Previous research has characterized source retrieval as a thresholded process, which fails on a proportion of trials and leads to guessing, as opposed to a continuous process, where response precision varies across trials but is never zero. The thresholded view of source retrieval is largely based on the observation of heavy tailed distributions of response errors, thought to reflect a large proportion of “memory-less” trials. In this study, we investigate whether these errors might instead reflect systematic intrusions from other list items which can mimic source guessing. Using the circular diffusion of decision making, which accounts for both response errors and RTs we found that intrusions account for some, but not all, errors in a continuous-report source memory task. Additionally, we found that intrusion errors were more likely to come from items studied in nearby locations and times, but not from semantically or perceptually similar cues. Our findings support a thresholded view of source retrieval but suggest that previous work has overestimated the proportion of guesses which have been conflated with intrusions.

*Keywords:* source memory, intrusion, swap error, contiguity, response times