

INVESTING, POLITICS, AND TIME: HOW TEMPORAL  
FRAMING CAN OVERCOME PARTISAN  
MOTIVATED REASONING TOWARDS  
RETIREMENT SAVING

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by  
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## ABSTRACT

Americans are not financially prepared for retirement and the World Economic Forum (2019) is forecasting the US retirement savings gap to grow consistently for the next three decades. Addressing this retirement savings gap will almost certainly require individuals to increase their retirement savings rate. Embracing this increased individual accountability for retirement savings is found in this research to lead to a higher retirement savings intention. However, this research also found that perceptions about who is accountable for the retirement savings gap is not uniform, but rather is polarized along political lines. Those who affiliate with the Republican party believe relatively more strongly in individual accountability for retirement saving while those who affiliate with the Democratic party believe more strongly in the accountability of institutions like the government, Wall Street and employers. This research experiments with temporal framing as a novel mechanism for disengaging respondents from these politically affiliated retirement savings accountability beliefs, and by doing so, influencing their retirement saving intentions.

Temporal framing was chosen as a mechanism for moderating politically affiliated beliefs about perceived accountability for retirement saving because distal temporal framing has been shown in prior research (Roh, McComas, Rickard & Decker, 2015) to be effective in reducing entrenched resistance. Distal framing in this research was expected to reduce resistance to ‘mismatched’ messages – which are ones that counter existing politically affiliated beliefs about accountability for retirement savings – and by moderating those beliefs, influence the priority of retirement savings.

The results confirm a clear distinction between Republican affiliated respondents, who place high accountability for the retirement saving gap on individuals and low accountability on institutions, and Democrat affiliated respondents, who consider both individuals and institutions as accountable. Furthermore, the research confirms that self-identified political affiliation does not influence the importance that respondents placed on retirement savings. And for both political affiliations, a higher perceived individual accountability for retirement savings is associated with an increased retirement savings priority. However, temporal framing as a mechanism for moderating politically affiliated beliefs about accountability was not effective as applied in this research, possibly because the tested messages were not sufficiently persuasive.

The findings from this research can be applied by practitioners to set the tone and content of messages about retirement savings, to target messages to the most receptive audiences, and to advance academic understanding of the influence of proximate and distal message framing. And most importantly, this research makes a small but meaningful contribution towards understanding how to ensure a dignified retirement for all Americans.

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DEDICATION

To Elaine, Nick, Rebecca and Kaitlyn  
for your support and tolerance of my time in the 'aerie'.

And to my father, Bert Van Wyk, for modeling a lifelong commitment to learning.

## CHAPTER 1

### INTRODUCTION AND OVERVIEW

#### The retirement savings problem

Americans are not financially ready for retirement and the problem is growing. Almost half of American households headed by someone aged 55 or older currently have no retirement savings at all (Government Accountability Office; 2019), and the World Economic Forum estimates that the US retirement savings gap will grow 5% annually, increasing from \$28T in 2015 to \$137T by 2050. Addressing this gap will require a shift in America's personal retirement savings behavior because Americans are now expected to take individual accountability for their retirement strategy. A Towers Watson study found that the number of Fortune 500 companies offering traditional defined benefit plans -- which provide a predetermined payout upon retirement -- dropped from 251 to 34 between 1998 and 2013. This vacuum is meant to be addressed by 401Ks but they are proving to be an inadequate solution: according to the US Census Bureau (2017), 59% of employees have access to a 401K, but only 32% of working age Americans are investing in one.

Individual attitudes and behaviors towards retirement and retirement saving reveal inconsistency and misunderstanding. In Gallup's 2019 survey about retirement beliefs, 57% of respondents said they expected to have enough money to live comfortably after retirement yet only 25% of respondents in the same survey said that they were currently saving enough for retirement. Based on that survey result, at least half of the people who expect to retire comfortably are not currently taking the steps necessary to do so.

This inconsistency extends to some of the most basic retirement realities. The average age at which non-retirees in a 2019 Gallup survey expected to retire was 65. The actual mean retirement age among retired respondents was 61, a full four years younger. Among non-retirees, 21% expected to supplement their income with part-time work. Only 4% of current retirees in the Gallup survey claimed to do so. In addition, non-retirees indicated that they don't expect Social Security to be a major source of funding in retirement. Current retirees confirmed that it is by far the largest source of their retirement income.

An important influence on financial attitudes is political affiliation. Both Republicans and Democrats report higher satisfaction with their financial situation when the White House is occupied by a president who matches their political affiliation (Weinshenk & Helpap, 2015). In a recent example, after the 2016 election in which Republican Donald Trump won the White House, Pew Research measured a 20-point gain in the number of Republicans who thought that their financial situation would improve over the next year. Democrats also experienced a 20-point shift, but downward.

A Pew Research report in 2019 showed that differences between Republicans and Democrats include attitudes towards personal wealth as well as the government's regulatory role in addressing wealth. When it comes to personal wealth, 71% of Republicans believe that a person is rich because they work harder than other people while only 22% of Democrats agree. As far as the government's regulatory role, the Pew Research 2019 study reported a 46-point gap in the perceived importance of creating a social safety net between Democrats, who indicated a higher level of importance, and

Republicans, and a 35-point gap regarding the importance of the government's overall role in guiding society, with Democrats again providing higher scores.

Demographic changes are adding urgency to the retirement savings concern. About 15% of the population is currently over the age of 65. Based on the U.S. Census Bureau's forecasted growth rates, the number of Americans over the age of 65 will increase by 50% to reach just over 22% by 2050. According to the Social Security Office of Retirement and Disability Policy, the Social Security system may not be able to fully meet its obligations to this large population of aging Americans by 2035. That would be a devastating blow since Social Security payments were the largest source of retirement income for most retirees in Gallup's 2019 survey and again underscores the importance of Americans prioritizing their personal retirement savings.

This current research seeks to make a contribution to solving the retirement savings problem by demonstrating strategies that may be applied to increase the priority of retirement savings for individuals. The study also seeks to address the role of political affiliation in retirement savings attitudes by testing temporal framing as a method to disengage respondents from their politically affiliated attitudes towards individual or institutional accountability for retirement savings. The research seeks to deliver practitioner benefits through the tested message strategies that can be reapplied by legislators, asset managers, financial advisors and others who seek to influence retirement savings behavior. It extends academic understanding about the influence of perceived individual accountability on future intentions, the use of temporal framing as a mechanism to disengage people from their current leanings, and the linkages between political

affiliation and retirement savings priority. And perhaps most importantly, the research aspires to contribute to the ability of Americans to retire with dignity.

### Concepts Overview

There is a large and growing body of research which demonstrates that temporal framing can increase the sense of connection – and individual accountability – that a person may feel to their future self (Hershfield, John and Reiff, 2018; Van Gelder, Luciano, Kranenbarg, & Hershfield, 2015; Frederick Loewenstein & O’donoghue, 2002; Pennington & Roese, 2003; Tumasjan, Welpel & Sporrle, 2013; Hershfield et al, 2011; Berezowska, Fischer & van Trijp, 2018; Jiga-Boy, Clark & Semin, 2010). The effect of strengthening this personal connection is an increased sense of obligation to your future self and an increased likelihood of choosing behaviors that lead to positive long-term outcomes, such as retirement savings investment (Hershfield, John and Reiff, 2018).

The simple act of vividly picturing oneself in the future has been shown to increase savings behavior (Hershfield et al, 2011), improve healthy behaviors (Berezowska, Fischer & van Trijp, 2018), and increase effort towards a goal (Jiga- Boy, Clark & Semin, 2010). The existing research on temporal framing has proven to be so popular that the concepts of temporal framing have moved into the mainstream media<sup>1</sup> and financial advisors and asset managers now seek to apply temporal distance concepts with their investor clients<sup>2</sup>.

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<sup>1</sup> Dennis, M. *Save more money by meeting your older self*. Forbes, April 12, 2017.

<sup>2</sup> <https://www.forbes.com/sites/reneemorad/2018/11/27/the-secret-to-a-happier-retirement-starts-with-your-imagination-study-suggests/#341bad601faa>

The core mechanism believed to be at work when reducing temporal distance through manipulations such as vividly picturing oneself in the future is increased self-continuity – i.e., the elevated awareness that one’s future self is an extension of one’s current self -- and the resulting emotional connection to that future self (Hershfield et al., 2011). Temporal framing can also be used in the opposite, distal direction by framing an object or effect into the future. An increase in temporal distance has been shown to overcome barriers to accepting viewpoints that challenge strongly held beliefs (Roh, 2018). In Roh’s study, a political affiliation-based polarization of response to human contribution to wildlife conservation risk was mediated when the message was framed using a temporally distal effect rather than a proximate effect.

Overcoming resistance to messages that challenge individuals’ existing viewpoints is relevant to retirement savings. The strong connection between political affiliation and personal values in America has been verified in research (Darmofal & Strickler, 2019; Johnson & Schwadel, 2019) and is reinforced each day in personal newsfeeds (Matthes, Nanz, Stubenvoll & Heiss, 2020). The breadth of the gap between Republicans and Democrats in core values is striking. Pew Research tested thirty political values items in 2019 – including gun policy, immigration, the role of government, business, economy & labor, and sexuality – and recorded an average value items gap of 30 points between Republicans and Democrats. Partisan media has been shown to contribute to this divide (Daniller, Silver & Moehler, 2013) although much of the polarization is ingrained and automatic (Iyengar & Westwood, 2014) and maintained regardless of exposure to media with opposing views (Bail et al., 2018).

Political affiliation is specifically tied to personal beliefs about finance and economics. In a Pew Research 2018 study, 57% of Republicans said that the US economic system is generally fair, while only 15% of Democrats agreed (a 42-point gap). Conversely, in this same study, 84% of Democrats said the US economic system unfairly favors the interests of the powerful, while only 36% of Republicans held that view (a 48-point gap). In a nod to how political affiliation influences perceptions of individual accountability, 71% of Republicans in Pew's study agree that 'a person is rich generally because they worked harder than most other people' while only 22% of Democrats agreed (a 49-point gap).

While perception of individual accountability appears to differ by political affiliation, the end goal of achieving sufficient retirement savings appears universal. A 2020 Vantis Life survey revealed that saving for retirement was the top financial goal for more than half of Americans, again pointing to the universal nature of the goal if not the actual behaviors to support the goal. In the 2012 *Retirement & Politics Survey* from Allianz Life Insurance Company, 88% of Republicans and 81% of Democrats stated that they have started saving for retirement. While a gap between political affiliations is visible, these findings show that a large and somewhat similar majority of both political parties is meaningfully concerned about retirement savings.

Political affiliation goes beyond influencing financial attitudes or beliefs about personal accountability; it also impacts the interpretation of new information (Bartels, 2002; Guilbeault, Becker & Centola, 2018). Bartels' research showed that objective data such as unemployment rates and inflation were interpreted and recalled more favorably when associated with a period when respondents' affiliated political party was in power.

This tendency to interpret data based on preexisting beliefs is explained by motivated reasoning, which is defined as the act of selecting information that matches and supports preexisting beliefs while rejecting contradictory information (Gollust, Lantz, & Ubel, 2009; Hart & Nisbet, 2012; Maibach, Nisbet, Baldwin, Akerlof, & Diao, 2010; Schuldt & Roh, 2014). Individuals experience cognitive dissonance when facing findings that challenge preexisting beliefs (Festinger, 1957). Rather than rejecting their preexisting beliefs, individuals are motivated to avoid the new evidence that contradicts their preexisting views (Kunda, 1990; Lodge and Taber, 2013). As Kunda (1990) elegantly phrased it, motivated reasoning is the “*tendency to find arguments in favor of conclusions we want to believe to be stronger than arguments for conclusions we do not want to believe*”. Through a combination of implicit biases and counterargument, new information is rejected from respondents’ beliefs.

As an example, partisanship and religiosity moderate the acceptance of scientific beliefs in the United States (Kahan, 2015; Pasek, 2018). Individuals whose partisanship or religious beliefs shape their scientific views have two choices when they are presented with evidence of a scientific consensus that does not match their viewpoint. They can resolve the dissonance either by rejecting the information that lead to the scientific consensus (Kahan, Jenkins-Smith & Braman, 2011) or by downplaying the relevance of the consensus as a basis for their own beliefs (Ellison & Musick, 1995).

