

Emotion Regulation in Older Age

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Derek Isaacowitz speaks while
James Gross and Mara Mather look on

We tend to think that as we get older everything goes downhill, from backs that creak to more frequent “where did I put my keys?” moments. But, following the pioneering work of APS Fellow and Charter Member Laura Carstensen, a cadre of researchers has documented a paradoxical effect of aging — that despite physical and cognitive decline, older adults seem to be more attuned and responsive to positive emotions than are younger people. A symposium sponsored by the National Institute on Aging and chaired by APS Fellow and Charter Member James Gross (Stanford University) and featuring Derek Isaacowitz (Brandeis University), Mara Mather (University of Southern California), and Heather Urry (Tufts University), explored exciting new ways to understand this so-called “positivity effect” and how to harness it for better well-being.

The field of aging research has matured to the point where scientists now employ cutting-edge tools to investigate the positivity effect at the physiological level. For example, Isaacowitz uses eye tracking technology to study attentional biases that may facilitate individual and age differences in emotion regulation, whereas Mather and Urry employ fMRI to understand age-related changes in emotional regulation. Using these tools to first establish that the positivity effect is in fact real, the researchers then turned to the question of whether individuals use this effect to actually change how they’re feeling.

After finding that older adults looked more often at happy and neutral faces and turned away from negative faces in a controlled lab setting, Isaacowitz became interested in the question of whether this preference for positive stimuli is a constant one. Interestingly, he found that this pattern was strongest only when the participants were in a bad mood, which wasn’t the case in younger individuals. Isaacowitz suggested that these adults activate a positive looking preference in order to regulate their mood. Whether this makes them ultimately feel better is another beast altogether and the data aren’t clear-cut: It helps some individuals some of the time. The research now needs to see how malleable these looking patterns are, and if we can use them to facilitate better emotion regulation and ultimately health in a wider swath of the population.

Another way to tackle this same problem is to take a neurological perspective on older adults’ emotional attention and memory. One theory posits that the positivity effect is actually due to reduced amygdala function in aging, but Mather argued that it could alternatively be active emotion regulation. Although older adults do experience neural decline, Mather’s research shows that they are more likely than younger adults to recruit cognitive control processes to regulate emotion and, ultimately, to diminish negative information. For instance, the positivity effect reverses in distracting situations (e.g., keeping track of tone sequences while looking at and recalling pictures), in which case older adults actually remember a higher proportion of negative information than younger people do. This suggests that amygdala decline cannot be responsible for older adults forgetting negative information, as they show a

negativity bias when distracted. Mather echoed Isaacowitz's suggestion that older adults can use cognitive resources to help direct their attention and memory towards information that will help them regulate their emotions in a positive way.

As studied by Isaacowitz and Mather, paying attention to and remembering positive information more than negative information is just one way that we can regulate our emotions. Another way is "cognitive reappraisal," changing one's interpretation of emotion-triggering events (e.g., reminding oneself that things will turn out OK). This method of emotion regulation is tough to do because it requires cognitive control, the ability to engage in goal-directed behavior and resist interference from goal-irrelevant distractions. Cognitive control is carried out by specific areas of the prefrontal cortex (PFC). Using a task that makes everyone pay attention to emotional information in the same way, Urry's research shows that the pattern of reappraisal-related activation in the PFC is less pronounced in older people than in younger people and that older people were less able than younger people to down-regulate their experience of negative emotion. According to Urry, this suggests that the higher levels of well-being generally observed in older adults likely stem in part from emotion-regulatory processes that require less cognitive control than cognitive reappraisal, like paying greater attention to positive information in the environment.

What is abundantly clear from this research is that emotion isn't on a parallel track with cognitive decline later in life and that it interacts with our environments quite differently in older adults than it does in younger adults. The neurological aspects of emotional functioning afford great opportunities for further research. As symposium discussant and past APS President Robert Levenson (University of California, Berkeley) summarized, "The field is struggling with the question of how aging impacts various parts of the brain and the implications for a wide array of human functioning. We know the frontal lobes are particularly vulnerable to aging, but the leap from the loss of particular neurons to complex emotional behaviors is fraught with peril and complexity." Levenson also reminded the audience that age itself is a very messy construct and that individual differences abound. However, one tantalizing conclusion that we can draw from this symposium is that as we age, we can become better stewards of our emotional lives.