

IN THE COURT OF APPEALS OF OHIO

TENTH APPELLATE DISTRICT

Sean O'Brien,	:	
Plaintiff-Appellant,	:	
v.	:	No. 18AP-231
	:	(Ct. of Cl. No. 2015-00785)
Department of Transportation,	:	(REGULAR CALENDAR)
Defendant-Appellee.	:	

D E C I S I O N

Rendered on February 28, 2019

On brief: *Bressman Law*, and *David A. Bressman*; *Webb Legal Group*, *William T. Webb*, and *Jennifer D. Su*, for appellant. **Argued:** *William T. Webb*.

On brief: [*Dave Yost*], Attorney General, *William C. Becker*, and *Frank S. Carson*, for appellee. **Argued:** *William C. Becker*.

APPEAL from the Court of Claims of Ohio

BRUNNER, J.

{¶ 1} Plaintiff-appellant, Sean O'Brien, appeals an adverse judgment of the Court of Claims of Ohio entered on March 6, 2018. The judgment held that defendant-appellee, Department of Transportation ("ODOT"), was not liable to O'Brien for injuries he incurred as a passenger in a motor vehicle collision that O'Brien alleges was caused by ODOT's negligence. For the reasons that follow, we reverse and remand this matter to allow O'Brien to present expert human factors testimony as to causation; that is, whether the signage ODOT installed for the intersection caused the driver of the vehicle in which O'Brien was a passenger to make the mistake that resulted in the collision and O'Brien's ensuing injuries.

I. FACTS AND PROCEDURAL BACKGROUND

A. Overview

{¶ 2} This negligence action arose out of a motor vehicle collision that occurred in Knox County, Ohio, on August 3, 2010, on State Route 95 ("SR 95"), where it intersects with Mishey Road (a.k.a. County Road 55, or CR 55) to the east and Old Mansfield Road (a.k.a. County Road 5, or CR 5) to the south ("the intersection"). The issues of liability and damages were bifurcated, and the case proceeded to a four-day trial before a magistrate on the issue of liability. O'Brien alleged that ODOT failed to follow the Ohio Manual of Uniform Traffic Control Devices ("OMUTCD" or "manual") with respect to the signage in advance of the intersection; it failed to post signs that were mandatory under the OMUTCD, and the discretionary signs it posted were not properly placed under the OMUTCD. O'Brien argued, because the signs ODOT had posted in advance of the intersection were inappropriate and/or in the wrong location, the driver traveling south on SR 95 was not afforded positive guidance and, thus, was unprepared for the actual layout of the intersection. O'Brien argued this was negligence on ODOT's part and caused the driver to make the mistake that resulted in the collision and, consequently, his injuries. O'Brien offered lay and expert witnesses, including a human factors expert, to show that ODOT was negligent with respect to the signage posted in advance of the intersection.

{¶ 3} ODOT argued that this was not a case about signs because the driver of the car in which O'Brien was a passenger testified he did not remember the signs. Based on this, ODOT argued that the collision occurred because the driver was driving too fast and not paying attention. ODOT objected to the testimony of O'Brien's human factors expert arguing it was immaterial based on the driver's testimony, and impermissible under Evid.R. 702 because it neither related to matters beyond the knowledge or experience possessed by laypersons nor dispelled a misconception among laypersons. ODOT presented the testimony of a person who rendered assistance at the collision site and overheard the driver's excited utterances, an accident reconstructionist, and the administrator of the ODOT's Office of Roadway Engineering.

{¶ 4} The magistrate found that the driver of the vehicle in which O'Brien was a passenger had failed to use reasonable care to observe the roadway, and that his failure to do so was the sole proximate cause of O'Brien's injuries. Accordingly, the magistrate recommended judgment in favor of ODOT. O'Brien timely filed objections to the

magistrate's decision. The Court of Claims overruled O'Brien's objections, adopted the magistrate's decision and recommendation, and entered judgment in favor of ODOT.

B. Facts

{¶ 5} The morning of August 3, 2010, O'Brien was a passenger in a vehicle operated by Joseph Alexander ("Alexander"), the father of his girlfriend, Jody Alexander ("Jody"). Alexander's wife, Judith Alexander, and Jody also were passengers in the car. The Alexanders were driving O'Brien to an airport in Columbus, Ohio, via a scenic route in Knox County. Alexander was driving south on SR 95, a two-lane rural highway. SR 95 is a through highway with a sharp curve at the intersection with Mishey and Old Mansfield Roads. Mishey Road runs east-west and intersects SR 95 from the east. Old Mansfield Road runs north-south and intersects SR 95 from the south. Stop signs control traffic from Mishey Road and Old Mansfield Road entering onto SR 95. A southbound driver such as Alexander must navigate a sharp curve to the right to remain on SR 95. A southbound motorist who drives straight, instead of following the curve, will travel through the intersection, crossing the northbound lane of SR 95, onto Old Mansfield Road. The portion of SR 95 where the accident occurred had a posted speed limit of 55 m.p.h., with a posted advisory speed limit of 20 m.p.h. for the curve.

{¶ 6} The roadway had the following signs and pavement markings in place on the day of the accident for motorists on SR 95 south in advance of the intersection. First, a yellow diamond-shaped intersection warning sign (W2-2)¹ was located on the right side SR 95 south; the sign bore black symbols of a side intersection approaching from the left, and the words "Mishey Road." Then two yellow diamond-shaped horizontal alignment signs with a black symbol of a right turn arrow, and an advisory speed (W1-1) of 20 m.p.h. were on both the left and right sides of SR 95 south. Those two signs were parallel to one another and preceded a hill that obscured the intersection. Next, a brown, rectangular directional sign with white letters that stated "Knox Lake" and "Boat Ramps, Marina," with white, vertical arrows pointing upward to indicate that the lake, boat ramps, and marina were straight ahead, and was on the right side of SR 95 south. Next, two chevrons (W1-8) pointing to the right were located on the left side of SR 95. Two large, yellow, rectangular, horizontal alignment signs with arrows (W1-6) that point to the right were placed adjacent

¹ The roadway signs are identified as they appear in OMUTCD, 2005 Revision 1.

to both Mishey Road and Old Mansfield Road, facing motorists on SR 95 south. Additional chevrons pointing right were located through the curve southwest of the large arrow boards. A double yellow center line separated the two lanes of traffic on SR 95 and curved sharply to the right for motorists following SR 95 south, but the center lines ended at the intersection. The double yellow lines began again on SR 95 immediately west of the intersection. The white edge line on the right side of SR 95 also curved to the right. South of the break in the double yellow centerline on SR 95, a double yellow center line was also visible on Old Mansfield Road. A yellow diamond-shaped "Dead End" sign was located on the right side of Old Mansfield Road south of the intersection. (ODOT's Ex. I.)

