T. (2000). Estimating party influence in congressional roll-call voting. *American Journal of Political Science*, 193-211.
- Spiegel, S., Grant-Pillow, H., & Higgins, E. T. (2004). How regulatory fit enhances motivational strength during goal pursuit. *European Journal of Social Psychology*, 34(1), 39-54.
- Stokes, D. E. (1962). Party loyalty and the likelihood of deviating elections. *The Journal of Politics*, 24(04), 689-702.

- Strauman, T. J., Socolar, Y., Kwapil, L., Cornwell, J. F., Franks, B., Sehnert, S., & Higgins, E. T. (2015). Microinterventions targeting regulatory focus and regulatory fit selectively reduce dysphoric and anxious mood. *Behaviour research and therapy*, 72, 18-29.
- Stroebe, W., Leander, N. P., & Kruglanski, A. W. (2017). Is It a Dangerous World Out There?: The Motivational Bases of American Gun Ownership. *Personality and Social Psychology Bulletin*.
- Taylor, P., & Keeter, S. (2010). Millennials: A portrait of generation next. *Pew Internet & American Life Project*. Washington DC: Pew Research Center.
- The 2016 Democratic Party Platform. (2016, July 21). Retrieved December 19, 2016, from <https://www.democrats.org/party-platform>
- The 2016 Republican Party Platform. (2016, July 18). Retrieved December 19, 2016, from <https://gop.com/the-2016-republican-party-platform>
- Trafimow, D. & Marks, M. (2015) Editorial, *Basic and Applied Social Psychology*, 37:1, 1-2
- Turner, M. A., Fix, M., & Struyk, R. J. (1991). *Opportunities denied, opportunities diminished: Racial discrimination in hiring*. Urban Insitute Press.
- Tversky, A., & Kahneman, D. (1973). Availability: A heuristic for judging frequency and probability. *Cognitive psychology*, 5(2), 207-232.
- Underwood, E. (2013) Public health. Gun control agenda is a call to duty for scientists. *Science* 339: 381–382.
- US Fish and Wildlife Service. (2016). National survey of fishing, hunting, and wildlife-associated recreation: *State overview*. US Fish and Wildlife Service, Shepherdstown.
- Valentine, J. C., Aloe, A. M., & Lau, T. S. (2015). Life after NHST: How to describe your data without “p-ing” everywhere. *Basic and Applied Social Psychology*, 37(5), 260-273.
- Vizzard, W. J. (1995). The impact of agenda conflict on policy formulation and implementation:

- The case of gun control. *Public Administration Review*, 341-347.
- Vizzard, W. J. (2014). The current and future state of gun policy in the United States. *J. Crim. L. & Criminology*, 104, 879.
- Walgrave, Stefaan, Jonas Lefevere, and Michiel Nuytemans. "Issue ownership stability and change: How political parties claim and maintain issues through media appearances." *Political Communication* 26, no. 2 (2009): 153-172.
- Weber, E. U., & Johnson, E. J. (2009). Mindful judgment and decision making. *Annual review of psychology*, 60, 53-85.
- Witkowski, T. H. (2013). The visual politics of US gun culture. *Research in Consumer Behavior*, 15, 3-23.
- Wolpert, R. M., & Gimpel, J. G. (1998). Self-interest, symbolic politics, and public attitudes toward gun control. *Political Behavior*, 20(3), 241-262
- Zajonc, R. B. (1968). Attitudinal effects of mere exposure. *Journal of personality and social psychology*, 9(2p2), 1.

Appendix A. Regulatory Focus Questionnaire

This set of questions asks you about specific events in your life. Please indicate your answer to each question by circling the appropriate number below it (1 2 3 4 5)

1. Compared to most people, are you typically unable to get what you want out of life?
2. Growing up, would you ever “cross the line” by doing things that your parents would not tolerate?
3. How often have you accomplished things that got you “psyched” to work even harder?
4. Did you get on your parents' nerves often when you were growing up?
5. How often did you obey rules and regulations that were established by your parents?
6. Growing up, did you ever act in ways that your parents thought were objectionable?
7. Do you often do well at different things that you try?
8. Not being careful enough has gotten me into trouble at times.
9. When it comes to achieving things that are important to me, I find that I don't perform as well as I ideally would like to do.
10. I feel like I have made progress toward being successful in my life.
11. I have found very few hobbies or activities in my life that capture my interest or motivate me to put effort into them.

