

Young Versus Old: Who Performs More Consistently?

August 05, 2013



Sometimes it's just not your day: First you can't remember where you put your car keys, then you forget about an important meeting at work. On days like that, our memory seems to let us down. But are there actually “good” and “bad” days for cognitive performance? And does age make a difference in the day-to-day variability in cognitive performance?

Florian Schmiedek, Martin Lövdén, and Ulman Lindenberger examined these questions using data from the COGITO Study, an investigation conducted at the Max Planck Institute for Human Development in Berlin. Their results are published in [*Psychological Science*](#).

The new findings reveal that while variability in cognitive performance does indeed exist, our personal impression that a whole day is either good or bad is often wrong. Rather, most performance fluctuations occur within shorter periods of time.

“True variability from day to day is relatively low,” says Schmiedek.

The data suggest that both day-to-day and within-day variability in cognitive performance are particularly low in older adults when compared to younger adults.

Testing over 200 younger (ages 20-31) and older (ages 65-80) adults on twelve different tasks revealed significant age differences. These tasks — testing perceptual speed, episodic memory, and working memory — were repeated across 100 days, enabling researchers to assess the participants' learning improvements as well as their day-to-day performance fluctuations.

In all nine cognitive tasks assessed, the older group actually showed *less* performance variability from day to day than the younger group. The older adults' cognitive performance was thus more consistent across days, and this picture remained unaltered when differences in average performance favoring the young were taken into account.

“Further analyses indicate that the older adults' higher consistency is due to learned strategies to solve the task, a constantly high motivation level, as well as a balanced daily routine and stable mood,” explains Schmiedek.

The findings are of importance for the debate about older people's potential in the workplace.

“One of our studies in the car production industry has shown that serious errors that are expensive to resolve are much less likely to be committed by older staff members than by their younger colleagues,” says Axel Börsch-Supan, another researcher studying productivity of the labor force in aging societies at the Max Planck Institute. “Likewise, in other branches of industry that we have studied, one does not observe higher productivity among the younger relative to the older workers.”

“On balance, older employees' productivity and reliability is higher than that of their younger colleagues,” concludes Börsch-Supan.

This research was supported by the Max Planck Society and an award from the Alexander von Humboldt Foundation donated by the German Federal Ministry of Education and Research.