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Brittney Griner was aware that marijuana, in any form, was illegal in Russia. But in her haste in packing for her trip, she forgot that cartridges with cannabis oil were in her carryon bag, resulting in her incarceration in a Russian prison. Police officers have forgotten their loaded weapons in public bathrooms, where children or criminals can find them. Airline pilots have forgotten to set the wing flaps properly, resulting in plane crashes and the loss of human lives. Finally, and on a personal note, 15 years ago, I was driving with my wife and my month-old granddaughter. When we arrived at our destination, I exited the car and was ready to walk away, when my wife asked me what I had forgotten. I had no idea what she was referring to because I had completely lost awareness, I had forgotten, my grandchild was in the back seat of the car. In all these cases, responsible people, unknowingly and unintentionally, have committed memory failures that can result in a catastrophe.

We are here today because a memory failure can result in a child suffering from organ damage or death. Loving and attentive parents, grandparents and caretakers, unknowingly and unintentionally, lose awareness of a child in their car, which can result in the child dying of heatstroke.

The knee-jerk reaction to learning that a child has died of heatstroke after having been forgotten in a car is to accuse the driver, usually the parent, of negligence. However, this tragedy has occurred hundreds of times to loving and attentive parents and caretakers, who would never consider doing anything to cause harm to a child.

I have been studying this phenomenon for the past two decades from a neuropsychological perspective. Forgetting a child in a car is called a failure of prospective memory, which is a failure to remember to do something in the future. Prospective memory failures can be relatively benign, such as forgetting to stop at the store on the way home or leaving a coffee cup on the roof of your car.

In each of these examples of prospective memory failure examples, a person first makes a plan, such as to bring a child to daycare. The person uses their frontal cortex to make this plan. Then they begin a drive, one they have traveled on many times before, with or without the child. But when someone follows a habitual behavior, they can go into what is referred to as 'autopilot' mode, which is when we do something automatically, without thinking about it, such as driving directly to work on a typical day without the child. These habitual behaviors are controlled by a powerful brain habit memory system, called the basal ganglia, which can override our frontal cortex from engaging in the plan. Our frontal cortex is responsible for reminding the parent of the child in the car (or to set the wing flaps properly, or to remember the gun in the bathroom, or to stop at the pharmacy for a prescription). The frontal cortex, which is part of our conscious memory system, competes with the basal ganglia, our habit memory system, which has the goal of getting us from one location to our destination.

Research has shown that competing factors can cause prospective memory (our frontal cortex) to fail rapidly, even in a matter of seconds. Examples of factors that cause

prospective memory to fail include stress and sleep deprivation, both of which are very common for parents caring for a young child. The absence of visual or acoustic reminders from a quiet child out of sight increases the chances a person will lose awareness of the 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. During the drive, we lose awareness that our headlights are on, and when we exit the car, we forget to shut the headlights off. This is a potentially hazardous memory failure since leaving the headlights on can drain the battery, leaving a person stranded in a potentially dangerous location. Just as auto manufacturers have built-in systems that shut off the headlights, we must have automated systems that detect the presence of a child in a car.

Therefore, it is important for people to understand that the brain is a magnificent, but flawed, memory processor. This means that the best parents and caretakers can unknowingly and unintentionally lose awareness of a child in the car. Once people accept that possibility, they need to take steps to be sure they are reminded of the child in their car when they arrive at their destination. That reminder can be a low-tech approach, which is to put something unique to the child's presence in the front of the car as a reminder that the child is in the back. A far superior approach is that we must have technology in every car to alert a driver to a child's presence every time the driver exits the vehicle.