OLDER ADULTS are faced with complex decisions, particularly medical and financial decisions, which can carry high levels of risk and have important consequences for their quality of life. Do older adults make decisions any differently than younger adults? Decision making involves cognitive and emotional processes that have been shown to change with age; for example, maintaining and manipulating information in working memory (MacPherson, Phillips, and Della Sala 2002), and dealing with the emotional aspects of a decision (Bechara et al. 1999; Blanchard-Fields, Jahnke, and Camp 1995).

Research shows that emotional goals, such as feeling good in the moment, become more salient as people get older (Carstensen, Isaacowitz, and Turk-Charles 1999). These changes have implications for older adults’ decision making. Older adults are more likely to attend and remember positively valenced information than are younger adults (Carstensen and Mikels 2005; Carstensen, Mikels, and Mather 2006; Mather 2004; Mather and Carstensen 2005), which may lead older adults to focus on different aspects of information available during the decision making process than younger adults (Mather, Knight, and McCaffrey 2005) and remember their past decisions more positively than the decisions merit (Mather and Johnson 2000).

One area in which age affects decision making includes decisions involving assessments of risk. A risky choice is one in which there is a probability or chance of various outcomes occurring. The final outcome is
not determined by the choice, but by the way that the chosen probabilistic situation turns out. In contrast, other choices are riskless in that the ultimate outcome for each option is known in advance and there is not uncertainty about how each option will turn out. The literature on emotion, decision making, and aging shows that age-related changes in emotion affect older adults' decision making about options with uncertain outcomes.

Affect and Decision Making

While emotion and cognition often work together in decision making, emotion overrides cognition under some circumstances. Emotional reactions occur more rapidly than cognitive responses (LeDoux 1993; Zajonc 1980), and therefore can direct cognitive assessments such as the perception of risk (Finucane et al. 2000). One example of directing cognitive assessments is that people often overweigh small probabilities or perceive a negative relationship between risks and benefits even when they are positively correlated; such judgments contradict rational thought (Finucane et al. 2000; Loewenstein et al. 2001). The tendency to erroneously perceive a negative relationship between perceived risk and perceived benefit seems to be the result of referring to one's affective response when judging both risk and benefit. For instance, people who feel more positively about cell phones rate the benefit of cell phones higher and the risk lower than those who feel more negatively about cell phones. This negative correlation increases when people are asked to make the judgments under time pressure and there is less time for analytic deliberation (Finucane et al. 2000).

In addition, several factors that influence risk taking behavior are mediated by affect rather than cognition; these include background mood, the time interval between decision and outcome, and vividness with which the outcome is represented mentally (Loewenstein et al. 2001). For example, emotional reactions are more sensitive to vivid possibilities than to the probability of an event occurring (Loewenstein et al. 2001). Thus, when an emotionally evocative outcome, such as winning a million dollars in a lottery, is involved in a risky decision, people are relatively insensitive to the probability of the outcome occurring. Whether the odds are one in one hundred million or one in one hundred thousand will make little difference in the decision to buy the lottery ticket.

Emotion plays an integral yet multifaceted role in decision making. Different emotions and even different aspects of the emotional experience affect decision making in distinct ways, and the effects of emotion on risky decision making depends on the nature of the risk, the level of risk
involved, and whether potential losses are personally relevant or not (Isen 2000; Isen, Nygren, and Ashby 1988; Isen and Patrick 1983; Mann 1992). For example, people in a positive mood are less risk taking than people in a neutral mood when the potential loss is personally relevant, regardless of the level of risk (Nygren et al. 1996).

**Positive Emotions**

Work by the psychologist Alice Isen and her colleagues demonstrates that positive mood has a complex effect on risk perception and decision making for risk (Isen 2000; Isen and Labroo 2003; Isen, Nygren, and Ashby 1988; Isen and Patrick 1983; Isen, Rosenzweig, and Young 1991; Mann 1992). People may be aware of their positive mood and may try to maintain it, leading to more conservative risk taking when the task is personally relevant. For example, participants induced into a positive mood bet more on a low-risk bet but less on a high-risk bet (Isen and Patrick 1983). These studies typically have used mood-induction techniques in the laboratory. Consistent with this pattern of findings in which people in a positive mood are more optimistic in their perceptions of positive outcomes yet more conservative in their actual risk taking behavior, a naturalistic study that examined managers' risk perceptions and risk intentions for business decisions found that managers who reported high levels of positive affect reported significantly lower perceptions of risk and personal consequence but were not more likely to seek risk compared to managers who reported low levels of positive affect (Williams, Zainuba, and Jackson 2003). Thus, perception of risk and reward by itself does not necessarily predict risk taking behavior.

