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Value from Fit with Distinct Motivational Field Environments

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ABSTRACT

For almost forty years gun ownership and the motivational underpinnings of why guns are valued has received little attention in psychology. Using motivation science tools that explain value creation (regulatory focus and regulatory fit), we tested for fit between the prevention orientation and gun ownership. Our field experiments demonstrate fit between gun ownership and prevention. Our research is agnostic regarding the legal and moral components of the gun rights debate. Instead, we examine the malleability of gun value as a function of regulatory focus and regulatory fit, and provide evidence for fit effects with distinct motivational environments.

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 (Azrael, 2017; Hepburn, Miller, Azrael & Hemenway, 2007). Widespread ownership of more than 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 political 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, Cerdá, & Wintemute, 2017), and in a special issue of Social Science Quarterly political scientists addressed demographic (Filindra & Kaplan, 2017; Goss, 2017), electoral (Joslyn, Haider-Markel, Baggs, & Bilbo, 2017), and criminal (Pearson-Merkowitz & Dyck, 2017) factors contributing to the gun rights debate.

For almost forty years, however, gun ownership and the motivational underpinnings of why guns are valued have received little attention in psychology. Our research addressed the latter issue in terms of motivational science mechanisms that have been used to study value creation, specifically regulatory focus and regulatory fit, and it does so using field experimentation (Cialdini, 2009; Latimer et al., 2008). Our research is 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 regulatory focus and regulatory fit.

Regulatory focus

Regulatory focus theory describes motivation as the independent goal orientations of promotion and prevention, where promotion approaches gains and avoids nongains and prevention approaches nonlosses and avoids losses (Higgins, 1997, 1998). Regulatory focus theory goes beyond pleasure and pain to depict how independent concerns for either approaching pleasure or avoiding pain operate as distinct goal orientations. Promotion is concerned with moving from a current status quo of 0 to a better state of +1, whereas prevention is concerned with maintaining a satisfactory status quo of 0 against a worse state of −1. Promotion and prevention predict engagement in major areas of human behavior, including professional performance (Brockner & Higgins, 2001; Plessner et al., 2009), relationships (Bohns et al., 2013), and emotions (Strauman, Socolar, Kwapil, Cornwell, Franks, Sehnert & Higgins 2015). Promotion and prevention have distinct

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strategies. Eager strategies "feel right" to the promotion state, whereas 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, 2006a, 2006b) 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, 2000, 2005). We use regulatory fit inductions to conduct field experiments that contribute to our understanding of the motivational underpinnings of support for gun ownership.

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 nonloss, 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-Pillow, & Higgins, 2004), including 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 guns 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 hunting itself cannot be the story, because the popularity of hunting in America continues to decline. Indeed, only approximately 11.5 million gun owners report hunting (US Fish and Wildlife Services, 2017), whereas more than 65% of gun owners claim "personal and home defense" as their primary reason for gun ownership (Burbick, 2006; Diener & Kerber, 1979; Dimock, Doherty & Christian, 2013). 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

The Linguistic Inquiry and Word Count (LIWC) 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. 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, Booth, Boyd, & Francis, 2015). Management researchers validated a dictionary containing 27 promotion word stems and 25 prevention word stems[1] in order to quantify the motivations embedded within CEOs' periodic letters to shareholders (Gamache, McNamara, Mannor, & Johnson, 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, Huang, Conley, & Higgins, 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 gun rights.

STUDY 1a: 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,

Boyd, Jordan, & Blackburn, 2015). We patterned our analysis after the LIWC authors' use of opinion-editorial writings (op-eds). We collected the 30 most recent op-eds about the gun rights debate and constructed a corpus of those writings and ran that corpus 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 30 most recent op-eds[2] about the guns in America indicated that scores were notably higher 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 that 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 discussed earlier, we assembled a similar corpus of 30 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, eight higher in prevention, and six equal. Thus, it is not the case that op-eds in general just happen to be written more in prevention than promotion.