Research conducted by Roh, McComas, Rickard & Decker (2015) provides an indication of when motivated reasoning is robust. Core elements appear to include preexisting attitudes that place the subjects into a recognizable ideological camp, a strong connection between the new data and existing beliefs, and the presence of complex and

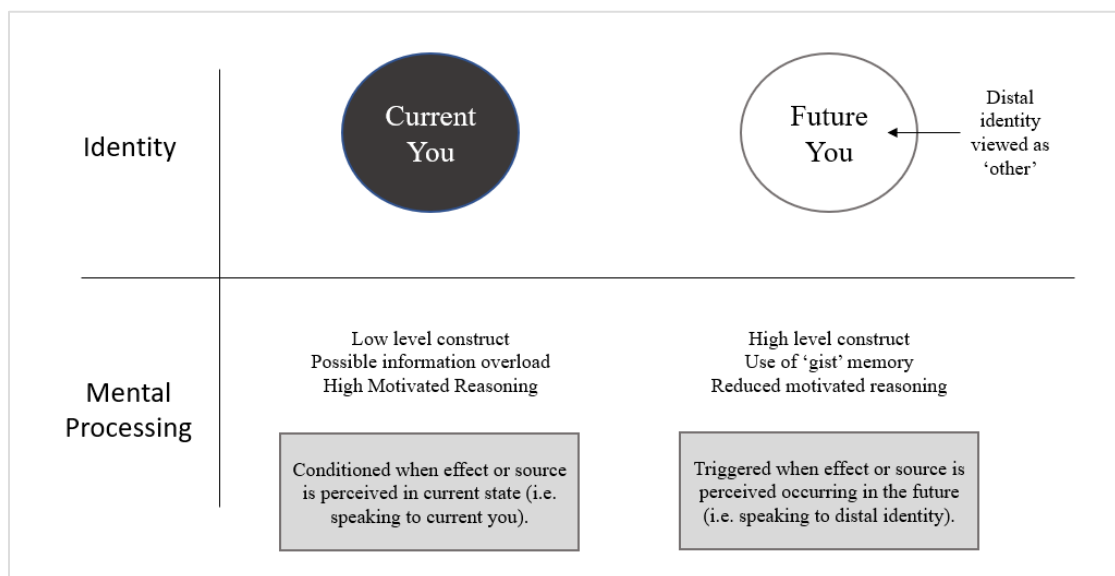
opaque data that needs some focus or skill to be interpreted. Given the previously described differences by party affiliation in attitudes towards economics, personal accountability and the role of government programs, it is reasonable to anticipate that motivated reasoning will exist for Republicans and Democrats as they receive messages that reference individual accountability for retirement savings. This brings us back to distal temporal framing because it offers a potential solution. Roh's previously described 2018 study supports that idea that increasing temporal distance towards an effect could cause respondents to disengage from their politically affiliated leanings.

There are parallels between temporal distance and social distance. For example, when picturing future events involving themselves, people often think and describe the event through the perspective of an external observer (Pronin & Ross, 2006). They visually think and describe their future selves as they would another person, although they do not treat their present self from that same externalized perspective. This more abstract perspective represents a break in self-continuity – a distancing from one's current perspective and identity -- while it focuses much less on concerns about internal subjective experience (Fujita, Trope, Liberman, & Levin-Sagi, 2006).

Further demonstrating the power of distal framing is the concept of the 'Other' (Figure 1). Pronin, Olivola & Kennedy (2008) demonstrate that one's future self is treated similarly to how another person (an 'Other') would be treated in the present. They used four experiments to show that decisions for one's current self are uniquely influenced by internal, subjective experience. By contrast, one's distal identity was externalized – as if viewed from a distance -- and was subjected in experiments to similar choices (or indignities) as was a stranger. Relatedly, and perhaps explaining why this was the case,

thinking about one's future self has been shown to activate similar regions of the brain as are activated when thinking about other people (Ersner-Hershfield, Wimmer, & Knutson, 2009). This distal framing effect can be used to reduce motivated reasoning if the target respondent is influenced to process information at a high-level construal because the information is appealing to their distal identity.

**Figure 1: Eliciting Distal Identity**



Construal level theory (Trope & Liberman, 2003) states that increasing temporal distance and social distance may change how people's concerns and information processing. Events further into the future are mentally represented via a short number of general, abstract features without contextual details (high-level construal) while events closer in time are visualized with concrete, contextual and incidental detail (low-level construal). As a result, events distant in time are evaluated based on their main features with little focus on details, which in turn has been shown to reduce motivated skepticism (McElroy & Mascari, 2007) and may increase the ease of processing for a message.

It is worth noting that there is another reason why temporal framing is an interesting mechanism for influencing retirement savings. The act of investing into retirement savings is inherently about time. The time-driven process of compounding, through which an asset's earnings gain earnings of their own, has been described as the 8<sup>th</sup> wonder of the world by Einstein and is credited by Warren Buffett as the most powerful factor behind his investing success. For each individual, time also takes on deeper meaning: investing in retirement savings is an investment in your future self. For this reason, the salience of time is a powerful influence for investment choices.

### Research hypotheses

The current research proposes that framing a retirement savings concern into the future will cause it to be processed via a high-level construal. This will allow mismatched messages – ones that focus on an accountability that does not align to a respondent's belief about retirement savings accountability -- to be processed more fluently and with less motivated reasoning. As previously described, Republicans tend to attribute more accountability to individuals than Democrats, who believe that the government has a responsibility to directly intervene in societal issues. Resistance to messages that are mismatched to the respondent's politically-affiliated beliefs may be alleviated by a distal temporal frame.

If the temporal frame is effectively influencing how mismatched messages are processed, this result will be visible in the data through a relatively higher attribution of accountability to institutions like the government, employers, and Wall Street in a distally framed institutional accountability message among Republicans (for whom this is expected

to be a mismatched message) than in a proximately framed institutional accountability message. For Democrats, this would be observed in a relatively higher attribution of accountability to individuals, for whom this is expected to a message mismatch, in the distally framed individual accountability message than its equivalent proximately framed message.

The current research approach is rooted in a strong foundation of evidence about the persistence of partisan leanings and the relationships between political affiliation and values, financial beliefs, and economic attitudes. The approach further anticipates that political affiliation has an indirect and inconsequential influence retirement savings priority; retiring with sufficient financial resources appears to be a universal human need. Stemming from these findings in the literature review, there are two hypotheses that guide the research plan.

**H1: Increasing perceived individual accountability for retirement savings will increase the financial priority of saving for retirement.**

By contrast, an increased sense that institutions such as the government, employers or Wall Street are accountable is expected to have minimal or possibly a negative effect on the priority of retirement savings.

**H2: The effect of political affiliation on perceived individual or institutional accountability will be moderated by the temporal frame of messages.** A distal temporal frame for the retirement savings gap in an individual accountability message is expected to increase the sense of

individual accountability among Democrats, for whom this accountability is a weaker match than among Republicans. Because Republicans are expected to be mismatched relative to an institutional accountability message for retirement savings, a distally framed retirement savings gap in an institutional accountability message is expected to increase the sense of institutional accountability among Republicans.

### Research plan

Three studies are included in the research plan. Study One, the results of which are detailed in Chapter 2, tests the mediation model by examining the relationships between political affiliation, accountability for the retirement savings gap, and retirement savings intention. The second study is a message test that serves as pretest for Study Two. It examines the relative influence, clarity and emotional valence of the tested messages. The objective is to ensure that the messages are equivalent in clarity while effectively communicating the intended temporal and accountability differences.

Study Two is designed to test the entire set of hypotheses. It measures the degree to which temporal framing moderates the influence of political affiliation on perceived accountability for the retirement savings gap, and through perceived accountability influences retirement savings intentions (Figure 2). Four different messages are placed among a randomly split sample so each message is reviewed by a different set of respondents. The message-time-frame modification frames the retirement income gap either existing now (proximate) or becoming a concern ten years in the future (distal). The



## CHAPTER 2

### STUDY ONE

#### Objectives and Hypotheses

The objective of Study One was to test the mediation model, which is that political affiliation effects perceptions of who is accountable for the retirement savings gap which in turn affects retirement savings priority. The path between political affiliation and retirement savings accountability was expected to be a direct effect, as was the path between retirement savings accountability and retirement savings priority. The mediational effect, in which political affiliation leads to retirement savings priority through retirement savings accountability, was expected to be an indirect effect.

#### Method

The IRB approved study was a three-minute online survey fielded via Survey Monkey. Data were collected between March 31 and April 1, 2020. A random sample of participants was invited to participate from the national Survey Monkey Audience panel. The sample yielded 456 18+ year old nationally representative respondents, of which 143 respondents were Republican or lean Republican and 189 respondents were Democrat or lean Democrat.

Table 1				
<i>Study One political affiliation</i>				
Republican	Lean Republican	Neither	Lean Democrat	Democrat
20%	12%	27%	20%	22%
n = 89	n = 54	n = 121	n = 91	n = 98



After reading the stimulus and answering the question about accountability, the respondents answered questions about political affiliation, concern about living comfortably after retirement, financial priorities, and demographics.

### Measures

*Accountability for Retirement Income Gap:* Accountability was measured on a 7-point Likert scale anchored by ‘Very much accountable’ and ‘Not at all accountable’. The message stimulus transitioned into the accountability question by asking for thoughtfulness (‘Please take a moment to think about the projected retirement savings gap’) and localization (‘...do you personally believe...’) to create delineation between the message and the first question while encouraging accuracy in the response provided.

*Political Affiliation:* Partisanship was measured with ‘Republican’, ‘Lean Republican’, ‘Neither’, ‘Lean Democrat’, and ‘Democrat’ as the options. Most respondents self-identified as having at least a ‘lean’ towards Republican or Democrat. However, 26.5% identified themselves as ‘neither’. Prior research provides evidence that those who self-identify as having a lean towards a political party are partisan when responding to value-based messages (Gollust & Cappella, 2014). For this reason, respondents who indicated a partisan lean are coded as Republican or Democrat in the analyses.

*Financial Priorities:* Financial priorities were collected by asking the importance of four financial goals for the 12 months ahead. The four goals are ‘paying off debt’, ‘buying a home’, ‘building an emergency fund’, and ‘saving for retirement’. The analysis

focuses on the financial priority of ‘saving for retirement’ and included the other financial priorities primarily to avoid isolating and possibly distorting the importance of a single priority among the many that respondents are balancing. Responses were collected on a 7-point Likert scale ranging from ‘not very important’ to ‘very important’. Respondents were given an option to select ‘Doesn’t apply to me’ for each financial saving priority. Overall, 9.6% of respondents chose the does-not-apply option for ‘saving for retirement’ which is higher than ‘building an emergency fund’ (7.2%) but lower than ‘paying off debt’ (16.5%) or ‘buying my own home’ (32%). Of the 43 respondents indicating that saving for retirement did not apply to them, 15 (34.9%) were retired, all but one of whom were over the age of 60. Almost the same percent of respondents over the age of 60 listed this financial priority as 7 = very important (32%) as said that the priority did not apply to them (35%).

*Retirement Concern:* This attitude was measured by asking ‘How concerned are you about having enough money to live comfortably after retirement?’. Responses were collected using a 5-point Likert scale with response options ranging from 1 = ‘extremely concerned’ to 5 = ‘not at all concerned’. Retirement concern was included to add a secondary check for evaluating the interplay between accountability and retirement attitudes.

Demographics measures collected included age, income, investable assets, education, employment, marital status, race/ethnicity, and gender. The Survey Monkey panel also automatically provided information on the region of the US in which the respondent lives.

## Analysis Approach

Demographic data from Pew Research (2020) profiles older Americans as predominantly white, less educated, and Republican, while income is not significantly different by political affiliation. In this Study One dataset, a similar profile emerges. Relative to Democrats, Republicans are more likely to be over the age of 50 (44% versus 34%, respectively), more likely to be white (84% versus 66%), and more likely to have stopped their education after high school (25% versus 14%). These demographic variables were included in the regression analyses.

The mediation model was tested through a series of steps. First, an independent samples t-test was used to establish the mean differences between Democrats and Republicans on perceived accountability for the retirement savings gap. Next, the effect of political affiliation on the priority of retirement savings through its effect on perceived accountability was measured through three regression models.

- 1) Regression model 1: The priority of retirement saving was measured as the dependent variable with political affiliation, age, race/ethnicity, and education set as independent variables.
- 2) Regression model 2: Each of the four accountabilities (individual, government, Wall Street, and employer) were measured as dependent variables with political affiliation, age, race/ethnicity, and education set as independent variables.

- 3) Regression model 3: The priority of retirement savings was measured as the dependent variable with political affiliation, each accountability, age, race/ethnicity, and education set as independent variables.

## Results

The independent samples t-test results for Democrat and Republican respondents relative to each measure of accountability (individual, government, employers, and Wall Street) reveals that Democrat respondents attributed lower mean accountability to individuals (4.61;  $t(328) = -3.57, p < .001$ ) and higher mean accountability to government (5.04;  $t(328) = 6.52, p < .001$ ) than Republican respondents (means of 5.31 and 3.81 for individuals and government, respectively). Mean differences were also present and distinct in the accountability attributed to Wall Street and employers with Democrats associating higher levels of accountability for both than did Republicans.

