

Eye movement and autobiographical memory study: the difference between talking and thinking a memory. By Faqui Assiya

Abstract

During our study, we were interested in the difference about eye movements between verbalization and the thought of an autobiographical memory. Previous studies only researched eye movements during autobiographical memory aloud. Since no study has considered thinking in memory until now, we proposed one to compare eye movements between verbalization and thinking of an autobiographical memory. We asked 33 participants, (20 women and 13 men, *M age* = 23.50 and *S age* = 6.01), to recall a personal experience from the past in a precise and specific way for two minutes. First, participants had to say it out loud and then silently, while we were recording their eye movements through the eye-tracker glasses. Next, we did statistical analysis by comparing eye movements between verbalization and thinking (number and duration of saccades, number and duration of fixations), using a paired group T-Student. The results showed that during the verbalization condition of a memory, the fixations were fewer and shorter and the saccades were fewer but longer than in the thought condition. Thus, there are more eye movements in thinking than in verbalizing a memory. Our results show that when we think, we recall autobiographical memories in their specificity. On the other hand, during verbalization, the eye movements have more extensive saccades that imply a greater search for visual details and probably more reliving. In thinking, we can say that there are autobiographical memories, however different from those in verbalization. This difference can be explained by a different involvement of each condition (« thinking » and « talking » the autobiographical memory) in the control processes.

Keywords: Eye movements, Autobiographical memory, Verbalization, Thought, Visual imaging, Reviviscence, Phenomenologies.