**Negative Emotions**

Negative emotions affect risk perceptions and behavior, as well as how and how much people process information when making a decision. In Steve Williams, Muhamed Zainuba, and Robert Jackson’s (2003) study regarding managers' perceptions of risk, managers who reported high levels of negative affect perceived risk-related gains more pessimistically and were more risk avoidant than managers who reported low levels of negative affect. The decision itself can be negatively laden. Many decisions, such as medical and financial decisions, are emotionally difficult. In these situations, negative emotions can act as a motivator for avoidance of most of the negative aspects of the decision making process (Luce 1998). Participants with the highest decision-related negative affect were more likely to choose an avoidant option (that is, the status quo) when selecting which automobile to purchase; those who chose an avoidant
option reported less intense negative emotions than those who chose other options (Luce 1998). Thus, negatively laden decisions can prompt the use of emotion-regulation strategies (in this case, avoidance).

Recently, researchers have begun to tease apart the effects of different negative emotions on decision making. Sadness, which is associated with the loss or absence of reward and a motivation to acquire reward, can lead to a preference for high-reward, high-risk options over low-reward, low-risk options (Raghunathan and Pham 1999). In contrast, anxiety is the feeling of high uncertainty over the outcome and low control over the situation, and can lead to risk avoidance (Raghunathan and Pham 1999). Depression, of which one symptom is the lack of energy, is associated with action aversion, leading to slower decision making and greater reluctance to make decisions (Loewenstein et al. 2001). In addition, anger and fear lead to different effects on risk estimates (Lerner et al. 2003). Anger also interacts with decision-related affect differently than sadness. Using the same paradigm as the automobile study described above (Luce 1998), participants induced into an angry mood were more likely to select the avoidant option (that is, the status quo) than participants in a neutral mood when the decision was emotionally difficult. In contrast, participants induced into a sad mood chose the avoidant option regardless of the level of negative emotion associated with the decision (Garg, Inman, and Mittal 2005).

In summary, emotions have direct and indirect effects on decision making for risk. Current mood, the emotional attributes of the decision, and emotional reactions all contribute to the decision making process and outcome. Of note are the findings that people often attempt to regulate their emotions during the decision making process: when in a positive mood, people attempt to maintain it by being more conservative for personally relevant risk (Isen 2000). Decision-related negative affect, particularly when coupled with current feelings of anger, can lead to decision avoidance (Anderson 2003; Garg, Inman, and Mittal 2005; Luce 1998; Mather 2006).

Aging and Affect

Despite physical and social losses, adults sixty-five years and older experience high levels of emotional well-being into advanced old age. Life satisfaction among older people increases or is comparable to levels among young adults in their twenties: the declines in life satisfaction that are seen in very old age are in part due to proximity to death, presumably because of declines in health (Agren 1998; Diener and Suh 1998; Mroczek and Spiro 2005). Emotional well-being typically is defined by high frequencies
of positive and low frequencies of negative emotions. There appears to be a curvilinear relationship between age and frequency of positive and negative emotions, with the least optimal emotional experiences in young adulthood and the most optimal emotional experiences in early old age (Charles, Reynolds, and Gatz 2001; Stacy and Gatz 1991).\footnote{1}

As people approach their eighties, the quality of emotional experience declines from this peak somewhat (Charles, Reynolds, and Gatz 2001; Stacy and Gatz 1991). However, at no point do older adults experience greater frequencies of negative affect than do younger adults (Carstensen et al. 2000). Furthermore, older adults experience longer durations of positive emotions and shorter durations of negative emotions than younger adults do (Carstensen et al. 2000).

