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Social Cognition and Aging

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Definition

Social cognition refers to the processes through which people make sense of themselves and others to engage with their social context (Fiske and Taylor 2013). Social-cognitive research draws from models developed in cognitive psychology as a tool for understanding social functioning. A social-cognitive perspective is useful for enhancing our understanding of the aging process, particularly because of the extensive research literature documenting age-related changes in cognition (Salthouse 2012). The cognitive changes that emerge with age paint a complex picture of loss and gain, as some losses in cognitive functioning interact with some gains in knowledge or ability in other domains. Social-cognitive changes with age are made even more complex by the fact that motivational and emotional changes brought about by changes in life goals (Charles and Carstensen 2010) interact with changes in cognitive function to produce diverse patterns of responding.

Determinants of age-related social-cognitive change

Two broad determinants of social-cognitive change with age are investigated in this entry. First, research on cognitive function generally paints a picture of loss as the norm with aging, with older adults typically showing a decline in areas that tap the "mechanics of the mind" such as processing speed, memory, executive function, and complex reasoning (Salthouse 2012). These deficits in cognitive processing often co-occur with other age-related losses, such as reduced physical and perceptual functioning, suggesting an underlying general physical decline. Despite these losses, however, there are also important areas of preserved and even enhanced function in late life. These are usually in domains that tap "experience of the mind" such as vocabulary and general knowledge (Salthouse 2012). In these domains, smaller age differences emerge, and older adults often outperform younger adults. Thus, the first key determinant of social-cognitive change with age is whether the task relies more on mechanics or experience.

Social cognition involves dual processes, with automatic and controlled processes each contributing to, or competing for, social outcomes (Smith and DeCoster 2000). Although aging disrupts processing speed and other factors that play a role in automatic processes, the primary impact of age is on controlled processes (von Hippel and Henry 2012). Because controlled processes are sometimes recruited to inhibit automatic ones, as the influence of controlled processes declines with age, the influence of automatic processes can become more apparent. This interaction between controlled and automatic processes is also influenced by the fact that the two processes appear to operate in a compensatory fashion, such that some automatic processes peak when controlled processes are at their weakest. Thus, a second important determinant of social-cognitive change with age is whether the task at hand relies more on automatic or controlled processing and whether the two tend to work together or in opposition. This entry will outline the broad categories of social-cognitive change with age and the role that mechanics, experience, and automatic and controlled processes have in determining these changes.

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Emotional and Motivational Changes

One group of age-related changes occurs in emotional goals and functioning (Charles and Carstensen 2010). These changes have an important impact on the ways in which older adults process social and emotional information. One marked change in older adults, compared with those who are younger and in middle age, is in the processing of positive and negative information. Many studies have demonstrated an "age-related positivity effect" whereby older adults preferentially attend to and remember positive over negative information (Charles and Carstensen 2010). Interestingly, several studies find that cognitive control resources are recruited to maintain the positivity effect: The positivity effect does not occur when cognitive resources are diverted to a secondary task. In addition, older adults recruit medial prefrontal regions, which have been implicated in top-down emotion regulation processes, when processing negative but not positive stimuli, indicating controlled downregulation of negative emotion (Reed and Carstensen 2012). It has also been demonstrated that older adults with better executive function, that is, older adults who demonstrate greater cognitive control on tasks demonstrated to require top-down, controlled processing, show a greater positivity effect (Reed and Carstensen 2012). This possibility is currently debated, but it suggests that older adults may recruit their limited cognitive resources in an attempt to maintain a positive outlook, a step that is indicative of the potential importance of positivity to older adults.

