

# Up-and-Coming Voices: Aging and Lifespan Development

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As part of the 2021 APS Virtual Convention, researchers had the opportunity to connect with colleagues and present their work to the broader scientific community in 15-minute flash talks. In this collection, we highlight talks by students and early-career researchers related to aging and development over the lifespan.

## Age-Related Changes in Discounting and Everyday Behaviors With Delayed and/or Probabilistic Consequences

***Yu-Hua Yeh*** (*Virginia Polytechnic Institute and State University*), *Joel Myerson*, and *Leonard Green* (*Washington University in St. Louis*)

### What did the research reveal that you didn't already know?

A common view is that human decision-making improves with age. However, the behavioral evidence for this putative change from studies with individuals in adulthood is not robust. The mixed findings

may be due to methodological differences across studies, the types of outcomes used, and sample size (i.e., statistical power). One area of decision-making that is of significant importance involves intertemporal choice studied within a discounting framework in which individuals are asked to choose between a smaller immediate gain and a larger but delayed gain and between a smaller certain gain and a larger but uncertain, or probabilistic, gain. Choosing the smaller immediate gain and the larger uncertain gain is considered to be representative of impatience and risk-taking, respectively. Our research extended this approach by including choices involving losses as well as investigating age-related changes in everyday behaviors that involve delayed and/or probabilistic consequences. We found that the decrease in impatience and risk-taking with age was more prominent when the decision-making involved negative outcomes. That is, the improvement in decision-making across the lifespan—an increase in ‘prudence’—was largely apparent when outcomes involved losses.

**How might your findings improve outcomes related to aging or, more generally, improve our understanding of lifespan development?**

Our findings highlight the importance of considering decisions involving losses when studying changes in the decision-making process with age. Moreover, our findings suggest that the framing effect—a systematic influence on decision-making based on framing expected outcomes as gains or losses—may grow larger as people get older. Although the predicted relation requires further research, understanding changes in decision-making processes across the lifespan could facilitate the development of interventions that help individuals to make better life decisions.

## **To Believe or Not to Believe: How Claimant Age and Perpetrator Status Affect White People’s Perceptions of Discrimination Claims**

*Amber D. Williams (California Polytechnic State University) and Dorainne Levy (Indiana University)*

**What did the research reveal that you didn’t already know?**

Our study sought to understand how White adults perceive Black people who claim they have experienced racial discrimination in the face of a job- or academics-related rejection. Specifically, we wanted to understand how perceptions differed depending on the age of the claimant (child, adolescent, or adult) and the role of the perpetrator (peer or authority figure). We have run two studies on this issue so far. In the first study, we found that adults were seen less positively than children and adolescents when claiming to have experienced racial discrimination. We sought to replicate these findings in a second study in which the discrimination scenarios were more uniform in order to rule out potential confounds. Our second study did not replicate the first study’s findings. We hypothesize that this may be because the adult in the second study was a 22-year-old college student rather than an adult with a professional job. We are hoping to replicate the results from the first study by having the adult claimant be someone who has a job and is in their 30s.

**How might your findings improve outcomes related to aging or, more generally, improve our understanding of lifespan development?**

If our results from the first study replicate, our findings will have several implications for understanding how racial discrimination claims are treated in professional settings. Adults who are discriminated against in job settings may file lawsuits or speak to their human resources department. If they are perceived negatively for making such claims, they may be punished in a number of ways, including being passed up for promotions and opportunities, thus perpetuating a cycle of racial discrimination that may have consequences for one's career opportunities, wealth, etc. However, it is also possible that age is not a factor in people's perceptions, as we found in the second study. In that case, future research should examine mechanisms that may improve perceptions of people who discuss racial discrimination at various points in their lives and in various settings.

## **The Effect of Aging on Working Memory: Longer Execution Times, Increased Interference, and More Serial Processing**

*Yiyang Chen, Trisha Van Zandt, and Mario Peruggia (The Ohio State University)*

### **What did the research reveal that you didn't already know?**

In this project, we used computational modeling to gain a better understanding of the differences between older and younger adults in working memory updating. One of the most interesting differences that we found was the level of preactivation used in memory processes. In working memory updating, the participants need to store a series of information pieces in working memory, update some information when needed, and retrieve particular pieces of information out of the series based on the requirement.

We found that younger adults may be able to pre-activate the series of information by retrieval and simply read out the target information from the pre-activated batch upon requirement. In contrast, older adults may be more likely to perform the memory processes serially with less use of pre-activation: see the requirement, retrieve the target information, and respond. Therefore, older adults may not be able to execute the memory processes as quickly and efficiently as younger adults.

