The organizing committee will select papers for presentation at the symposium based on extended abstracts (one page, single spaced). The abstract should state the study’s objectives, briefly describe the methods, summarize the results obtained and state the conclusions. The body of the abstract should be no longer than 2300 characters, including punctuation (not spaces). All abstracts should be emailed to[isdn15@temple.edu](mailto:isdn15@temple.edu" \t "_blank) by 5 pm EST on Mar 2, 2015. Decisions about the abstracts will be communicated to the authors by Mar 23, 2015. Selected papers would ideally not be published prior to the symposium.

**Title:** Preference consistency relies on hippocampal function: Evidence from mediotemporal lobe epilepy

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**Abstract:**

If preferences are often constructed (Lichtenstein & Slovic, 2006) memory processes must play a major role in this construction. Both memory encoding and retrieval influence judgment and choice in multiple ways (Weber & Johnson, 2009).The role of memory representations of past experience in choice can be demonstrated by showing that choice is impaired in individuals known to have memory encoding or retrieval deficiencies. Thus we ask whether patients with hippocampal sclerosis are impaired in their preference construction.

We test this hypothesis with a series of binary choices among familiar food products. Our measure of choice quality is preference transitivity If a person chooses A over B, and B over C, transitivity requires that they pick A over C (Samuelson, 1938). One reason for focusing on transitivity is that it is central to the General Axiom of Revealed Preference and is a necessary and sufficient condition for value maximization (Houthakker, 1950). Our task examines binary choices among 20 common candy bars. In a control task, respondents indicated which number was larger in pairs of numbers. In both cases our dependent measure was the transitivity of (preference or magnitude) judgments. 31 participants with MTL lesions a control group (n=30) with extratemporal lesions and a healthy control group (n=30) completed the task.

Patients with hippocampal sclerosis showed an increased percentage of intransitive choices compared to the two control groups in the preference task compared to the control task (means for preference task: MTL: 6.07%; ETL: 3.37%; CON: 2.75; means for control task: MTL: 0.50 %; ETL: 1.00%; CON: 0.14%, ; linear mixed model with orthogonal contrasts group task interaction b = – 0.06, t(91) = –2.98, p = 0.004). The difference between degree of intransitivity between the preference and control task did not differ significantly between the two control groups (b = – 0.04, t(91) = 0.97, p = 0.333). The ratio of compromised hippocampal volume to total volume was significantly correlated with the percentage of intransitive choices (spearman-rho = 0.761; p<0.001; n=16). Further analyses ruled out alternative hypotheses on explicit declarative memory deficits, speed-accuracy tradeoff and preference for specific items.

Our results suggest a critical role for the hippocampus as the input carrier into the construction of the value of choice options. Most decisions require the construction of value based on past experience. A better understanding of both internal and external inputs to preference construction processes and their aggregation and comparison will allow us to better comprehend and model how the brain calculates value and makes wise choices.