<i>Study One independent samples t-test</i>			
		Democrat	Republican
Individuals	Mean	4.61	5.31
	Std. Deviation	(1.76)	(1.71)
	N	189	141
Govt	Mean	5.04	3.81
	Std. Deviation	(1.59)	(1.84)
	N	188	142
Wall Street	Mean	4.54	3.51
	Std. Deviation	(1.70)	(1.91)
	N	188	141
Employers	Mean	5.17	4.45
	Std. Deviation	(1.54)	(1.71)
	N	188	143

The next analysis step was to run the first regression model, which examined the financial priority of retirement savings as a dependent variable. The regression confirmed that the priority of retirement savings is not swayed by political affiliation. Age, however, did significantly influence the priority of saving for retirement, ( $b = .295$ ,  $t(446) = 6.10$ ,  $p < .001$ ). Race/ethnicity and education do not show significant influence on the priority of saving for retirement.

Table 3					
<i>Study One, Saving for retirement regression</i>					
	Coefficients				
	Unstandardized B	Coefficients Std Error	Standardized Coefficient Beta.	t	Sig.
Pol Affiliation	.002	.059	.002	.039	.969
Age	.322	.053	.295	6.101	.000
Race/Ethnicity	-.020	.064	-.015	-.321	.749
Education	.081	.058	.065	1.388	.166

R Square = .097

Dependent Variable: Priority of saving for retirement

The second set of regressions explored the relationships between perceived accountability (individual, government, Wall Street and employer), political affiliation, and key demographic traits. Political affiliation is a significant predictor of all four accountabilities: individual accountability (Table 4;  $b = -.193$ ,  $t(444) = -4.14$ ,  $p < .001$ ), government accountability (Table 5;  $b = .286$ ,  $t(444) = 6.24$ ,  $p < .001$ ), Wall Street accountability (Table 6;  $b = .227$ ,  $t(443) = 4.84$ ,  $p < .001$ ), and employer accountability (Table 7;  $b = .185$ ,  $t(444) = 3.90$ ,  $p < .001$ ). Age has significant influence on perceptions of individual accountability (Table 4;  $b = .135$ ,  $t(444) = 2.77$ ,  $p < .05$ ) and government

accountability (Table 5;  $b = -.130$ ,  $t(444) = -2.69$ ,  $p < .05$ ) but not on the perceptions of Wall Street or employer accountability.

Table 4					
<i>Study One, Individual accountability regression</i>					
	Coefficients				
	Unstandardized B	Coefficients Std Error	Standardized Coefficient Beta.	t	Sig.
Pol Affiliation	-.240	.058	-.193	-4.136	.000
Age	.144	.052	.135	2.767	.006
Race/Ethnicity	-.003	.063	-.002	-.050	.960
Education	.114	.058	.094	1.97	.049

R Square = .072  
Dependent Variable: Individual Accountability

Table 5					
<i>Study One, Government accountability regression</i>					
	Coefficients				
	Unstandardized B	Coefficients Std Error	Standardized Coefficient Beta.	t	Sig.
Pol Affiliation	.365	.059	.286	6.237	.000
Age	-.143	.053	-.130	-2.692	.007
Race/Ethnicity	-.022	.064	-.016	-.350	.727
Education	-.028	.059	-.022	-.477	.633

R Square = .111  
Dependent Variable: Government Accountability

Table 6					
<i>Study One, Wall Street accountability regression</i>					
	Coefficients				
	Unstandardized B	Coefficients Std Error	Standardized Coefficient Beta.	t	Sig.
Pol Affiliation	.296	.061	.227	4.835	.000
Age	-.083	.055	-.075	-1.511	.131
Race/Ethnicity	6.946E-6	.067	.000	.000	1.000
Education	-.032	.061	-.025	-.523	.601

R Square = .062  
Dependent Variable: Wall Street Accountability

Table 7					
<i>Study One, Employer accountability regression</i>					
	Coefficients				
	Unstandardized B	Coefficients Std Error	Standardized Coefficient Beta.	t	Sig.
Pol Affiliation	.216	.055	.185	3.904	.000
Age	-.077	.050	-.077	-1.548	.122
Race/Ethnicity	-.008	.060	-.007	-.140	.889
Education	-.035	.055	-.031	-.641	.522

R Square = .045

Dependent Variable: Employer Accountability

The final regression confirmed that individual accountability has a significant relationship with the priority of saving for retirement (Table 9;  $b = .154$ ,  $t(439) = 3.19$ ,  $p < .001$ ). The other accountabilities do not demonstrate a significant influence.

Table 8					
<i>Study One, Priority of saving for retirement regression</i>					
	Coefficients				
	Unstandardized B	Coefficients Std Error	Standardized Coefficient Beta.	t	Sig.
Political Affiliation	.005	.063	.004	.085	.932
Individual Acct	.158	.050	.154	3.191	.002
Government Acct	.048	.061	.048	.783	.434
Wall Street Acct	.085	.055	.086	1.530	.127
Employer Acct	-.032	.065	-.029	-.501	.617
Age	.307	.054	.281	5.682	.000
Race/Ethnicity	-.017	.064	-.012	-.258	.796
Education	.083	.060	.066	1.400	.162

R Square = .125

Dependent Variable: Priority of saving for retirement

## Discussion

The mediation model, which hypothesized that political affiliation affects perceptions of who is accountable for the retirement savings gap which in turns affects retirement savings priority, was confirmed. Each type of perceived accountability was significantly predicted by political affiliation, and perceptions of individual accountability uniquely had a significant relationship with the priority of saving for retirement.

In addition, the assumption that political affiliation has an indirect (or mediated) effect on the priority of retirement savings was verified by Study One.

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### CHAPTER 3

#### MESSAGE PRETEST

A message pretest was inserted between Study One and Study Two to measure whether the message stimuli are clearly written, are equivalent in their clarity, and evoke similar emotions. In addition, the test was designed to confirm if the messages clearly communicated the proximate and distal time frames, and if the direction of accountability for retirement savings was retained from the message and influenced by the message.

#### Method

The five-minute online survey was fielded and completed via Survey Monkey among 699 nationally representative respondents on June 3, 2020. Each respondent saw one of four randomly assigned messages so that independent samples could be analyzed (Table 9). The cell sizes per message ranged from  $n = 129$  for message I/P to  $n = 211$  for message I/D due to Survey Monkey's method of assigning respondents to each cell. There was no indication that this variation influenced the composition of respondents in each cell.

Table 9		
<i>Message and sample size</i>		
	Individual Accountability	Institutional Accountability
Proximate Retirement Income Gap	Message I/P <b>(n=129)</b>	Message N/P <b>(n=206)</b>
Distal Retirement Income Gap	Message I/D <b>(n=211)</b>	Message N/D <b>(n=153)</b>

The structure for each of the four tested messages was identical. The first sentence describes the aging of America, the second sentence describes the problem of insufficient

retirement savings, and the third sentence indicates a direction of accountability and a call to action. Each message tested had multiple time reference points. When the time frame was proximate, the message emphasized that proximate frame through words and phrases such as ‘currently’, ‘presently’ and ‘now’. When the distal time frame was utilized, the words and phrases included ‘in the future’, ‘eventually’, ‘future gap’ and ‘future retirement savings’.

*Message I/P – Individual Accountability, Proximate Time Frame*

Currently, many Americans are over the traditional retirement age of 65 years old. However, many of these retirement age Americans do not presently have enough retirement savings to stop working. To address this gap now, individuals need to invest more of their earnings into retirement savings.

*Message N/P – Institutional Accountability, Proximate Time Frame*

Currently, many Americans are over the traditional retirement age of 65 years old. However, many of these retirement age Americans do not presently have enough retirement savings to stop working. To address this gap now, our government, employers and Wall Street firms need to create policies and programs that support Americans during their retirement years.

*Message I/D – Individual Accountability, Distal Time Frame*

In the future, an increasingly large number of Americans will be over the age of 65 years old. However, many of these Americans are expected to fall short of the savings needed to retire when they eventually reach 65. To address this future gap, individuals will need to invest more of their future earnings into retirement savings.

*Message N/D – Institutional Accountability, Distal Time Frame*

In the future, an increasingly large number of Americans will be over the age of 65 years old. However, many of these Americans are expected to fall short of the savings needed to retire when they eventually reach 65. To address this future gap, our government, employers and Wall Street firms will need to create policies and programs that support Americans during their future retirement years.

Measures

Attribution of accountability for the retirement savings gap was measured after message exposure via the following question: ‘The retirement savings gap mentioned in the paragraph is the responsibility of which of the following?’. The three choice options were ‘individuals’, ‘institutions (government and employers)’ or ‘other (please specify)’. The choice options were simplified in this test versus Study One by collapsing the government, employers and Wall Street options into a single institution choice option with government and employers in parentheses. The rationale was that the primary objective of the study is to test the message effects and that the most important distinction between the accountability directions is individual accountability versus institutional accountability. Because the government (through laws and regulation) and employers (through providing retirement plans) are the primary direct institutional influences, they were chosen as examples to highlight within the institutional choice message.

Ease of understanding was measured on a 7-point Likert scale with ‘very easy to understand’ anchoring one end of the scale and given a value of 1 for this analysis, and ‘not at all easy to understand’ anchoring the other end of the scale and given a value of 7. The numerical values were assigned post-survey and not visible to the respondents.

The perception of the temporal frame was measured by asking respondents the following question: ‘The paragraph described the retirement savings gap as which of the following?’ with choice options of ‘currently happening’, ‘a future concern’ or ‘other (please specify)’. In addition, respondents were asked ‘How would you describe the retirement savings gap described in the paragraph you previously read?’ with response options on a 7-point Likert scale anchored by ‘very urgent’ and ‘not at all urgent’.

Post-message emotional valence was tested using a reduced version of the Positive Affect Negative Affect Scale (PANAS), the full scale of which was introduced by Crawford & Henry (2004) and the reduced version that was used here established by Magyar-Moe (2009). The positive emotions measured were attentive, active, alert, determined and inspired. The negative emotions measured and placed into the negative emotions index were hostile, ashamed, upset, afraid, and nervous. Respondents were asked to ‘Please indicate the extent you felt the following emotions after reading the previous paragraph’ and provided response options on a 5-point Likert scale anchored by ‘very much so’ and ‘not at all’.

The same demographics measures were collected as in Study One.

## Analysis

The analysis approach consists of four main steps. It began with a 2x2 ANOVA to measure the influence of temporal frame (proximate or distal) and accountability frame (individual or institution) on ease of understanding. The main message manipulations – accountability direction and temporal frame – were then confirmed through a comparison of means and a chi-square analysis. The analysis then turned to the message affect, which was first assessed via a reliability analysis to test internal consistency of response. Finally, a general linear model was run to understand the impact of ease of understanding on the measured positive affect and negative affect of the messages.

## Results

*Ease of Understanding:* The estimated marginal means for the accountability frame and temporal frame reveal generally consistent and strong ease of understanding across the messages. The individual and institutional accountability frames had similar means (2.23 and 2.50) and aggregate ease of understanding (see Tables 10 and 11), as did the proximate and distal frames (means = 2.38 and 2.34). Across the four messages, the institutional accountability message had the lowest mean score for ease of understanding.

