

Op-ed: Can parents really forget kids in cars?

By David Diamond, special to HLN Updated 4:49 PM EDT, Mon June 30, 2014



NEED TO KNOW

- David Diamond is a neuroscientist and frequent consultant on Forgotten Baby Syndrome cases
- He says parents forget kids in cars when their memory systems clash
- He also explains how flawed memory could have played a role in Justin Ross Harris' case

 Editor's note: [David Diamond, Ph.D.](#), is a professor of psychology, molecular pharmacology and physiology and the University of South Florida and a frequent consultant on Forgotten Baby Syndrome court cases.

On June 18, Justin Ross Harris had breakfast at Chick-fil-A with his 22-month-old son Cooper. Harris claims he buckled him into his car seat, and in the half-mile drive to work, forgot Cooper was in the car. On that sweltering summer day in Atlanta, Cooper spent the entire day in the car, ultimately dying of heatstroke. At the end of his work day, onlookers noticed Harris' hysterical cries as he discovered his son's lifeless body, according to [CNN](#).

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This scenario reminds me of my first case in which a child died as a result of being forgotten in a hot car. Seven years ago, Lyn Balfour intended to bring her son to daycare, but instead she drove straight to work, forgetting her son was in the car. Along with the jury in a Charlottesville, Virginia courtroom, I heard a recording of her panic-stricken call to 911. Balfour's screams expressed her terror, as well as despair, because she knew that any harm that had come to her son was her fault. The jury considered this a tragic act of human error, but was compelled to find her not guilty of manslaughter.

How can loving, attentive parents have such an incomprehensible lapse of memory? To forget a child and leave him or her all day in a hot car seems unfathomable and, to many, unacceptable.

I have studied this phenomenon, referred to as Forgotten Baby Syndrome or FBS, for the past 10 years. According to data collection from [kidsandcars.org](#), it appears that FBS has occurred hundreds of times in the United States and around the world in the past 20 years.

FBS is a failure of prospective memory, which refers to the planning and execution of an action in the future. Prospective memory is processed by two brain structures: The hippocampus, which stores new information, and the prefrontal cortex, which enables us to plan for the future. It is the hippocampus that processes that a child is in the car, while the prefrontal cortex enables a parent to plan the route, including a change in plans to go to daycare rather than straight to work.

Watch more: [How did the child left in car die?](#)

FBS appears to involve a clash between prospective memory and another form of memory, referred to as habit memory. Habit memory is formed subconsciously through repeated activities, such as learning how to ride a bike or, in the case of FBS, repeatedly driving to and from home and work.

Habit-based memories are stored in a region of the brain called the basal ganglia, which enables people to drive to work in "auto-pilot" mode, requiring minimal conscious effort. The prospective and habit brain memory systems compete against each other on a regular basis. For example, a person places a cup of soda on the car roof (prospective memory), removes keys from his pocket and drives off (habit memory), leaving the cup on the roof. In another common example, a person intends to stop at the store on the way home from work but drives right past the store to arrive home without groceries. In each case, the prospective memory system fails to remind the person of a change in routine as the habit-based memory system imposes its will to accomplish well-established tasks.

The dozens of cases of FBS I have studied have followed a similar pattern. On the day of the tragedy, the parent follows a well-traveled route, one that rarely or inconsistently includes transporting the child. Therefore, FBS appears to be a dominance of the basal ganglia to guide the parent to home or work, but in the process, it suppresses the hippocampus from reactivating the memory of the presence of the child in the car. FBS defies the simple explanation of poor

parenting, having been committed by people in all walks of society, from doctors to teachers to construction workers, and by parents and grandparents around the world, including cases in Australia, France and Israel.

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The Atlanta case fits the FBS pattern in that the father appears to have been following a well-traveled route, which inconsistently included taking Cooper to daycare. But it appears to have three disturbing components that may make it difficult for people to accept that this was an unintentional act of flawed memory.

First, Harris had breakfast with Cooper only a half mile from his workplace. How can a father forget his son is in the car in only a half-mile drive? Consider a man who places a cup of soda on the roof of the car and then searches his pockets for the keys. His basal ganglia is immediately activated upon finding the keys; he gets in the car and drives off, having completely lost awareness of the cup on the roof. The comparison of a forgotten child to a cup of soda may offend our sensibilities, but the cases of FBS I've studied indicate that the brain processes involved in forgotten children and material objects are disturbingly similar. It appears that the memory of the child in the car is blocked instantly and that memory can be suppressed for an entire day.

Second, [court documents](#) point out that Harris returned to his car around lunchtime, while Cooper was still inside. People may wonder how Harris could return to the car during the day and not notice his son. In the dozens of FBS cases I've researched, the parents who left their children in their cars had absolute certainty that their children were safe at home or with the daycare provider. Again, objective science can be disturbing, but there would have been no reason for Harris to check for his son in the car.

Read more: [Toddler's mom: 'I miss him with all my heart!'](#)

Parents who commit FBS lose awareness that their children are in their cars. Tragically, these parents report that they had pictures of their child on their desks, they talked about their child with co-workers, and even reported they had to leave work on time to pick up their child from daycare. All the while, they were unaware their child was dying in a hot car. It is likely that when Harris returned to his car mid-day, there was no cue to indicate that Cooper, probably long dead, was still in the car.

A third factor is unique to this case and perhaps what people find most disturbing: According to police documents, [Harris and his wife ran an Internet search](#) on how long an animal can survive in a hot car, a day before he forgot his son in his car. Only Harris knows if the Internet search he conducted involved a conscious decision on his part to leave his son in the car, or was just a cruel coincidence.

Watch more: [Did dad know he left baby in hot car to die?](#)

Regardless of the outcome of the Atlanta case, there is no doubt that combat between brain memory systems in healthy, loving parents has resulted in heat-related deaths of children. The technology is available at a nominal cost: It is time for Congress to mandate sensors in car seats before more children die because they are forgotten in hot cars.

<http://www.hlnv.com/article/2014/06/30/cooper-harris-child-dies-hot-car-why-parents-forget>