{¶ 7} The collision occurred at the intersection after Alexander failed to follow the sharp right curve to remain on SR 95 south, and instead drove straight through the intersection toward Old Mansfield Road to the south, and collided with a motor vehicle operated by Pamela Riggleman, who was traveling north on SR 95 to Mishey Road. The Alexander vehicle flipped one or two times, coming to rest on its roof next to Old Mansfield Road. O'Brien was ejected from the vehicle and sustained serious injuries. Alexander was driving approximately 40 m.p.h. when he went through the intersection.

{¶ 8} O'Brien filed his complaint on September 10, 2015. He alleged the accident "was a direct and proximate result of the breach of duties, resulting from the negligence, negligence per se, recklessness, strict liability, violation of statutory duty/duties or other actions of malfeasance, misfeasance and nonfeasance of [ODOT]." (Mar. 6, 2015 Compl. at ¶ 10.) O'Brien further alleged ODOT had breached its duty to exercise reasonable care, including controlling traffic flow, safety signage, and other responsibilities related to making highways safe for the usual and ordinary course of travel. Finally, O'Brien alleged ODOT had failed to adhere to minimum standards imposed by law to exercise reasonable care in controlling traffic flow, safety signage, and other responsibilities related to making highways safe for the usual and ordinary course of travel, "said standards contained in, inter alia, the Ohio Manual of Traffic Control for Construction and Maintenance Operations, the Federal Manual of Traffic Control for Construction and Maintenance Operations, and the Traffic Control Application Standards Manual." (Compl. at ¶ 18.)

{¶ 9} On October 17, 2016, the case proceeded to trial before a magistrate as to liability only. O'Brien's theory of the case was that ODOT was negligent in its placement of

signs in advance of the intersection, such that it failed to adequately warn Alexander that SR 95 south curved sharply to the right, as opposed to continuing south through the intersection, a failure that proximately caused the collision. In support of his claims, O'Brien presented ten witnesses, including three experts, to establish that (1) Alexander was prevented from understanding that SR 95 curved to the right due to the topography of SR 95, including the hill that obscured the intersection, the slope of SR 95, and the fact that Old Mansfield Road was visible in the distance, (2) ODOT failed to place adequate signage at the intersection, and (3) ODOT's actions were the proximate cause of the accident, and therefore his injuries. O'Brien also offered numerous exhibits that were admitted into evidence.

{¶ 10} Alexander testified that, at the time of the collision, he was 63 years old and was living in Antwerp, Ohio² with his wife. He further testified that he had a long career with the American Electric Power Company ("AEP"), which required him to drive extensively around Ohio, on both rural and urban roadways. He estimated that, by August 2010, he had driven approximately 750,000 to 1,000,000 miles on Ohio roadways. He also testified that, due to his work, he had taken numerous defensive driving courses through which he learned techniques that he incorporated into his everyday driving. He described some of the techniques to the magistrate. He further testified that he attended weekly safety meetings throughout his career, many of which stressed safe driving.

{¶ 11} Alexander testified that he was not particularly familiar with SR 95, and that he had not driven through the intersection in a number of years. He testified that he had not consumed any alcohol that morning nor taken any medication that would have affected his ability to drive. He was not in a rush to get to Columbus. He testified that he was well rested and had been driving only about 10 or 15 minutes before the collision occurred. He was not distracted by conversation, eating, drinking, or using a cell phone or any other device while he was driving.

{¶ 12} Alexander estimated that his speed was 40-45 m.p.h. as his vehicle approached the summit of the hill north of the intersection. Alexander stated that he did not remember seeing any warning signs in advance of the intersection. He testified that it

² Antwerp, Ohio is located in Paulding County in northwestern Ohio, approximately 145 miles from the site of the collision.

appeared to him that SR 95 went straight and curved slightly to the right past the summit of the hill. After cresting the hill and beginning to descend toward the intersection, however, he saw SR 95 turning to the right. He stated that, by that time, it was too late to make the turn, so he continued straight into the intersection. He saw the Rigglesman vehicle on SR 95 north in his peripheral vision and accelerated to get out of the way. Rigglesman, however, had begun to travel from SR 95 to Mishey Road and struck the Alexander vehicle broadside. The Alexander vehicle rolled once or twice before coming to rest on its roof in a grassy area adjacent to Old Mansfield Road.

{¶ 13} Judy Alexander testified that the day of the accident was the first time she had traveled through the intersection. She stated she remembered seeing a curve sign before the hill, but did not realize that the road they were traveling on (SR 95) would curve, and that she did not see the curve until the collision.

{¶ 14} O'Brien presented the testimony of Ruth Auker, Allison Lowery, and James Singrey, who lived near the collision site. Each testified about the times they had witnessed, over the past 30 to 40 years, the aftermath of accidents at the intersection, or drivers who had ended up in a field after missing the curve on SR 95, or the ODOT road signs for the intersection knocked down.

{¶ 15} O'Brien's first expert was Henry Lipian, an accident reconstructionist from Grafton, Ohio, whose company, Introtech Incorporated, has investigated and reconstructed transportation casualties and crashes, including watercraft, aircraft, and motor vehicle crashes, since 1989. Lipian performed accident reconstruction during his service in the U.S. Coast Guard and his employment with the Ohio State Highway Patrol and the Hunting Valley (Ohio) Police Department. He obtained training in accident reconstruction from Northwestern University, the University of North Florida, Texas A&M University, and the Society of Automotive Engineers. He is accredited through the Accreditation Commission of Traffic Accident Reconstruction, the only international accreditation for this line of work. Lipian testified he is familiar with the OMUTCD.

{¶ 16} At O'Brien's request, Lipian's company had performed an accident reconstruction to determine the point of impact and the speed of the vehicles, and whether Alexander's speed prevented him from safely negotiating the sharp curve. Lipian and his team did not interview Alexander in preparing the report. Lipian testified that his team

examined the scene of the accident, photographed the intersection and its approach, drove the intersection and made a video recording of the drive, and reviewed the crash report and police photographs of the intersection taken just after the accident. His team also took measurements using a "total station," which allowed them to accurately map the intersection, including topography. (Tr. Vol. 1 at 122.) Based on these measurements, Lipian and his team calculated the speed of the Alexander vehicle as 42 m.p.h., and the speed of the Riggleman vehicle as 53 m.p.h.