The Salience of Emotion in Old Age

According to socioemotional selectivity theory (Carstensen, Isaacowitz, and Turk-Charles 1999), as people age and perceive time as increasingly limited, they place greater importance on emotional goals, such as feeling good in the moment and creating emotional meaning from life, and more importance on the emotional aspects of their lives than on achieving knowledge related goals, such as acquiring information. The increased salience of emotion leads to emotional well-being and improved emotion regulation. Several lines of research now document that older adults place greater importance on emotional goals, experience high levels of emotional well-being, and regulate their emotions better than younger adults (Agren 1998; Carstensen et al. 2000; Charles, Reynolds, and Gatz 2001; Diener and Suh 1998; Gross et al. 1997).

The increased salience of emotion with age also occurs in the areas of preferences, attention, and memory (Mather and Carstensen 2005). Compared to younger adults, older adults attend to and remember a greater proportion of emotional information than neutral information and prefer and better remember advertisements with emotional slogans than those with knowledge-related slogans (Fung and Carstensen 2003). The increased salience of emotion appears to be driven by heightened attention and memory for positive information and de-emphasis on negative stimuli (Carstensen and Mikels 2005; Mather and Carstensen 2005). This positivity effect has been defined as a developmental pattern in which there is a shift from a disproportionate preference for negative information in young adulthood to a disproportionate preference for positive information in old age (Carstensen, Mikels, and Mather 2006). It is linked with improved emotional well-being, as studies have found that older adults show enhanced moods after recalling autobiographical events,
especially among those who show the positivity effect in their memories (Kennedy, Mather, and Carstensen 2004; Pasupathi and Carstensen 2003).

**Positivity Effects Among Older Adults**

Remembering positive information is likely to benefit emotional well-being more than remembering negative information is likely to. Thus, older adults’ focus on emotion may lead to selective increases in the potency of positive information relative to negative information. Below, we briefly review evidence of a positivity effect among older adults in the areas of attention, memory retrieval, memory-review strategies, and autobiographical memory.

*Attention.* If older adults focus on emotional goals, this bias also should appear in earlier stages of the memory process, such as in the encoding phase. In one study, age differences in the encoding phase were examined by having younger and older adults view positive, negative, and neutral pictures while their brain activity was recorded using a functional magnetic resonance imaging (fMRI) scanner (Mather et al. 2004). Both older and younger adults showed greater activation in the amygdala for emotional pictures than for neutral pictures. However, for older adults, seeing positive pictures led to greater amygdala activation than seeing negative pictures, whereas younger adults showed similar levels of activation for positive and negative pictures. These findings indicate that younger and older adults show different patterns of attention during initial encoding depending on the emotional valence of the stimuli.

Age differences in attention also were found in a study in which older and younger adults completed a dot-probe task (Mather and Carstensen 2003). Participants first viewed a neutral and an emotional version of a face displayed on the left and right sides of the computer screen for one thousand milliseconds. The faces disappeared from the screen and a small gray dot appeared in the center of where one of the faces had been displayed. As soon as they saw the dot probe, participants pressed a key on the keyboard. Older adults were significantly slower in responding to the dot probe behind negative faces than behind neutral faces; this bias did not appear in younger adults’ response rates. Although no significant age-group difference was found for the positive trials, older adults were significantly faster in responding to dot probes behind the positive faces than behind neutral faces. Similar age differences in attention to emotional stimuli have been found in eye-tracking studies (Isaacowitz et al. 2006a, 2006b; Rosler et al. 2005).

These age differences in attention occur during decision making as well. For instance, when making a choice between descriptions of two cars
in which each option included both positive and negative features, older adults spent a larger proportion of their time reviewing the positive features than the younger adults did, whereas the younger adults spent more of their time reviewing the negative features than the older adults did (Mather, Knight, and McCaffrey 2005). Older adults also had more accurate memory for positive features than for negative features, whereas younger adults did not show this bias.

**Memory Retrieval.** Recent findings indicate that older adults disproportionately forget negative information (Charles, Mather, and Carstensen 2003; Denburg et al. 2003; Leigland, Schulz, and Janowsky 2004; Mather and Knight 2005; Mather, Knight, and McCaffrey 2005). For example, after looking at a slide show of positive, negative, and neutral pictures, older adults recalled a greater proportion of positive pictures than negative pictures compared with younger adults (Charles, Mather, and Carstensen 2003). This diminishment of negative memory relative to positive memory among older adults was revealed both when participants listed all of the pictures they remembered and when, out of a series of pictures, they indicated which pictures they had seen before and which were new pictures. Furthermore, the age differences could not be accounted for by differences in mood in the two samples or in differences in the intensity level of the negative and positive pictures.

