From the Iowa District Educator,

The day that we will be seeing self-driving cars on our roads is supposedly just around the corner, and maybe down the block a little. There are 5 levels of automation, graduating from driver assistance to partial driver automation to a fully driverless vehicle where there is no steering wheel or accelerator and brake pedals. They are introducing Level 4 vehicles soon. But, Level 5 vehicles, the fully driverless vehicles will be quite a few years away, maybe a couple of decades. It is not just the technology that is holding us back. There are issues to be resolved with insurance, traffic laws, roadway design, the ability for nearby vehicles to communicate with each other, and to communicate to a centralized information center to inform the vehicle on traffic, weather, closures, and so on. But one of the biggest barriers is that the currently driverless vehicles do not handle poor road conditions well, such as snowy roads or rough pavement. They can be confused as to whether the bump was a pothole or something living. Human drivers are better able to analyze a traffic situation and determine, through their experiences, how to navigate through certain situations.

Even though computers can do highly complex calculations, there are certain tasks that the human brain is better equipped to do, though that may not be true for long. Driving involves many complex tasks and we have different parts of our brain that handle those different tasks. The temporal lobe handles memory skills and language recognition. The parietal lobe connects our senses to our perceptions, so it is very important to our visual and audible actions. The occipital lobe is the center of our visual perception system, which is essential to driving. The cerebellum is important to our motor skills and monitors emotions, such as fear and pleasure. The most important part of our brain when we are driving is the frontal lobe. This is the thinking part of the brain and we use it to monitor our motor skills. It is also important to our emotional maturity. Our frontal lobe is not fully developed until sometime in our late twenties. This lack of development is often the cause of many teenage crashes, more than just their lack of driving experience. It is the lack of emotional maturity that leads teenagers to be more likely to speed, drive recklessly and disobey traffic signs.

Yet, because we drive so often, and most everyone who is reading this article has certainly been driving for decades, we tend to underestimate what really goes on between the ears when we drive. So much of driving can be by rote memory, or “muscle memory”. Driving a motorcycle is even more complex than driving a car, so we are probably more aware than car drivers of the importance of being alert and the mental effort we must make when riding. Muscle memory is important since this means that we do not have to overload our frontal lobe with decision making on every little aspect of my driving. I do not have to think about how much twisting of the throttle I need to achieve the speed I want. For most of the time, I am not thinking too much about how to steer the bike, until I come up on a challenge where my thinking brain must take over. That leaves more time for my frontal lobe to analyze traffic and other hazards.

The brain deserves appreciation for all the amazing stuff it can do and for all that it does. With that appreciation we should recognize how important it is that we take care of it. I always carry my brain inside a helmet when I ride. I try to make sure it gets plenty of sleep at night and is well rested before I go riding. I also make sure that there is nothing that will impair its functions when I ride. It is my buddy. I promise to take it with me on every ride. It seems to really enjoy it when I do that.

Have a safe one out there and I will catch you on the road.

Greg Hayes