{¶ 17} Lipian also determined the point of impact of the vehicles, which demonstrated that Alexander was going straight through the intersection at the time of the crash, indicating that Alexander missed SR 95's curve to the right. Lipian also noted that he had not seen any evidence that Alexander had tried to slow down or take evasive action before the collision. Lipian included these findings in his report dated April 1, 2014, which was admitted as evidence at trial. Lipian's report contains a section titled "Contributing Factors," which states in part:

Human error by Mr. Alexander caused the crash, but his error must be balanced against the concepts of positive guidance, poor roadway geometry and the Ohio Manual of Uniform Traffic Control Devices. The deceptive nature of the intersection, coupled with inadequate positive guidance and contradictory traffic control combined with Mr. Alexander's unfamiliarity with the path of travel contributed to the cause of the crash. The lack of positive guidance and false visual cue nature of the roadway were the primary factors to the cause of this crash. Other than provide an array of conflicting, confusing and visual overloaded traffic control devices, the state fell far short of providing a safe and effective guidance system for drivers unfamiliar with the roadway. This conclusion is evidenced by the crash rate for this area of SR 95 as well as the numerous skid mark and tire mark evidence during our scene inspection.

* * *

In order for a driver to avoid a situation hazard, they must have sufficient time and distance to perceive, react and take corrective action. Many factors can contribute to the result of a crash, including the lack of proper traffic control warning devices, line of sight restrictions posed by horizontal curves and hills as in this case.

It is my opinion to a reasonable degree of certainty in the field of crash reconstruction that the absence of positive guidance on SR 95 should be considered as a major contributing element to the cause of this crash. The State of Ohio failed in its responsibility to meet the most basic tenet of traffic control devices:

Support: The purpose of traffic control devices, as well as the principles for their use, is to promote highway safety and efficiency by providing for the orderly movement of all road users on streets and highways throughout the Nation. [Fn. 10. OMUTCD page 1A-1]

These opinions are expressed to a reasonable degree of scientific and reconstructive certainty and are based upon data that is currently available for review and analysis. * * *

(Emphasis sic.) (O'Brien Ex. 7 at 16-17.)

{¶ 18} The second expert O'Brien presented was Kimberly Nystrom, P.E., a traffic engineer from Granite Bay, California and the former chief traffic engineer for the State of California, to provide her opinions, as a traffic engineering expert, as to ODOT's negligence and to provide an opinion as to causation. Nystrom testified that the intersection was not properly signed and violated both mandatory and recommended provisions in OMUTCD.

{¶ 19} Nystrom testified about the engineering concept of positive guidance, which she explained is a highway department's way of communicating with drivers. She described positive guidance as follows:

Positive guidance is basically the interaction between what a traffic engineer places, signing, striping, delineators, that type of thing, and the driver. It's the communication.

So positive guidance is putting up these devices or markings to convey a meaning to allow the driver to understand what is present or coming up so that they can drive accordingly. The positive [aspect] is basically giving them the confidence and the assurance that as they're driving, they don't need to stop, slow, drive erratically to figure out what's going on. They're assured, which is that positiveness of what's -- what they're approaching. * * *

It's the human factors component of the traffic engineering world.

(Tr. Vol. 2 at 484.) Nystrom stated that traffic engineers are always using principles of positive guidance in their decision-making, so it is a part of the training of competent traffic

engineers. She explained that driver expectancy comes from the field of human factors, and that traffic engineers use this concept when making decisions. She testified that the OMUTCD is all about the concept of driver expectancy. Nystrom stated that traffic engineers' main goal is to never surprise a motorist:

Because at that point, not being a psychologist, you just don't know what somebody is going to do. Are they going to stop in the middle of the road? Are they going to pull over unexpectedly? Are they going to put on their brakes and be rear-ended? People do a lot of strange things when they're surprised.

(Tr. Vol. 2 at 488.)

{¶ 20} Nystrom testified further that, although ODOT did not have a duty to redesign the intersection, various factors associated with the intersection demonstrated that the intersection was not visible for a sufficient amount of time for motorists to identify the sharp turn on SR 95 and to safely navigate it. She stated that the intersection was located just past a vertical curve—a hill in the roadway—that prevented drivers from seeing the intersection until they crested the hill. Nystrom testified as to the visibility of the intersection, or intersection sight distance, which she stated is important because a large majority of accidents occur due to visibility issues. She stated that adequate sight distance is required at every point of the road, and so she "looked at the sight distance provided for stopping conditions, as well as for decision conditions." (Tr. Vol. 2 at 494.) She testified that Ohio's Location and Design Manual helped her to determine whether the intersection posed a hazard because it discussed intersection sight distance. She explained that the term intersection sight distance "is the ability of a driver to see the intersection in its entirety. And what that means is every leg, 60 feet back and the center, to that, that's seeing the intersection. They need to be able to see that with enough distance to make a decision." (Tr. Vol. 2 at 500.) Nystrom testified that the sight distance for the intersection was zero.

{¶ 21} Nystrom also testified as to problems with ODOT's signage and striping for the intersection, stating that ODOT had violated mandatory provisions set forth in OMUTCD. On cross-examination, she summarized her opinions as to the one-one large arrow board and the chevron alignment signs as follows:

I'm saying that these warning signs have a purpose, but they are not used appropriately. And my personal view is they took - these and basically just placed them all over without

understanding how they're to be used and how they're understood by drivers. I spoke yesterday about the chevrons. There's a huge gap -- as you can see even in this photograph, there's a huge gap that these don't at all serve the purpose and the intent of what a chevron is for. And these arrows are not aligned -- because they're supposed to be in the direction that the vehicle is going so that they see an arrow right in front of them. And you can see in this [Exhibit G] they don't. So minus the striping, which didn't exist on the day of the accident, it appears the road goes straight through unless these arrows are here to where you want to turn right. But there's no indication to motorists that SR 95 turns to the right.

(Tr. Vol. 3 at 693.)

{¶ 22} The third expert O'Brien presented was William Vigilante, Ph.D., a psychologist who has worked as a forensic consultant in the field of human factors for the past 15 years. O'Brien asked Dr. Vigilante to provide an opinion as to how Alexander would have cognitively processed the signage for the intersection, how that might have influenced his thought process and decision making as he approached the intersection, and how it affected what he remembered about the warning signs and the events before, during, and after the collision.

{¶ 23} Dr. Vigilante began by generally describing what human factors entails, as follows:

Human factors is the science that studies how people interact with their use. All different types of products, machines, systems. For example, vehicles, cars, SUVs, trucks. And roadway systems, highway systems.

