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ORIGINAL ARTICLE

Framing the decision to buy long-term care insurance: losses and gains in the context of statistical and narrative evidence

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Abstract Rational models have difficulty explaining low levels of demand for long-term care insurance. We posit that insurers have framed the need for insurance in a manner that unintentionally promotes risk-seeking behavior (i.e., high probability loss frame), and that alternative frames can better promote willingness to insure. We further posit that emotional frames are more effective than rational risk frames in promoting willingness to pay. Survey evidence supports these hypotheses: emotional narrative frames are associated with greatest willingness to pay, and the high probability loss frame was associated with among the lowest average amounts willing to pay.

Keywords Emotion · Motivation · Behavioral economics · Framing · Long term care insurance · Narrative

Introduction

Insurance marketers have struggled for decades to increase sales of long-term care (LTC) insurance, a product desperately needed by many but bought by few. An array of different answers to this question have been proposed (reviewed below), yet a simple but powerful element of the marketing mix has been completely overlooked, namely the framing of the need for LTC insurance. This article seeks to demonstrate the potential power of corrective framing by applying theoretical models and insights drawn from behavioral economics, leading to specific recommendations for marketing managers.

According to standard economic models of rational decision making, consumers should be willing to pay for insurance that covers the single greatest unfunded risk to their retirement income security, namely the financial consequences of needing long-term services and supports (LTSS) (Kaplan 2007). Nevertheless, many studies show that very few American consumers actually insure themselves against this risk (Brown and Finkelstein 2007). As the Baby Boom generation marches into retirement, only 6.4% of eligible American adults are currently covered by long-term care (LTC) insurance (Cutler et al. 2010). Because premiums are based on one's age at issue, prospects for rising coverage levels for the uninsured are likely to diminish as this cohort ages.

The question of why so few Americans have purchased long-term care insurance has been addressed by researchers at public interest think tanks and trade groups (America's Health Insurance Plans/LifePlans 2012; Merlis/Kaiser Family Foundation 2003; McGrew/Scripps Gerontology Center 2000), and other social scientists, producing a variety of partial answers. These partial answers are presented below by category of barriers to purchase.

This question has been studied by several economists who have focused on the availability of substitutes for insurance, especially the potential for crowd out of the private insurance market by the availability of Medicaid (Brown and Finkelstein 2004, 2007; Sloan and Norton 1997), as well as the availability of other substitutes such as unpaid care provided directly by family members (Pauly 1990). Additional factors identified include high transactions costs, imperfect

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competition, asymmetric information, or dynamic problems with long-term contracting (Norton 2000).

Lack of consumer readiness to plan for future LTSS has also been cited as barrier to purchase: the failure of the public to meet more immediate, higher priority needs such as adequate savings and health insurance (Merlis/KFF 2003, pp. 8–9). Additionally, researchers cite lack of awareness regarding sources of LTSS financing, causing a false sense of security that one's future LTSS needs are already covered (AHIP/LifePlans 2012, p. 21).

Objections to characteristics of LTC insurance products and their cost have also been cited as barriers to purchase. The top-stated reason for non-purchase of LTC insurance is that it "costs too much" (AHIP/LifePlans 2012, p. 9). Surveys also find concern that premiums will be increased over time and become unaffordable (AHIP/LifePlans 2012, pp. 39–40).

Personality traits and heuristics have been cited as psychological factors that interfere with planning for future LTSS: the true risk of needing LTSS is discounted or denied (AHIP/LifePlans 2012, p. 8); the prevalence of personality traits that prevent planning, e.g., present orientation and external locus of control (AHIP/LifePlans 2012, p. 18); devaluation of future disabled selves (McGrew/Scripps Gerontology Center 2000); and consumer inability to comprehend low-incidence large-loss events (Kunreuther 1978).

