



The Paradox of Aging

BY SHERI HALL

For years, researchers have known that cognitive functions such as reasoning, memory, and problem solving decline with age. But a relatively new discovery is transforming conventional thinking about aging and cognition: as people age, their emotional well-being improves. This happens to everyone to some degree, regardless of occupation, ethnic background, or education.

As people grow older, they lose some of their ability to process information. It's a universal truth that has guided how we think about getting older in modern society.

"The processes that show decline are ones people need to navigate our everyday world—working memory, short-term memory, attention, the ability to represent visual images in our mind," explained Joseph Mikels, assistant professor of human development. "All of the things we need to get around in life show significant decline starting in our 20s."

That is, except in one area: emotion.

"Loss is ubiquitous across a number of cognitive domains, but older adults actually show an advantage over younger adults in the domain of emotion," explained psychologist Anthony Ong, assistant professor of human development. "The question is, what good is that advantage?"

A cadre of Human Ecology faculty members are delving into this new area of inquiry, leading to novel insights in health and well-being, decision making, and cognitive functioning. Among them are Ong, Mikels, and Corinna Loeckenhoff, the Louis and Mel Tukman Assistant Professor in Human Development. Together, they are slowly chipping away at conventional thinking about aging and developing new theories to help older adults improve their lives. >>>

A focus on well-being

Ong runs the Resilience and Lifespan Development Laboratory, which focuses on understanding the role that psychological traits play in the ability to sustain positive emotions in the face of stressful life circumstances.

“From a well-being perspective, it’s important to study older adults,” he said. “We assume happiness is intrinsically connected with the qualities of youth, and yet we find that older adults tend to be happier. This has been referred to as the paradox of aging.”

Ong is examining whether older adults’ improved emotional intelligence can help slow the aging process. Early indications suggest it’s possible, according to Ong’s literature review on positive emotions and health in later life published in *Current Directions in Psychological Science*.

“Overall, the data suggest that positive emotions have demonstrable health benefits in later life, the net effect of which may be to slow or delay the rate of functional decline in physiological resilience,” he said. “This raises some interesting questions about how older adults overcome the typical challenges we associate with aging.”

Future work will require greater attention to the interaction between increasing positive emotion and decreasing physiological resilience with aging, Ong said.

“Targeted prevention and intervention strategies that enhance positive emotions, particularly among the most vulnerable, are likely to play an important role in preventing serious physical illness, minimizing the burden of stress, and improving overall functioning in older adults,” he said.

Emotions and decision making

Human Ecology researchers have learned that, in addition to affecting basic cognitive functioning and physiological resilience, emotions play a key role in decision making, especially in older adults.

“For a long time, it was thought that decision making primarily relies on rational consideration of the available alternatives, but we are learning that there’s more going on,” Loeckenhoff said. Research in her Laboratory for Healthy Aging explores how age groups differ in their approach to health-related choices, behaviors, and outcomes.

Loeckenhoff has demonstrated in the laboratory that older adults selectively focus on positive material when they’re faced with choices. “That’s not just a consequence of aging—it’s a motivated choice to focus on the positive side of things with clear benefits for emotional well-being,” she said.

In addition, older adults appear to draw on emotional processing strategies for complex decisions. In a recent study published in the *Journal of Experimental Psychology: Applied*, Mikels and Loeckenhoff, along with colleagues at Stanford University, asked younger and older adults to make choices among health-related options, such as health insurance, home-care health nurses, or hospitals. The task was cognitively challenging since participants received multiple pieces of information before indicating their final decision. Interestingly, younger adults made better choices when they focused on memorizing individual pieces of information, whereas older adults fared better when encouraged to form an overall emotional impression of each option.

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Loeckenhoff has also learned that older adults are more patient—they are less likely to choose immediate monetary gains or gratification than younger adults. In one study, she gave participants real choices to receive a monetary award immediately or a check in the mail in the future. Older adults were more likely to wait for future gains and this may be related to age differences in the anticipation of emotional reactions. “Younger people said that five dollars wouldn’t feel as good 180 days down the road, whereas older adults were equally sensitive to immediate and future outcomes,” Loeckenhoff explained.

Now she is partnering with colleagues at Weill Cornell Medical College (WCMC) to find out how such mechanisms influence patients’ choices about health care. “One of my goals is to see how this plays out in the real world, and to see if there are implications for treatment guidelines or policy changes,” she said.

In an ongoing study, Loeckenhoff is working with Elaine Wethington, associate professor of human development and of sociology, and WCMC geriatrician M. Cary Reid, director of the Cornell-Columbia Translational Research Institute on Pain in Later Life, a community-based center for improving pain prevention and management in people age 65 and older. The team of researchers is currently investigating how far in advance chronic pain patients, physicians, and physical therapists plan their pain management strategies.

“Physical therapy, for example, is more work and more painful on an immediate level than taking pain medications, but in the long run, it yields considerable benefits,” Loeckenhoff said. “Taking medications, in contrast, provides immediate pain relief, but may have more negative side-effects in the long run. We want to understand how patients and providers are making these decisions, and whether they vary with the age of the patient.”

One concern is that older adults’ greater sensitivity to future outcomes may make them so worried about long-term side effects that they are less likely to adhere to pain medications. “That’s one scenario where greater sensitivity to future outcomes could backfire,” Loeckenhoff said. Complete results from the study will be available next year.

Loeckenhoff feels very fortunate to have access to such collaborations. “Human Ecology is an incredibly rich interdisciplinary environment,” she said. “Just within the college, I have the opportunity to work with economists, psychologists, sociologists, and policy analysts. And we’re connected all over campus—to other departments, to the medical school. That’s what you need to translate your work to real-life applications.”



Anthony Ong (right) and Corinna Loeckenhoff (next to Ong) discuss study results with students.

Emotions and memory

In addition to aiding in decision making, older adults' improved capacity to process emotions also affects their short-term memory.

In a study published in *Psychology and Aging*, Mikels, along with colleagues from Stanford University and the University of Michigan, gave older adults a typical short-term memory test, asking them to remember images and numbers shown on a computer screen. He found the expected short-term memory deficits—until he showed the participants emotionally charged photographs.

“They were looking at things like puppies, angry dogs, beautiful landscape scenes, and spiders,” Mikels said. “We saw no age deficit when we asked the participants to hold emotional information in their minds.”

Participants still weren't as good at remembering factual details about the pictures, but they showed marked improvements in recalling the emotional content. They also

showed improved ability to remember positive images over negative ones. (Younger adults, conversely, were better at remembering the negative images.)

“We've coined this phenomenon ‘the positivity effect,’” Mikels explained. “Researchers use that term to describe a pretty large body of research that shows a developmental shift away from preference for negative information and toward preference for positive information as people age.”

Since that basic discovery, Mikels is investigating how improved recall of positive emotions can help older adults in everyday life.

In a recent study published in the journal *Psychology and Aging*, Mikels worked with graduate students Andrea Shamaskin and Andrew Reed to create a series of brochures about preventive health care. Complementary brochures used the identical pieces of information, but some framed issues in a negative light, while others framed them in a positive light. For example, one pamphlet explained that if skin cancer is detected early, chances of recovery are improved. Another explained that if skin cancer is detected later, chances of recovery are slimmer. The study then tested how well participants remembered the information presented.

“Older adults showed vastly better memory for the positive statements rather than the negative statements,” Mikels explained. “Based on these early results, it seems thinking about the positivity effect could go a long way toward improving the lives of older adults.” ● ● ●

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