	Proximate	Distal
Mean	2.38	2.34
Std. Error	(.081)	(.079)
N	323	360
	Individual	Institutional
Mean	2.23	2.50
Std. Error	(.70)	(.089)
N	424	259

	Coefficients				
	Type III Sum of Squares	Df	Mean Square	F	Sig.
Accountability Frame	11.907	1	11.907	5.774	.017
Temporal Frame	.203	1	.203	.099	.754

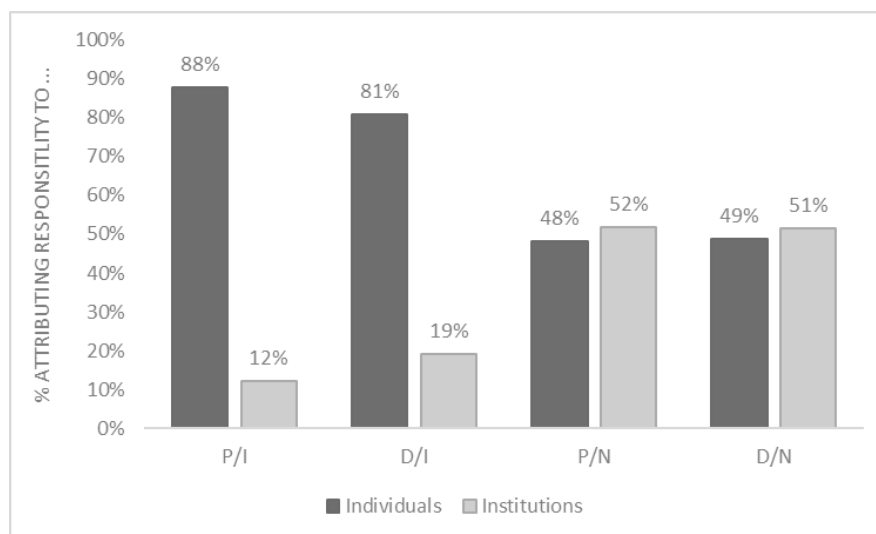
R Squared = .009

Dependent Variable = Ease of understanding

The lower ease of understanding for the institutional message frame may have been due to a combination of several factors. First, the institutional accountability messages were less streamlined; they have nine more words than the individual accountability messages. Second, the institutional messages had a diverse focus on government, employers and Wall Street firms rather than the simplicity of individual accountability. Third, the institutional messages called out dual actions ('create(-ing) policies and programs') while the individual messages called out a singular action ('invest more'). And finally, it may have been more difficult for a respondent to understand the received actions in the institutional messages ('our government, employers and Wall Street firms need to

create policies and programs that support Americans during their retirement years’) than the individual action called out (‘individuals need to invest more’). These findings suggested that an adjustment should be considered to improve the ease of understanding for the institutional messages before Study Two.

*Message recall for direction of accountability:* Accountability attribution was strongly influenced by the message. Messages highlighting individual accountability (P/I and D/I) resulted in 88% and 81% of respondents indicating individual accountability. Messages highlighting institutional accountability (P/N and D/N) resulted in 52% and 51% of respondents indicating institutional accountability. Reflecting back to Study One, the majority of respondents linked more accountability with individuals than the government, employers or Wall Street, although the strength of association differed by political affiliation. Given this prior orientation, it is not surprising that the individual accountability messages – in which the message manipulation was aided by existing beliefs -- resulted in a high level of directional alignment. For the same reason, it is also not surprising that individual accountability was expressed by almost half of respondents even in the institutional messages (P/N and D/N). The bottom line is that the accountability direction of the message was distinctly perceived as evidenced when comparing the differences between P/I and P/N or D/I and D/N (40% and 32% shift in accountability direction, respectively).

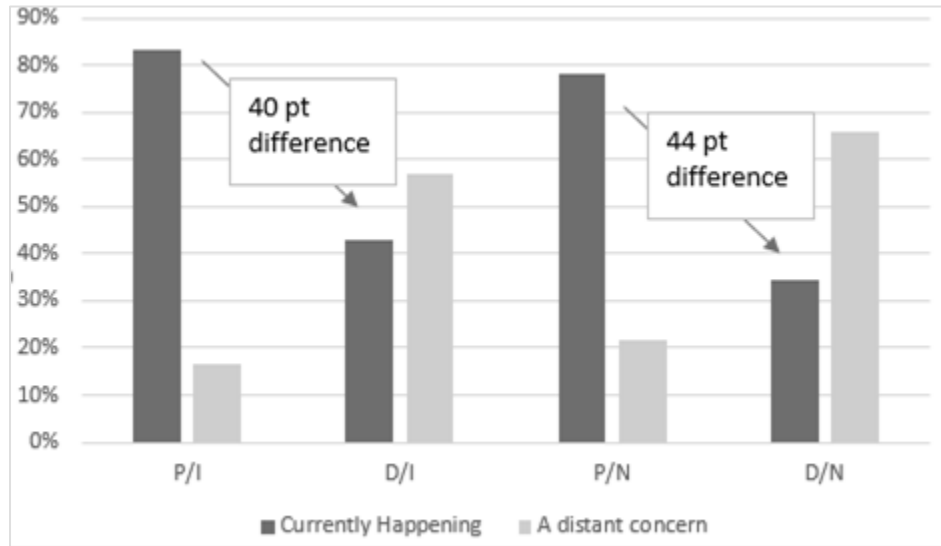
**Figure 3 – Accountability for the retirement saving gap**

*Q: The retirement savings gap mentioned in the paragraph is the responsibility of which of the following?*

To further confirm the message accountability manipulation, the message accountability frame directions (i.e., proximate and distal message) were coded into single variable for individual and institutional messages, respectively, and measured relative to political affiliation and accountability attribution. The chi-square returned a 2-sided asymptotic significance of  $p = .003$ , well below the designated alpha level of  $p = .05$  and confirming an association between the accountability frame in the message and the accountability attribution in the response.

*Retention of Temporal Frame:* Respondents exposed to the P/I message were 40 points more likely to recall the retirement savings gap as ‘current’ than those reading the D/I message. A similar effect was seen with the institutional frame as a 44-point difference was measured between those receiving message P/N and those receiving message D/N. This confirmed that the temporal frame was being recalled by the majority of respondents.

**Figure 4 – Perception of time frame**



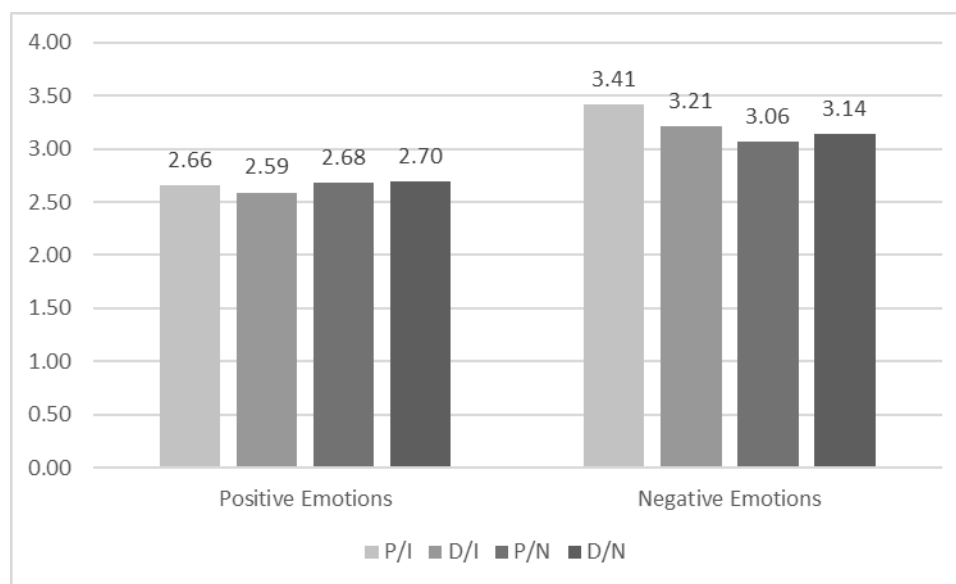
*Q: The paragraph described the retirement savings gap as which of the following?*

As with accountability, the proximate and distal messages were recoded into singular new variables for each time frame and measured relative to political affiliation and the binary time frame attribution. The chi-square returned a 2-sided asymptotic significance of  $p = .003$ , well below the designated alpha level of  $p = .05$  and confirming the association between the variables. Additionally, there was a high correlation between the time frame of the message and the urgency respondents recalled from the message ( $p < .05$ ), further confirming that the time frame was influencing response. Of note, while the message effect was clearly strong, over a third of the respondents receiving the distal message did incorrectly respond that the gap was described as ‘currently happening’. This may be due to the fact that respondents were already aware of the retirement savings gap and answered on the basis of their current understanding rather than what the message proposed.

*Emotional Valence:* A reliability analysis was run on the five positive emotions and the five negative emotions to measure how consistently the emotional attribute scale was used by respondents across the messages. Any cases with missing data – where for instance a respondent did not answer for one of the emotions -- were excluded from the analysis. This excluded 7.1% of cases from the positive emotion dataset, and 6.6% of the cases from the negative emotion dataset.

Interpretation of Cronbach's alpha within a reliability test was that a score of  $>0.7$  is considered acceptable for internal consistency, and  $>0.8$  is considered good. The reliability test for the current research returned good Cronbach's alphas for both the positive emotions (0.846) and for the negative emotions (0.834). In addition, the inter-item statistics revealed that eliminating any individual emotion had little impact on the Cronbach's alpha, adding evidence to reliability of the measures.

The messages did elicit more negative mean valence than positive mean valence, perhaps due to the anxiety associated with the topic of a retirement savings gap. Across the four messages, similar valence was measured with the exception of the P/I message (Figure 5). This message received higher negative mean valence (3.41), perhaps because this message made the gap more personal due to the individual accountability described as well as more immediate due to the proximate frame.

**Figure 5 – Emotional valence by message**

*Q: Please indicate the extent you felt the following emotions after reading the previous paragraph.*

*Positive and Negative Affect:* As shown in Tables 12 and 13, the message time frame did not have a significant positive affect but did have a significant negative affect ( $F(1, 682) = 6.90, p < 0.05$ ). Likewise, the accountability frame did not significantly influence positive affect but did influence negative affect ( $F(1, 682) = 13.75, p < .001$ ). The latter appeared to have been driven by a higher negative affect for individual accountability (mean index across the five emotions measured of 17.1) versus institutional accountability (mean index of 15.5). This influence appeared to be separate from ease of understanding as individual accountability messages were measured as somewhat easier to understand (Table 10, page 29) yet had less negative affect.

Source	Type II Sum of Squares	df	Mean Square	F	Sig.
Political affiliation	43.524	4	10.881	.525	.717
Message acct frame	.074	1	.074	.004	.953
Message time frame	61.152	1	61.152	2.951	.086
Message acct frame* Political affiliation* Message time frame	97.190	9	10.799	.521	.799
Message acct frame* Political affiliation	47.667	4	11.917	.575	.681

a. R Squared = .019 (adjusted R Squared = .010)

Source	Type II Sum of Squares	df	Mean Square	F	Sig.
Political affiliation	161.041	4	40.260	1.538	.190
Message acct frame	359.953	1	359.953	13.747	.000
Message time frame	180.774	1	180.774	6.904	.009
Message acct frame* Political affiliation* Message time frame	245.489	9	27.277	1.042	.458
Message acct frame* Political affiliation	60.268	4	15.067	.575	.681

a. R Squared = .051 (adjusted R Squared = .023)

## Discussion

The message pretest confirmed that the temporal frame was properly recalled, and that the direction of accountability was recalled and influenced by the messages. However, while the messages were having the desired effect, the test revealed an opportunity to improve the ease of understanding – particularly for the institutional accountability messages -- before Study Two.

The messages were modified prior to Study Two based on these findings. The three-sentence message structure was maintained to avoid drifting too far from what worked in the message pretest. But message clarity was addressed in four primary ways. First, across all the messages the vague reference in sentence one to ‘many Americans’ or ‘an increasingly large number’ was quantified as ‘15%’ in both messages. By removing vague language, message processing should be improved, and anchoring in the same percentage will eliminate a point of variance across the tested messages. Second, the distal frame was specified as being ‘in ten years’ to add further specificity. Third, the description of the accountability subject was simplified in the institutional message. Instead of highlighting ‘our government, employers and Wall Street firms’ the focus was simply placed on ‘our government and institutions’. This choice simplified the statement and highlights the accountability source that is most differentiated between Lean/Republicans and Lean/Democrats in Study One. The fourth and final adjustment was to point to ‘make it easier’ rather than ‘policies and programs’ as a way of streamlining the communication.

<b>Message</b>	<b>Tested Wording</b>	<b>Adjustments for Study Two</b>
<i>I/P Individual Accountability, Proximate Time Frame</i>	Currently, many Americans are over the traditional retirement age of 65 years old. However, many of these retirement age Americans do not presently have enough retirement savings to stop working. To address this gap now, individuals need to invest more of their earnings into retirement savings.	Currently, 15% of Americans are over the traditional retirement age of 65 years old. However, right now many retirement age Americans do not have enough savings to stop working. To address this gap now, American workers of all ages need to consistently build more retirement savings now.

