



# **Leveraging Psychological Science to Motivate Retirement Planning:** A Literature Review

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## Retirement – A Complex Decision

Decisions about retirement are complex. They require people to consider not only about their financial situation and health status, but also their attitudes towards their workplace, preferences for leisure, the change of societal roles (moving away from being a “worker” or being “productive”), and impact on self-image and identity (Barnes-Ferral, 2003). Moreover, retirement involves thinking about the present, past, and future (Feldman & Beehr, 2011). Synthesizing and integrating information on all of these components can be a daunting task, especially considering that retirement in and of itself can cause anxiety (which in turn may influence satisfaction with retirement- van Solinge & Henkens, 2008). To help employees engage in retirement decisions and gain a sense of control over the process and its outcomes, which is cardinal for their well-being (Heckhausen & Schulz, 1995), it is important to understand factors that may influence how people approach such complex decisions.

Much has been written on the many factors affecting people’s decisions about whether and when to retire (for comprehensive reviews, see books edited by Adams & Beehr, 2003 and Wang, 2013). The purpose of this report is not to summarize this rich literature, but rather to assist practitioners as they encourage people to think about, and plan for, retirement. Planning for retirement is an ongoing process with multiple decision points (Feldman & Beehr, 2011) influenced by personal factors ranging from available resources to age, gender and culture, and environmental circumstances such as historical times.

These forces at times work against one another or interact to make decisions about retirement hard to engage in. For example, imagine a teacher in her early sixties who has some money in a retirement savings account. She likes her job, but is very worried about contracting COVID-19 given a pre-existing health condition. She never thought of herself as a “math person” but is now faced with a need to make a decision about whether to continue working or not, and whether to make changes to her retirement plans. How might this teacher approach the decision? What forces are pulling her to think deeply about available options versus avoid making a decision altogether? What kind of information would she be looking for, and what are the best ways to present it? Our aim in this review is to translate scientific findings on how people generally approach complex decisions (and age-related factors that may influence these processes) into insights about ways to motivate people to be full, and informed, participants in their own retirement planning.

## Why Is It Hard to Engage People in Retirement Planning?

### Lack of self-efficacy

Perhaps the most obvious reason for people to avoid taking an active part in their retirement planning is that they may feel ill-equipped for the task. Think of our retirement-contemplating teacher- on top of the need to consider multiple factors that might determine her best course of action, planning for retirement may require her to make complex calculations and predictions about personal, local, and global economics. In a way, the mere existence of retirement planning financial advisors potentially signals to people that this is a profession that one must master, not an area in which a layperson can have any valuable input. Our teacher who does not perceive herself as a “math person” may feel especially inadequate. In psychology, such feelings are known as lack of self-efficacy. There is little doubt that retirement-planning professionals have considerable knowledge and expertise and that their assistance may be necessary. Yet, lack of self-efficacy may cause people to refrain from involvement altogether and simply “leave it to the pros”. If we aim to motivate engagement in retirement planning, we should consider ways to increase people’s sense of efficacy in this domain.

The term ‘self-efficacy’ relates to people’s feelings of having sufficient resources (skills, knowledge, etc.) to deal with the task at hand. Extensive research found that people are keenly aware of their abilities and are unlikely to take actions for which they feel they do not have the necessary resources (Bandura, 1977; 1997; Zimmerman, et al., 1992; Judge & Bono, 2001). Simply put, people need to feel confident that they can succeed in order to engage with tasks in the first place. In the case of retirement planning, financial self-efficacy- composed of people’s confidence in their ability to deal with financial challenges, manage personal finances and progress towards their financial goals (see Appendix 1) may be particularly important, alongside general efficacious approach to life (Lown, 2011).

Efficacy beliefs start developing early in childhood and continue to develop throughout life via personal experience and education (Bandura, 1997). This might make such beliefs hard to change. That said, such change is certainly possible through providing feedback of self and others' performance, observing others, setting of goals that gradually increase in difficulty, stress management (Ashford et al, 2010; Bandura, 1977; Prestwich, 2014).

Rather than changing self efficacy directly, financial advisors and experts might be well suited to change people's beliefs about their ability to develop the necessary skills and gain the needed knowledge to develop efficacy. In psychology, such change is known as a move from a "fixed mindset" to a "growth mindset" (Dweck, 2008). Carol Dweck's pioneering work finds that success in contexts varying from academic achievement, to business and athletics is greatly aided by people's beliefs that they can learn and grow their abilities as opposed to having innate talent (Dweck; 2008; 2009; Dweck et al., 2014; Yeager et al., 2019). Importantly, growth mindsets can be developed through interventions stressing that the difficult, often unpleasant, nature of learning (or training) is a necessary part of growth. This includes not just rewarding efforts, but also providing people with challenging tasks that suit their current skills and exceed them by just a little (Dweck, 2008; Yeager & Dweck; 2020).