Human factors is focused on people that use these products and systems. So we are interested in how people capture information through our senses, for example, visual perception, auditory perception. How people make use of that information, that is how they process that information, also known as cognition. How people store information in their memory, both short-term and long-term memory. How people make decisions. How things like expectancies and prior experiences affect those decisions and how we interpret information that we obtain through our senses. And then how we're able to respond, different stimulus in situations and events.

Human factors is an applied science. So we work with engineers, architects, designers and so forth to help design

systems, whether they be roadway systems, vehicles, car, et cetera. And our goal is to design systems that are safe, easy to use and don't exceed the capacity of the people that are asked or expected to be using the system.

(Tr. Vol. 3 at 735.)

{¶ 24} Dr. Vigilante next described how human factors relate to traffic engineering:

Specifically human factors is related to traffic engineering in the design of the roadway and the traffic controls and so forth that are providing information to the driver along the roadway.

So examples are issues related to sight distance, both stopping sight distance and decision sight distance. That is how much sight distance does a driver need in which to obtain information from the roadway and then process and act upon that information to successfully navigate either a roadway or a hazard in the roadway and that is based upon human factors research related to perception/reaction time. Things -- traffic controls as laid out in the Ohio MUTCD and the federal MUTCD, a lot of the requirements for consistency and uniformity are based upon the concepts of positive guidance, which is a concept from the human factors psychology literature and research. And that is based upon the concept of expectancy, which is another human factors psychology-related concept.

(Tr. Vol. 3 at 748-49.)

{¶ 25} Dr. Vigilante testified about the concept of expectancies, which he defined as "beliefs or understandings how different activities, situations, events or systems work or are supposed to work." (Tr. Vol. 3 at 757.) He stated:

Expectancies result from the consistent implementation of the way products or systems are designed. And then based upon that consistent design, people build expectancy so that they don't have to sit and think about how the lights come on when they walk into a room. It's an automatic thought. You hit the light switch, the lights go on. If there weren't consistency to build expectations, we would lose a lot of efficiency because it would require us to examine and think about things before we do them. All the time. And that's not the way that we function.

(Tr. Vol. 3 at 757-58.) Dr. Vigilante explained that drivers develop expectancies, of which there are two different types: a priori and ad hoc. A priori expectancies are those that are built over a long period of time. He used as an example the color red, which is seen as

meaning hot, or stop, or danger. In comparison, ad hoc expectancies are learned in a site-specific situation.

{¶ 26} Dr. Vigilante next testified about the concept of expectancy violation, which he stated was "essentially any presentation of a system or event or an activity that violates your expectancy. Whether it's apriori [sic] or ad hoc. So it runs counter to what you would typically or normally expect." (Tr. Vol. 3 at 761.) He then testified about the effect an expectancy violation has on traffic safety:

Typically [an expectancy violation] results in a need for a longer perception/reaction time. You have to -- it takes longer for you to think about what happened and then respond to it. So it takes longer to identify the situation, detect it, identify it and process the information and make a decision. So you need more time. And if you're not presented with that time, you run into consequences. So another negative consequence of expectancy violation is increase in error. So you're more likely to make an error when your expectancy is violated.

With respect to [a] roadway, you're more likely to be involved in a crash, so crash risk is a direct consequence. Increase in crash risk is a direct consequence of expectancy violation.

Also, with expectancy violation, you need more information to understand what is happening and what is needed. And what you're supposed to do. With the expectancy violations, an event, a hazard needs to be more salient. It needs to be a stronger stimulus to capture your attention, to get you to notice that it's there.

So things that are expected or are easier to see, easier to find. Things that are unexpected are harder to find and harder to see. And of course in the driving environment, you want things to be relatively easy to see and relatively easy to find. One way you do that is through consistent presentation.

(Tr. Vol. 3 at 762-63.)

{¶ 27} Dr. Vigilante explained the concept of expectancy reinforcement—which he described as anything that reinforces a pre-existing expectancy—and its dangers in traffic engineering.

{¶ 28} ODOT objected to Dr. Vigilante's testimony, asserting that Dr. Vigilante had nothing to offer the magistrate, as the finder of fact, that was beyond the magistrate's knowledge and experience, and that the magistrate "[didn't] need a psychologist to come in

and tell [her] what the psychology is in terms of how a driver might react to the roadway." (Tr. Vol. 3 at 769.) ODOT stated further that "the only thing that matters is how did the driver of the PT Cruiser react[ed] to the roadway. You've heard his testimony. You know what it is. For [Dr. Vigilante] to say that [Alexander] had that reaction or whatever reaction he's going to say is pure speculation." (Tr. Vol. 3 at 769-70.)

{¶ 29} O'Brien's counsel replied that Dr. Vigilante's testimony would help to explain what was going on in Alexander's head as he was driving prior to the collision, and would give the magistrate the tools to understand how it is that people, as drivers and as human beings, interact with ODOT's road signs.³

³ O'Brien's brief identifies the following portion of the trial transcript, as the proffer regarding Dr. Vigilante's testimony:

THE COURT: Mr. Webb?

MR. WEBB: Sure. I'm quite confident after spending three days with you that you are perfectly capable of making good decisions. And -- but one of the things that I found when I got involved in this case, and on a personal note, this is the first time I've dealt with any of this, it's been fascinating for me because what Dr. Vigilante is going to testify about now and for the next, you know, hour or so are these concepts of how it is that we get from point A to point B.

I think we've all had the experience of, you, driving, driving home and then -- driving someplace and it may be someplace we're familiar with, it may be someplace we're not even familiar with, and then when we're all finished, we don't even remember exactly where it was we've been, but yet somehow we've got here.

And that process, I've always been interested in that and I've figured out dealing with, reading the literature, talking with Dr. Vigilante, working with him as to how it is that that happens. And I understand the State wants us to be a very simple case about the fact this was driver error on behalf of Mr. Alexander. It is. Absolutely. Mr. Alexander made a mistake. But the more interesting question is why. What was going on in his head.

We know there wasn't anything going on in the car. We know there wasn't, you know, there weren't any impairment issues or anything along those lines. There hasn't been any evidence of that and there isn't going to be. So what about the system and what about -- and this was a gentleman -- this wasn't somebody who was a newbie driver. This was -- this was an almost perfect scenario from the standpoint that he had logged about, you know, somewhere between three-quarters and a million miles, I think was his testimony, on rural roads in Ohio. He had received defensive driving training. He had -- and he was practicing those techniques. And he was paying attention. He was driving straight ahead. He had both hands on the wheel. And yet somehow he missed the turn. And the question is how? How did that happen?

