



## Consumer Judgment

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### Introduction

Previous research indicates that two processing systems support decision making – the automatic/affective system and the controlled/deliberative system (e.g., Kahneman, 2003; Sanfey & Chang, 2008). Memory-based value judgments may depend on both systems, but it is presently unclear if one system is ideally suited to support judgments that rely on integrating recently learned affective information. The current fMRI study examines the involvement of these two neural systems for value judgments requiring either simple retrieval of previously learned affective information or retrieval with information integration.

In addition, the brain regions associated with deliberative processing are particularly affected by normal age-related decline, while regions primarily associated with emotion processing face less decline (Raz and Rodrigue, 2006). These asymmetrical patterns of decline in deliberative versus affected systems is likely to contribute to age differences in both decision-related processing and decision behavior. In support of this, age differences in financial decisions appear to be associated with neurofunctional declines that affect basic information processing abilities (Agarwal et al., 2007). Furthermore, a meta-analysis indicated decreased information search during decision making in older adults (Mata & Nunes, 2010) – a behavior that can help to keep task demand low when cognitive resources are limited. The current study will directly examine the impact of memory dependence and emotional information on age differences in neural processing and behavioral biases during a consumer judgment task. Through this approach, the current study will help us understand how characteristics of decision contexts and age-related changes to brain structure and function may interact in normal human aging.

### Experimental

Stimuli included product images with consumer review excerpts from an online shopping website. First, participants rated the emotional valence of consumer reviews. Products were presented with a single consumer review or with two different reviews on non-consecutive trials. Then, participants estimated the average consumer rating for each product from the consumer reviews presented. Judgment accuracy was determined from the similarity between participants' average valence rating(s) for review comments and their estimations of the average consumer rating for each product. The study used the UF McKnight Brain Institute, Advanced Magnetic Resonance Imaging & Spectroscopy Facility 3T Philips Achieva scanner.

### Results and Discussion

Parametric analysis of value processing showed that older compared to younger adults exhibited less robust brain activity in sensory regions when making judgments from memory. Within and across age groups, retrieval demand was associated with activation of fronto-parietal regions that were notably distinct from regions associated with value judgments. Performance on the product attribute memory task was associated with increased activity in the dorsolateral prefrontal cortex during the judgment phase; however, participants' value-related activation was not modulated by their level of attribute-memory.<sup>1</sup>

\*Note: Data collection just completed and a manuscript is in preparation.

### Conclusions

Taken together, these results indicate that episodic encoding and retrieval demand can affect brain regions recruited during memory-dependent value judgments, but the network of regions associated with value judgments themselves function relatively independent of memory components. In addition, although the neural correlates of value processing are affected by age, dissociations in memory-related components of value judgments appear to be maintained in healthy aging.

### Acknowledgements

A portion of this work was performed at the National High Magnetic Field Laboratory, which is supported by National Science Foundation Cooperative Agreement No. DMR-1157490 and the State of Florida.

Funding for this study was provided by Dr. Lighthall via her faculty start-up account.

### References

1. Lighthall, L. et al. (2018), Society for Neuroscience Annual Meeting. San Diego, CA.