### **Application**

*Clients who seem unmotivated to be actively involved in decisions about retirement may be feeling a lack of self-efficacy and belief that they "don't have what it takes" to make wise decisions. It might be prudent to first assess financial self-efficacy, then build up clients' belief that they can acquire any necessary knowledge and tools. This can be done through breaking down the process into small manageable steps of increasing difficulty. In this process, it is important to validate clients' feelings of struggle, but not accept that they cannot learn.*

### **Distance from Future Self**

Another factor that might lead people to avoid being actively involved in their retirement-planning decisions is that people often feel that these decisions are made for a stranger rather than for themselves. This is because people often feel distant from their future selves and find it hard to identify with this ambiguous figure, especially if this future self exists in the far future (Ersner-Hershfield & Bartels, 2018; Urminsky, 2017). The result is lack of motivation to take action and engage in the decision-making process. If we take the teacher from our example, she may find it hard to imagine herself in ten years- in which case she would be less motivated to plan for retirement, or she may be vividly envisioning her life in the future- in which case planning for retirement may be more enticing.

Manipulations that foster connection with one's future self via writing, visualizing and/or interacting with an older-self avatar proved successful in increasing younger adults motivation to start saving (Ersner-Hershfield et al., 2009; Sims et al., 2020) and engage in health promoting behaviors (Raposo, 2019).

### **Application**

*Assessing the degree to which clients feel close to their future selves (for example using the scale from Raposo, 2019 in Appendix 2) may inform advisors about clients' motivation to engage in retirement planning. Though the effects of future-self priming among middle aged people and older adults are yet to be studied extensively, contemplating about one's future self and envisioning future selves might motivate people to engage in retirement planning. This can be done, for example, by encouraging clients to vividly visualize a day in their retirement, making sure they use "I" statements.*

## Cognitive Dissonance

Another reason, related to distance from future self, that people might avoid engaging in decisions about retirement is cognitive dissonance. Cognitive dissonance refers to the feeling of psychological discomfort arising from facing two contradicting beliefs about oneself and/or the world (Harmon-Jones & Mills, 2019; Festinger, 1957). When two “cognitions” (beliefs, perceptions, occurrences, etc.) are inconsistent with one another people feel uncomfortable because the world doesn’t “make sense”. If our teacher believes that her school needs her and the HR department is encouraging her to think about retirement, or if she thinks she has enough money saved but learns that despite saving, money in retirement might be tight- a cognitive dissonance is likely to arise.

To reduce the psychological discomfort, according to cognitive dissonance theory, people may do one or more of the following (Harmon-Jones & Mills, 2019): they may ignore one of the “dissonant” cognitions (for example, our teacher may avoid meeting with HR or looking at her retirement savings account), add a new cognition that resolves the discrepancy (e.g. believing that “my children will help”, or “It’s just that the new principal doesn’t like me”), reduce the importance of the dissonant cognition (e.g. saying to herself “oh, the finances are not that bad” or “I can live off that”), or increase the importance of other, consistent, cognitions (“The kids in the classroom always give me great feedback”, “Last month I saved on groceries”).

In terms of personal economic choices, scholars have noted that cognitive dissonance leads people to hold on to existing beliefs about their financial situation and avoid making changes (Akerlof & Dickens, 1982). This may explain why only 52% of US households accurately assess their financial preparedness for retirement (Kim & Hanna, 2015). Kim and Hanna found further that people with set retirement plans (either defined benefits or defined contributions) are more likely to have unrealistic expectations about retirement than people without set retirement plans. Arguably, this is because cognitive dissonance leads them to hold on to the belief that their financial security in retirement is taken care of.

### Application

*To overcome cognitive dissonance and motivate clients to continuously engage with their retirement planning, advisors might find it helpful to work with (rather than against) people’s existing beliefs. Gentle “nudges” to take a second look, and working with people’s pre-existing beliefs about themselves (for example, people like to think of themselves as ‘rational’) may work well to eschew cognitive dissonance. That said, cognitive dissonance may also be a tool to change people’s minds- if they are faced with irrefutable evidence that is hard to ignore.*

## Intuition and Deliberation in Complex Decision Making

It is no secret that humans do not always think and behave in rational ways, although they are certainly capable of it. Nobel laureate Daniel Kahneman is often credited with popularizing the terms ‘system 1’ and ‘system 2’ thinking to describe intuitive, emotion-guided, thinking versus deliberative and calculated thinking (Kahneman, 2011; see Shleifer, 2012 for review). Some debate remains as to whether the two types of thinking represent truly separate systems or two sides of the same cognitive system which is unnecessarily abstracted (see Gladwin & Figner, 2014). However it is generally accepted that the two types of thinking exist, and that deliberative thinking is more cognitively “taxing” (that is- it relies more heavily on working memory capacity) while intuitive thinking is more readily available but also more prone to biases (Evans & Stanovich, 2013).

It is important to note that the two systems are complimentary. Rational, “slow”, thinking (i.e. ‘system 2’) is not always preferable to making decisions based on intuition. When speed is more important than accuracy or when the stakes are very low, intuitive thinking may help preserve cognitive resources and turn attention to more pressing matters. Similarly, when people have a lot of experience in a given domain, their intuitions might come with little cost to accuracy (Evans & Stanovich, 2013; Gladwin & Figner, 2014). Both intuition and rational analysis are used by senior executives to make complex decisions (Woiceshyn, 2009). While the theory postulates that the two systems compete with one another in some kind of a “race to decision” they overall function together to facilitate adaptive interactions with one’s environment (Kahneman, 2011).