Study 1a 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 1b: Essays

We asked 301[3] 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. 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 ($M = 0.85$, $SD = 0.99$). This result 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 et al., 1997) and found a weak 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.

STUDY 2: Fliers

The lexical analyses in Studies 1a and 1b 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 composed 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 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. 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 consisted of 30 and 29 words, respectively, and contained the same number of regulatory focus dictionary words: seven 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 and thus more visitors. Notably, there was neither other advertising nor links for these websites at any other venues, and those websites were created solely for the purpose of this experiment 6 days prior to execution.

Results

The week following the 112 vendors receiving a flier, there were 53 visits to these websites. Thirty-seven unique visitors landed on the website advertised in prevention wording, whereas only 16 unique visitors came to the website advertised by the promotion website. This difference suggests that the prevention flier produced stronger engagement than the promotion flier, consistent with the regulatory fit prediction. 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.

STUDY 3: Gun show

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

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." Using simple random assignment, 100% of the eligible vendors at the gun show for Study 3 were individually assigned to promotion, prevention, or control conditions. Given that vendors stayed at their individual tables and communicated with patrons, their assignment to condition and 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. Important to note, as in earlier work on value creation from regulatory fit (e.g., Higgins, Kruglanski, & Pierro, 2003), these questions maintained the same valence toward 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. Of importance, the topic of the induction was ammunition, not the guns, so that the differences among conditions would not convey differential attitude valence toward the target object itself. As a result, the inductions scripted next maintained stable valence and interest toward the AR, 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 3 and 4: Rigor to eliminate or reduce bias.

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 dollars 586.28 ($SD = 136.93$); the 47 participants in the promotion induction condition named a mean price of dollars 611.23 ($SD = 111.61$), and the 48 participants in the prevention induction condition named a mean price of dollars 683.54 ($SD = 193.80$). The effect size between control and prevention was an increase of 97 dollars with 35 dollars of associated standard error ($R^2 = .06$). Figure 1 depicts the positively skewed distributions found in each of the control, promotion, and prevention conditions.

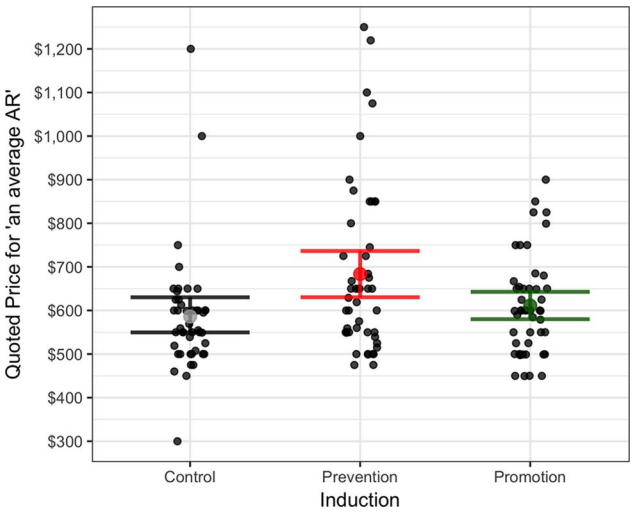

Figure 1. Prevention induction intensifies value in a prevention-oriented environment.

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. 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 dollars 40), whereas the difference between the control median and the prevention median was more than dollars 80. Both the mean and median differences between prevention and control conditions indicate the effect that 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 $100 does have theoretical implications for how value is created in motivationally distinct consumer environments. Next we further discuss those implications and recommend strategies for different parties.