{¶ 30} ODOT argued that Dr. Vigilante's proffered testimony was impermissible under Evid.R. 702 because it "offer[ed] nothing more than what you already know and what you have by the other evidence in this case to decide." (Tr. Vol. 3 at 775.)⁴ Additionally,

And Dr. Vigilante is here to help give you the tools so that you can understand how it is that we, as drivers, and as human beings interact with these signs. Because what the warning signs are is they are the Department of Transportation's way of communicating with us. And I might communicate with you by sending you an email. I might talk to you. I might put a sticky note on your chair. Something along those lines. But what these warning signs are is ODOT's way of interacting with us. And that's -- yes, it's through visual because some of it is -- some of the input is visual and this is what -- the question that I am getting into right now. I said what kind of information is being processed and how is it processed. And that's not something that I knew.

And if this is your first experience in this kind of case, then it's probably not something you know as a fact finder either. And that's why we've brought Dr. Vigilante here because he, as an expert, will be able to tell you that this is the type of information that is being -- that's being absorbed. This is how the mind absorbs it and then discards it afterwards as well. And then -- all of these types of things. And they tie in extremely well with what-- both with what Hank Lipian testified to and about what Ms. Nystrom testified to as well. Because this is a human factors case. This is all about human factors. Traffic engineering is all about it.

And so that's why we're here. That's what the issue is. And that's why the question is proper and the answer should be allowed.

(Tr. Vol. 3 at 770-73.)

⁴ ODOT's response to the proffer is set forth as:

THE COURT: Okay. Mr. Becker, are you --

MR. BECKER: I'm sorry, Your Honor.

THE COURT: Did you want to say something else?

MR. BECKER: Yes. Evidence Rule 702, testimony by experts. All of the following must apply, A, the witness's testimony either relates to matters beyond the knowledge or experience possessed by laypersons or dispels a misconception among laypersons.

I would be the first to say that if there was an airplane crash, I'm not a pilot, I don't know that you are, but my guess is you'd want to hear from a pilot in terms of how an airplane is flown. If this was a train crash, you'd probably want to hear from a train engineer in terms of how the train is operated. This is a car crash. We all understand how to drive a car. This isn't something that's going to rise to the level -- and of course this rule is written for juries, but as it's applied to you as a layperson -- you're probably beyond a layperson, but again, this witness has to offer you something beyond your knowledge and experience. He doesn't.

ODOT argued that anything Dr. Vigilante would offer on the topic of positive guidance would not be of value because positive guidance is an engineering concept, and he is not an engineer. Finally, ODOT argued that anything Dr. Vigilante would offer on the topic of expectancy would be cumulative.

{¶ 31} Thereafter, the magistrate allowed Dr. Vigilante to testify only about two issues: (1) what he knew about perception/reaction time and (2) whether there was some misconception that was common to laypersons with regard to the case. This ruling barred him from testifying about the concept of working memory. Additionally, the magistrate stated she would give Dr. Vigilante's testimony the weight that, in her opinion, it deserved.

{¶ 32} ODOT next objected to Dr. Vigilante testifying about the concept of positive guidance because it was outside the scope of the magistrate's ruling as to the two issues Dr. Vigilante was allowed to testify. ODOT argued, moreover, that guidance was an engineering concept, and "[p]sychologists should not be testifying about the guidance on a roadway." (Tr. Vol. 3 at 792.) She sustained ODOT's objection, and stated:

What I'm specifically interested in hearing from this witness is the following: If he had any expertise on perception/reaction time, if he can relate that expertise to the roadway and the signage, that's what I'd like to hear. We've heard all day from Ms. Nystrom who is an engineer. I understand her testimony. I've gotten her testimony.

* * *

So if you can limit his testimony to anything specialized -- any specialized knowledge that this witness has about perception/reaction time in combination with -- if he has any expertise about signage that was there at the time, that's what

The other thing that Mr. Webb just said is that he's going to tell you how the mind works. Well, there can't be anything more speculative than that. So what they're going to try to do, I guess they are, is to have this witness put himself in the mind of the driver of the PT Cruiser. That is just pure speculation. There's no other way to account for it.

So by the rules of evidence, with regard to expert testimony, at least this question, and probably many more, are not going to fit in what is permissible for this Court to consider. This is -- this expert is offering you nothing more than what you already know and what you have by the other evidence in this case to decide.

(Tr. Vol. 3 at 773-75.)

I would like to hear. And if he has any expertise about a misperception that lay people would have, then I'd like to hear that. But we've gotten his background, we've gotten all that stuff. I think we need to speed it up and focus on those issues and let's go ahead.

(Tr. Vol. 3 at 792-93.)

{¶ 33} The magistrate allowed ODOT to have a continuing objection as to Dr. Vigilante's testimony about guidance, and stated that all she wanted to know is what Dr. Vigilante could "add from a human factors perspective to show what [Alexander] was looking at from the signage that was in place at the time, * * * what's the misperception that he can dispel about that? I mean * * * I'm still just very concerned that his testimony is not necessary." (Tr. Vol. 3 at 802.)

{¶ 34} Dr. Vigilante discussed the perceptual problem the intersection posed to drivers because of the visual information presented to the driver. He testified that the signage ODOT used for the intersection developed and reinforced drivers' expectancies in advance of the intersection and increased the danger when those expectancies were violated when they finally saw or reached the intersection. Dr. Vigilante stated:

The visual features of the roadway add to that as a misperception, adds to that misidentification. It results in the driver making a misidentification because he misidentifies the situation. It's a direct result of the configuration of the roadway and the signs that were up there providing him with false and misleading guidance.

(Tr. Vol. 3 at 832.)

{¶ 35} O'Brien's counsel then asked Dr. Vigilante to testify about misperceptions of the human factors issue of positive guidance, but the magistrate would not allow it, stating that the limited information she wanted from him was whether there was any misconception among laypersons that he could dispel.

{¶ 36} The magistrate also barred Dr. Vigilante from testifying about misconceptions regarding working memory and long-term memory, stating that there was no testimony that Alexander had forgotten the signs, only that he did not remember what they were. The following exchange then occurred between the magistrate and counsel:

THE COURT: But there's no testimony that he saw a sign and then forget what it said. So let's not --

MR. WEBB: And that may not be the testimony. But that's -- that's what [ODOT's] argument is. [ODOT's] argument is that he saw these signs and then ignored them for some reason. Now he claims that he forgot the signs. And that's not how memory works. And this is something -- this is a misperception that laypersons have. So it really will take one minute.