When decisions, such as retirement-related decisions, involve integrating large amounts of information from multiple sources, engaging in deliberative thinking is especially difficult due to increased cognitive demands. Naturally, it is often in these types of decisions that deliberative, analytic thinking may be particularly important (Kushniruk, 2001), although it would be a mistake to assume that such thinking is free of errors (Shleifer, 2012; Evans & Stanovich, 2013). One way to encourage people to move from intuitive and automatic thinking towards deliberative thinking is to encourage them to slow down and think aloud (Kushniruk, 2001). Another way is to turn people's attention to the effects of automatic and intuitive thinking, yet even then people may still rely on their intuition and default to 'system 1' thinking (Kahneman, 2011). For this reason, it is important to understand the type of heuristics that often automatically affect decision making because these are likely to shape how people approach decisions about retirement.

## Heuristics and Biases

Heuristics are 'mental short-cuts' that people (and possibly other animals) use to minimize cognitive efforts and make decisions quickly (Santos & Rosati, 2015). Because complex decisions are cognitively taxing, people are likely to rely on heuristics and biases (often without awareness) to reach a decision (Evans & Stanovich, 2013). Heuristics are especially appealing when people are not very motivated to engage in the decision, and when there is a lot of uncertainty involved - as is often the case with retirement planning (Camerer & Weber 1992; Santos & Rosati, 2015). Below are some heuristics and biases that are most relevant to making decisions about retirement planning.

When faced with a difficult situation, framing has a significant impact on people's perception of the situation. For example, when people are asked to consider options to fight against a disease, their responses vary depending on how the situation is described: the number of lives lost or the number of lives saved (Tversky & Kahneman, 1981). Framing affects decision-making, and people make judgements based on relative factors, instead of absolute factors (for a review, see Kahneman, 2011). In retirement planning, for example, framing decisions in terms of what might be lost is more likely to lead to saving preferences.

Another heuristic that might be important to retirement planning is known as '*anchoring*'. Anchoring refers to people's tendency to use arbitrary numeric cues as the basis for estimation (Tversky & Kahneman, 1974; review in Furnham & Boo, 2011). In an iconic demonstration, Tversky and Kahneman asked people to spin a wheel and get a random number between 0-100. Participants then indicated whether they believed the percentage of African countries in the United Nations is higher or lower than that number and asked to give their final estimate by moving higher or lower than that number. People who got a higher number gave estimates that were higher than those who got a lower number as a starting point, even when they were rewarded for being accurate (Tversky & Kahneman, 1974). Anchoring effects were found to influence people's decisions not only when giving estimates of random quantities, but also on the perceived probabilities of events (Chapman & Johnson, 1999; Tversky & Kahneman, 1974) and willingness to pay for consumer goods (Ariely et al., 2003; Mussweiler et al., 2000). Anchoring may thus lead people to overvalue or undervalue the probability of retirement-related events or to estimate a higher or lower amount of money needed for retirement, based on arbitrary numerical cues. For this reason, financial advisors may want to consider the numerical information they are presenting to clients, especially before asking them to estimate any kind of number.

Another example of cognitive bias is the *endowment effect*, when people overestimate the value of an object they own compared to the one they do not own (Kahneman et al., 1990; Thaler, 1980). The endowment effect leads people to want more in exchange for what they have compared to what they would have been willing to pay for it, even when making a profit is not the goal. Theories explaining the endowment effect are being debated (Santos & Rosati, 2015), yet it clearly relates to *loss aversion* - people's tendency to weigh potential losses as looming larger than potential gains when making decisions (Kahneman et al., 1991; Van Dijk & Van Knippenberg, 1996). In retirement planning, studies found that when presenting people with information (using bar charts) of potential losses and gains, people focus on short-term losses leading to suboptimal decisions (Benartzi & Thaler, 1999). Adding indicators of uncertainty around point-estimates may further exacerbate loss aversion (Wesslen et al., 2021). That said, Wesslen and colleagues (2021) found that asking people to make decisions over a longer time frame may reduce loss aversion and yield better returns, stressing the importance of planning for retirement well ahead of time.

## Personal Factors that May Influence Retirement Planning

In addition to psychological factors that humans tend to share, there are individual differences that may influence people's attitudes and behaviors. Next, we review three of the main characteristics that may affect motivation to engage in retirement planning. We focus on gender, upbringing (i.e. parental influences) and culture because those are relatively easy to assess (as oppose to, for example, personality traits or mental health which require specialized scales or training).