Since policy makers cannot easily affect the affordability of insurance, the personality traits of the population, or the availability of substitutes, few remaining viable levers exist for increasing coverage rates. One remaining lever relates to the *perceptual framing* of LTSS risk, costs, and insurance. Indeed, in summarizing their comprehensive analysis of factors that prevent greater coverage, Brown and Finkelstein (2007) conclude that "More generally, our findings suggest that an important avenue for further research is exploring empirically the relative impact of various *demand side factors* on the size of the private long-term care insurance market. These include not only Medicaid but also the role of the family and of *limited rationality* (italics added; p. 27.)"

The framing hypothesis

This paper heeds the call for greater exploration of demand side factors, specifically the problem of limited rationality stemming from systematic biases in judgment and decision making. Following the general approach used by Brown et al. (2008) who applied the theoretical framework of prospect theory to understanding consumer aversion to annuitization, this paper attempts to apply predictions made by prospect theory (Kahneman and Tversky 1984) to attempt to explain the non-rational behavior of consumers with regard to long-term care insurance.

Kahneman's (2011) "fourfold pattern" is a system for classifying decision frames and for predicting and explaining resulting behavior based on types of framing. Four patterns result from the combination of framing decisions as either *losses* or *gains* (applying the principle that losses have a greater psychological impact than gains, i.e., losses are more painful than gains are pleasurable), with either *high probability* or *low probability* of occurrence (applying the principle that decision weights systematically diverge from rational utility based on probabilities: people overweight small probabilities and underweight large probabilities), producing specific predictions for each of the four combinations (high probability gain, high probability loss, low probability gain, and low probability loss). Two of these combinations are associated with risk-averse behavior: high probability gains and low probability losses. In the case of high probability gains, individuals seek to trade-off utility for the certainty of locked-in gains, e.g., by accepting a lower settlement offer. In the case of low probability losses, individuals are willing to pay a premium in order to protect against a larger, unlikely loss, e.g., by buying a warranty to protect a new appliance (Kahneman 2011, p. 318). The remaining two scenarios are associated with risk-seeking behavior: low probability gains and high probability losses. In the case of low probability gains, people are willing to pay a premium for a chance for an extremely unlikely gain, e.g., by buying lottery tickets. Finally, in the case of high probability losses, people are willing to take extreme risks in desperate circumstances to avoid a near-certain loss, e.g., by placing unreasonably large bets in an attempt to win back money lost gambling.

Accordingly, the rationale for purchasing long-term care insurance can be framed as either a loss or a gain by focusing on the magnitude of loss (i.e., the high cost of LTSS) or the magnitude of the stream of claim payments made to fund one's care (e.g., you will receive $5000 per month). Similarly, the risk of needing LTSS can be framed as relatively high probability (e.g., 70% lifetime risk of needing any LTSS) or a relatively low probability (e.g., 20% risk of needing more than 5 years of nursing home care).

Long-term care insurance has historically been framed as a *high probability loss*. Most consumer-facing marketing materials emphasize very high lifetime risk, typically contrasting high probability of lifetime use of LTSS against the much smaller risks of catastrophic losses of home or auto. For example, even the federal website designed to educate consumers about long-term care planning, longtermcare.gov, states that "70% of people turning age 65 can expect to use some form of long-term care during their lives," which can itself be interpreted as a high probability loss frame, and the site goes on to state in economic terms that "long-term care is expensive" and breaks down the costs by location and type of care.

In practice, Kahneman's framework suggests that framing long-term care insurance as a high probability loss should produce risk-seeking behavior, i.e., the type of behavior associated with desperate, last ditch gambles, a mindset very much at odds with the reasoned long-term planning behavior one might associate with the purchase of long-term care insurance. Thus, we argue that the primary frame used to market long-term care insurance historically may be the least effective; by extension, we argue that the other frame associated with risk seeking, low probability gain, should also be relatively ineffective. We hypothesized that the frames associated with risk aversion should be more effective, with low probability loss being most effective, since it takes advantage of loss/gain asymmetry and tends to be associated with the purchase of insurance.

Since the predicted effects of the fourfold pattern are theoretically mediated by emotional response, we hypothesized that directly targeting emotions via highly emotional loss and gain scenarios should be associated with greater willingness to pay for insurance than any of the "rational" fourfold pattern frames. Following prospect theory's prediction that losses are more psychologically potent than gains, we further predicted that the emotional loss condition would be most associated with risk aversion and, accordingly, the greatest willingness to pay for LTC insurance.

