

## Research Statement

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My research has two general strands, one concerning the nature and significance of memory and the other concerning implicit learning. Memory and learning are of course related, and I defend complementary views of them. But I approach them from distinct disciplinary perspectives: I am finishing a philosophical dissertation on memory while also working as a psychology researcher in Washington University's Reading and Language Laboratory.

Philosophers and psychologists who study memory and learning share an assumption: explicit is better. It is often thought that memory works best when one has stored fixed and detailed representations of past experiences. Similarly, it is easy to suppose that learning will be most successful when it involves explicit instruction and deliberate acquisition on the part of the learner. Each of these characterizations faces regress challenges, as well as an accumulating body of empirical evidence suggesting that remembering is often constructive rather than preservative and learning is often as, if not more, effective when it proceeds implicitly rather than explicitly. Theories of memory and learning must address these challenges, and both strands of my research are structured toward this general aim. Thus far, I have pursued these projects independently and so discuss them under separate headings below.

### Memory

Memory is a capacity often invoked in philosophical discussion (e.g., epistemology, personal identity, agency, moral responsibility). These appeals reveal widespread commitment to what I term the *Archival View of Memory*, which includes three claims: 1) memory aims at preservation, 2) remembering involves reviving stored representations of particular past experiences, and 3) memory error is forgetting, the loss or decay of stored representations. My research explores the internal consistency of this view of memory as well as its coherence with the emerging picture of memory as a reconstructive process.

In the dissertation, I focus on the second claim of the Archival View, asking whether an account of memory requires memory traces as stored representations. I argue that memory is a causal process and the memory trace is the label given to the specific form of causal connection involved in remembering. While this affords a limited role to memory traces, I deny that there are no compelling reasons for viewing these causal connections as stored representations. Instead, I defend a Capacity View of Memory: a memory trace is a retained capacity to represent the original experience, which manifests in the right retrieval conditions.

The account of memory traces I develop in the dissertation suggests several lines of work that I am eager to pursue. First, I want to develop an account of misremembering and an account of the function of memory that is compatible with the nature and prevalence of this error. Misremembering, where memory representations cobbled together from multiple sources, challenges claims one and three of the Archival View. Cases of misremembering are not easily explained by the sharp remembering/forgetting dichotomy of the Archival View: they are

inaccurate recollections of the past and yet they are only explicable if one assumes that the person has retained the past experience. The inability to accommodate cases of misremembering challenges the characterization of memory at work in the Archival View: If memory aims at preservation, why are our memories so rarely preserved? Second, I want to revisit areas of philosophy in which memory has often been invoked, especially debates over the retention of knowledge and nature of personal identity. How do challenges to the Archival View impact the claim that memory is retained knowledge and the use of memory as a criterion for personal continuity over time?

### **Learning**

My research in the Reading and Language Lab centers on how children learn about the nature of written language. The correspondence between the sounds and symbols of language is transparent to literate adults, but learning about this relationship requires a degree of metalinguistic awareness that is difficult for young children. In this respect, written language acquisition resembles other metacognitive challenges children face during early childhood, such as the acquisition of theory of mind. Under the direction of Rebecca Treiman, the Reading and Language Lab studies ways that those learning to read and write might display implicit sensitivity to patterns in English and other written languages.

Although much of the research concerning children's knowledge of written language focuses on explicit instruction in formal school settings, my research explores the possibility that young children acquire information about the surface and deeper features of written language implicitly through everyday conversations with their parents. Parent speech can be informative about the nature of written language, for example, if it highlights similarities between spoken and written language and contrasts print from other symbolic systems that children are familiar with, such as pictures and numbers. I survey large databases of parent-child conversation transcripts, searching for various syntactic and semantic markers by which parents and children could mark these similarities and differences. Using multilevel statistical models, I determine whether these patterns are influenced by various factors, such as the child's age and the family's socioeconomic status. I am currently working to expand this project through collaborative work with researchers from the Language Development Project at the University of Chicago. In these studies, we are asking whether the same conversational patterns emerge and, most importantly, whether variations in these patterns are predictive of children's later literacy achievement. We are encouraged in this line of inquiry by studies showing a similar relationship between the frequency of math talk in early childhood years and later math performance.

In future papers, I would like to explore some philosophical implications of this research. First, I intend to write a paper addressing the relation between implicit learning and concept acquisition suggested by these and similar results. Second, I want to compare the developmental trajectory of print awareness and theory of mind to determine how these results impinge upon theories of cognitive architecture and metacognitive development.