### Gender

Existing literature shows that there are gender differences when people make financial decisions. Women tend to be more risk averse than men; for example, women make smaller investments than men do when making decisions about investments (Charness & Gneezy, 2012). It seems that gender differences in making financial decisions are pervasive regardless of age or expertise in finances. In a study where the mean age of participants was 20.57 years, it was found that women were more risk averse and less confident when making financial decisions than men (Powell & Ansic, 1997). Among the highly educated people, women showed more risk aversion than men (Hibbert et al., 2013). In a survey study that was conducted among finance professors in the U.S., it was found that women were more likely to stop participating in stock markets after experiencing a loss, while men were more likely to continue investing in stocks and that women had a more pessimistic view of the stock market (Hibbert et al., 2018). Such differences are observed in other cultures as well. In a study conducted among fund managers from the U.S., Germany, Italy, and Thailand, it was found that female fund managers were more risk averse (Beckmann & Menkoff, 2008). The authors noted that the results did not imply that female fund managers are less successful than male fund managers, but they just have different investment styles and strategies (Beckmann & Menkoff, 2008). Their study showed that expertise did not dominate over gender in terms of financial risk taking (Beckmann & Menkoff, 2008).

Possible causes of gender differences in financial decision making have been explored. A survey conducted among college students showed that women have less interests in finances than men do (Chen & Volpe, 2002). Women also had less knowledge about personal finances, lower confidence in making financial decisions, and less motivation to learn more about personal finances (Chen & Volpe, 2002). Regardless of gender, education and experience influence financial literacy among subjects; for example, people who majored in business had higher financial literacy and a senior would be more knowledgeable than a freshman (Chen & Volpe, 2002).

Other scientists have shown that how one is raised and how the financial literacy is acquired contributes to the gender differences. On average, men have their first financial discussions at home earlier than women do while growing up (Agnew & Cameron-Agnew, 2015). The father's education level was correlated with the child's financial literacy level, but not the mother's education level, suggesting that financial knowledge at home mainly came from fathers (Agnew & Cameron-Agnew, 2015). The pressure to conform to gender-typical behaviors may be a reason that women are more risk averse (Booth & Nolen, 2012). When presented with two financial options, women who attend single-sex schools were more likely to choose the riskier financial option than women who attend co-ed schools (Booth & Nolen, 2012). Authors suggest that gender differences in financial decisions in previous studies may reflect the influence of nurture, rather than nature (Booth & Nolen, 2012).

Furthermore, men's financial literacy is enhanced when they make financial decisions for their families in adulthood. Many men often specialize in finances, so they lead financial decisions, through which they gain more financial knowledge (Fonseca et al., 2012). The gender differences in financial literacy may be a result of enhancing financial knowledge of a person, who is already financially more knowledgeable than his or her partner, not because of characteristic differences between men and women (Fonseca et al., 2012).

Literature shows mixed findings on how well experience with, and expertise in, financial decisions mitigate gender differences in financial decisions. Some studies (e.g. Chen & Volpe, 2002; Hibbert et al., 2013) suggest that education and experience influence financial literacy and reduce financial risk aversion, but studies (e.g. Beckmann & Menkoff, 2008; Hibbert et al., 2018) have suggested that there are differences in risk aversion and making financial decisions despite being professionals in finances.

Gender differences are but one way in which environmental (especially- parental) influences may affect retirement planning and motivation to participate in discussions about it. Parents especially have an important influence on young adults' financial decisions, financial knowledge, and investment behavior. These early influences, which seem to have a bigger effect on women than men affect both knowledge of, and confidence in, making financial decisions later in life (Shim et al 2013, Bowen 2002, Bartholomae and Fox 2002, cited in Tang et al. 2015).

### **Application**

*When working with men and women, financial advisors might benefit from questioning clients about their experience with financial decisions on different levels. Naturally, it is best to avoid gender-based assumptions. It is important, however, to tailor the way information is presented and discussed to people's existing knowledge. This may yield greater motivation to engage in the decision-making process as well as better outcomes.*

### **Upbringing (parental influences)**

Parents influence their children on a wide range of things, and financial behavior is no exception. Support for the importance of parental influence on their children's financial knowledge and behaviors is robust. Although many studies were conducted on college students, who are far from retirement, factors that influence financial behaviors of college students are similar to factors that influence the financial behaviors of older people (Koposko & Hershey, 2014)

Financial literacy is strongly associated with retirement planning (Hilbert et al., 2003). Parents' education level is known to have a significant impact on their child's financial literacy (Lusardi et al., 2010). In particular, mother's education level was positively associated with their children's financial literacy. Parents' financial sophistication (e.g. Owning stocks, having retirement savings) was also crucial since some financial knowledge may be passed on to their children directly by parents (Lusardi et al., 2010). The income of the parents mattered; higher incomes were associated with more perceived parental influence on financial literacy and more positive financial attitudes and behaviors (Jorgensen & Savla, 2010; Lusardi et al., 2010). Both explicit and implicit learning by children improved their financial attitudes and behaviors (Jorgensen & Savla, 2010).

Early financial learning experiences have a significant impact on one's attitudes and knowledge of retirement planning (Koposko & Hershey, 2014). Positive parental influence is found to be related to higher financial knowledge (Koposko & Hershey, 2014), and responsible financial behaviors (Tang et al., 2015). Furthermore, parents influence children's financial identity style, which is determined by how much one accepts his or her parents' views or seeks to develop their own views. Such financial identity style is related to an individual's financial capabilities (financial knowledge, attitude, and behavior) (Shim et al., 2013).