This is the first attempt to our knowledge to simultaneously investigate loss versus gain framing within the context of statistical versus narrative evidence; within the statistical evidence conditions, the impact of level of uncertainty (i.e., level of probability) was also investigated. By investigating the effects of these three variables across a continuum of personal relevance (i.e., age), we are able to compare the substantive impacts of these manipulations.

Testing the framing hypothesis

We applied this model to framing the need for LTC insurance and created four distinct scenarios to be presented to consumers representing Kahneman's fourfold pattern (high probability gain, high probability loss, low probability gain, and low probability loss).

In order to frame the need for LTSS as either high or low probability, valid statistics were selected that either emphasized the high probability of ever needing LTSS across one's lifespan (high probability) or the substantially lower probability of needing nursing home care for more than 5 years (low probability):

For High Probability Scenarios: "Seven in ten (71%) of older Americans will use some form of long-term care during their lifetimes…"

For Low Probability Scenarios: "One in six (17%) of older Americans will experience a long term stay in a nursing home…"

Likewise, we framed the impact of owning LTC insurance as either a gain realized or a loss avoided by emphasizing the amount a policy would pay out (gain) or the amount that could be lost in the absence of LTC insurance (loss).

For Gain Scenarios: "This policy pays you $4500 each month, or $150 every day, that you require personal assistance…"

For Loss Scenarios: "LTC insurance helps protect you against the average lifetime loss of $63,000 in nursing home costs alone…"

Combining these frames resulted in four different scenarios representing the fourfold pattern of prospect theory applied to LTC insurance.

As predicted by prospect theory, we hypothesized that high probability loss and low probability gain scenarios should be associated with risk-seeking behavior, as demonstrated by lower willingness to pay for LTC insurance, and that the high probability gain and low probability loss scenarios should be associated with risk-averse behavior, as demonstrated by greater willingness to pay for LTC insurance. Applying the distinctions of Salovey et al. (2002), we note that all the tested scenarios focus on motivating *prevention* behavior (as opposed to *detection* behavior), since LTC insurance is designed to prevent a potential future financial loss.

Kahneman (2011) and Salovey et al. (2002) attribute the power of framing to the types of emotion that are generated by each of the scenarios. Consistent with a central role of emotion, recent research has demonstrated that emotionally evocative narrative evidence tends to be more effective than statistical evidence in motivating health behaviors (de Wit et al. 2008) and charitable giving (Small et al. 2007; Small and Loewenstein 2003; Slovic 2010). Accordingly, we devised two additional conditions designed to evoke emotion through storytelling to maximize the salience of gains or losses, i.e., a story of a family that experienced positive consequences of owning insurance and a story of a family that experienced negative consequences of not owning insurance, respectively. Because these were stories of supposedly past events, no probability information was explicitly provided, although perceived probability may have been temporarily heightened through operation of the availability heuristic (i.e., access to specific examples can cause perceptions of greater likelihood of similar events). The following is a representative selection; full text is provided in Table 1.

Table 1 Scenarios used to frame LTC insurance with the fourfold pattern and emotional gain/loss conditions