<p><i>I/D</i> <i>Individual</i> <i>Accountability,</i> <i>Distal Time</i> <i>Frame</i></p>	<p>In the future, an increasingly large number of Americans will be over the age of 65 years old. However, many of these Americans are expected to fall short of the savings needed to retire when they eventually reach 65. To address this future gap, individuals will need to invest more of their future earnings into retirement savings.</p>	<p>In ten years, 15% of Americans will be over the traditional retirement age of 65 years old. However, many of them will be short of the savings necessary to stop working in the future. To address this coming gap, in the future American workers of all ages will need to build retirement savings for their older years.</p>
<p><i>N/P</i> <i>Institutional</i> <i>Accountability,</i> <i>Proximate</i> <i>Time</i></p>	<p>Currently, many Americans are over the traditional retirement age of 65 years old. However, many of these retirement age Americans do not presently have enough retirement savings to stop working. To address this gap now, our government, employers and Wall Street firms need to create policies and programs that support Americans during their retirement years.</p>	<p>Currently, 15% of Americans are over the traditional retirement age of 65 years old. However, right now many retirement age Americans do not have enough savings to stop working. To address this gap now, our government and institutions should make it easier for American workers of all ages to build their retirement savings now.</p>
<p><i>N/D</i> <i>Institutional</i> <i>Accountability,</i> <i>Distal Time</i> <i>Frame</i></p>	<p>In the future, an increasingly large number of Americans will be over the age of 65 years old. However, many of these Americans are expected to fall short of the savings needed to retire when they eventually reach 65. To address this future gap, our government, employers and Wall Street firms will need to create policies and programs that support Americans during their future retirement years.</p>	<p>In ten years, 15% of Americans will be over the traditional retirement age of 65 years old. However, many of them will be short of the savings necessary to stop working in the future. To address this coming gap, in the future government and institutions will need to make it easier for American workers of all ages to build retirement savings for their older years.</p>

Of note, the message pretest pointed to the need for additional measures to be included in Study Two to better understand processing fluency and other factors. Rather than relying on ‘ease of understanding’ alone as a measure of processing fluency, two questions that explore ease of processing and degree of focus through a total of six measures were added to the Study Two questionnaire. These questions and measures are described in more detail in Chapter 4.

In addition, a measure was added to help interpretation the perceived urgency of retirement savings. This question was asked in the message pretest only in the context of what was described in the messages tested. Asking about perceived urgency as a discrete measure could add interesting insight because the distal frame could reduce the perceived urgency of retirement savings which could in turn interact with strength of individual or institutional accountability. This measure is included in the Study Two to add clarity when interpreting results.

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## CHAPTER 4

### STUDY TWO

Two studies were completed as part of the research plan prior to Study Two. The first, Study One, supported the hypothesis that the financial priority of retirement savings can be influenced through perceived accountability for retirement savings. The findings revealed that individual accountability has a uniquely strong influence on retirement savings behavior. Furthermore, the results confirmed that political affiliation is associated with different beliefs about who is accountable for the retirement savings gap. The message test was fielded next, and it confirmed that respondents perceived the direction of retirement savings accountability in each message frame, and that the temporal frame of the messages was recalled. These results supported moving forward to Study Two while providing three helpful inputs that shaped the Study Two design.

First, the hypotheses being examined necessitate a large sample for Study Two. In Study One, only 33% of respondents leaned Republican. Independent samples are required for each message and the analysis is dependent on measuring the effect of the messages at the political affiliation level for both Democrats and Republicans. Second, the ease of understanding for the messages, while solid, could be improved. The recommendations made at the end of Chapter Three are incorporated for Study Two. Finally, the low r-squared in Study One and the absence of a significant influence from the temporal frame on perceived accountability in the message pretest were reminders to consider other variables for Study Two. One measure that may add insight to the analysis is the sense of urgency that respondents feel towards retirement savings. Urgency may

influence retirement savings concern and priority, and it may also be affected by the temporal frame of the message. Urgency was added as a survey measure for those reasons.

### Method & Measures

The survey was programmed in Survey Monkey and placed among a representative sample of 1,463 Survey Monkey panelists aged 18 years old or older. Each respondent was randomly assigned to one of the four messages and saw that message only. The research did not re-survey respondents from either Study One or the message pretest.

Questions regarding ease of understanding, financial goals, and demographics were repeated as phrased in Study One and/or the message pretest. Political affiliation was measured in additional detail by utilizing a two-step question that began with ‘How would you describe your political orientation?’ and response options of Republican, Independent/Neither, or Democrat. For those who answered ‘Independent/Neither’ a follow up question was asked: ‘Do you think of yourself as closer to the Republican Party or Democratic Party?’ with response options of Republican Party, Democratic Party, and Neither. This question structure was used effectively by Roh, McComas, Rickard, and Decker (2015) and draws from research that shows that respondents who do not list a political affiliation are still likely to have leanings that strongly align to one particular political party (Petrocik, 2009). Finally, retirement concern was measured using the same question phrasing as in the message pretest but the response scale was changed to a 7-point Likert scale. In addition to these modifications, several new questions or adjusted questions were included which are explained in the following paragraphs.

*Processing Fluency and Engagement:* Two questions were added to measure processing fluency and engagement on a 7-point Likert scale (Lee & Aaker, 2004). The first question was ‘How would you describe the information presented in the paragraph that you read?’. The two measures collected from that question were ease of processing and ease of understanding. A second question was added with the phrasing ‘While reading that paragraph about retirement, do you think you were ...?’. Four measures were collected from that question -- involvement, interest, care, and attention – that were used to assess their engagement.

*Retirement gap accountability beliefs:* Study One phrased the question in the context of the retirement income gap (‘How much accountability do you personally believe each of the following holds for the retirement income gap?’). The message pretest was focused on the message response and thus phrased the question as ‘The retirement savings gap mentioned in the paragraph is the responsibility of which of the following?’. In addition to the reference back to the message, the point of emphasis shifted from retirement income in Study One to retirement savings in the message pretest. The wording for Study Two was ‘How much accountability do you believe each of the following holds for addressing the retirement savings gap?’. This wording emphasized ‘savings’ which is a present choice rather than ‘income’ or ‘gap’ which is a conceptual concern in order to match the financial priorities that were measured. The wording also did not reference back to the message since the intent was for respondents to respond based on their own beliefs. Finally, the word ‘personally’ was eliminated to avoid biasing the respondents towards individual accountability.

The retirement gap accountability measure returns to the approach used in Study One which listed individuals, government, employers, and Wall Street as discrete measures. In the message pretest these response options were condensed into ‘individuals’ and ‘institutions (government or employers)’. The rationale for following the Study One format was twofold. First, the response patterns in Study One showed that respondents did differentiate between government, employers, and Wall Street. Second, the expanded response options enabled the respondents to provide a more accurate reflection of their beliefs.

*Urgency:* This new Study Two question focuses on the respondents’ perception: ‘Do you feel that the retirement savings gap is an immediate concern?’ The 7-point Likert scale was anchored with ‘Very much an immediate concern’ and ‘Not at all an immediate concern’.

### Analysis Approach

The cleaning process removed 191 responses leaving a Study Two sample of 1,272 respondents for analysis. Speeders, defined as those who answered in less than 2 minutes, well below the 3m:51s average, were removed first. Only 17% of the 161 speeders were able to complete the survey without skipping questions. Beyond speeders, incomplete surveys were provided by an additional 30 respondents. These respondents were also removed. Because of the survey layout on devices, it was not particularly time or effort saving for respondents to simply select the first response option from each question. No

respondents that weren't filtered as speeders simply selected the first response option for each question.

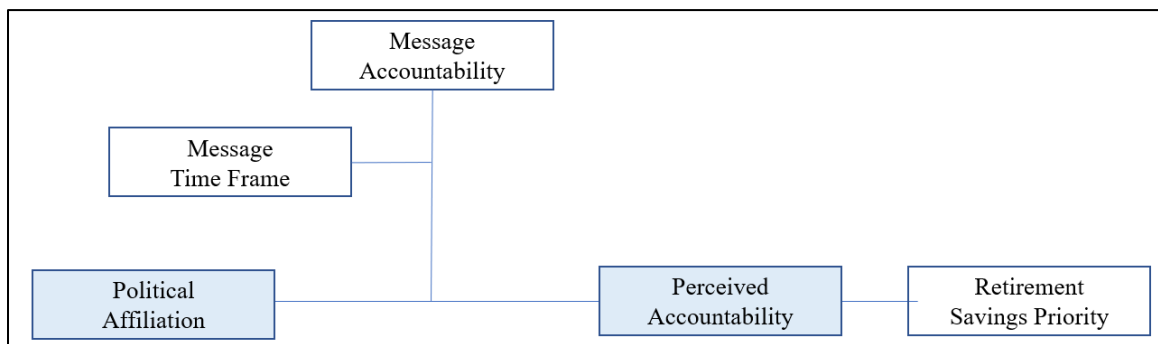
The 1,272 responses that remained after cleaning out speeders and incomplete responses were exported from Survey Monkey to SPSS for analysis. Among these respondents, 689 self-identified as being affiliated with the Democrat party, while 383 self-identified as being affiliated with the Republican party. Only 200 respondents (16% of the total) did not indicate a political affiliation in the two-part question sequence employed in Study Two. Relative to Study One, this represents a slight decline in the percent of Republican affiliated respondents (32% in Study One to 30% in Study Two) and a gain of 13% in Democrat affiliated respondents (42% in Study One to 55% in Study Two). The gain for Democrat affiliation mainly came from the reduced number of neutral respondents (from 27% to 16%). The reduction in neutral respondents can likely be attributed to the new question structure which allows for affiliation ("Do you think of your as closer ...") and is also consistent with the higher political engagement seen in the 2020 presidential election year.

The analysis plan begins with reliability measures to ensure that the responses were exhibiting internal logic. After the reliability measures, the hypotheses for the mediation model were tested through four steps:

Step 1: The effect of political affiliation on perceived accountability for retirement savings was initially reviewed via an independent sample t-test, then tested in a separate linear regression analysis for each of the four accountabilities. In each regression, the perceived accountability area (individuals, government, Wall Street, and employers) was set as the dependent variable, while political affiliation, age, race, and education were

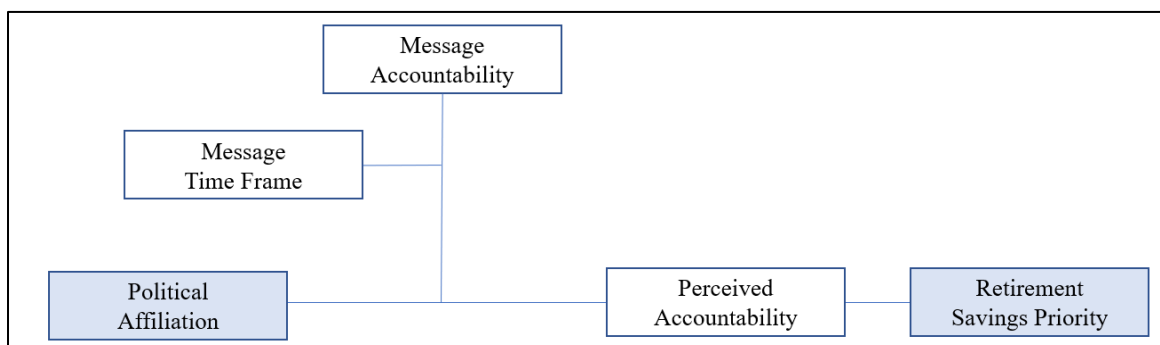
included as independent variables. The latter three demographic attributes were included in the model because of their correlation with political affiliation. Additional demographic variables were examined and excluded if they were not predicted by political affiliation. For example, political affiliation did not significantly predict income and the mean household income for both Democrats (5.62) and Republicans (5.58) was placed within the middle of the same response option of \$75,000 to \$99,999.

**Figure 6 – Step 1: Political affiliation and perceived accountability**



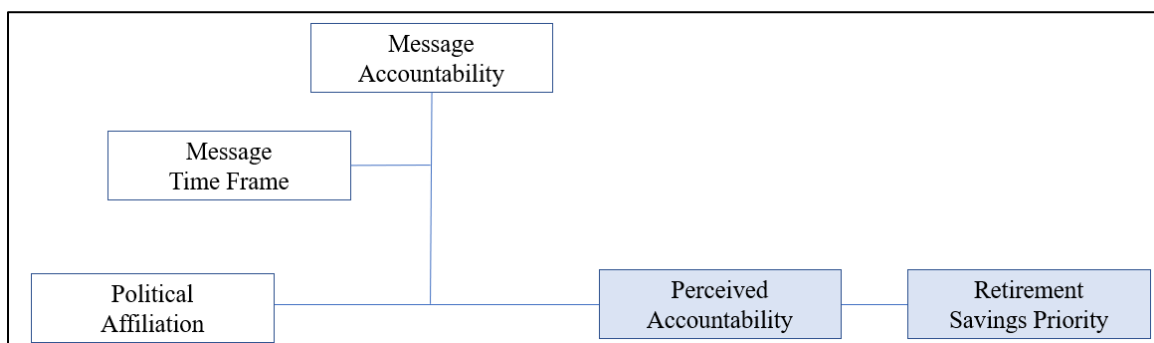
Step 2: The effect of political affiliation on retirement savings priority was tested via a linear regression analysis with retirement savings priority as the dependent variable while political affiliation, age, race, and education were included as independent variables.