STUDY 4: Tattoo convention

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). 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 structurally similar promotion-oriented environment that was 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; data show that 38% of millenials, 32% of Gen Xers, 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 3. 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, that is, 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 in** 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 the 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 dollars 153.08 ($SD = 30.72$), the 38 participants in the prevention induction condition named a mean price of dollars 162.63 ($SD = 59.18$), and the 41 participants in the promotion condition named a mean

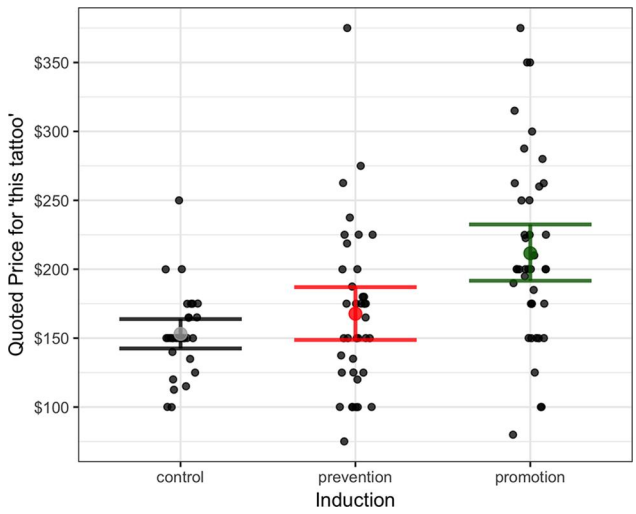

Figure 2. Promotion induction intensifies value in a promotion-oriented environment.

Table 1. Value from fit with promotion and prevention environments.

	n	*M*	*SD*	*Median*	R^2
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.

price of dollars 216.31 ($SD = 64.18$) for the same tattoo.[5]

The $10 mean difference between the prevention and control means indicate that prevention does not intensify value in all environments, and the mean difference of dollars 63 (with dollars 11.64 of standard error) between the promotion and control means suggests that in this hypothesized promotion environment, promotion inductions intensify the value of quoted prices ($R^2 = .19$). The effect found at the promotion environment was larger than the effect found at the prevention environment (see Table 1, $R^2 = .19$ 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%). 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 (dollars 50). In summary, promotion questions at this promotion environment caused a nontrivial monetary effect that has theoretical implications for regulatory fit theory and practical implications for consumers and marketers.

STUDY 5: 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, but to preserve the ecological validity of the field experiments, we could not administer an unwieldy survey onsite. However, a separate sample of gun owners' regulatory focus was available.

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 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. 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 that 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.

Discussion of studies 3 and 4: 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 show 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 2 min (Fix & Struyk, 1993; Turner, Fix, & Struyk, 1991). Retail

discrimination experiments typically use race as an independent variable, necessitating two 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 6 months before the first experiment. During that time, the research team visited three small gun shows at small hotel venues to familiarize themselves with vendor–patron interactions. The experimenter practiced memorizing and delivering scripts for 2 hr 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 repeated rehearsals and trials (Pfungst, 1911).

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–patron 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 study 4: Negotiations and regulatory focus

The ecological demonstrations of regulatory fit effects in our field experiments can 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, whereas promotion fits sellers (Appelt, Zou, Arora & Higgins, 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.

General discussion and conclusions

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 nonfit conditions), our research demonstrated that it is possible to change perceived value of the target object. 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 nonfit 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 (Halvorson & Higgins, 2013). 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. Study 1 showed that gun control supporters also write in prevention lexicon to discuss guns but with less intensity than gun rights supporters. 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, instead of 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, gun control advocates could distinguish their arguments from the prevention concerns wielded by gun rights advocates. Our speculations are testable. Future research could randomly assign debaters to argue either side of the debate and 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. The studies in this article 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 long-standing political, moral, and legal debate.

Notes

1. Gamache 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) and Kanze et al. (2017).
2. Our procedure for compiling a canon of op-eds on the topics of guns: We searched for "guns + op-ed" in Google's search engine. We selected articles that were opinion-editorials. The most common sources were the *New York Times, LA Times*, and *Washington Post*. When it was necessary to expand our search for other major news sources, we included the *Boston Herald, Chicago Tribune*, and BBC. As a result, our contemporary corpus spans from June 2008 to October 2016.
3. We intended to recruit exactly 300 participants; an administrative error led to 301 observations.
4. Bureau of Alcohol, Tobacco, and Firearms estimate 64,583 licensed gun dealers in the United States and territories as of July 2017.
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.

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