**Memory Review Strategies.** These studies indicate that older adults attend more to emotional information than nonemotional information and more to positive than to negative information. Results from a study of memory for decisions provides evidence that older adults' emotionally gratifying memories go beyond just remembering relatively fewer negative elements of an event; they extend also to choice-supportive memory. Choice-supportive memory occurs when people attribute more positive features to the option they have chosen and more negative features to the option they have rejected (Benney and Henkel 2006; Henkel and Mather 2007; Mather, Shafir, and Johnson 2000, 2003). In a study comparing younger and older adults' memories of choices (Mather and Johnson 2000), participants chose between two options, each of which included positive and negative features. Older adults were more likely to attribute more positive and fewer negative features to options that they chose than to the options that they did not choose. These findings held even after controlling for age-related declines in memory. Although older adults were more choice supportive than younger adults in the control condition, younger adults displayed the same levels of choice-supportive memory as older adults when participants were instructed to think about how they felt about the options in each decision task. In contrast, older adults
were significantly choice supportive in every condition, whether they were cued to focus on their emotions or not. The findings demonstrate that older and younger adults focus on the same information quite differently. Older adults spontaneously focus on the affective qualities of information, whereas younger adults do not. When younger adults do focus on the affective qualities of the information, they show the same choice-supportive bias as older adults. The findings indicate that affective processing of information contributes to choice-supportive behavior. In particular, older adults may use choice-supportive memory as a way to regulate their current emotional state.

**Autobiographical Memory.** Longitudinal studies of distant personal memories find a positivity effect with age for many types of personal information, including parental care, emotionally charged personal experiences, physical and emotional well-being, and personality characteristics (Field 1981, 1997; Kennedy, Mather, and Carstensen 2004; Robbins 1963; Yarrow, Campbell, and Burton 1970). When given cues to retrieve autobiographical memories, older adults retrieve more positive memories than negative memories (Serrano, Latorre, and Gatz 2007) and are less likely to retrieve negative memories than are younger adults (Schlagman, Schulz, and Kavilashvili 2006; Schuldin and Woldorf 2005).

Age-related forgetting of past traumatic personal experiences also occurs (Robins et al. 1985; Wagenaar and Groeneweg 1990), which should aid current emotional well-being. These findings are consistent with a study in which younger and older adults recalled memories from previous periods of life (Bemtsen and Rubin 2002). Negative memories were longer-lasting for younger adults, whereas positive memories endured longer for older adults.

Positively recalling the distant past appears to aid emotional well-being. In a study of American nuns, older participants were more likely to distort autobiographical memories in a positive direction and end up in a better mood than before they recalled their memories compared to younger participants (Kennedy, Mather, and Carstensen 2004). In this study, all the sisters recalled personal information that they had originally reported fourteen years prior. Thus the findings are not due to older participants recalling more temporally distant information than younger participants. In addition, findings remained after controlling for scores on a short-term memory test and for current mood at the time of recollection.

In summary, older adults attend more to emotional information; in particular, they attend more than younger adults to positively valenced information relative to other types of information (Carstensen and Turk-Charles 1994; Fung and Carstensen 2003; Hashtroudi, Johnson, and Chrosniak 1990). Furthermore, several memory studies suggest that older
adults regulate their emotions while recalling past decisions, public events, and personal experiences in ways that optimize current emotional states (Kennedy, Mather, and Carstensen 2004; Levine and Bluck 1997; Mather and Johnson 2000; Pasupathi and Carstensen 2003). As a whole, the literature on aging and emotion indicates that older adults place greater importance on emotion, leading to higher levels of emotional well-being and more effective emotion regulation than younger adults.