**Figure 7 – Step 2: Political affiliation and retirement savings priority**



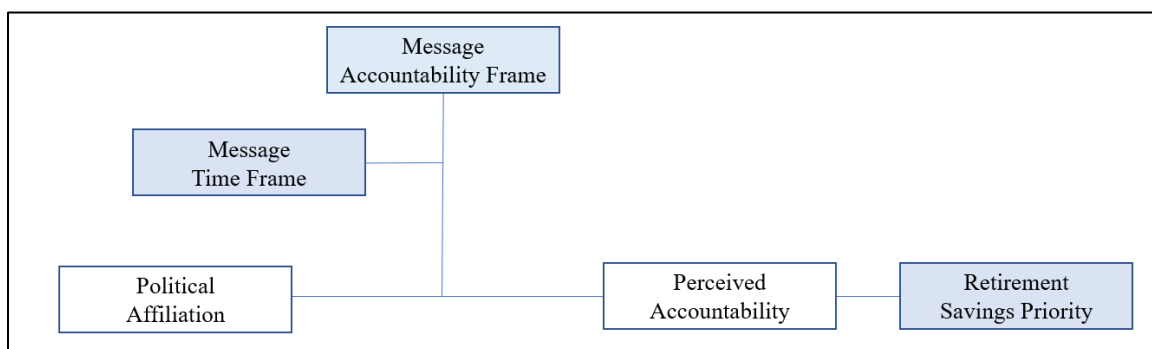
Step 3: The effect of perceived accountability for retirement savings and the retirement savings priority was tested via a linear regression analysis with retirement savings priority as the dependent variable with perceived accountability, political affiliation, age, race, and education included as independent variables.

**Figure 8 – Step 3: Perceived accountability and retirement savings priority**



Step 4: The mediating role of message time frame on retirement savings priority through perceived accountability was tested via a general linear model in which retirement savings priority was set as the dependent variable and message accountability frame, message time frame, political affiliation, age, race, and education were examined as factors. In addition, factor interactions were measured for political affiliation and message time frame, as well as political affiliation and message accountability.

**Figure 9 – Step 4: Testing the conceptual model**



### Results - Reliability Analysis

The ease of processing and ease of understanding measures were observed to be significantly correlated ( $F(1, 1002) = 38.79, p = .000$ ), as were the pairs of engagement measures ('careful' and 'attentive', 'involved' and 'interested'). The mean responses by message were consistently within the top two boxes on the 7-point Likert scale (indicating 'very easy') for both ease of processing and ease of understanding (Table 15).

Table 15						
<i>Message means for processing and engagement</i>						
Question	<i>When you entered this survey, you were asked to read a short paragraph about retirement. How would you describe the information presented in the paragraph that you read?</i>  (7 pt scale, 1 = very easy)		<i>While reading the paragraph about retirement, do you think you were ...?</i>  (7 pt scale, 1 = very much so)			
Message Measure	Ease of Processing	Ease of Understanding	Involved	Interested	Careful	Attentive
a. Prox/Ind	1.5 <sup>b,c,d</sup>	1.5 <sup>b,c,d</sup>	3.0	2.8	2.9	2.6
b. Future/Ind	1.7	1.7	2.9	2.6 <sup>a,c,d</sup>	2.8	2.4 <sup>a</sup>
c. Prox/Inst	1.7	1.7	3.1	2.9	2.8	2.5
d. Future/Inst	1.8	1.7	3.0	2.9	2.8	2.5
a,b,c,d significant @ 95% confidence level						

A regression analysis which sets ease of understanding and ease of processing as dependent variables and entered the message accountability frame and message temporal frame as factors further clarified the findings. This analysis revealed that message

accountability direction significantly influenced ease of understanding ( $F(1, 1252) = 5.07, p = .010$ ) while message time frame significantly influenced ease of processing ( $F(1, 1224) = 4.57, p = .016$ ).

While all of the messages were easy to understand and process, and all were read with similar levels of engagement, the *proximate* message frame combined with the *individual* message accountability frame created a message that was even easier than the other messages to understand and process. This echoed an aspect of the message pretest in that the proximate and individual message frame was again standing out (recall that in Study One this message frame evoked higher negative emotion). However, the effect of the message on perceptions did not appear to be strong; neither the sense of urgency about the retirement savings gap nor the concern about retirement were significantly different in response to this message.

A final reliability test was applied to examine the consistency of response between retirement attitudes, household income, and investable assets. The stated levels of income and investable assets, as well as all three retirement attitudes (the priority of saving for retirement, the perceived urgency of the retirement savings gap, and the concern about living comfortably after retirement), each demonstrated significant correlation. This result added confidence that the survey instrument was being thoughtfully completed by respondents.

## Results – Conceptual Model

As described in the analysis approach, Step 1 was to test the relationship between political affiliation and perceived accountability for retirement savings. As previously measured in Study One, Republicans were expected to believe more strongly in individual accountability while Democrats were expected to believe relatively more strongly in the accountability of the government, Wall Street, and employers. Table 17 displays the mean results from the independent samples t-test, and consistent with expectations, the mean accountabilities were significantly different for Democrat and Republicans for each accountability direction.

		Democrat	Republican
<b>Individuals</b>	Mean	4.72	5.10
	Std. Deviation	(1.47)	(1.41)
	N	690	582
<b>Govt</b>	Mean	4.28	3.43
	Std. Deviation	(1.62)	(1.87)
	N	690	582
<b>Wall Street</b>	Mean	3.67	3.02
	Std. Deviation	(1.81)	(1.82)
	N	690	582
<b>Employers</b>	Mean	4.20	3.60
	Std. Deviation	(1.55)	(1.74)
	N	690	582

The regression results confirmed the strength of relationship as all four accountability results were shown to be significantly influenced by political affiliation (Tables 17-20). Age was also shown to be significantly correlated with perceived accountability for individual ( $b = 0.142$ ,  $t(1259) = 3.148$ ,  $p < .001$ ) and employer ( $b = -.072$ ,  $t(1259) = 2.698$ ,  $p < .05$ ). Perceptions of individual accountability by age ranges were useful as a way to further illustrate the effect of age on attitudes. Democrat respondents aged 18-29 rated individual accountability at 3.78 (midpoint on the scale) while Democrats

aged 45-60 rate individual accountability at 5.04 (towards the top of the scale). Republican respondents, by comparison, provided consistently high ratings for individual accountability across the age ranges, with 18 to 29-year-old respondents giving ratings of 5.08 (1.3 points higher than their Democratic peers) while 45 to 60-year-old respondents rated it 5.48 (0.44 points higher than their Democrat peers). Age was not only correlated with political affiliation, but also demonstrated an influence on the strength of perceived accountability for the retirement savings within each political affiliation.

Table 17					
<i>Study Two, Individual accountability regression</i>					
	Coefficients				
	Unstandardized B	Coefficients Std Error	Standardized Coefficient Beta.	t	Sig.
Pol Affiliation	0.173	0.055	0.088	3.148	0.002
Age	0.150	0.023	0.185	6.472	0.000
Race/Ethnicity	0.046	0.033	0.038	1.370	0.171
Education	0.062	0.030	0.060	2.076	0.038

R Square = .051

Dependent Variable: Individual Accountability

Table 18					
<i>Study Two, Government accountability regression</i>					
	Coefficients				
	Unstandardized B	Coefficients Std Error	Standardized Coefficient Beta.	t	Sig.
Pol Affiliation	-0.403	0.068	-0.167	-5.911	0.000
Age	-0.052	0.029	-0.052	-1.822	0.069
Race/Ethnicity	-0.064	0.041	-0.043	-1.535	0.125
Education	-0.106	0.037	-0.084	-2.876	0.004

R Square = .035

Dependent Variable: Government Accountability

Table 19					
<i>Study Two, Wall Street accountability regression</i>					
	Coefficients				
	Unstandardized B	Coefficients Std Error	Standardized Coefficient Beta.	t	Sig.
Pol Affiliation	-0.344	0.071	-0.139	-4.871	0.000
Age	-0.039	0.030	-0.038	-1.315	0.189
Race/Ethnicity	0.030	0.043	0.020	0.710	0.478
Education	-0.089	0.038	-0.069	-2.348	0.019

R Square = .023

Dependent Variable: Wall Street Accountability

Table 20					
<i>Study Two, Employer accountability regression</i>					
	Coefficients				
	Unstandardized B	Coefficients Std Error	Standardized Coefficient Beta.	t	Sig.
Pol Affiliation	-0.292	0.064	-0.131	-4.588	0.000
Age	-0.072	0.027	-0.078	-2.698	0.007
Race/Ethnicity	0.042	0.039	0.030	1.076	0.282
Education	-0.047	0.034	-0.040	-1.379	0.168

R Square = .024

Dependent Variable: Employer Accountability

Step 2 was to assess whether political affiliation had a direct or indirect effect on retirement savings priority. Consistent with the findings from Study One, the results in Study Two did not show a direct effect between the priority of retirement savings and political affiliation. And as was expected, age did significantly influence the priority of saving for retirement, ( $b = .411$ ,  $t(1263) = 12.44$ ,  $p < .001$ ) as 18–29-year-old respondents in particular placed less priority on retirement savings (mean importance on the 7-point Likert scale of 3.9 and 4.3 for 18–29-year-old Democrats and Republicans, respectively).

Race/ethnicity and education did not show significant influence on the priority of saving for retirement.

Table 21					
<i>Study Two, Saving for retirement regression</i>					
	Coefficients				
	Unstandardized B	Coefficients Std Error	Standardized Coefficient Beta.	t	Sig.
Pol Affiliation	0.045	0.077	0.016	0.583	0.560
Age	0.411	0.033	0.345	12.441	0.000
Race/Ethnicity	-0.071	0.048	-0.040	-1.492	0.136
Education	-0.071	0.043	-0.047	-1.679	0.093

R Square = .111

Dependent Variable: Priority of saving for retirement

The consistency of retirement priority between Republicans and Democrats extended beyond the financial priority of saving for retirement to include retirement concern (Table 22). Only urgency, where Democrats had a higher sense of immediate concern than Republicans (5.60 vs 5.12, respectively) was significantly different ( $t(690) = 5.60, p < .001$ ).

Table 22			
<i>Study Two, Mean for retirement savings attitudes</i>			
	Saving for retirement	Retirement concern	Urgency of retirement savings gap
Democrat	5.69	4.58	5.60
Republican	5.75	4.56	5.12

Step 3 involves assessing whether individual accountability was uniquely related to the priority of saving for retirement. This was confirmed, as perceptions of individual accountability uniquely showed a significant influence ( $b = .129, t(1263) = 3.161, p < .005$ ) on the priority of savings for retirement.

Table 23					
<i>Study Two, Perceived accountability and retirement savings priority</i>					
	Coefficients				
	Unstandardized B	Coefficients Std Error	Standardized Coefficient Beta.	t	Sig.
Pol Affiliation	0.035	0.080	0.012	0.434	0.664
Age	0.395	0.033	0.331	11.791	0.000
Race/Ethnicity	-0.077	0.048	-0.044	-1.627	0.104
Education	-0.070	0.043	-0.047	-1.650	0.099
Individuals	0.129	0.041	0.088	3.161	0.002
Government	0.028	0.041	0.024	0.691	0.490
Wall Street	0.069	0.038	0.060	1.827	0.068
Employers	-0.010	0.043	-0.007	-0.223	0.824

R Square = .121

Dependent Variable: Priority of saving for retirement

The final test of the conceptual model was to review the influence of the message time frame on retirement savings priority through the use of a general linear model. The results demonstrated that the hypothesized mediating role of message time frame on retirement savings priority through perceived accountability (Table 24) was not present, either as an individual measure or as a factor with political affiliation. Therefore, the conceptual model was not supported. Of interest, the message frames simply did not influence respondents as neither message frame – temporal frame or accountability direction -- had a significant influence on the priority of saving for retirement as individual measures or factors with political affiliation.