	Gain	Loss
Rational—high probability	High probability gain This policy pays you $4500 each month, or $150 every day, that you require personal assistance. Seven in ten (71%) older Americans will use some form of long-term care during their lifetimes, so there's a high probability that these benefits will be paid out	High probability loss Long-term care expenses represent the single biggest risk to retirement income security. LTC insurance helps protect you against the average lifetime loss of $63,000 in nursing home costs alone. Nursing homes cost an average of $75,000 per year in the USA. Seven in ten (71%) older Americans will use some form of long-term care during their lifetimes, so you face a high risk of experiencing a significant loss
Rational—low probability	Low probability gain This policy pays you $4500 each month, or $150 every day, that you require personal assistance. One in six (17%) older Americans will experience a long-term stay in a nursing home, so there's at least some chance of a very large payout of benefits	Low probability loss Long-term care expenses represent the single biggest risk to retirement income security. LTC insurance helps protect you against the average lifetime loss of $63,000 in nursing home costs alone. Nursing homes cost an average of $75,000 per year in the USA. One in six (17%) older Americans will experience a long-term stay in a nursing home, so you face at least some risk of experiencing a significant loss
Emotional (story based)	Emotional gain Mary C.'s husband John experienced a debilitating stroke at age 63, which prompted the couple to move into a one-floor condo closer to their children. Even though John was confined to his bed or wheelchair, it was very important to Mary that John be cared for at home. "Fortunately, we had purchased this LTC insurance policy several years earlier. The extra $4500 each month meant that I could hire a lovely home care aide to help take care of John. John passed away after 12 months, but he was able to stay in our home the whole time, surrounded by family. It was reassuring to know that the payments would have kept coming if he had been with us for another two years"	Emotional loss Mary C.'s husband John experienced a debilitating stroke at age 63, which prompted the couple to move into a one-floor condo closer to their children. Even though John was confined to his bed or wheelchair, it was very important to Mary that John be cared for at home. "Unfortunately, we had passed on buying LTC insurance several years earlier. Medicare provided some home visits at first but they ended when they deemed John was not improving, leaving us with the stress of trying to provide his care ourselves. And so we were forced to put him in a nursing home, costing us more than $5000 each month. A large part of our retirement savings was wiped out within a year. In addition to the financial stress, this also was never what John, or I, would have wanted. We wanted him to be able to spend his last months at home"

Emotional Gain Scenario: "Fortunately we had purchased this LTC insurance policy… the extra $4500 each month meant that I could hire a lovely home care aide to help take care of John… he was able to stay in our home the whole time, surrounded by family."

Emotional Loss Scenario: "Unfortunately we had passed on buying LTC insurance several years earlier…We were forced to put him in a nursing home, costing us more than $5000 each month. A large part of our retirement savings was wiped out within a year."

In order to test this hypothesis, we conducted an online study in January 2014 using the Schlesinger Associates panel wherein respondents were shown one of these scenarios and asked for the price they would be willing to pay for a LTC insurance product. A total of 1305 individuals between the ages of 30 and 79 with household incomes of at least $30,000 completed the survey resulting in a range of between 208 and 228 completed interviews per condition. Data were weighted to age, sex, and income by condition resulting in no significant differences between the conditions. All respondents were provided the same definition of long-term care as "the type of assistance people need over an extended period of time because they are unable to do certain things for themselves." They were then asked whether they know someone personally who has needed long-term care, whether they are confident they will have friends or relatives living nearby to provide them with care should they need it, and whether they already own a LTC insurance policy. Respondents were then shown a description of a typical LTC insurance policy including information about the monthly benefit amount, total benefit amount, benefit increase option, elimination period, and typical monthly premium range by age at purchase. After reviewing this description, respondents were presented with one of the six framing conditions and were then asked two questions about the price they would be willing to pay for such a policy (adapted from van Westendorp [1976]), and how likely they would be to purchase LTC insurance in the next 5 years.

Considering this LTC insurance policy, at what price per month would you consider this policy to be inexpensive or easily affordable?

At what price per month would this policy begin to be expensive?

How likely are you to purchase LTC insurance in the next five years? (5 point scale)

Results

The data for this study were analyzed using an omnibus 6 (conditions: high probability gain, high probability loss, low probability gain, low probability loss, emotional gain, and emotional loss) × 3 (age 30–39, 40–59, 60–79) ANOVA. Results revealed a significant impact of age ($F(1, 1165) = 126.331$, $p < .05$), condition ($F(5, 1165) = 2.777$, $p < .05$), and the age × condition interaction ($F(10, 1165) = 1.918$, $p < .05$) on the amount respondents were willing to pay for an LTC insurance policy. The significant main effect of age ($M_{30–39} = \$59.40$, $M_{40–59} = \$87.20$, $M_{60–79} = \$151.90$) was expected, as respondents were presented with typical price ranges (increasing with age) for LTC policies for their age group prior to being presented with the experimental condition. Outliers in the data were recoded as follows: values between one dollar and nine dollars were recoded to ten dollars, and those above five hundred dollars were recoded to five hundred dollars.