Aging and Decision Making

Most studies of decision making for risk that include older adults do not report age differences in risk attitude and risk behavior for financial decisions, health decisions, or games of risk (Bechara et al. 1994; Kovalchik et al. 2005; Mayhorn, Fisk, and Whittle 2002; Stout, Rodawalt, and Siemers 2001; Zwahr, Park, and Shifren 1999). Even when negative aging stereotypes were activated, older adults had equivalent levels of risk behavior in playing a computerized version of blackjack compared to younger adults (Ashman et al. 2003). Several other studies found no age differences in risk behavior when selecting cards from decks varying in their level of risk and rewards; indeed, some of these studies found that older and younger adults were equally likely to select cards from high-reward, high-risk decks (Bechara et al. 1994, 1998; Dror, Katona, and Mungur 1998; MacPherson, Phillips, and Della Sala 2002; Wilder, Weinberger, and Goldberg 1998; Wood et al. 2005). These studies primarily have used the Iowa gambling task, in which participants learn the contingencies of the payoffs through trial and error (Bechara et al. 1999). One study that displayed the probabilities of winning did find that older adults were less risk taking than younger adults (Deakin et al. 2004). The authors suggest that in experience-based tasks older adults may be slower in learning to avoid high-risk options than younger adults, leading older adults to make more risky decisions than they would otherwise (Deakin et al. 2004). If this is the case, then the amount of cognitive demand and memory demand required by the decision making task may affect older adults’ risk behavior.

Evidence also indicates that older and younger adults perceive risk in comparable ways. Both younger and older adults tend to value immediate reward over longer-term, more profitable gain (Green et al. 1996; MacPherson, Phillips, and Della Sela 2002). When forced to make a decision in hypothetical scenarios, such as whether or not to begin cancer or estrogen-replacement therapy, no significant age differences emerged for participants’ estimates of the risk of therapy (Zwahr, Park, and Shifren 1999). Furthermore, both younger and older adults are equally
susceptible to framing effects, in which changes in the wording of a decision option such that the option is viewed as either a gain (that is, positive framing) or a loss (that is, negative framing) lead to changes in the perception of the expected utility of the decision option. Positive framing is associated with risk aversion, whereas negative framing is associated with risk taking (Mayhorn, Fisk, and Whittle 2002). An exception to the above findings is that older adults who have disproportionate aging of the ventromedial prefrontal cortex (vmPFC), an area associated with decision making and reasoning, appear to make more risky and less advantageous gambling decisions than younger adults and older adults with typical aging of the vmPFC (Denburg, Tranel, and Bechara 2005). This finding is consistent with research on decision making for risk among patients with prefrontal cortex lesions (Bechara et al. 1994; Bechara et al. 1999), in which the patients were more risk taking than healthy controls. Currently, it is unknown whether damage to the prefrontal cortex is linked with greater desire for risk taking or to ignorance of the level of risk involved (Sanfey et al. 2003). Thus, some older adults who show advanced aging to their vmPFC make more risky decisions than younger adults, but the motive is unclear (Denburg, Tranel, and Bechara 2005).

Despite the general similarity across younger and older adults in risk taking tendencies, older adults do deal with certain aspects of the decision making process differently from younger adults. Compared with younger adults, older adults forget early decisions on the Iowa gambling task more quickly and are more likely to make decisions based on recently experienced outcomes rather than from more objective cognitive assessments which incorporate all experienced outcomes (Wood et al. 2005). They also tend to generate fewer options, deliberate for less time, and seek out and review less information—particularly negative information—than younger adults in hypothetical and real-life situations (Berg, Meegan, and Klauczynski 1999; Lökenhoff and Carstensen 2004; Mather, Knight, and McCaffrey 2005). In fact, in a study of everyday decisions regarding medical adherence and nutrition, most of the errors made by older adults' were due to incomplete reading of the provided information (Willis, Dolan, and Bertrand 1999). Finally, older adults also are more likely than younger adults to avoid making a decision regarding serious medical treatments; they do this by either putting off making a decision or preferring that their physician make the decision for them (Hudak et al. 2002; Mather 2006; Orsino et al. 2003).

In summary, laboratory studies indicate that the majority of older adults and younger adults have comparable levels of risk aversion and perceive comparable amounts of risk involved in making decisions. Older adults, however, forget decisions more rapidly, deliberate for less time, seek out less information, are more decision avoidant, and use less cogni-
tively demanding information-search strategies than younger adults; such activities could lead to more risky decisions. In particular, there are two factors that change with age—memory and emotional salience—which could influence older adults’ decision making about alternatives with uncertain outcomes.