Emotion regulation is the process by which emotions are increased, decreased, or sustained. When compared with younger adults, older adults also show maintained or even improved emotion regulation (Charles and Carstensen 2009). They are able to implement emotion regulation strategies both before and after the onset of the emotional response with similar effectiveness to younger adults. In some areas, older adults even show better emotion regulatory functioning than younger adults. For example, some studies have demonstrated that older adults are better able to suppress the expression of emotion than younger adults. This strategy is usually cognitively costly; however, other research has demonstrated that emotion suppression incurs fewer cognitive costs for older than younger adults: After suppressing their emotions, younger adults showed reduced working memory performance, but older adults did not. Research examining emotion in daily life has also found that older adults may be better at emotion regulation: after an experience of negative effect, older adults returned to a neutral or positive state more quickly than younger adults. Finally, older adults appear to rely on more effective emotion regulation strategies (e.g., cognitive reappraisal) than younger adults (e.g., expressive suppression). Taken together, this work suggests that older adults rely on the emotion knowledge accrued during their lifetime to implement emotion regulation strategies in a more emotionally intelligent and perhaps less cognitively demanding way.

Cognitive Changes

Executive functions are a group of mental processes responsible for initiating, planning, and coordinating basic cognitive processes. Executive functions include task switching, working memory, and inhibition of thought and behavior. As such, executive functions are not a single ability, but a group of higher-order processes that permit the regulation of cognition. Executive functions recruit frontal brain regions, and these areas are among those affected by age-related deterioration. As a result, aging is associated with declines in executive functioning (Salthouse 2012). These declines in executive function are associated with a wide range of outcomes, which we will briefly discuss below.

Behavioral restraint. Age-related declines in executive function have been linked to a broad range of cognitive deficits, such as disruptions in attention and memory. The consequences of a decline in

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executive function, however, are broader than just these cognitive deficits. Executive functions play a central role in social processes, and as a result, the age-related deficits observed in executive function have been found to lead to problems with social behavior across a variety of domains (von Hippel 2007). In particular, deficits in inhibitory processes have been linked to socially disinhibited behavior with age. As a result of decreased inhibitory ability, older adults are more likely than younger adults to talk excessively about topics that are irrelevant to the conversation, to inquire about private issues in public settings, and to engage in a variety of socially inappropriate behaviors than younger adults (von Hippel 2007). Importantly, this effect of executive decline appears to be independent of the effect of general cognitive decline, suggesting that executive deficits have an important unique effect on social appropriateness.

Stereotyping and prejudice. Devine (1989) proposed that our environment is filled with stereotypes, and as a result, these stereotypes are automatically activated upon encountering a stereotyped group member. She suggested that this automatic activation of stereotypes occurs among both prejudiced and non-prejudiced people, but that non-prejudiced people reject and inhibit these stereotyped thoughts, whereas prejudiced people do not. Older adults are less capable of inhibiting their automatically activated thoughts than younger adults, and thus, one implication of this model is that older adults may be more prejudiced. Several lines of research now support this idea (von Hippel and Henry 2012; von Hippel 2007). Older adults show greater prejudice on self-report scales and are rated by their peers as being more prejudiced than younger adults, and these age differences in prejudice appear to arise through executive function decline. Older adults do not seem to show greater automatic bias when compared with younger adults; they are just less successful at inhibiting this bias. These findings suggest that age differences in prejudice emerge in response to executive function decline and are not simply the result of a greater willingness among older adults to express their prejudices.

Understanding others. As outlined earlier, older adults tend to prioritize emotional and social goals. One implication is that aging might lead to improvements in social understanding. In contrast to this suggestion, however, research finds important losses in understanding others' emotions, intentions, and mental states with age. Broadly, there seems to be an age-related decline across all modalities of emotion recognition, although there is some evidence that unconscious emotion recognition may be better preserved than conscious emotion recognition (von Hippel and Henry 2012). Additionally, in some contexts, older adults seem to use more sophisticated heuristics than younger adults in forming social judgments, suggesting that the accumulation of social experience across the adult life span can lead to some benefits in understanding others (Peters et al. 2007).

Emotion recognition and empathy. Emotion recognition is an important skill for social interaction, and indeed, emotion misrecognition in older adults is associated with reduced social and interpersonal functioning, poor communication, and inappropriate social behavior (von Hippel and Henry 2012). Across most emotions the pattern is of age-related decline, and the recognition of anger and sadness is particularly impaired (Ruffman et al. 2008). This specific decline in recognition of negative emotions may be a function of the tendency for older adults to focus on positive over negative information in processing, as inattention to negative expressions may make their identification more difficult.