Source	Type II Sum of Squares	df	Mean Square	F	Sig.
Political Affiliation	0.621	2	0.310	0.08	0.926
Message Time Frame	0.131	1	0.131	0.03	0.857
Message Accountability Direction	8.290	1	8.290	2.05	0.152
Age	400.923	7	57.275	14.18	0.000
Pol Affiliation * Message Time Frame	10.407	2	5.203	1.29	0.276
Pol Affiliation * Message Accountability Direction	0.812	2	0.406	0.10	0.904

R Squared = .178

Dependent Variable: Priority of saving for retirement

#### Additional Analysis – Urgency

Perceived urgency of the retirement savings gap was examined through a linear regression that set each accountability direction as the dependent variable and set perceived urgency, retirement concern, political affiliation and age as factors. Individual accountability perceptions did not predict urgency perceptions, but perceptions of government accountability ( $b = .269, t(1260) = 9.854, p < .000$ ), Wall Street accountability ( $b = .225, t(1260) = 7.858, p < .000$ ), and employer accountability ( $b = .248, t(1260) = 9.771, p < .000$ ) all predict urgency perceptions. Retirement concern was also modeled and was not predicted by any of the accountability perceptions.

Table 25					
<i>Study Two, Urgency and accountability direction</i>					
Dependent Variable	Coefficients				
	Unstandardized B	Coefficients Std Error	Standardized Coefficient Beta.	t	Sig.
Individual	0.022	0.023	0.027	0.946	0.345
Government	0.269	0.027	0.270	9.854	0.000
Wall Street	0.225	0.029	0.220	7.858	0.000
Employers	0.248	0.025	0.269	9.771	0.000

Factors: Urgency, retirement concern, political affiliation, age

## Discussion

Study Two was an internally reliable and carefully designed survey that confirmed the link between political affiliation and sense of accountability for retirement savings, and that perceptions of individual accountability for retirement savings influence the priority of saving for retirement. In addition, the results clarified that political affiliation has an indirect effect on the priority of saving for retirement which is mediated by accountability perceptions.

However, the messages tested in Study Two, and specifically the temporal frames of the messages, were not able to disengage respondents from their underlying attitudes and beliefs about retirement savings accountability. As a result, the overall conceptual model was not supported by the data. There are multiple explanations for why this might have happened.

The obvious place to start is with the test messages themselves; they exerted a very weak influence on respondents. A three-sentence message simply may not have been sufficient to shift attitudes that were built over a lifetime and that are reinforced by the

strong sense of identity that Americans often feel within their political party. The messages were easy to understand, but that doesn't assure that the measures were influential. Could a visual in addition to the verbal message driven deeper processing and more response? Would a longer message with more context to set up the risk and relevance have resulted in a different response? For comparison, Roh, McComas, Rickard, and Decker used messages that were three paragraphs long and up to 286 words in length – five times longer than the messages used in the current research -- to influence the respondents in their research.

Secondly, attachment to the existing attitudes may have been much stronger than realized. The accountability attributed to each of the measured sources – individuals, government, employers, and Wall Street – was shown to be associated with a political affiliation. Political attitudes are deeply set, and as discussed in the literature review, facts and attitudes shift to match political attitudes rather than challenge them. Of note, each study in this research plan was fielded during the very contentious 2020 presidential election campaign between Biden and Trump. Engagement in politics was high; the *Washington Post* reported that two-thirds of the voting eligible population voted in the 2020 presidential campaign, more than any other presidential campaign in the last 120 years. This higher level of contention and engagement may have contributed to the difficulty in disengaging respondents from their politically affiliated leanings.

Finally, the hypothesis may have over-interpreted the theory. As explained in Chapter One, the influence of distal framing was hypothesized to reduce self-continuity and trigger high-level construal. This research tested those mechanisms in a novel design. The closest research parallel was published by Roh, McComas, Rickard, and Decker

(2015). They established in their published research that distal framing could reduce resistance to mismatched messages about wildlife concern.

Roh, McComas, Rickard, and Decker sought to use proximate and distal messages to shift perceptions of risk and relevance of zoonotic disease. In their research design, risk and relevance is hypothesized to be reduced by distal framing which caused the respondents to use a *“less effortful, heuristic (high level construal) processing style, resulting in less motivated skepticism toward value-incongruent messages.”* The macro risk portrayed within the Roh, McComas, Rickard, and Decker research is arguably comparable in nature to the current research. Their research emphasized a public health issue; the current research emphasized a public wealth issue. However, a difference between this current research and the Roh, McComas, Rickard, and Decker test design may have included the degree of agency that test respondents felt towards the research problem.

Individuals would have limited agency over zoonotic disease risk which is an externality leading to public health problems. By contrast, retirement savings and eventual retirement income is a challenge over which an individual may feel a high sense of personal agency. To address a future retirement savings gap, an individual could simply choose to work to a later stage of life, reduce fixed costs like housing or tax rate by moving to a small house and/or cheaper state, or spend less on daily living expenses. This increased agency may have reduced the sense of risk and relevance and blunted the application of high-level construal processing.

A particularly interesting finding is that perceptions of individual accountability did not predict a sense of urgency about retirement saving, while each of the three institutional accountability directions were significantly correlated with sense of urgency. The current

data set does not provide distinct clues as to why this relationship exists, particularly since age and political affiliation were included in the regression model and perceived institutional accountability still predicted the sense of urgency. Thus, we are left to speculate as to why, and as will be discussed in Chapter Five, this would be interesting to explore in future research.

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## CHAPTER 5

### CONCLUSION

This research was a detailed study of how political affiliation influences the financial priority of retirement saving through a sense of who is accountable for retirement saving. The three completed studies from the research plan established several interesting findings, including the depth and strength of influence from political affiliation on retirement attitudes, the influence of individual or institutional accountability beliefs on retirement savings priority, and that these accountability beliefs are not easily changed.

The findings from this research have meaningful implications for the complex reality of retirement savings. The current research clearly demonstrates that political affiliation must be considered when attempting to influence retirement attitudes and behaviors. Respondents in this research, regardless of political affiliation, believed more strongly in individual accountability for retirement than in the accountability of institutions. However, Democrats balance that sense of individual accountability with a strong sense that the government is also accountable, while Republicans do not.

#### Applications

For practitioners in financial services, the findings can be applied to the tone and content of messages about retirement savings. For example, a retirement plan sponsor who is seeking to increase participation rates in the company retirement plan offering would find it useful to know that emphasizing individual accountability is effective for increasing

the priority of investing in retirement savings, but that younger employees (particularly those who lean towards leftwards on the political spectrum) may be less responsive to a direct individual accountability message given their relatively lower alignment to this belief. Furthermore, based on the effect of urgency on employer accountability observed in Study Two, this same plan sponsor would benefit from knowing that messages to their company's employees about the urgency of building retirement savings may have an unexpected consequence. The message may cause employees to raise their expectations regarding the company's support for retirement savings – such as through 401K matches or other programs -- as much or more than the message causes the employees to increase their personal retirement savings intention.

For academics, this research yields interesting results regarding the influence of temporal framing in both the proximate and distal directions. Most existing research had focused on increasing self-continuity and reducing temporal distance by making a future effect more proximate. This research experimented with both proximate and distal framing, and discovered that temporal framing – when tested via simple, written stimuli -- does not significantly influence either accountability beliefs or retirement savings attitudes.

Multiple applications could be drawn from the retirement attitudes that were measured within this research. Of particular interest is the manner in which accountabilities are associated with sense of retirement concern and a sense of urgency about the retirement savings gap. It was expected that individual accountability would be associated with an increased priority for savings for retirement. It was not anticipated that a higher level of accountability for government and employers would be correlated with high retirement concern and a high sense of urgency. This underscores the trickiness in getting messaging

right: elevating the sense of worry may result in elevated expectations for institutional support as much or more than individual actions to address the gap.

### Limitations

The limitations from the current research include the messages tested and the problem against which the research was focused. The stimulus was a simple message (less than 70 words across three sentences) that focused on time frame towards an aging population and a retirement savings gap. The messages did not create an argument for a change in accountability but rather relied purely on the temporal shift and a description of actions that could be taken by the accountable figure in order to have influence. A more powerfully crafted message with details about the gap and an argument for actions to be taken may have yielded a different result.

Another limitation is that the research problem was focused on a concern for which individuals may have felt a strong sense of agency (for example, an individual could simply work longer or reduce spending) or overconfidence. The results from Gallup's 2019 research, quoted in Chapter One, demonstrated that respondents in that research were capable of being simultaneously aware that they are not investing enough for retirement yet confident in their future retirement comfort. An extrapolation to this study is that respondents may have felt less sense of personal risk and problem relevance than expected, which would have blunted the application of high-level construal processing. A different problem context may result in a different finding.

Finally, each study in this research plan was fielded during the very contentious 2020 presidential election campaign between Biden and Trump. As mentioned in Chapter Four, engagement in politics reached historically high levels during this campaign. A less politically contentious study period may have reduced the difficulty in disengaging respondents from their politically affiliated leanings.

#### New avenues for future research

Several avenues for future research could be explored. First, increasing individual accountability was clearly shown to increase retirement savings intentions. Future research could experiment with ways to increase individual accountability through targeted messaging or other means of influence. Alternatively, future research could explore the barriers between intent and action for those who feel a high sense of accountability but whose retirement savings behavior is sub-optimal. Finding ways to specifically address the barriers amongst a population that is attitudinally aligned would yield highly pragmatic findings.

A second avenue is to further research the influence of perceived urgency about the retirement savings gap on accountability direction and implications. Future research could be designed to establish the underlying mechanisms of this relationship and the influence that they have on retirement savings messages. The current research raises interesting questions about how individuals might respond to messages that increase their sense of urgency about retirement savings. For example, might retirement plan messages increase expectations of the employer offering the retirement plan rather than increasing the

intended participation or deferment rates? It is highly relevant to understand how individuals are likely to direct their energy as the retirement savings gap continues to increase and likely gathers more attention.

A third avenue is to explore the responses of microsegments of the tested population. For example, measuring political affiliation as a continuous measure to allow for more nuanced and granular profiling, and profiling could be extended beyond political affiliation and demographics to include attitudinal and behavioral measures. This approach could be even further expanded by testing the optimal sequence of messages by profile and microsegment response.

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## REFERENCES

- Bail, Christopher A., et al. "Exposure to opposing views on social media can increase political polarization." *Proceedings of the National Academy of Sciences* 115.37 (2018): 9216-9221.
- Bartels, Larry M. "Beyond the running tally: Partisan bias in political perceptions." *Political behavior* 24.2 (2002): 117-150.
- Berezowska, A., Fischer, A. R., & van Trijp, H. C. (2018). The interplay between regulatory focus and temporal distance in the health context. *British journal of health psychology*, 23(1), 22-37.
- Converse, Philip E. "Information flow and the stability of partisan attitudes." *Public opinion quarterly* 26.4 (1962): 578-599.
- Crawford, John R., and Julie D. Henry. "The Positive and Negative Affect Schedule (PANAS): Construct validity, measurement properties and normative data in a large non-clinical sample." *British journal of clinical psychology* 43.3 (2004): 245-265.
- Daniller, Andrew, Laura Silver, and Devra Coren Moehler. "Calling it wrong: Partisan media effects on electoral expectations and institutional trust." *APSA 2013 Annual Meeting Paper*. 2013.
- Ellison, Christopher G., and Marc A. Musick. "Conservative Protestantism and public opinion toward science." *Review of Religious Research* (1995): 245-262.
- Ersner-Hershfield, H., Garton, M. T., Ballard, K., Samanez-Larkin, G. R., & Knutson, B. (2009). Don't stop thinking about tomorrow: Individual differences in future self-continuity account for saving. *Judgment and Decision Making*, 4(4), 280.
- Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford, CA: Stanford University Press.
- Frederick, S., Loewenstein, G., & O'donoghue, T. (2002). Time discounting and time preference: A critical review. *Journal of economic literature*, 40(2), 351-401.
- Fujita, Kentaro, et al. "Construal levels and self-control." *Journal of personality and social psychology* 90.3 (2006): 351.
- Guilbeault, Douglas, Joshua Becker, and Damon Centola. "Social learning and partisan bias in the interpretation of climate trends." *Proceedings of the National Academy of Sciences* 115.39 (2018): 9714-9719.
- Gollust, Sarah E., Paula M. Lantz, and Peter A. Ubel. "The polarizing effect of news media messages about the social determinants of health." *American journal of public health* 99.12 (2009): 2160-2167.
- Gollust, Sarah E., and Joseph N. Cappella. "Understanding public resistance to messages about health disparities." *Journal of health communication* 19.4 (2014): 493-510.

Hart, P. Sol, and Erik C. Nisbet. "Boomerang effects in science communication: How motivated reasoning and identity cues amplify opinion polarization about climate mitigation policies." *Communication Research* 39.6 (2012): 701-723.

Hershfield, H.E., John, E.M. & Reiff, J.S. (2018). Using Vividness Interventions to Improve Financial Decision Making. *Policy Insights from the Behavioral and Brain Sciences*, 5(2), 209–215.