**Age Differences in Memory that May Affect Decision Making**

Decision making depends on working memory and long-term memory (Bechara et al. 1998). Compared to younger adults, older adults have a reduced capacity for working memory in terms of immediately available information, such as remembering telephone numbers (Light, Zelinski, and Moore 1982), as well as a worse long-term memory (Ahlberg and Sharps 2002). Little is currently known as to how age differences in memory affect decision making. A recent study suggests that memory decline affects decision making in old age. When asked to judge several hypothetical patients’ diseases based on information provided, older adults made more conservative judgments than younger adults. However, when older adults were given more time to study the information, age differences in the level of conservatism disappeared (Spaniol and Bayen 2005). Findings from this study indicate that after controlling for memory encoding, no age differences occur for level of conservatism. More work is needed to understand whether the effect of memory on any particular task depends on the extent and type of memory that the task requires, and whether these particular memory demands mediate the effects of aging on risk taking.

One decision making strategy linked to memory which has been extensively studied is the use of heuristics. Older adults are more likely to rely on gist information or heuristics in recall (Bayen et al. 2000; Mather, Johnson, and De Leonardis 1999). Heuristic decisions are habitual, intuitive, nonanalytical, and require minimal processing speed (Ariely and Zakay 2001). A similar reliance on heuristic processing may occur in older adults’ decision making as well (Peters et al. 2000; Yates and Patalano 1999). For example, older adults are more likely than younger adults to use personal experience in making judgments (Löckenhoff and Carstensen 2004) and to rely on stereotypes in source monitoring (Mather, Johnson, and De Leonardis 1999).

The reliance on heuristics under certain circumstances can be beneficial and, in other cases, detrimental. For example, it can be detrimental if older adults rely solely on general background knowledge in reviewing medical information and in giving advice to another medication user (Gould 1999). However, researchers have suggested that older adults do
not show the "attraction effect"—an effect that occurs when adding an irrelevant option to an existing set of options increases the likelihood of people choosing the irrelevant option—because of their reliance on heuristics (Kim and Hasher 2005). The attraction effect leads to inconsistent decisions across similar problems, which can have deleterious effects. To date, little is known about the relationship between age-related changes in the reliance on heuristics and decision making for risk, but findings do suggest that older adults rely more on heuristics in their decision making as well as in their memory.

The Relationship Between Aging, Affect, and Decision Making

The increased salience of emotion with age may lead to age differences in decision making processes and behavior. This can happen in three ways: the effects of emotion on decision making found among young adults will be heightened among older adults; a focus on the emotional aspects of decision making will increase with age, or greater likelihood of showing a positivity effect in memory for past decisions among older adults than among younger adults.

Greater Effects of Emotion on Decision Making Due to the Increased Salience of Emotion with Age

Research shows that emotion regulation can occur during the decision making process. When faced with a decision, people try to maintain a positive mood; when in a negative mood, people try to mitigate negative feelings (Anderson 2003; Isen 2000; Luce 1998). Older adults are more adept at emotion regulation than younger adults, and therefore may be more likely to try to regulate their emotions during the decision making process. Older adults also are more likely to be in a positive mood at any given time compared to younger adults (Carstensen et al. 2000). According to theories about mood maintenance (Isen 2000), older adults should be more likely than younger adults to have low thresholds for risk when the decision is personally relevant. To our knowledge, this question has yet to be addressed experimentally.

Greater attention to maintaining positive mood and better emotion regulation may also explain why older adults are more likely to avoid making a serious medical decision compared to younger adults. Deciding whether or not to have a serious medical procedure, such as total joint arthroplasty, is a highly emotional, conflict-laden task, and thus one way
to avoid negative affect is to postpone the decision (Hudak et al. 2002). Other research has demonstrated that people who feel decision-related negative affect are more likely to choose an avoidant option and to have a less negative affect after doing so (Luce 1998). We conjecture that attempting to mitigate decision-related affect may also lead older adults to deliberate for less time and seek out less information for negatively laden decisions than younger adults do.