Parents' philosophy about finances and expectation of their children shape their financial attitudes and behaviors, which influence remains significant even in adulthood. Parents' financial expectations influence a child's likelihood of saving; the more optimistic a parent is, the less likely the child is to save (Brown & Taylor, 2016). Whether one saved during childhood is positively associated with the likelihood of saving and the amount saved in early adulthood (Brown & Taylor, 2016). In a study conducted on participants between ages 45 and 63, parental economic socialization was positively associated with financial planning for retirement (Palaci et al., 2017). The study supports the relationships between parental influence and responsible financial behaviors, which impacts retirement financial planning (Palaci et al., 2017).

### **Application**

*One useful intervention is to encourage parents to discuss financial issues more at home. This extends their future time perspectives, which leads to positive impacts on saving behaviors (Hershey et al., 2010). Implementation of programs in schools to teach financial planning to students has also been shown helpful (Cowen et al., 2011), although this may be a long-term solution.*



## Cultural Influences

Markus and Kitayama (1991) proposed the idea of independent and interdependent views of self, influenced by one's cultural background. The independent view of the self is characteristic of many Western cultures, and the interdependent view of the self is characteristic of Asian, African, Latin American, and some southern European cultures. An independent construal of the self places a great emphasis on the self, such as internal thoughts, feelings, and abilities. The interdependent construal of the self emphasizes the connectedness of the self and others, where social harmony is valued. Roles in the community and relationships with others are valued (Markus & Kitayama, 1991).

Such differences in views of the self and the relationship of the self to others have significant impacts on the idea of retirement and how it is spent. Luborsky and LeBlanc (2003) explored the definition of retirement across a wide range of cultures. Retirement in the U.S. is a new phase in life marked by the cessation of work, yet people still have income. A significant part of one's identity as an adult is lost, but it is not negatively perceived and his or her social identity is maintained (Luborsky & LeBlanc, 2003). It is a start of a new phase that allows people to enjoy leisure that one may not have had time for before. Other cultures have different definitions of final stages of life and varied ways of spending time (Luborsky & LeBlanc, 2003).

In some cultures, people lose rights and social status as they age (Luborsky & LeBlanc, 2003). For example, the Fulani, a small pastoral society in West Africa, move in to live with their eldest son, maintain only a few rights at old age. For the Lusi of Papua New Guinea, an elderly's position in the society depends on his or her independence, productivity, and strength of kin relationships. More independent, more productivity, and stronger kin ties can secure one's place (Luborsky & LeBlanc, 2003). In other cultures, such as the Andeans, Iban of Sarawak, Ayamara of Bolivia, and Hopi of the American Southwest, older adults shift to do less strenuous work while maintaining rights and social roles. Older adults may even have spiritual roles in some cultures, such as Thai, Ladak, Burmese, and Chinese (Luborsky & LeBlanc, 2003).

People's attitudes toward retirement financing are greatly influenced by the retirement financing system of a country (e.g. how much an individual is responsible for vs. how much the state and the employer are responsible for) (Hershey et al., 2007; Hershey et al., 2010). A study conducted on participants from the U.S. and the Netherlands found that Dutch participants did less retirement planning activities and had less clear financial goals than American participants, yet the Dutch scored higher on the measure of perceived saving adequacy. Americans, on the other hand, were strongly influenced by their available financial resources. Americans that earn more have clearer and more expansive future time perspectives than those who earn less. They also report higher levels of goal clarity, higher perceived financial knowledge, higher retirement planning activity levels, and higher perceived savings adequacy (Hershey et al., 2007). This was not found among the Dutch participants (Hershey et al., 2007). Nationality had a greater influence on retirement planning than age (Hershey et al., 2010).

Franca and Hershey (2018) extended the findings by Hershey et al. (2010). They conducted a study on factors that motivate people to plan and save for retirement in Brazil. Although saving in Brazil was not a widespread practice like in the U.S., the same factors (psychological, social, and economic) that motivate people to plan and save in the Netherlands and the U.S. also motivated planning and saving in Brazil (Franca and Hershey, 2018). Psychological, social, and economic forces had a stronger influence on retirement planning compared to socio-demographic factors, such as education, age, gender, or income. Saving adequacy needs to be considered together with the different sources of income after retirement (Franca and Hershey, 2018).

### Application

*When discussing retirement financial planning, goals should be assessed depending on the individual's number of income sources and the retirement financing system of a country. Yet, encouraging people to think of their societal roles post retirement may ease stress associated with retirement planning by affirming people's sense of self-worth (thus ameliorating some of the cognitive dissonance involved in retirement planning). These roles are naturally culturally-dependent.*

*In addition, clients' cultural background can inform practitioners in using independent versus interdependent language as a motivator. For example, self-focused planning highlighting individual goals and the impact of possible*

*(courses of action on one's ability to achieve them is likely to be more motivating to people from "Western" European, European-American etc.) cultures. On the other hand, community-focused (and perhaps more specifically, family-focused) planning which highlights how different courses of action might affect one's position vis-a-vis their important social networks and the lives of close others might be more appealing to people from collectivist cultures such as East-Asians, Africans, and Latin Americans.*

## Life-stage Specific Factors that May Influence Retirement Planning

Although planning for retirement is important throughout one's working years, people are likely to be more motivated to be actively involved in such planning in older ages- when the prospect of retirement feels more tangible. Several age-related developmental changes may influence people's approach to retirement planning. We review these changes below, focusing on five areas: Motivation, Cognition, Attitudes about Aging, Personality, and Environmental constraints and opportunities. In each area, we explain how age-related changes may affect retirement planning.