MR. BECKER: It's not a matter of how long it takes in terms of an evidentiary objection. And that mischaracterizes the evidence in this case. The driver testified he doesn't remember seeing any signs.

MR. WEBB: Right.

MR. BECKER: That's been his testimony. He has no recollection of seeing any signs. That's all we have.

MR. WEBB: Exactly. But see, their whole point, and this it tied to other misperceptions that we've already talked about, which is that this -- these signs entered his field of vision and therefore he should remember them. If he had -- if he had been affected by them, then he should remember having been affected by them. And he doesn't.

And what Dr. Vigilante is going to tell you from a human factors standpoint and from a psychologist's standpoint is the -- he just testified it's the only field that studies human memory. What he's going to do is explain how it is that Mr. Alexander can be driving down the road, see signs and maybe -- I don't know, perhaps perceive them; but regardless, see them at least and then not remember them right after the accident. And that's something that is well beyond the ken of the ordinary layperson.

THE COURT: That's not the testimony in this case. The testimony in this case is that he doesn't remember the signs. He doesn't say that he saw the signs and then he doesn't remember what they said. He doesn't say any of that. He says he thought the road went straight.

MR. WEBB: Right.

THE COURT: That's his testimony. He went straight and he got struck by a car. That's it. I don't think this witness needs to testify about that at all.

{¶ 37} Dr. Vigilante proceeded to testify that the signs were misleading and did not correct the perceptual problems with the intersection. He explained that there is a big difference between looking at still photographs of the intersection years after the accident and being a driver unfamiliar with the intersection, encountering the intersection and SR 95's sharp curve to the right in real time.

{¶ 38} We note that the report Dr. Vigilante prepared for this litigation (Plaintiff's Exhibit 22) contained 11 findings and was admitted into evidence. The report indicates Dr. Vigilante used the following materials in its preparation: Ohio Traffic Crash Report; O'Brien's complaint; deposition transcripts and exhibits of Joseph Alexander, Henry P. Lipian, and Andrew E. Ramisch; reports of Lipian and Ramisch; digital copies of 13 color scene photos, 45 black and white scene photos and 207 color site photos taken by Lipian's team at Introtech; 2 videos of the site taken by Introtech; 3 videos of the site taken by others; Ohio Traffic Crash Reports for collisions at the subject intersection. The "Analysis" section of the report covers the following human factor topics:

- E.1. Positive Guidance.
- E.2. Expectancy Violation and Misleading Guidance.
- E.3. ODOT Failed to Provide Adequate Positive Guidance.
- E.4. Alexander Inability to remember the road signs is expected.

(O'Brien's Ex. 22 at 5-17.)

{¶ 39} ODOT presented the testimony of Freddie Okulich, a motorist who stopped to render assistance soon after the collision. Okulich testified that Alexander "was in hysterics" immediately after the accident and saying, "[I]ook what I've done. I wasn't paying attention." (Tr. Vol. 4 at 954.) Okulich also testified Alexander "was saying stuff that he was going too fast for the turn. He forgot about the turn." (Tr. Vol. 4 at 954.)

{¶ 40} David Holstein, a licensed engineer in the state of Ohio, testified that he had worked for ODOT for 26 years and was the administrator of ODOT's Office of Road Engineering. He stated he had been responsible for revising the OMUTCD for the prior 18 years. He has served on the AASHTO traffic committee, a national group of state traffic engineers. Holstein testified that SR 95 became a state route in the 1930s. The OMUTCD in effect at the time of the underlying collision was the 2005 version, Revision 1.

{¶ 41} Holstein testified about each sign that was in place for the intersection on the day of the collision, stating that all the signage in place in advance of the intersection was

optional per the OMUTCD in effect at the time of the collision.⁵ He testified further that the signs mandated by Sections 2D.27 through 2D.30 of the OMUTCD were not required to be posted for the intersection.

⁵ The magistrate summarized Holstein's testimony about the signs as follows:

According to Holstein, all of the signage in place in advance of the intersection was optional per the [OMUTCD] in effect at the time. Holstein explained that the Mishey Road sign is an intersection warning sign that provides notice to motorists that there is an impending intersection and vehicles might be entering from the left. (Defendant's Exhibit C; section 2C.37 of the manual.) With regard to the two right turn signs (W1-1), Holstein stated that they are known as horizontal alignment signs, and their purpose is to warn that there is a change in the direction of the road that the motorist is traveling on. Although "turn" signs were in place, Holstein testified that SR 95 has a curve, not a turn. In addition, the chevrons and the two large arrow boards are additional horizontal alignment warning signs to notify motorists to follow the curve in the roadway. Holstein stated that the [OMUTCD] is based on national best practices, however, there are times that ODOT makes a variation due to its discretionary engineering judgment.

On cross-examination, Holstein testified that the 20 mph advisory speed was determined by driving around the curve multiple times with a ball bank indicator, which calculates the speed in which a motorist should be able to comfortably traverse the curve. Although he did not conduct the test himself, he testified that he believed the advisory speed of 20 mph was reasonable for the curve. Holstein disagreed with Nystrom's opinion that an advance route turn assembly and/or junction assembly was required at the intersection.

Section 2D.27 of the OMUTCD states that: "Route Sign assemblies shall be installed on all approaches to numbered routes that intersect with other numbered routes." Section 2D.28 states that: "The Junction assembly shall be installed in advance of every intersection where a numbered route is intersected or joined by another numbered route." Section 2D.29 states that: "[An Advance Route Turn assembly] shall be installed in advance of an intersection where a turn must be made to remain on the indicated route."

In Holstein's experience, Section 2D.29 does not pertain to this intersection, because a southbound motorist on SR 95 would simply navigate the curve to stay on the indicated route. A southbound driver does not need to turn onto a different road to remain on SR 95. According to Holstein, use of an advanced route turn sign is required when a motorist must turn onto a different road to remain on the indicated route. Moreover, although two roads intersect with SR 95, Holstein testified that the side roads are not "numbered routes" as stated in the manual, so section 2D.27 would not pertain to this intersection. Specifically, Holstein testified that in this case, any signs as set forth in Sections 2D.27 through 2D.29 were not called for at this intersection. Holstein explained: "Southbound 95 is going through a curve. That's why we had numerous chevrons, numerous – we had multiple large arrows. So the proper application is to give drivers of southbound 95 information that their horizontal alignment is about to change." (Transcript, p. 51.)