**Focus on Emotional Aspects of Decision Making**

Research indicates that older adults are more attuned to the emotional aspects of everyday interpersonal problems and adjust their problem-solving strategies accordingly (Blanchard-Fields, Jahnke, and Camp 1995; Blanchard-Fields, Stein, and Watson 2004; Watson and Blanchard-Fields 1998). In solving everyday interpersonal problems, older adults show greater flexibility in their use of problem-solving strategies, are better able to place the problem in context, and are better able to adjust their problem-solving strategy accordingly (Blanchard-Fields, Stein, and Watson 2004). For example, younger adults reported using mostly problem-focused strategies regardless of problem type or the emotional consequences of the solution. In contrast, older adults reported changing their strategies based on the emotional salience of the problem. They used problem-focused strategies for problems that were not emotionally salient and emotion-focused strategies for emotionally salient problems.

Older adults utilize heuristics when making decisions, in part due to age-related changes in cognitive processes (Mather, Johnson, and De Leonardis 1999; Peters et al. 2000). They may rely more heavily on a particular type of heuristic—the affective heuristic—than younger adults. The affective heuristic is the reliance on the emotional labels associated with the decision or judgment (Slovic et al. 2002). The stronger the affective impression of a potential decision and the more clearly positive or negative the impression is, the more weight the affective impression has on decision making. For example, when people have a strong positive or negative affective reaction to a particular decision, the affective reaction overrides sensitivity to changes in probabilities. The increased salience of emotion coupled with declining memory in old age may lead to a greater reliance on the affective heuristic than on other types of heuristics. Time pressure leads to greater reliance on the affective heuristic and to poorer decision making (Finucane et al. 2000; Mann 1992). Because older adults process information more slowly than younger adults, they may feel more pressured by time and consequently rely more heavily on the affective heuristic.
Positive Memory Effect for Past Decisions

As research shows, older adults disproportionately attend to and remember positive information compared to negative information, showing a positivity effect. The positivity effect may lead older adults to disproportionately remember their good decisions over their bad decisions, or the positive aspects of past decisions over the negative aspects to a greater extent than younger adults. They also may forget bad decisions more rapidly than good decisions. This memory bias may then influence future decisions for risk. For example, older gamblers report that their largest win in the past year was a significantly larger amount than that reported by younger gamblers (Desai et al. 2004). There are several possible explanations for this age difference. It may be that because older adults gamble more frequently, their chances of “winning big” are better. It may also be that older adults bet more money. Or, it could be due to the positivity effect, in which the older gamblers recalled their biggest win as larger than it actually was, whereas younger adults are less optimistic in their recall. Indeed, older adults are more likely to attribute more positive and fewer negative attributes to options they chose than to options they did not choose, showing choice-supportive memory (Mather and Johnson 2000). Furthermore, research on the affective heuristic has demonstrated that the remembered affect associated with a product influences subsequent product choice (Slovic et al. 2002). Thus, if older adults remember more positive attributes than negative attributes of past decisions—even if the decision was poor—they may be likely to make the same decision in the future.

Conclusion

 Older adults are faced with complex and difficult decisions, particularly in the areas of medical and financial decisions. Many of these decisions are risky, such as whether or not to have a serious medical procedure or deciding how much money to gamble at the casino. Yet little research to date has investigated how older adults make decisions and which factors may influence older adults’ decision making. Linking the literatures on aging, emotion, and decision making, we suggest that age-related changes in emotion lead to age differences in the decision making process and memory for past decisions.

Compared to younger adults, older adults disproportionately attend to and remember emotional information more than nonemotional material; this age-related focus on emotion appears to be driven primarily by a focus on positive emotion. This positivity effect can affect older adults’
decision making for risk in multiple ways, including greater reliance on the affective heuristic, greater effort to maintain positive mood during the decision making process, greater attention to the emotional aspects of the decision making process, and positively biased memory for past decisions. These emotional factors may hurt the effectiveness of older adults' decisions in some situations. For example, avoiding careful consideration of negative features of choice options may lead to poor choices. However, older adults' strategies should lead them to suffer less emotional pain as they make decisions as well as later when they recollect past decisions.

Notes

1. A similar curvilinear pattern is found for self-esteem, in which self-esteem gradually increases through adulthood with a peak in the late sixties, and then declines through very old age (Robins and Trzesniewski 2005).

References


Outcome (and Especially Avoidance of Loss) Rather than Probability."  


