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Behavioral economics and aging

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ABSTRACT

Aging populations represent a growing health and economic challenge for many countries. While economists have studied aging extensively, the issue of aging has received less direct attention from the relatively younger field of behavioral economics. Nonetheless, many of the best-understood policies proposed by behavioral economics have implications for aging. In this paper, I review theoretical and empirical work in behavioral economics relevant to policies around global aging and highlight areas where more evidence is needed. I focus on interventions that encourage financial preparation for old age, policies that attempt to change health behaviors to mitigate the burden of non-communicable diseases and the implications of behavioral economics for policies that policies related to aging around health spending, insurance and regulation.

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Introduction

In recent years, ideas from behavioral economics have been increasingly applied to public health. Behavioral economic models of individual decision-making help understand how and why observed behavior deviates from traditional economic models of rationality. This understanding can lead to better policies by predicting how the structure of choices influences decisions, suggesting effective levers policy-makers can use to influence health decisions and identifying biases that may be exploited by firms absent appropriate regulations. The evidence base of behavioral design is growing with policies and products motivated by behavioral models undergoing rigorous randomized control trials in numerous countries around the world.

Many of the most well studied applications of behavioral economics have direct implications for improving policy around aging. Specifically, a large and growing number of experimental studies examine policies motivated by behavioral economics to improve financial preparation for retirement and old age. A number of studies have suggested a relationship between individuals' financial condition and their health outcomes (Prichett and Summers, 1996; Feachem and Medlin, 2002). Recent evidence from Poterba et al. (2012) suggests that health costs may contribute to draining individuals of retirement income. Behavioral economics has pinpointed a number of successful interventions to increase retirement income, which may have downstream benefits for health as well.

Another area where behavioral economics has contributed to the policy environment around aging relates to changing health

behaviors that contribute to global disease burdens. A growing percentage of health care costs in many countries are related to non-communicable diseases. Many health behaviors contribute to poor health and growing health spending, such as medication non-adherence, poor nutrition and exercise habits. Behavioral economic models of time preferences, salience and limited attention have motivated the design of behavioral interventions such as providing small incentives and reminders to change behavior individuals struggle to change on their own. This "asymmetric paternalism" (Loewenstein et al., 2007) is premised on the assumption that individuals find it hard to modify health behavior when left to their own devices and policies that nudge individuals toward better health behaviors are welfare improving both privately and socially.

In addition to interventions designed to encourage behavior change, a large body of evidence suggests that the architecture of choices may subtly guide decisions, even when individuals are not aware of efforts to change their behavior (Thaler and Sunstein, 2008). The evidence suggests that a well designed choice architecture may lead individuals to better decisions for their long run health, while poorly designed choice environments may lead individuals to delay decisions or choose insurance and spending options that are sub-optimal for both health and financial well-being.

Finally, a number of the lessons of behavioral economics suggest that firms may be able to exploit individuals' behavioral biases and mistakes. Ho et al. (2006) argue that firms quickly discover and exploit individuals' behavioral biases. If aging affects individuals' tendencies to display these biases, then regulation should be attentive to how firms engage in marketing to older individuals. However, there is limited direct evidence about how behavioral biases change over the life course. I summarize the existing literature and make recommendations for future research.

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Financial preparation for retirement

For an aging population, there is a close relationship between the amount of savings that individuals have to live on after they stop working and health in older age. There is evidence that even for individuals in the US who manage to save enough to replace a significant proportion of their income, health shocks may still lead to depletion of retirement savings (Poterba et al. (2012)). On the other side, a lack of retirement savings would make it difficult to maintain good health, particularly in countries without comprehensive health insurance programs (Feachem and Medlin, 2002). Many behavioral economists have studied savings behavior extensively, from understanding the psychology that makes it difficult to save to using that psychology to design retirement savings plans and policies that encourage greater savings rates.

Dynamic time preferences are central determinants of individuals' financial choices in preparing for retirement. Traditional economic models with constant discount rates have been called into question by evidence from psychology and neuroscience. Behavioral economists have proposed an alternative theoretical framework for modeling time preferences. Laibson (1997) provides evidence that many individuals are better characterized by hyperbolic preferences, with inconsistency in preferences over time depending on whether tradeoffs include the current period. Hyperbolic discounting is consistent with evidence that many individuals simultaneously save and carry expensive debt (Laibson, 1997). Furthermore, individuals who make time inconsistent trade-offs appear to demand commitment devices that limit temptation. Ashraf et al. (2006) provide evidence of demand for a savings product in the Philippines that restricts individuals' access to their own savings.