### Motivational Changes

Most theoretical accounts for motivational changes with age agree that people become more selective as they age, that is- they prefer to invest resources on a limited set of goals and behaviors (at work, in social relationships, etc. Baltes & Carstensen, 1996). These models generally agree that the main goals and behaviors that people become less motivated to pursue (i.e. 'pruned') are ones relating to acquiring knowledge, developing new skills and capabilities, and exploration of new paths.

Explanations fall roughly into two categories: time horizons-based selectivity and loss-based selectivity. Time horizons relate to the amount of time people foresee having in the future, and the time frame for which they are planning. According to socioemotional selectivity theory (SST- Carstensen, 1993; 2006; Carstensen, Isaacowitz, & Charles, 1999), in younger ages people have expansive future time horizons, and so they are motivated to pursue future oriented goals- especially those relating to learning, exploration, and self-development. As people grow older and time in the future becomes more limited, people prioritize instead present-oriented goals relating to emotional meaning and satisfaction. That is, as people get older they appreciate their remaining time and savor time more than they did when they were younger. Evidence supporting SST postulate has been found in numerous studies from fields ranging from work motives (Zacher & Frese, 2009; Kooij, De Lange, Jansen, Kanfer, & Dijkers, 2011; Rudolph, Kooij, Rauvola, & Zacher, 2018), to volunteer motivation (Okun & Shultz, 2003; Greenfield & Marks, 2004; Davila & Diaz-Morales, 2009; Yamashita, Keene, Lu, & Carr, 2017), and social partner preferences (Fredrickson & Carstensen, 1990; Fung, Carstensen, & Lutz, 1999; Fung, Lai, & Ng, 2001; Fung & Carstensen, 2006; Lang & Carstensen, 2002).

### Application

*As people get older, they are more likely to be invested in retirement planning if it is framed in a way that highlights the importance of financial planning to achieving emotionally meaningful goals (such as spending time with loved ones, and/or on the things you love- Fung & Carstensen, 2003).*

The time horizons mechanism posited by SST corresponds to a general concept in psychology: the Explore/ Exploit tradeoff. The basic idea of this tradeoff, similar to SST, is that when the future is vast and full of opportunities, exploring the environment to find the most rewarding course of action (i.e. spending resources to learn about the environment) results in larger payoffs in the long run. However, when there is only limited time in the future the most rewarding course of action is to exploit one's existing knowledge by sticking to the course of action that is already known to be somewhat rewarding (Christian & Griffiths, 2016). Computer simulations prove the utility of this concept in maximizing gains, and psychological experiments show that the human brain naturally carries out explore/ exploit computations by monitoring time horizons, while considering anticipated rewards and environmental constraints (Cohen et al., 2007).

## Application

*Consider client's time horizons at different time points in the retirement planning process. Not only that exploring different options early and sticking to the existing most rewarding strategy is likely to maximize rewards, people are likely to be motivated to do so and shun away from making dramatic changes to their plans the closer they feel to retirement.*

Time left in the future is one key component influencing the desirability of exploration versus exploitation. Other factors that may affect people's tendency to explore or exploit are the uncertainty of the environment (when rewards are highly uncertain, exploring is more risky but potentially more rewarding) and individual's sensitivity to new information (also known as "learning rate" or "temperature" - Cohen et al., 2007). As people age, they are likely to be less sensitive to new information which might lead them to be even less inclined to explore new opportunities. On the other hand, some evidence suggests that older people are more tolerant of risk to monetary losses, which might make exploring options more desirable. We elaborate applications of age-related changes in learning capacity and risk-tolerance later.

Focusing on aging-related losses, the model of Selective Optimization with Compensation (SOC- Baltes & Baltes, 1990; Baltes, 1997) highlights cognitive and physical declines as the basis for age-related selectivity. SOC postulates that, with age, people increasingly rely on existing knowledge and skills to minimize effort as they pursue their goals. SOC posits, therefore, that having achievable goals is increasingly important as people age. Therefore, self-efficacy (a 'match' between a person's perceived capabilities and the demands of the task at hand; Bandura, 1977; Judge & Bono, 2001) may play a bigger role in motivation to engage with retirement planning for older, compared to younger, adults.

