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ScienceDirect
Journal of Consumer Psychology 26, 3 (2016) 417 – 425
JCP JOURNAL OF CONSUMER PSYCHOLOGY

Research Report

Solving the annuity puzzle: The role of mortality salience in retirement savings decumulation decisions☆

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Accepted by Cornelia Pechmann and Amna Kirmani, Editors; Associate Editor, Anirban Mukhopadhyay

Received 3 November 2014; received in revised form 17 September 2015; accepted 21 October 2015
Available online 28 October 2015

Abstract

We propose mortality salience – increased accessibility of death-related thoughts – as one previously unexplored explanation for the annuity puzzle, the low rate at which retirees buy annuities even though economists recommend annuities as an optimal decision. Across four studies we show that mortality salience decreases how likely individuals are to put savings into an annuity. By forcing consumers to consider their own death, the annuity decision makes mortality salient, motivating them to avoid the annuity option as a proximal defense against the death-related thoughts triggered by considering an annuity. Moreover, we demonstrate the robustness of the mortality salience effect through measurement and manipulation of the underlying process, and we estimate an overall mean effect size using meta-analysis. With this research, psychological theory can inform economic theory by helping to explain the annuity puzzle phenomenon that has challenged economists for decades. This research also has important implications for consumer welfare by offering insights into annuity choice and helping to inform the increasingly complex financial decisions facing individuals as they navigate the retirement savings decumulation process.

Keywords: Financial decision-making; Retirement savings; Mortality salience; Annuity puzzle; Savings decumulation; Terror management theory

Introduction

Consumers reaching retirement age face the difficult task of deciding how and when to spend the money they have saved for retirement. For five decades economists have examined this "decumulation" problem and have argued that purchasing annuity products is an optimal decision strategy for most people when they reach retirement (Benartzi, Previtero, & Thaler, 2011; Yaari, 1965). Annuities are financial instruments designed to provide individuals with a steady stream of income during retirement by allowing them to exchange a lump-sum of savings for an income stream guaranteed to last for the rest of the individual's life or for a fixed period of time. Economic theory argues that annuities are attractive as they reduce the risk of outliving one's income, a critical concern given warnings that a large number of consumers are expected to run out of money during retirement (VanDerhei, 2014). Yet very few individuals facing retirement choose to annuitize a substantial portion of their retirement savings (Benartzi et al., 2011). Economists refer to this as the *annuity puzzle*. In June 2015, U.S. retirement assets totaled $24.8 trillion, with only 8.6% of assets held as annuity reserves (Investment Company Institute, 2015).

The economic literature has examined the annuity puzzle within a rational choice framework. Several explanations for the annuity puzzle have been proposed, yet none have been shown to fully account for it. For example, low retirement savings (Dushi & Webb, 2004), unfair annuity pricing (Mitchell, Poterba, & Warshawsky, 2000), annuitization framing (Agnew, Anderson, Gerlach, & Szykman, 2008), decreased flexibility accessing one's money (Poterba, 2006), possibility of default by the financial company (Babbel &

☆ The authors would like to thank Boston College and the Solitude Research Support Initiative at the Carroll School of Management for financial support.
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http://dx.doi.org/10.1016/j.jcps.2015.10.001
1057-7408/

Merrill, 2006), and the foregone opportunity to bequeath one's assets (Lockwood, 2012) have all been examined. Further, companies offering annuities have adjusted their products in an effort to accommodate proposed explanations and make annuities more attractive by introducing options such as fixed terms, bequeath features, and deferred start dates, with little effect on the rate of annuitization. As a result, researchers have called for more work that moves beyond the fully rational paradigm and instead offers behavioral explanations for the annuity puzzle (Brown, 2007).

This research offers one such novel explanation of the psychological underpinnings of the annuity puzzle. We propose that the task of choosing whether or not to buy an annuity is anxiety-provoking and aversive for consumers because it evokes thoughts of death. A key aspect of the annuity decision process is considering when one is likely to die (Brown, 2007). We argue that, by forcing people to think about dying, the annuity decision makes people's mortality salient, motivating them to defend against this threat by avoiding the annuity option to remove death-related thoughts from consciousness. The current research uses psychological theory to inform economic theory and help explain the annuity puzzle phenomenon that has baffled economists for decades (Yaari, 1965), and more broadly, provides insight into savings decumulation – a topic that has been largely ignored outside of the economics and finance literature.