On the one hand, the implications of a tendency toward present-biased preferences suggests a challenge for countries moving away from guaranteed pensions and toward voluntary contribution systems. Individuals who face temptation may have trouble saving enough to be ready for retirement when the level of savings depends on their voluntary contributions. Fortunately, a better understanding of behavioral economics has led to improvements in the design of financial products that can encourage greater savings and investment in the future even for agents with time inconsistent preferences. I discuss evidence from studies on changing defaults, simplification of options and pre-commitment. Some of these interventions redesign products to minimize the effects of behavioral biases, while others design products with features that take advantage of behavioral biases, creating systems where individuals with behavioral biases will actually save more.

One implication of time inconsistent preferences is that individuals may procrastinate, deferring the costs of action, especially if they are naïve about their lack of self-control (O'Donoghue and Rabin, 1999). If individuals tend to defer taking action, the design of default options becomes especially important. In the case of retirement savings, the work by Beshears et al. (2008) with large firms in the US suggests that changing retirement enrollment from an opt-in system, where individuals must take action to enroll, to an opt-out system, where individuals are automatically enrolled, more than doubles enrollment in retirement savings systems. Opt-out retirement enrollment has shown to be so effective that it has been adopted as general policy by the US Department of Treasury and advocated for university-wide policy at Harvard University by Larry Summers (Choi et al., 2004).

However, one potential danger of defaults is that they may be too sticky, causing individuals to stick with choices that are not optimal, for example, staying with a default enrollment retirement savings level even when they should be increasing their contributions (Choi et al., 2004). Caplin and Martin (2012) provide evidence from experimental games that when social planners choose

payoff-maximizing defaults, individuals are more likely to be inattentive and accept the default without thinking. This indicates that if social planners are too effective in setting defaults, individuals may actually reduce their attention to important retirement decisions. Carroll et al. (2009) propose an active choice framework where individuals are required to make a choice, and argue that it is preferred to defaults when savings preferences are heterogeneous and individuals tend to procrastinate, but not when individuals lack financial literacy.

Defaults are not designed to correct psychological biases but instead to take advantage of predictable biases and use them to influence behavior. Another savings intervention designed by Thaler and Benartzi (2004) leverages two sources of bias at the same time: present-bias and loss aversion. Prospect theory, proposed by Kahneman and Tversky (1979), models a psychological tendency for individuals to dislike losses disproportionately more than they like similar gains. The Save More Tomorrow[®] program commits future raises to savings. Individuals who are present-biased are not asked to give up current consumption right away, but instead may postpone their savings until the future (Thaler and Benartzi, 2004). Furthermore, savings begins only when individuals' salaries increase, requiring no cuts in regular spending habits. The program is therefore ideally designed for individuals who avoid losses, especially if losses are calculated based on recent consumption patterns as suggested by Koszegi (2006).

Changing the architectures of choices is another intervention that has been shown to increase savings. For example, models from psychology suggest that when individuals make a decision with too many options or too much complexity, they often defer the choice. A review of empirical studies by Kamenica (2012) suggests that this avoidance of decisions may be related to choice fatigue. Simplifying the architecture of choices has been shown to be effective in increasing participation in retirement savings programs. In collaboration with a large firm in the US, Beshears et al. (2012) show that simplifying the decision about which plan to use for savings by reducing it to a yes or no decision increases enrollment in retirement savings by up to 20%. Similarly, Iyengar et al. (2004) find that participation in retirement savings programs declines as the number of fund options increases. In other words, individuals may disengage with saving for old age if the decision of how to save is too overwhelming. The insight that the number of retirement savings options is a crucial determinant of participation in retirement savings programs has broad implications for designing financial choices.

Avoiding a decision when there are too many choices is just one of a number of behavioral anomalies around retirement savings that have been studied by behavioral economists. Benartzi and Thaler (2007) document evidence across numerous studies that agents use naïve heuristics when deciding how much to save for retirement, how to invest their savings and how to spend from different assets. Benartzi and Thaler (2007) argue based on evidence from a number of studies that education does little to reduce the reliance on heuristics, but that the architecture of the choice individuals make about a plan is likely to have a large impact on all elements of retirement savings decisions.

The optimal design of retirement tools is especially important in light of evidence that older cohorts tend to have lower financial literacy. Lusardi and Mitchell (2011) document a pattern of lower financial literacy among older individuals in the US, Germany, the Netherlands, Italy, Sweden, Russia, Japan, and New Zealand. However, despite lower financial literacy, older individuals are more confident about their financial abilities (Finke et al., 2011). This mismatch between confidence and knowledge suggests that a careful and clear design of choice architecture would have significant welfare impacts for aging individuals. Pottow (2012) documents that older individuals in the US are the fastest growing

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