## Application

*Asking people to acquire new knowledge, learn new skills or use new tools in their retirement planning may be exceptionally hard and demotivate them from engaging in the planning process. If necessary- emphasize how it builds on existing knowledge or experience.*

## Changes to Cognitive Functioning

In the face of common beliefs that aging involves declines in cognitive functioning, empirical evidence suggests that age-related cognitive changes are nuanced. Scholars distinguish between two types of cognitive abilities: acquired knowledge and the ability to use it (sometimes called "crystallized intelligence") and cognitive processing and learning abilities (dubbed "fluid intelligence"). A robust body of evidence shows that aging involves increases in crystallized intelligence at least until early older-adulthood and remains fairly stable so long as people are free of dementia (Salthouse, 2004; Zaval, et al., 2015). The power of age-related increases in crystallized intelligence and expertise is perhaps best exemplified by Sully Sullenberger. This experienced pilot, only a year prior to his retirement, safely landed US Airways flight 1549 on the Hudson River, saving the lives of all 155 people on board. Moreover, the ability to use existing knowledge and accumulated experience wisely leads to age advantages in problem solving, especially in integrating context and in problems involving social situations (Grossman et al., 2010; 2013). Put simply, the traditional role of "the village elders" is backed by scientific evidence.

The nature of aging trajectories in fluid intelligence, however, is a matter of greater debate. Empirical findings suggest that aging involves decline in some components of fluid intelligence, namely processing speed and learning of new information (Salthouse, 2004; Ghisletta et al., 2012; Howard Jr. & Howard, 2013; see review by Del Missier et al., 2015). However, there is also evidence that meaningful declines in fluid intelligence are not part of normal aging and are, in fact, predictors of dementia (Wilson, et al., 2011; Tucker-Drob, 2019). In any case, there is little doubt that declines in fluid intelligence are quite heterogeneous (Ghisletta et al., 2012), and that older adults are very capable of sound financial decision making by using fluid and crystallized intelligence in complementary fashion (Li, et al., 2013; 2015; Zaval et al., 2015).

## Application

*Presenting information about retirement planning in a manner that corresponds to individuals' existing knowledge can help people make wise decisions. It may also ease the burden of learning new information and make such information more accessible. That said, one should not assume that older people are incapable of learning and integrating complex information and withhold or oversimplify it as a result.*

Although there is considerable variability among people in trajectories of cognitive aging, several general age-related effects with implications for retirement decisions have been documented in the literature. One of these is age-related focus on positive aspects of the environment, rather than negative. Consistent with age-related motivational shifts postulated by SST, studies consistently find that older adults pay more attention to and better retain information presented in positive (over negative) terms. Studies examining what is now called the “positivity effect” produced robust evidence that older people prefer to view images that engender positive affect over ones that lead to negative affect, review information about positive attributes of choice options more than their negative attributes, and are more motivated to act following information about potential benefits rather than risks (Carstensen & Mikels, 2005; Mather & Carstensen, 2005; Löckenhoff & Carstensen, 2007; Notthoff & Carstensen, 2014; Reed et al., 2014). Importantly, the positivity effect does not seem to be a case of “rose colored glasses”, but rather a deliberate (that is, “top-down”) cognitive process that can be “turned off” if the situation requires it (Knight et al., 2007).

Relatedly, findings from behavioral as well as neuroimaging studies find that older adults are less sensitive to risk in monetary decision making compared to younger adults (Eppinger et al., 2012; Nielsen et al., 2008; Samanez-Larkin et al., 2007; 2011). Reduced sensitivity to loss may lead to suboptimal decision making in some settings that require caution (Samanez-Larkin et al., 2010). However, it may also benefit older adults when “cutting losses” leads to better financial outcomes- evident in older adults being less susceptible to the sunk-cost fallacy than younger adults (Bruine de Bruin et al., 2014; Strough et al., 2008; 2014).

## Application

*Presenting older people with information about potential benefits, rather than risks, of different retirement plans is likely to result in greater motivation to engage with decisions, as well as better retention. It may also be prudent to assure older people fully appreciate substantial risks when they exist and do not ignore them. That said, older individuals may be more tolerant of occasional losses stemming from their decisions as well as more amenable to make changes to previous chosen risky courses of action if they seem to be losing money continuously. A successful approach may therefore be to balance positive messaging with words of caution about the risks involved in different courses of action- including those of inaction.*

Based on the assumption that cognitive aging involves declines to fluid intelligence, researchers expected to find that age is associated with a preference to review less information when making decisions. A number of studies on decisions for consumer goods and ones involving monetary gains found some support for the hypothesis that older adults review less information and explore fewer options than younger adults (e.g. Mata et al., 2007; Mata & Nunes, 2010; Hess et al., 2013). Further, there is evidence that older adults prefer to receive less information when making complex decisions than younger adults (Mikels et al., 2009; Reed et al., 2014). Importantly, empirical findings suggest that differences among older and younger adults in the amount of information they review prior to making a decision do not result in worse quality of decisions among older, compared to younger adults (Berg, et al., 1999; Meyer et al., 2007; Mata & Nunes, 2010). Rather than searching for a lot of information, older adults may make high-quality decisions by relying on past experience or gut feelings (Morrow & Chin, 2015; Li et al., 2015; Mikels et al., 2010).

That said, there is also evidence to suggest that older adults may be motivated to look for as much information as younger adults before making a decision when the context of decision is meaningful (Hess, 2014; Strough et al., 2015). Although decisions about money may not make for a meaningful context in and of themselves (as do decisions about health, for example- Löckenhoff & Carstensen, 2007; Mata & Nunes, 2010), telling older adults that their decisions would affect others seems to make the context more meaningful and lead older adults to review more information than they would otherwise (Hess, et al., 2013; Löckenhoff & Carstensen, 2008).