Our overarching hypothesis that the framing (loss, gain, high probability, low probability, high emotion loss, high emotion gain) of long-term care insurance impacts willingness to pay gained initial support from the significant main effect of condition. Post hoc analyses using Tukey's procedure did not show statistically significant support for our hypothesis that high probability loss and low probability gain scenarios should be associated with risk-seeking behavior, as demonstrated by lower willingness to pay for insurance, and that the high probability gain and low probability loss scenarios should be associated with risk-averse behavior, as demonstrated by greater willingness to pay for insurance. However, an examination of the overall mean scores for the four risk/reward conditions does show, as predicted, that respondents, overall, are (directionally) willing to pay more for insurance when framed as a low probability loss.

In line with Kahneman's assertion that such priming effects are mediated by emotion, we further predicted that emotions would play a key role in respondent's willingness to pay for LTC insurance. More specifically, we hypothesized that our emotional conditions (emotional gain, emotional loss) would have more impact on willingness to pay (would promote paying more) than our four rational risk/reward conditions, and that our emotional loss condition would have the largest positive impact overall. Looking once again at our post hoc analyses, we find some mixed

support for these hypotheses. Significant differences between the emotional conditions ($M_{Emotional\ Gain} = \$118.75$, $M_{Emotional\ Loss} = \$121.16$) and the high probability loss condition ($M_{High\ Probability\ Loss} = \$93.70$) and between the emotional loss condition ($M_{Emotional\ Loss} = \$121.16$) and the high probability gain condition ($M_{High\ Probability\ Gain} = \$97.44$) support our prediction that the emotional conditions would have a significantly higher positive impact on willingness to pay for insurance, with the emotional loss condition having the greatest impact. Although not statistically significant, further scrutiny of these results shows a pattern consistent with our prediction that the emotional loss condition ($M_{Emotional\ Loss} = \$121.16$) would show the highest willingness to pay, followed closely by the emotional gain condition ($M_{Emotional\ Gain} = \$118.75$).

Next, the significant age × condition interaction effect was examined to get a better understanding of how willingness to pay for insurance is impacted by the interplay of age and framing condition that was presented to respondents. Post hoc analyses utilizing one-way ANOVA's were run separately within each age group on the six framing conditions in order to isolate significant interaction effects. Results revealed that 60–79 year olds showed significantly higher willingness to pay for LTC insurance ($F(5, 399) = 3.488$, $p < .05$) in the emotional gain condition ($M_{60–79} = \$182.91$) than in either the high probability gain ($M_{60–79} = \$135.50$) or high probability loss ($M_{60–79} = \$126.49$) conditions. While this finding lends support to our hypothesis that emotional conditions will have a positive impact on willingness to pay, it may also suggest that among our oldest respondents, those closest to personally facing the situations expressed in our scenarios, framing LTC insurance as an emotional gain far outperforms the negative reaction (i.e., fear) that may result from framing it as a high probability condition. While no additional tests proved to be statistically significant, further examination of the amounts respondents were willing to pay for insurance in each of the six framing conditions across our three age groups does provide some interesting insights relating to our hypotheses (see Table 2). Most apparent from these data and related to our hypothesis that the emotional loss condition would have the most positive impact on willingness to pay for insurance, is the change in willingness to pay in the emotional conditions as one moves up the age groups. Both the youngest (30–39) and oldest age groups (60–79) provide higher dollar amounts for the emotional gain condition ($M_{30–39} = \$74.86$, $M_{60–79} = \$182.91$) relative to the emotional loss condition ($M_{30–39} = \$62.00$, $M_{60–79} = \$156.41$), while this relationship is reversed in the 40- to 59-year-old group ($M_{Emotional\ Gain} = \$82.15$, $M_{Emotional\ Loss} = \$108.98$). From this finding, it would appear that our overall finding that the emotional loss

Table 2 Mean amount willing to Pay for LTC insurance by framing condition and age group *Source:* Authors' calculations (means based on omnibus 6 × 3 ANOVA test using SPSS version 22)