Mortality salience (MS), defined as the increased accessibility of thoughts related to one's death, affects a broad range of behaviors, including interpersonal evaluations, moral judgments, stereotyping, in-group bias, conformity, materialism, and self-regulation (see Burke, Martens, & Faucher, 2010; Greenberg, Solomon, & Pyszczynski, 1997). According to terror management theory (TMT; Greenberg et al., 1997) awareness of one's own mortality creates the potential for paralyzing terror, which could undermine individuals' functioning. Since MS engenders potentially overwhelming existential anxiety, it triggers defensive responses that help people avoid or minimize emotional distress (DeWall & Baumeister, 2007).

TMT research proposes a dual-process theory of proximal and distal mortality salience defenses and posits that distinctive tactics are used to cope with conscious and unconscious aspects of the problem of death (Greenberg, Arndt, Simon, Pyszczynski, & Solomon, 2000; Pyszczynski, Greenberg, & Solomon, 1999). Accessible unconscious thoughts of death are defended against with *distal defenses* that have no direct rational relationship to the problem of death, but enable one to construe oneself as a valuable participant in a meaningful universe (i.e., pursuit of self-esteem and faith in one's cultural worldview; Greenberg et al., 1997). Distal defenses are active whenever the individual is awake and conscious; they serve to keep death-related thoughts out of consciousness and have been explored widely in the literature.

When the problem of death enters current focal attention and death-related thoughts enter consciousness, *proximal defenses* that serve to remove death-related thoughts from consciousness are activated (Greenberg et al., 2000). Proximal defenses are relatively rational cognitive maneuvers that serve to push the problem of death off into the future by removing death-related thoughts from consciousness through thought suppression or by denying one's vulnerability to threats of dying (Pyszczynski et al., 1999).

Drawing upon this literature, we argue that the annuity choice task triggers conscious thoughts of dying, which activate proximal defenses that push the problem of death out of consciousness (Greenberg et al., 2000). A common proximal defense used to remove death-related thoughts from focal attention is thought suppression (Greenberg et al., 2000; Pyszczynski et al., 1999). One way to suppress the death-related thoughts triggered by the annuity task is to avoid the annuity product, as buying an annuity necessitates thought and effort likely to keep death-related thoughts in consciousness. As such, people avoid annuities in an effort to suppress the death-related thoughts triggered by an annuity purchase.

We test this proposition in four studies. In Study 1, we show that the task of choosing an annuity triggers spontaneous thoughts of dying to a greater extent than the task of choosing an Individual Retirement Account (IRA), and these thoughts mediate the effect of financial product condition on choice. In Study 2, we provide evidence for our proposed process by priming MS and show that as MS increases, annuity choice rate further declines. In Study 3, we test a more subtle and practical MS manipulation by varying the annuity stimuli and measure the underlying process. In Study 4, we replicate our findings with a sample of older consumers closer to retirement and with realistic promotional materials. Finally, we conduct a meta-analysis combining the results across our studies to estimate the overall mean effect of MS on annuity choice rates.

Study 1

This first study was designed to test whether the annuity choice task is more likely to spontaneously evoke death-related thoughts, as compared to other relevant financial decisions made upon retirement. When consumers near retirement, they need to decide what to do with the savings they have accumulated through their employer retirement plan. Two financial products commonly considered for retirement savings are annuities and Individual Retirement Accounts (CNN Money, 2015). IRAs are tax-deferred savings plans from which retirees can draw down their accumulated savings. We examined whether the annuity decision task is more likely to trigger thoughts of death as compared to the IRA decision task (whose evaluation is less likely to entail consideration of one's time of death). Moreover, we also assessed whether levels of death-related thoughts drive participants' choice probability in each of the two different choice tasks. Lastly, we ruled out decreased life expectancy as a possible alternative explanation for the effects of mortality salience on choice.

Method

One hundred sixty-one participants recruited from an online panel (43% females; age range: 18–63; M_{age} = 33.4; median