### **How might your findings improve outcomes related to aging or, more generally, improve our understanding of lifespan development?**

Based on our findings, it may be worthwhile to further investigate if older adults commonly adopt a different style of information processing from younger adults. If so, it may be helpful to tailor specific information presentation formats to suit the processing styles of older adults. For example, presenting the information from social media in a piece-by-piece fashion to older adults, instead of the usual form of presenting it in clusters.

## **Perceptions of Love and Sex Predict Relationship Duration and Satisfaction Among Young and Middle Aged Greek Adults**

*Anthi Argyroudi (Aristotle University of Thessaloniki), Konstantinos Christos Daoultzis, Panos Kordoutis (Panteion University of Social and Political Science), and Elvira Masoura (Aristotle University of Thessaloniki)*

### **What did the research reveal that you didn't already know?**

Perceptions of love-to-sex associations may change across the lifespan while influencing relationship satisfaction and longevity. Sexuality is typically perceived either as an outcome or a prerequisite of love. According to a third perception, love and sex work in tandem. In 2002, Susan S. and Clyde Hendrick proposed four schemes organizing such perceptions: “love is most important,” “sex demonstrates love,” “love comes before sex,” and “sex is declining.”

Contrary to lay understanding, our research, with 631 Greek participants, found no difference between the groups of young (18–40) and middle-aged adults (41–65) in the four schemes, excluding middle-aged adult women, who stated that “sex is declining” more often than young women.

We also found similar relationship satisfaction predictors across age groups. Stronger perception that “sex is declining” predicted less satisfaction, whereas stronger perceptions that “love is most important” and “sex demonstrates love” predicted more satisfaction. Within groups, satisfaction increased with age among younger people but to a lesser extent within the older age group.

One common predictor of relationship longevity across age groups was “sex is declining,” with people in longer relationships more likely to report this perception. For young adults, “love comes before sex” and increased age was a positive predictor of relationship longevity. Young men were more likely to report shorter relationships.

### **How might your findings improve outcomes related to aging or, more generally, improve our understanding of lifespan development?**

Our findings challenge the stereotype that sex is more important than love to younger adults but not to older adults; we found no difference. Sex and love worked in tandem to yield satisfaction irrespective of age group. Sexual passion may coexist with companionate love in satisfying relationships. Although sex was found to be a prerequisite of relationship satisfaction and longevity, love is still important for relationship longevity among young adults. Interventions related to relationship satisfaction and longevity among young adults should emphasize that companionship built upon sex enhances satisfaction. Middle-aged adult women should be encouraged to explore more aspects of sexual satisfaction in their relationships, and young adult men to appreciate the contributions of longevity to companionate love.

## **Reward-Motivated Memory Processes and Their Underlying Neural Mechanisms Change With Age**

*Alexandra Ochoa Cohen (New York University), Morgan M. Glover (New York University), Camille V. Phaneuf (University of Michigan), Lila Davachi (Columbia University), and Catherine Hartley (New York University)*

**What did the research reveal that you didn't already know?**

Research in adults has shown that reward enhances memory through mechanisms involving both subcortical and cortical brain areas, both during and after learning. Although there is a substantial amount of evidence indicating that both reward processing and associative memory change across development, few studies have examined how reward influences long-term memory formation across development from childhood to adulthood. We found enhancements in components of reward memory that were similar across all ages as well as specific to adolescence. We also examined brain activity using fMRI during and after reward association learning. We found that memory enhancements were linked to brain mechanisms that varied with age both during (“online”) and after (“offline”) learning. Specifically, we found evidence for potential age-related shifts from offline subcortical to online prefrontal cortical circuits supporting reward-motivated memory. These findings are consistent with theories of brain development suggesting that connections between subcortical brain areas mature earlier than connections between cortical and subcortical brain areas; moreover, they show that these developmental changes may have consequences for reward-related memory formation.

**How might your findings improve outcomes related to aging or, more generally, improve our understanding of lifespan development?**

Our results highlight dynamic developmental changes in the brain mechanisms through which reward-related information is prioritized in memory from childhood to adulthood. Because memories guide our thoughts and actions, this work provides a foundation for future work examining how reward memories influence our behaviors across development. This area of research has the potential to inform learning strategies that can be leveraged to help adaptively shape memories for experiences and support healthy development.