Older adults also show deficits in cognitive empathy, that is, they have a poorer understanding of others' complex emotions and mental states (von Hippel and Henry 2012). As with social dysfunction, deficits in cognitive empathy appear to emerge as a result of age-related decline in executive function, with older adults showing greater impairment on measures where greater executive control is required. Relatively less research has been conducted examining older adults' emotional empathy or their emotional responses to the cognitive or emotional state of another. The research in this area so far has examined mimicry and found that although subconscious mimicry seems to be spared in later adulthood, later stages of mimicry may be interrupted by difficulties in emotion recognition.

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Attribution and social inference. The processes covered earlier in this section rely primarily on the mechanics of the mind and thus are negatively affected by brain atrophy. There are, however, some aspects of social inference that rely more clearly on the experience of the mind, and in these areas, age has the potential to result in improved function. Indeed, across some domains of social inference, older adults are able to use more adaptive strategies (Peters et al. 2007; Blanchard-Fields 2007). For example, older adults require fewer cues than younger adults to form clear impressions of others, perhaps because they can rely on their greater social experience. Older adults are also more skilled at making trait inferences about others and are more able to use important diagnostic trait information in making social judgments. Finally, older and middle-aged adults are more sensitive to social context than younger adults, which can provide helpful information for understanding others.

Attitudes and persuasion. Attitude change involves a number of cognitive and motivational processes that change in older adulthood, suggesting that there are likely to be corresponding changes in persuasibility, that is, the degree that one is able to be persuaded of an idea, with age. Consistent with this possibility, attitude change follows a U-shaped curve with age, with younger and older adults being the most susceptible to attitude change (Visser and Krosnick 1998). This effect seems to emerge in part because younger and older adults also report lower attitude certainty, attitude importance, and attitude-relevant knowledge than middle-aged adults. One source of these changes may be cognitive losses with aging, which limit older adults' ability to counterargue against persuasive messages. Two other noncognitive mechanisms may also underlie age-related susceptibility to attitude change: reduced social support for attitudes and role changes with age that bring about attitude changes. That is, older adults may find that there is no longer social support for the attitudes they used to hold and so change their attitude accordingly. They are also less likely to have a social role involving power: Powerful roles call for a resolute approach in the face of persuasion attempts, and because older adults do not usually hold these roles, they are likely to be more persuasible. At this point we do not know the degree to which these factors may underlie changes in persuasibility among older adults.

Decision-making. Decision-making is affected by both age-related gains and losses. As with other domains, the general cognitive decline observed with aging is often associated with poorer decisions. It is also the case, however, that older adults make better use of cognitive shortcuts in decision-making and benefit from their greater life experience, and emotional and motivational changes mean that they are often happier with their choices (Peters et al. 2007). Broadly, the research literature shows age-related deficits in the decisions necessary for everyday life (Thornton and Dumke 2005). This effect is robust across most markers of decision quality, with the exception that older adults' self-ratings suggest either preserved decision-making or even better everyday decision-making than younger adults. These findings suggest that older adults perceive themselves as making better decisions despite actually making worse decisions. Because older adults tend to focus on the positive, it is possible that older adults are simply happier with their decision outcomes than younger adults and thus rate themselves as better decision-makers despite their objective deficits.

Although older adults show decline in most domains of decision-making, they show preserved ability and even improvements in interpersonal decisions (Blanchard-Fields 2007). Older adults may outperform younger adults in interpersonal domains because of their accumulated life experience, but they also have some additional advantages. First, they tend to take a long-term perspective and focus more on preserving interpersonal relationships than on solving personal problems (Blanchard-Fields 2007). Second, they do not overweight negative information, which may be helpful in some interpersonal decision-making domains (Charles and Carstensen 2010). Third, they are strategic about when they use controlled processing strategies, correctly perceiving cognitive control as a limited resource (Peters et al. 2007).

Various types of decision processes are also impacted by the age-related pattern of deficits in cognitive control processes but preservation of automatic processes. For example, controlled processes are often

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required to correct for possible sources of bias in decision-making, and as a result, older adults are less able to correct for biases (Peters et al. 2007). Cognitive control processes are also required in generating counterfactual simulations of possible alternative outcomes to decisions, and as a result, older adults are less able to create detailed simulations of the future. Naturally, this deficit has the potential to negatively impact their decision-making.