Hershfield, H. E., Goldstein, D. G., Sharpe, W. F., Fox, J., Yeykelis, L., Carstensen, L. L., & Bailenson, J. N. (2011). Increasing saving behavior through age-progressed renderings of the future self. *Journal of Marketing Research*, 48(SPL), S23-S37.

Iyengar, Shanto, and Sean J. Westwood. "Fear and loathing across party lines: New evidence on group polarization." *American Journal of Political Science* 59.3 (2015): 690-707.

Jiga-Boy, G. M., Clark, A. E., & Semin, G. R. (2010). So much to do and so little time: Effort and perceived temporal distance. *Psychological science*, 21(12), 1811-1817.

Kahan, Dan M. "Climate-science communication and the measurement problem." *Political Psychology* 36 (2015): 1-43.

Kahan, Dan M., Hank Jenkins-Smith, and Donald Braman. "Cultural cognition of scientific consensus." *Journal of risk research* 14.2 (2011): 147-174.

Kunda, Ziva. "The case for motivated reasoning." *Psychological bulletin* 108.3 (1990): 480.

Lee, Angela Y., and Jennifer L. Aaker. "Bringing the frame into focus: the influence of regulatory fit on processing fluency and persuasion." *Journal of personality and social psychology* 86.2 (2004): 205.

Lodge, Milton, and Charles S. Taber. *The rationalizing voter*. Cambridge University Press, 2013.

Magyar-Moe, Jeana L. *Therapist's guide to positive psychological interventions*. Academic press, 2009.

Maibach, Edward W., et al. "Reframing climate change as a public health issue: an exploratory study of public reactions." *BMC public health* 10.1 (2010): 299.

Matthes, J., Nanz, A., Stubenvoll, M., & Heiss, R. (2020). Processing news on social media. The political incidental news exposure model (PINE). *Journalism*, 21(8), 1031-1048.

McElroy, Todd, and Dominic Mascari. "When is it going to happen? How temporal distance influences processing for risky-choice framing tasks." *Social cognition* 25.4 (2007): 495-517.

McElroy, T., & Mascari, D. (2007). When Is It Going To Happen? How Temporal Distance Influences Processing for Risky-Choice Framing Tasks. *Social cognition*, 25(4), 495-517.

Pasek, Josh. "It's not my consensus: Motivated reasoning and the sources of scientific illiteracy." *Public Understanding of Science* 27.7 (2018): 787-806.

Pennington, G. L., & Roese, N. J. (2003). Regulatory focus and temporal distance. *Journal of Experimental Social Psychology*, 39(6), 563-576.

Petrocik, John Richard. "Measuring party support: Leaners are not independents." *Electoral Studies* 28.4 (2009): 562-572.

Pronin, E., Olivola, C. Y., & Kennedy, K. A. (2008). Doing unto future selves as you would do unto others: Psychological distance and decision making. *Personality and social psychology bulletin*, 34(2), 224-236.

Roh, S., McComas, K. A., Rickard, L. N., & Decker, D. J. (2015). How motivated reasoning and temporal frames may polarize opinions about wildlife disease risk. *Science Communication*, 37(3), 340-370.

Schuldt, Jonathon P., and Sungjong Roh. "Of accessibility and applicability: how heat-related cues affect belief in "global warming" versus "climate change"." *Social Cognition* 32.3 (2014): 217-238.

Slavin, Robert E., and Allen M. Tanner. "Effects of cooperative reward structures and individual accountability on productivity and learning." *The Journal of Educational Research* 72.5 (1979): 294-298.

Trope, Yaacov, and Nira Liberman. "Temporal construal." *Psychological review* 110.3 (2003): 403.

Tumasjan, A., Welpe, I., & Spörrle, M. (2013). Easy now, desirable later: The moderating role of temporal distance in opportunity evaluation and exploitation. *Entrepreneurship Theory and Practice*, 37(4), 859-888.

Turusbekova, Nonna, et al. "The role of individual accountability in promoting quality management systems." *Total Quality Management* 18.5 (2007): 471-482.

Van Gelder, J-L, Luciano, E., Kranenbarg, M.W., & Hershfield, H.E. (2015). Friends with my future self: A longitudinal vividness intervention reduces delinquency. *Criminology*, 53, 1-22.

Weinschenk, Aaron C., and David J. Helpap. "Political trust in the American states." *State and Local Government Review* 47.1 (2015): 26-34.



\* 4. Imagine that the US Government is offering a tax rebate that will be sent to you as a check. Which of the following would you prefer?

- \$1,000 today
- \$1,300 in one year (a bonus of \$300 for waiting one year)
- \$1,025 in one month (a bonus of \$25 for waiting one month)

5. How concerned are you about having enough money to live comfortably after retirement?

- Extremely concerned
- Very concerned
- Somewhat concerned
- Not so concerned
- Not at all concerned

6. What is your age?

- 17 or younger
- 18-20
- 21-29
- 30-39
- 40-49
- 50-59
- 60-69
- 70 or older

7. What is the highest level of school that you have completed or the highest degree you have received?

- Less than high school degree
- High school degree or equivalent (e.g., GED)
- Some college but no degree
- Associate degree
- Bachelor degree
- Graduate degree

8. What is the total value of your household's investable assets? Investable assets include all financial assets that are, or could be invested (e.g. bank account balances, retirement accounts, trusts, etc.). Investable assets do not include businesses, real estate or other property.

- Less than \$100,000
- \$100,000 to \$249,999
- \$250,000 to \$499,999
- \$500,000 to \$749,999
- \$750,000 to \$999,999
- \$1,000,000 or more
- Prefer not to answer
- Don't Know

\* 9. How much total combined money did all members of your HOUSEHOLD earn last year?

- |  |  |
|--|--|
| <input type="radio"/> \$0 to \$9,999         | <input type="radio"/> \$150,000 to \$199,999 |
| <input type="radio"/> \$10,000 to \$24,999   | <input type="radio"/> \$200,000 to \$299,999 |
| <input type="radio"/> \$25,000 to \$49,999   | <input type="radio"/> \$300,000 to \$399,999 |
| <input type="radio"/> \$50,000 to \$74,999   | <input type="radio"/> \$400,000 or more      |
| <input type="radio"/> \$75,000 to \$99,999   | <input type="radio"/> Prefer not to answer   |
| <input type="radio"/> \$100,000 to \$149,999 | <input type="radio"/> Don't Know             |

10. Which of the following best describes your current relationship status?

- |                                 |   |
|---------------------------------|---|
| <input type="radio"/> Married   | <input type="radio"/> In a domestic partnership or civil union        |
| <input type="radio"/> Widowed   | <input type="radio"/> Single, but cohabiting with a significant other |
| <input type="radio"/> Divorced  | <input type="radio"/> Single, never married                           |
| <input type="radio"/> Separated |   |

11. Which race/ethnicity best describes you? (Please choose only one.)

- American Indian or Alaskan Native
- Asian / Pacific Islander
- Black or African American
- Hispanic
- White / Caucasian
- Multiple ethnicity / Other (please specify)

12. Which of the following best describes you?

- Employed – working full time
- Employed – working part time
- Not employed – student
- Not employed – retired
- Not employed – looking for paid work
- Not employed – not looking for paid work

13. To which gender do you most identify?

- |  |   |
|--|---|
| <input type="radio"/> Female             | <input type="radio"/> Gender Variant/Non-Conforming |
| <input type="radio"/> Male               | <input type="radio"/> Not Listed                    |
| <input type="radio"/> Transgender Female | <input type="radio"/> Prefer not to Answer          |
| <input type="radio"/> Transgender Male   |   |



9. Please indicate the extent you felt the following emotions after reading the previous paragraph.

	Very much so				Not at all
Attentive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Active	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alert	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Determined	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inspired	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hostile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ashamed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Upset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Afraid	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Nervous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. How would you describe your political orientation?

- Republican
  Lean Democrat  
 Lean Republican
  Democrat  
 Neither/Independent

11. What is your age?

- 17 or younger
  40-49  
 18-20
  50-59  
 21-29
  60-69  
 30-39
  70 or older

12. What is the highest level of school that you have completed or the highest degree you have received?

- Less than high school degree
  Associate degree  
 High school degree or equivalent (e.g., GED)
  Bachelor degree  
 Some college but no degree
  Graduate degree

13. What is the total value of your household's investable assets? Investable assets include all financial assets that are, or could be invested (e.g. bank account balances, retirement accounts, trusts, etc.). Investable assets do not include businesses, real estate or other property. Your best estimate is fine.

- Less than \$100,000
- \$100,000 to \$249,999
- \$250,000 to \$499,999
- \$500,000 to \$749,999
- \$750,000 to \$999,999
- \$1,000,000 or more
- Prefer not to answer
- Don't Know

\* 14. How much total combined money did all members of your HOUSEHOLD earn last year?

- \$0 to \$9,999
- \$10,000 to \$24,999
- \$25,000 to \$49,999
- \$50,000 to \$74,999
- \$75,000 to \$99,999
- \$100,000 to \$149,999
- \$150,000 to \$199,999
- \$200,000 to \$299,999
- \$300,000 to \$399,999
- \$400,000 or more
- Prefer not to answer
- Don't Know

15. Which of the following best describes your current relationship status?

- Married
- Widowed
- Divorced
- Separated
- In a domestic partnership or civil union
- Single, but cohabiting with a significant other
- Single, never married

16. Which race/ethnicity best describes you? (Please choose only one.)

- American Indian or Alaskan Native
- Asian / Pacific Islander
- Black or African American
- Hispanic
- White / Caucasian
- Multiple ethnicity / Other (please specify)

17. Which of the following best describes you?

- Employed – working full time
- Employed – working part time
- Not employed – student
- Not employed – retired
- Not employed – looking for paid work
- Not employed – not looking for paid work

18. To which gender do you most identify?

- Female
- Male
- Transgender Female
- Transgender Male
- Gender Variant/Non-Conforming
- Not Listed
- Prefer not to Answer





**13. What is your age?**

- |                                     |                                   |
|-------------------------------------|-----------------------------------|
| <input type="radio"/> 17 or younger | <input type="radio"/> 40-49       |
| <input type="radio"/> 18-20         | <input type="radio"/> 50-59       |
| <input type="radio"/> 21-29         | <input type="radio"/> 60-69       |
| <input type="radio"/> 30-39         | <input type="radio"/> 70 or older |

**14. What is the highest level of school that you have completed or the highest degree you have received?**

- |  |  |
|--|--|
| <input type="radio"/> Less than high school degree                 | <input type="radio"/> Associate degree |
| <input type="radio"/> High school degree or equivalent (e.g., GED) | <input type="radio"/> Bachelor degree  |
| <input type="radio"/> Some college but no degree                   | <input type="radio"/> Graduate degree  |

**15. What is the total value of your household's investable assets? Investable assets include all financial assets that are, or could be invested (e.g. bank account balances, retirement accounts, trusts, etc.). Investable assets do not include businesses, real estate or other property. Your best estimate is fine.**

- Less than \$50,000
- \$50,000 to \$100,000
- \$100,000 to \$249,999
- \$250,000 to \$499,999
- \$500,000 to \$749,999
- \$750,000 to \$999,999
- \$1,000,000 or more
- Prefer not to answer
- Don't Know

**\* 16. How much total combined money did all members of your HOUSEHOLD earn last year?**

- |  |  |
|--|--|
| <input type="radio"/> \$0 to \$9,999         | <input type="radio"/> \$150,000 to \$199,999 |
| <input type="radio"/> \$10,000 to \$24,999   | <input type="radio"/> \$200,000 to \$299,999 |
| <input type="radio"/> \$25,000 to \$49,999   | <input type="radio"/> \$300,000 to \$399,999 |
| <input type="radio"/> \$50,000 to \$74,999   | <input type="radio"/> \$400,000 or more      |
| <input type="radio"/> \$75,000 to \$99,999   | <input type="radio"/> Prefer not to answer   |
| <input type="radio"/> \$100,000 to \$149,999 | <input type="radio"/> Don't Know             |

17. Which of the following best describes your current relationship status?

- Married
- Widowed
- Divorced
- Separated
- In a domestic partnership or civil union
- Single, but cohabiting with a significant other
- Single, never married

18. Which race/ethnicity best describes you? (Please choose only one.)

- American Indian or Alaskan Native
- Asian / Pacific Islander
- Black or African American
- Hispanic
- White / Caucasian
- Multiple ethnicity / Other (please specify)

19. Which of the following best describes you?

- Employed – working full time
- Employed – working part time
- Not employed – student
- Not employed – retired
- Not employed – looking for paid work
- Not employed – not looking for paid work

20. To which gender do you most identify?

- Female
- Male
- Transgender Female
- Transgender Male
- Gender Variant/Non-Conforming
- Not Listed
- Prefer not to Answer