## Application

*When presenting older clients with information about retirement plans and when asking them to choose among a variety of options, they are likely to prefer less information than younger clients and review relatively less information prior to making a decision. However quickly they may come to a decision, older clients' gut feelings may be worth trusting, especially if they have some relevant experience. If it is important that older clients review a lot of information, it might be beneficial to stress how this decision may impact others- especially close others such as beloved family members.*

## Attitudes About Aging

Finally, people's own attitudes about aging seem to affect behavior and cognitive processing. Attitudes towards own aging refer to the degree to which people perceive their own aging as positive or negative, enabling or limiting, holding advantages or bringing challenges. Attitudes, in this sense, are positive and negative feelings towards aging. While they are related to stereotypes of aging (with those adhering to negative stereotypes about older adults having more negative attitudes towards aging) they are not synonymous (Hess, 2006). That said, exposure to aging negative stereotypes, for example in popular media, may engender and cement negative attitudes towards aging, as can poor physical and mental health and low emotional stability (Bryant et al., 2016; Levy, 2003).

Not surprisingly, negative attitudes towards one's own aging are associated with worse aging trajectories in terms of cognitive performance, physical and mental health, and emotional well-being. It is hard to establish causality in this type of research, because experiencing negative aspects of aging trajectories may lead people to develop negative attitudes towards aging. Yet, evidence suggests that negative attitudes at baseline predict worse outcomes later in life (Bryant et al., 2012; Levy et al., 2002a; 200b; Low et al., 2013; Siebert et al., 2020). Importantly, negative attitudes towards own aging predict less intrinsic motivation to engage in demanding tasks (Hess et al., 2018). Further, a considerable body of experimental evidence suggests that priming negative age stereotypes and negative attitudes towards aging may decrease motivation for engaging in health and well-being promoting behaviors, as well as impair cognitive performance. Interestingly, priming of positive attitudes towards aging does not seem to have a comparable opposite effect (see meta analysis by Meisner, 2012).

## Application

*It might be prudent to talk to clients about how they perceive aging and envision their life long into retirement. Clients who express negative attitudes (e.g. saying things like "I will probably be in and out of the doctor's office a lot", "I'm sure I'll have little energy to do things", or "I will be lonely most of the time") are likely to experience worse aging trajectories and may have different expenses to anticipate compared to those who express more positive attitudes - particularly when it comes to healthcare expenses. Additionally, those discussing retirement plans with people in their second half of life would be wise to avoid priming negative attitudes towards aging by steering away from negative stereotypes about old age (even jokingly) or imagery that portrays aging negatively. Priming negative attitudes may demotivate clients from active involvement in their retirement planning and set them on a course for worse well-being in retirement.*



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## **Appendix 1: Financial Self Efficacy Scale (FSES, Lown, 2011)**

Please respond to the following statements using these response categories:

1 = Exactly true 2 = Moderately true

3 = Hardly true 4 = Not at all true

1. It is hard to stick to my spending plan when unexpected expenses arise.
2. It is challenging to make progress toward my financial goals.
3. When unexpected expenses occur I usually have to use credit.
4. When faced with a financial challenge, I have a hard time figuring out a solution.
5. I lack confidence in my ability to manage my finances.
6. I worry about running out of money in retirement.

## Appendix 2. Connectedness to Future Selves

How much is the person you'll be at age 65 really "you"?

How connected do you feel to the person you'll be at age 65?

How different is the person you'll be at age 65 from the person you are now? [reverse-coded]

How likely is it that you will be the same person when you are 65 as you are now?

How strongly do you identify with the person you'll be when you are 65 years old?

1 = not at all

2 = slightly

3 = somewhat

4 = very much

5 = completely

## Appendix 3. Attitudes towards Aging Questionnaire (AAQ, Laidlow et al., 2007)

Items are rated on a 5-point Likert scale in the format of “To what extent do you agree with each of the following statements? 1-Do not agree at all 5- Strongly agree.

### Scale 1: Psychosocial loss

- Old age is a time of loneliness
- Old age is a depressing time of life
- I find it more difficult to talk about my feelings as I get older
- I see old age mainly as a time of loss
- I am losing my physical independence as I get older
- As I get older I find it more difficult to make new friends
- I don't feel involved in society now that I am older
- I feel excluded from things because of my age

### Scale 2: Physical change

- It is important to take exercise at any age
- Growing older has been easier than I thought.
- I don't feel old
- My identity is not defined by my age
- I have more energy now than I expected for my age
- Problems with my physical health do not hold me back from doing what I want
- My health is better than I expected for my age
- I keep as fit and active as possible by exercising

### Scale 3: Psychological growth

- As people get older they are better able to cope with life
- It is a privilege to grow old
- Wisdom comes with age
- There are many pleasant things about growing older
- I am more accepting of myself as I have grown older
- It is very important to pass on the benefits of my experiences to younger people
- I believe my life has made a difference
- I want to give a good example to younger people

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