{¶ 42} By decision filed September 1, 2017, the magistrate concluded that O'Brien had failed to prove by a preponderance of the evidence that ODOT had breached any mandatory duty as set forth in the OMUTCD. The magistrate stated:

After a review of the testimony and evidence presented, the magistrate finds that the testimony of Holstein was more credible and persuasive than that of Nystrom. Although there was much testimony regarding the use of the words "turn" and "curve," the photographs and video of the roadway clearly show that to remain on SR 95 southbound, a motorist would follow the curve in the roadway to the right. Although it is a sharp curve, the magistrate finds that no "turn" must be made to remain on the indicated route as stated in Section 2D.29 of the OMUTCD. A motorist must navigate a curve in the existing roadway to remain on the indicated route. Accordingly, the magistrate finds that [ODOT] was not required to place an Advance Route Turn Assembly in advance of this intersection because a motorist did not need to turn onto a different roadway to remain on the indicated route. In addition, the magistrate finds that a route junction assembly was not required, in that Mishey Road and Old Mansfield Road were not "other numbered routes" as contemplated in the [OMUTCD]. Thus, the magistrate finds that [O'Brien] has failed to prove by a preponderance of the evidence that ODOT breached any mandatory duty as set forth in the OMUTCD. (See Section 2D.27-29 of the OMUTCD.)

(Sept. 1, 2017 Mag.'s Decision at 15.)

{¶ 43} The magistrate stated further:

With regard to the signs that were in place at the time of the accident, the greater weight of the evidence shows that all the signs were optional pursuant to the manual. (See Sections 2C.37; 2C.06; 2C.09; 2C.10 of the OMUTCD.) Although [O'Brien's] experts criticized the Mishey Road intersection sign because it did not accurately depict the physical appearance of the intersection, the magistrate finds that the manual did not require an exact depiction of the appearance of the intersection. Rather, the purpose of this optional sign was to "indicate the presence of an intersection and the possibility of turning or entering traffic," and that it should illustrate and depict the general configuration of the intersecting roadway, such as Mishey Road. (Section 2C.37 of the OMUTCD.) In addition, all experts agreed that the advisory speed limit of 20 mph was reasonable for the curve. The magistrate further finds

(Sept. 1, 2017 Mag.'s Decision at 12-13.)

that ODOT had discretion to use its engineering judgment to place advisory speed signs with a right turn arrow in advance of the hill that obscured the curve to warn motorists to reduce their speed. The greater weight of the evidence shows that the signage in place adequately warned motorists of a curve ahead in the roadway. Furthermore, the magistrate finds that [ODOT] complied with Table 2C-5 of the manual when it used "turn" signs instead of "curve" signs to warn of the curve based upon the results of the ball bank test, in that engineering judgment was used to determine a safe speed for the curve. Finally, with regard to Nystrom's criticisms of the existing signage, the modified advisory warning signs that she suggested are also in the optional category of signs. Although Nystrom would have used different signage herself, her preference of other optional signs does not prove that [ODOT's] use of optional signage was negligent. [O'Brien] has failed to prove that the existing signage did not adequately warn motorists of a change of alignment in the roadway.

Assuming, arguendo, that ODOT was negligent in its use of signage or in its failure to place an advanced route turn assembly, [O'Brien] has failed to prove that any breach by ODOT was the proximate cause of his injuries. * * *

Id. at 16-17.

{¶ 44} The magistrate reviewed Alexander's testimony that he did not remember seeing any signs:

Alexander testified that he did not remember seeing any signs, including the four arrow signs, three chevrons, and two advisory speed signs that were posted. Alexander did not testify that any signs misled him into thinking to continue south. At most, he testified that he thought SR 95 continued to the south because he could see Old Mansfield Road in the distance. Furthermore, although Old Mansfield Road is visible in the distance, a "Dead End" sign is also visible in the accident photos, and the white edge line on SR 95 southbound clearly curves to the right.

Id. at 17.

{¶ 45} The magistrate next discussed the speed at which Alexander was driving, stating that "the evidence shows that Alexander was traveling both greater than 20 mph advisory speed and too fast for the conditions of the roadway." *Id.* at 17. The magistrate noted that O'Brien's expert witness, Lipian, had "conceded that if Alexander had reduced

his speed to the advisory speed, he would have been able to observe that the route he was traveling on curved to the right." *Id.* The magistrate concluded:

The common law of Ohio imposes a duty of reasonable care upon motorists, which includes the responsibility to observe the environment in which one is driving. *Hubner v. Sigall*, 47 Ohio App.3d 15, 17 (10th Dist. 1988). The magistrate finds that Alexander did not use reasonable care to observe the roadway, and that his failure to use reasonable care was the sole proximate cause of [O'Brien's] injuries. Accordingly, judgment is recommended in favor of [ODOT].

Id. at 17-18.

{¶ 46} We observe that, although the magistrate's decision contains a summary of Dr. Vigilante's testimony,⁶ her earlier representation that she would give Dr. Vigilante's

⁶ The magistrate's decision contains the following summary of Dr. Vigilante's testimony on the topics the magistrate allowed:

Vigilante testified that human factors is the science that studies how people interact with the use of vehicles and roadway systems; how people capture, store, and interpret information, and make decisions. He testified that issues related to sight distance, perception reaction time, and expectancy are used to develop traffic control devices. Vigilante testified that human factors concepts are found throughout the OMUTCD, in examples of consistency or signage and traffic control devices.

Vigilante testified that there were multiple visual cues for Alexander to continue straight instead of curving to the right through the intersection. One example was the physical configuration of the intersection, where Old Mansfield Road continued straight south of the intersection. Another example was the Mishey Road sign, which Vigilante stated gave Alexander an expectancy that there was a "T" intersection. He added that the two right turn arrow signs placed after the Mishey Road sign gave a driver the impression that the road would turn to the right after the "T" intersection. He also testified that photos from the accident scene show that the advisory turn signs could signal to a driver that the curve was for Old Mansfield Road, and that since the double yellow line breaks but is also visible on Old Mansfield Road, a driver could assume that he was required to go straight ahead instead of turning right. He opined that had the appropriate signage been in place, Alexander would have had the right positive guidance to make the turn.

On cross-examination, Vigilante acknowledged that Alexander did not testify that he was confused by the signs on the roadway, but Vigilante believes that the signs were "misleading" to a driver. According to Vigilante, the "T" intersection sign tells a driver that there is a "T" intersection and then a turn, not that those two conditions would happen simultaneously. He also testified that the five chevrons and two large arrow boards pointing to

testimony the weight that, in her opinion, it deserved, was hampered by her earlier decisions limiting the admissibility of much of his testimony. In short, the evidence the magistrate needed to properly consider the application of the law to the evidence before her was inadequate for the claims of this action.