	30–39	40–59	60–79	Total
High probability, gain (A)	$56.52	$88.24	$135.50	$97.44
High probability, loss (B)	$54.62	$81.15	$126.49	$93.70
Low probability gain (C)	$59.81	$77.62	$147.47	$103.90
Low probability, loss (D)	$51.39	$88.21	$164.27	$107.72
Emotional gain (E)	$74.86	$82.15	$182.91[BA]**	$118.75[B]**
Emotional loss (F)	$62.00	$108.98[C]*	$156.41	$121.16[BA]**

Dollar values that are significantly greater than comparison conditions are indicated by superscript letters A, B, C, D, E, and F

** Significant at the 5% level; * Significant at the 10% level

condition results in the highest willingness to pay is mainly being driven by the 40- to 59-year-old age group. Another observation of note is the change seen in willingness to pay in the low probability loss condition, the condition we hypothesized to promote the highest willingness to pay, as one compares the age groups. The low probability loss condition is associated with the lowest willingness to pay among the 30- to 39-year-old group ($M_{30-39} =$ \$51.39), but is among the highest in terms of willingness to pay among the 40–59 and 60–79 age groups, respectively ($M_{40-59} =$ \$88.21, $M_{60-79} =$ \$164.27). Additionally, among the 40- to 59-year-old age group, we found further support for our hypothesis that risk-averse conditions in general should promote higher willingness to pay than risk-seeking conditions, as this group exhibited a nearly identical willingness to pay for the two risk-averse conditions ($M_{\text{High Probability Gain}} =$ \$88.21, $M_{\text{Low Probability Loss}} =$ \$88.24) that was directionally higher than the two risk-seeking conditions ($M_{\text{High Probability Loss}} =$ \$81.15, $M_{\text{Low Probability Gain}} =$ \$77.62).

Discussion

The failure to achieve widespread adoption of LTC insurance despite attempts by the insurance industry and government (e.g., state tax incentives, federal awareness campaigns; Wiener et al. 2000) may have significant consequences for the future solvency of the government-funded programs that finance LTSS, primarily Medicaid. The barrier to purchase consistently cited most often over the past two decades by those who consider but then reject the option to insure is the cost of LTC insurance (AHIP/Life-Plans 2012); therefore, interventions that can influence how that cost is perceived should be effective in limiting this objection and increasing adoption rates.

We predicted that framing could influence willingness to pay for LTC insurance in a manner consistent with prospect theory's fourfold pattern: when framed as a high probability loss, historically the framing of choice by LTC insurance marketers, the choice of whether or not to insure is viewed through a lens of anxiety and desperation, leading to risk-seeking behavior expressed as lower willingness to pay. Survey evidence supported this prediction: in each of the three age groups studied, the high probability loss condition was associated with either the lowest or second lowest average amounts that consumers were willing to pay.

The implication for marketing managers is clear: framing the need for LTC insurance as a high probability loss is a flawed strategy that can inadvertently drive consumers toward risk-seeking behavior. Marketers who target older consumers must be mindful not to arouse fear (cf. Janis 1967) and should instead use stories that emphasize the positive outcomes achieved by having insurance when needed or, alternatively, statistical arguments that frame very costly LTSS situations as relatively unlikely (the low probability loss condition is associated with the second greatest willingness to pay in both the 40- to 59- and 60- to 79-year-old groups). Such a move away from fear appeals and toward positive narrative messages is not only more effective, it also serves the goal of ethical marketing practice, especially when older, potentially vulnerable, populations are targeted (Hastings et al. 2004).

The key target market for most LTC insurance marketers is middle age (i.e., ages 40–59), when premiums are still relatively affordable and applicants tend to still be healthy. For this age group, our results suggest that messages promoting risk aversion should be most effective: An emotional story emphasizing the negative consequences of the failure to insure was most effective in motivating willingness to pay, presumably because it tapped the loss aversion tendency without evoking the sense of hopelessness associated with high probability. Because the LTSS needs of this group are relatively distant, the fear of loss is motivating, not paralyzing. The rational conditions designed to elicit risk aversion, high probability gain and low probability loss, also promoted higher willingness to pay relative to the conditions that past research has associated with risk seeking, i.e., high probability loss and low probability gain. We note that this result (reflecting the primary target market) does not support the general alternative hypothesis of Salovey et al. (2002) that gain-framed

messages should be more effective than loss-framed messages in motivating prevention behavior.

