

Not all mind wandering is created equal

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Mind wandering—sometimes seen as daydreaming or "zoning out"—has been shown to facilitate creative thinking and problem solving, but in the wrong context it can become distracting or even dangerous. Inattentive students can get behind in class, and drivers who aren't paying attention to the road are far more likely to end up in accidents. And for some professions, like surgeons or air traffic controllers, zoning out on the job can lead to disaster.

Most research looking at [mind wandering](#) has assumed that all mind wandering is inherently unintentional, but findings from a new study suggest otherwise: People frequently report zoning out on purpose, and the causes of this "intentional" type of mind wandering can differ from the causes of unintentional mind wandering.

The findings are published in *Psychological Science*, a journal of the Association for Psychological Science.

"In recent years, there has been an enormous increase in the number of studies examining mind

wandering," explains researcher Paul Seli, a post-doctoral fellow in the department of psychology at Harvard University and lead author on the study. "The general assumption has been that people's experiences of mind wandering exclusively reflect their attention unintentionally drifting away from a [task](#). Based on our everyday experiences, however, it seems that people frequently intentionally mind-wander."

To learn more about the underlying causes of intentional and unintentional mind wandering, Seli and University of Waterloo colleagues Evan F. Risko and Daniel Smilek measured rates of these two types of mind wandering in 113 university students as they completed sustained-attention tasks that varied in difficulty.

"We suspect that when people are completing an easy task, they may be inclined to deliberately disengage from the task and engage in mind wandering. This might be the case because easy tasks tend to be rather boring, or because people realize that they can get away with mind wandering without sacrificing performance," the researchers explain.

"Conversely, when completing a difficult task, people really need to focus on the task in order to perform well, so if they do mind-wander, their mind wandering should be more likely to occur unintentionally."

Participants were instructed to press the space bar on a computer keyboard each time they saw specific target numbers appear on screen (i.e., digits 1-2 and 4-9). Half of the students completed an easy version of this task, where the numbers always appeared in sequential order; the other participants completed a challenging version of the task where the numbers always appeared in a random order.

Throughout the experiment, participants were prompted to mark their current mental state as being on task, intentionally mind wandering, or

unintentionally mind wandering (e.g., thinking about what to eat for dinner or upcoming plans with friends).

The overall rate of mind wandering was the same for both groups, but critically, there were significant differences in rates of intentional and unintentional mind wandering, depending on how challenging the task was. When participants completed the easy task, which was designed to be incredibly boring, they reported more intentional mind wandering. In contrast, participants completing the challenging task reported more unintentional mind wandering.

"These results challenge the common view that all mind wandering is unintentional," Seli says. "Importantly, this result indicates that intentional and unintentional mind wandering are unique cognitive experiences that sometimes behave differently. In turn, this suggests that researchers ought to distinguish between these two unique subtypes of mind wandering in future work."

Seli and colleagues are interested in continuing their research on the potential differences in the underlying causes of unintentional and intentional mind wandering. A better understanding of why people's attention meanders has several practical applications, including finding ways to keep students focused during class.

"We are interested in examining the causes and consequences of unintentional and intentional mind wandering in educational settings," they write. "Ultimately, we would like to develop methods with which students can reduce the occurrence of these two unique types of mind wandering so that they can more effectively learn the course material."

More information: P. Seli et al. On the Necessity of Distinguishing Between Unintentional and Intentional Mind Wandering, *Psychological Science* (2016). [DOI: 10.1177/0956797616634068](https://doi.org/10.1177/0956797616634068)

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