Appendix B. Table to Accompany Figure 1

Table: Percentage of Partisans supporting Gun Rights

year	Gallup: Ban			GSS			Gallup: Strict			Pew Research		
	D	R	<i>n</i>	D	R	<i>n</i>	D	R	<i>n</i>	D	R	<i>n</i>
1959	22.73	21.23	1122									
1963	17.07	16.8	3157									
1965	20.82	25.49	2508									
1972	24.76	22.44	986	25.74	27.45	1080						
1973				22.44	28.86	933						
1974	35.95	41.02	295	21.76	25.39	930						
1975	53.17	57.23	933	20.85	23.97	902						
1976				25.44	27.63	925						
1977				25.9	27.16	988						
1979	66.01	69.09	1011									
1980				25.04	35.16	878						
1981	45.61	51.4	1261									
1982				23.22	32.36	1190						
1983	32.32	44.19	956									
1984				23.22	32.4	892						
1985	33.25	40	724	25.17	28.34	1032						
1987				25.84	27.11	1214						
1988	56.46	66.56	640	19.14	29.81	615	31.87	35.64	615			
1989	30.18	30.45	940	14.94	22.38	723						
1990	52.92	59.36	672	15.41	21.26	593	13.1	19.31	611			
1991				16.37	18.56	649	23.98	33.79	660			
1993	46.88	66.22	639	13.2	22.5	682	25.93	46.26	1155	25	45	unk
1994				14.18	27.94	1256						
1995							30.4	47.53	310			
1996				12.55	22.24	1155						
1998				13.41	23.12	1123						
1999							18.01	52.04	1698	19	42	unk
2000	51.51	74.44	643	12.54	27.27	1038	20.4	52.58	652	19	50	unk
2001							36.41	56.6	668			
2002	53.53	77.7	611	12.17	26.9	561	33.66	60.5	627			
2003	49.34	81.03	631				25.9	60.36	658	40.53	60.85	1054
2004	47.05	76.23	668	14.23	26.43	556	22.15	64.26	636	25.94	56.59	921
2005	51.83	80	660				26.11	61.71	654			
2006	50.14	75.49	643	13.22	26.64	1153	26.09	57.98	638			
2007	54.32	81.58	601				28.57	60.64	630	22.55	56.74	762
2008	56.65	81.25	611	13.97	30.9	801	28.93	69.58	621	23.84	61.61	895
2009	51.37	86.66	612				31.53	76.05	632	28.33	69.31	779
2010	51.85	82.59	640	18.73	33.33	705	33.43	72.87	612	32	72.29	2738
2011	58.76	86.07	571				33.44	72.2	537	28.36	72.86	2705

2012	60.96	89.63	632	17.66	36.73	747	15.33	58.21	640	23.26	73.53	1994
2013	61.53	86.49	523				19.58	74.89	596	22.85	71.2	844
2014	53.15	86.01	637	14.31	37.6	932	25.08	72.48	619	26.74	79.94	2610
2015	57.33	87.28	591				21.59	75.77	466	25	71	unk
2016										22	82	unk

Appendix C. Raw data for Study 4

These data, available here as R code to reconstruct the dataset, are also available as spreadsheets and R code on the Open Science Framework: <https://osf.io/u6ykj/>

AR data # (these data are also available as a .csv on the OSF) # create dataframes below for the DVs in each of 3 conditions: control, prevention, promotion

```
ARcontrol <- data.frame(condition = "control", gunav =  
c(475,500,625,550,549,460,500,644,600,539,600,550,507.5,  
599,650,550,600,500,625,559,554.5,525,600,569,500,600, 650,519,500,300,595,600,550,650,475,1200,1000,750,  
612.5,600,450,550,500,650,700), stringsAsFactors = F)
```

```
ARprevention <- data.frame(condition = "prevention", gunav =  
c(525,650,900,600,850,539,650,650,745,725,684,500,675,600,  
619,629,475,500,1100,725,515,550,667.5,600,549,559,875,  
500,500,499,800,650,1219.5,650,850,850,550,560,550,1075,575,550,550,1000,850,650,475,1250),  
stringsAsFactors = F)
```

Note: the presence of a high value for the last data point, consistent with the hypothesis is remarkable. # This extreme value prompted us to examine and report the medians among conditions. # Removal of the last point in prevention condition (\$1250), reduces the effect between control and prevention to approximately 82 USD

```
ARpromotion <- data.frame(condition = "promotion", gunav =  
c(450,579,589.5,550,654,680,500,667,500,650,685,499.5,584.5,  
450,649,599,624.5,497.5,600,550,499,600,525,599, 799,600,499,550,600,499,525,449.5,825,450,750,650,  
825,650,750,600,650,750,600,850,900,550,625), stringsAsFactors = F)
```

This dataframe 'AR' is a combination of the above 3 dataframes

```
AR <- rbind(ARcontrol, ARprevention, ARpromotion)
```

Appendix D. Raw data for Study 5

These data, available here as R code to reconstruct the dataset, are also available as spreadsheets and R code on the Open Science Framework: <https://osf.io/u6yjk/>

```
tatcontrol <- data.frame(condition = "control", priceav = c(125,250,150,120,175,175,100,200,150,150,
150,140,165,150,150,175,200,115,150,175,165,112.5,150,150,165,150,150,150,100,135), stringsAsFactors = F)

# Decimal value $112.5 was calculated for a vendor whose hourly rate was $75 dollars # That vendor said he would
do the tattoo at that rate in "1 to 2 hours". = $75 to $150... mean = $112.5

tatprevention <- data.frame(condition = "prevention", priceav = c(175,100,150,150,180,100,100,125,100,200,
165,75,150,137.5,135,125,180,175,100,175,225,275,100,125,375,237.5,175,225,262.5,218.75,187.5,200,150,120,22
5,150,150,175), stringsAsFactors = F)

# Decimal value 218.75 was calculated for a vendor who quoted,
# "I charge anywhere from $350-$525 for a 4 hour session. I could do that tattoo in 2 hours."
#  $350/2 = 175$ ,  $525/2 = 262.5$ , mean of those values = $218.75

tatpromotion <- data.frame(condition = "promotion", priceav = c(175,200,315,190,150,210,200,225,
200,280,222.5,200,150,80,200,250,260,185,200,225,200,262.5,150,150,195,250,350,375,287.5,350,125,175,300,17
5,175,100,225,150,262.5,100,200), stringsAsFactors = F)

tat <- rbind(tatcontrol, tatprevention, tatpromotion)
```

Appendix E. Bayesian updating

The figure below depicts how three archetypical audiences would interpret the results of the large gun show experiment and its replication and extension. The first row depicts an agnostic audience, who thinks there would be no effect of the prevention induction, accompanied by some uncertainty. The second row depicts an optimal audience, who has confidence in the hypothesis, but harbors some uncertainty. The third row depicts a skeptical audience, who thinks there would be no effect of the prevention induction, accompanied by little uncertainty.