The youngest group studied, 30–39 year olds, generally do not view LTSS as an immediately relevant topic. This group tended to respond better to gain scenarios than to comparable loss scenarios. We suspect this result may be due to the increased salience of monetary pay outs in the gain conditions relative to the low relevance of distant potential losses, which appear to be too tenuous to elicit a loss aversion response. This result is consistent with Rothman et al. (1993) who report that loss versus gain framing effects are moderated by level of involvement, such that relatively uninvolved audiences may be more motivated by gain frames. Future research is needed to address the impact of scenarios that are tailored by age group in order to boost personal relevance, e.g., emotional stories of accidents involving younger people.

From the standpoint of theory development, it seems notable that greatest willingness to pay in each of the three age groups is associated with one of the emotional conditions. This result suggests that emotional response plays a key role in forming behavioral intentions (i.e., willingness to pay). This result is consistent with results reported by researchers studying charitable giving (Small et al. 2007; Small and Loewenstein 2003; Slovic 2010) who report significantly higher donations in response to emotional narratives as opposed to statistical evidence. Although this result supports Kahneman's assertion that priming results are mediated by emotion, it seems likely that emotional responses are more fundamental, playing a larger role than decision heuristics. The significantly higher willingness to pay in response to the emotional conditions, accompanied by the lack of significant differences between the rational fourfold pattern conditions, suggests that the view of "affect as heuristic" may benefit from reconsideration.

Future research is needed on the cognitive and emotional mechanisms underlying this effect through experimental research. Small et al. (2007) attribute this effect to the presence of a vivid "identifiable victim" as opposed to "statistical victims"; other potential mechanisms include the operation of the availability heuristic, the degree of personal identification with story characters (e.g., demographic proximity to the event), and the impact of cognitive load on elicitation of empathy. Individual differences provide additional avenues for investigation, particularly those traits shown to be related to planning behavior (i.e., present vs. future orientation; Strathman et al. 1994; Hershey and Mowen 2000), regulatory focus (prevention focus vs. promotion focus; Harlow et al. 2001), self-efficacy (Bandura 1977), cognitive orientation (i.e., need for cognition; Caccioppo and Petty 1982), and capacity for empathy (interpersonal reactivity; Davis 1983). The potential efficacy of messages targeted by personality segments is

underscored by Salovey et al.'s (2002) discovery of stronger framing effects when targeted by segment.

A major goal of the present research was to compare the effects of the statistical "fourfold pattern" with more emotionally evocative narrative messages. We found at least four instances of statistically significant advantages for emotional narratives over statistical messages, but no statistically significant differences among the combinations of loss/gain and level of probability that comprise the fourfold pattern. This result provides evidence that the magnitude of the emotional narrative effect is greater than that associated with the specific configuration of statistical arguments; it echoes the meta-analysis conducted by O'Keefe and Jensen (2007) on 93 studies of statistical framing effects who concluded that despite finding statistical significance "the effect is so small as to be negligible" (p. 637). These results suggest that future research could fruitfully expand beyond rational loss/gain × level of uncertainty framing to focus more explicitly on the type and strength of emotions elicited by communications.

Naturally occurring experiments can provide valuable sources of information on the practical effects of alternative framings. Employment-based enrollment campaigns, wherein health benefit options and retirement savings plans are framed for employees, provide a particularly valuable source of revealed preferences since attempts are made to reach all eligible employees in the same manner, at the same time, and behavioral outcomes can be easily measured by examining participation rates and benefits options selected. To the extent that these campaigns can be assigned to the framing conditions of the fourfold pattern and emotional gains or losses, real-world measures of effect size should be informative for employers, marketers, and policy makers.

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