In contrast, the relative preservation of automatic processes in older adults allows them to make use of a number of automatic heuristics, which are fast, effortless, and generally accurate enough for most everyday purposes (Peters et al. 2007). The use of these heuristics may be helpful in allowing older adults to make rapid decisions while relying less on controlled processes. It is also the case, however, that older adults may be less able to suspend their reliance on automatic heuristics by implementing cognitive control processes when it is necessary to do so.

Individual Differences in Loss

In assessing cognitive loss with age, it is also important to consider whether these losses can be prevented and whether there are traits that may buffer age-related deficits in social-cognitive functioning.

Age stereotypes. There are number of stereotypes about cognitive loss with age, and these stereotypes are widely endorsed by older adults themselves (Levy 2003). Not surprisingly, research suggests that age stereotypes can have a causal effect on cognitive outcomes. For example, older adults who are led to think about aging and wisdom perform better on a memory test than older adults who are led to think about aging and senility. These acute stereotype effects may be induced through stereotype threat (or the concern that one may be judged on the basis of negative stereotypes about one's group), which has been shown to lead to performance deficits in a wide variety of domains. The more chronic consequences of age-related stereotypes are likely to be induced through a combination of stereotype threat and self-stereotyping (Levy 2003). That is, to the degree that older adults expect to show stereotypic age-related losses, they are likely to do so. This has been demonstrated across many domains, but perhaps the most striking is research demonstrating that negative stereotypes of aging measured early in life predict poorer health and earlier mortality in late adulthood. Overall, the data suggest that negative stereotypes about aging are likely to exacerbate age-related cognitive decline. They also suggest, however, that promoting positive stereotypes of aging may be an important intervention tool.

Mental activity. Mental activity levels may also play an important protective role in the cognitive aging process. Complexity in education, work, and in everyday life all delay the onset of cognitive decline (Valenzuela and Sachdev 2006). The facilitating effect of mental activity may be analogous to that of physical exercise. Even short-term mental activity may have beneficial effects, and thus, it may be possible that older adults could benefit from acute cognitive training (Lustig et al. 2009). A systematic review concluded that cognitive training in healthy older adults produces strong and persistent protective effects on cognitive performance, particularly in the domains that were the major focus of the intervention (Valenzuela and Sachdev 2009). That is, cognitive training seems to be most helpful when it is targeted: For example, training in attention enhances attention but does not always enhance memory, and training in memory enhances memory but does not always enhance attention.

Mental activity does not just delay the onset of cognitive aging; it can also compensate for it. One important example of compensation shown by older adults is neural "over-activation," in which additional brain regions are recruited by older adults to solve the same problems as younger adults (Reuter-Lorenz and Cappell 2008). Although there is no single explanation for over-activation, it appears to be at least in part a compensatory process to attempt to address declines in cognitive function.

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Conclusions

It is clear from the phenomena discussed in this entry that social-cognitive aging is a complex process, influenced by a variety of different sources. Age-related decline in cognitive control processes can sometimes be offset by preservation of automatic processes, but sometimes the inability to inhibit automatic processes can itself lead to poorer performance in older adults. In contrast, age-related changes in experience and knowledge accumulated throughout life can enhance social-cognitive function in some domains, and it is important to understand these experiential changes that occur in tandem with cognitive decline. Finally, motivational and emotional changes with age also play an important role in any attempt to understand social-cognitive outcomes, and the interactions between cognitive, experiential, and motivational changes can create complex patterns of behavior. It is clear that social cognition changes in many important ways with advanced age, and research is only just beginning to understand this complexity.

Cross-References

- ▶ Attitudes and Self Perceptions of Ageing
- ▶ Cognitive Control and Self-Regulation
- ▶ Cognitive Resource Theories
- ▶ Emotional Development in Old Age
- ▶ Emotion-Cognition Interactions
- ▶ Positive Emotion Processing
- ▶ Social Determinants of Cognitive Health
- ▶ Socio-Emotional Selectivity Theory

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