

# Why the brain can be blamed for children unknowingly being left to die in a hot car

March 5 2019

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More than 50 children died in hot cars in 2018, making it the deadliest year on record. Many of the cases involve parents who unknowingly left a child behind, often for an entire day. University of South Florida Psychology Professor David Diamond has studied this phenomenon for over a decade and has served as an expert witness on many high-profile

cases. In his latest publication, he describes the psychological and neural basis of how responsible people make such fatal errors.

His study, published in *Medicine, Science and the Law*, explains how the brain can fail to remember to do something in the future (prospective memory). Examples of prospective memory are remembering to call a friend after lunch or to stop at the store on the way home from work, as well as prospective memory errors which result in a loss of life, in airplane crashes and when children are forgotten in cars. Diamond described how the frontal and parietal cortices allow us to use stored information to make a plan and then to execute that plan in the future. The hippocampus is critical for consciously remembering to retrieve the memory and that the task was completed. The [basal ganglia](#) enable us to go into an "autopilot" mode, in which we follow a well-traveled route, but in the process, lose awareness of the plan to take the [child](#) to daycare.

According to Diamond, as someone goes into an 'autopilot' mode, habitual behavior, such as getting ready for work and driving directly to the office on a typical day, can cause a parent to lose awareness of the child in the car. Extensive research has shown that competing factors can cause the execution of a plan to fail rapidly, even in a matter of seconds. Examples of factors that cause [prospective memory](#) to fail include stress, a disrupting [phone call](#), and sleep deprivation. A lack of visual or verbal reminders, like a sleeping child or a misplaced diaper bag, increases the chances for a person to lose awareness of the child in the back of a car.

Diamond's study also included research on [false memories](#), in which people create strong memories of events that were implied but did not happen. In the cases he has handled, the brain somehow creates the false memory that the parents had dropped off their children, as planned, at daycare. Diamond recalls the horror conveyed by the parents he has interviewed - 'they return to their car with the plan to pick their child up

at daycare, only to find the child had suffered from heatstroke during the day.'

Many of the parents that forget children in cars have been charged with manslaughter, and even murder. Diamond has worked with defense attorneys and legal scholars to address the legal ramifications for child deaths in hot cars. His study included a review of an absence of mens rea, in which harm caused by an individual without intent or awareness, should negate prosecution of cases where [parents](#) and caretakers unknowingly and unintentionally leave a child in a car. That's because neuroscience research confirms that when [brain systems](#) compete the subconscious (habit) neural system can overpower the conscious mind when it comes to maintaining awareness of a sleeping child in the back of a car.

"The brain [memory](#) systems that fail when people forget [children](#) in cars are the same as those systems that cause us to forget to shut off the headlights when we arrive at a destination," said Diamond. "Just as auto manufacturers have built-in systems that shut off headlights, we must have built-in systems that detect a forgotten child in a car."

Many efforts are underway to find a solution, such as proposed federal legislation that requires vehicles to alert drivers when a child is left in the car.

**More information:** *Medicine, Science and the Law*, [DOI: 10.1177/0025802419831529](#)

Provided by University of South Florida

Citation: Why the brain can be blamed for children unknowingly being left to die in a hot car

(2019, March 5) retrieved 5 May 2024 from <https://medicalxpress.com/news/2019-03-brain-blamed-children-unknowingly-left.html>

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