{¶ 47} On September 14, 2017, O'Brien filed the following objections to the magistrate's decision:

1. The Magistrate erred in holding that [ODOT] was not negligent per se for its failure to place signs in the manner mandated by the [OMUTCD];
2. The Magistrate erred in holding that ODOT was not negligent for the manner in which it signed and striped the intersection, although the testimony of negligence was undisputed;
3. The Magistrate erred in disallowing and ignoring evidence regarding the science of human factors as it pertains to the related issues of negligence regarding the signage of the intersection in question and causation;
4. The Magistrate erred in refusing to allow evidence regarding ODOT's installation of Advance Route Turn Assemblies post-accident, and the unrebutted evidence is that the use of these signs reduced the number of crashes at the intersection, proving causation;
5. The Magistrate erred in disallowing evidence that the intersection has a reputation of being unsafe;
6. The Magistrate's Decision is against the manifest weight of the evidence and is not supported by the evidence;
7. The Magistrate erred in her findings of fact, omitting many salient facts, and stating others inaccurately;
8. The Magistrate erred in her conclusions of law; and
9. The Magistrate erred in not conducting a site visit[.]

(O'Brien's Objs. at 1-2.)

the right were confusing, and that Alexander was not responsible for the accident due to the confusing signage.

(Mag.'s Decision at 10-11.)

{¶ 48} ODOT, after receiving an extension, filed a response to the objections on October 10, 2017.

{¶ 49} By judgment entry issued March 6, 2018, the Court of Claims found that the magistrate had properly determined the factual issues and had appropriately applied the law. The Court of Claims adopted the magistrate's decision and recommendations, including the findings of fact and conclusions of law contained therein, as its own. The Court of Claims overruled O'Brien's objections and rendered judgment in favor of ODOT.

{¶ 50} O'Brien now appeals the judgment of the Court of Claim.

II. ASSIGNMENTS OF ERROR

{¶ 51} O'Brien presents four assignments of error for our review:

1. The trial court erred when it entered judgment for the Defendant Department of Transportation ("ODOT").
2. The trial court erred in holding that ODOT did not violate any mandatory provisions set forth in the OMUTCD.
3. The trial court erred in holding that ODOT is immune for its negligence in posting several discretionary signs that attempted to warn of an impending intersection.
4. The trial court erred in ignoring largely un rebutted evidence that ODOT's negligence and negligence per se caused the collision.

III. LAW AND DISCUSSION

A. Standard of Review

{¶ 52} A trial court's ruling concerning the admission of expert testimony is within the broad discretion of the trial court and will not be disturbed absent of abuse of discretion. *Scott v. Yates*, 71 Ohio St.3d 219, 221 (1994). An appellate court's standard of review for reviewing a trial court's ruling to admit or exclude evidence is a review based on whether the trial court committed an abuse of discretion that amounted to prejudicial error. *Gordon v. Ohio State Univ.*, 10th Dist. No. 10AP-1058, 2011-Ohio-5057, ¶ 82, citing *State v. Yohey*, 3d Dist. No. 9-95-46 (Mar. 18, 1996), citing *State v. Graham*, 58 Ohio St.2d 350 (1979), and *State v. Lundy*, 41 Ohio App.3d 163 (1st Dist.1987). An abuse of discretion "connotes

more than an error of law or judgment; it implies that the court's attitude is unreasonable, arbitrary or unconscionable." *Blakemore v. Blakemore*, 5 Ohio St.3d 217, 219 (1983).

B. Assignments of Error

1. O'Brien's Fourth Assignment of Error: Exclusion of Human Factors expert's testimony

{¶ 53} We first consider O'Brien's fourth assignment of error, as we believe it to be dispositive in this matter. Ohio law is clear that ODOT is only liable for accidents that are proximately caused by its failure to conform to the requirements of the OMUTCD. *Pierce v. Ohio Dept. of Transp.*, 23 Ohio App.3d 124 (10th Dist.1985). *See also Lumbermens Mut. Cas. Co. v. Ohio Dept. of Transp.*, 49 Ohio App.3d 129 (10th Dist.1988).

{¶ 54} O'Brien contends that the Court of Claims erred in refusing to admit and consider the human factors evidence and in ignoring the evidence that Alexander was exercising reasonable care as he drove. O'Brien asserts that Ohio courts have permitted human factors experts to testify as to how humans interact with and use machines and systems, including cars and roadways. O'Brien further asserts that, at trial, he introduced "unrebutted human factors testimony as to how ODOT's negligence caused the accident, including such principles as perception/reaction time, and offered other such evidence that was not admitted." (O'Brien's Brief at 2.)

{¶ 55} ODOT counters that this matter "centers on a person driving down a roadway and not proceeding and responding to the signs posted. It does not relate to knowledge or experience beyond a lay person. And despite the magistrate's repeated query to [O'Brien's] counsel as to how a human factors expert could dispel a misconception common among lay persons, none was offered." (ODOT's Brief at 28.) ODOT argues that Alexander testified that he did not remember any warning signs in advance of the intersection, not that he had been misled or confused by any signs. ODOT argues, therefore, that the magistrate did not err in sustaining its objection to O'Brien's human factors expert testifying about working memory in relation to what Alexander could recall about what warning signs he would have seen before the collision.

{¶ 56} Based on our thorough review of the record, we are not persuaded that this matter is as simple or straightforward as ODOT contends.

{¶ 57} The testimony of expert witnesses is governed by Article VII of the Rules of Evidence. Evid.R. 702 sets forth the following test for determining whether an expert may be allowed to testify:

A witness may testify as an expert if all of the following apply:

(A) The witness' testimony either relates to matters beyond the knowledge or experience possessed by lay persons or dispels a misconception common among lay persons;

(B) The witness is qualified as an expert by specialized knowledge, skill, experience, training, or education regarding the subject matter of the testimony;

(C) The witness' testimony is based on reliable scientific, technical, or other specialized information. To the extent that the testimony reports the result of a procedure, test, or experiment, the testimony is reliable only if all of the following apply:

(1) The theory upon which the procedure, test, or experiment is based is objectively verifiable or is validly derived from widely accepted knowledge, facts, or principles;

(2) The design of the procedure, test, or experiment reliably implements the theory;

(3) The particular procedure, test, or experiment was conducted in a way that will yield an accurate result.

A trial court need not consider testimony within the general knowledge of a lay person. *Phillips v. Miller*, 10th Dist. No. 88AP-147 (Dec. 22, 1988).

{¶ 58} Evid.R. 703 through 705 provide for limitations on an expert's testimony. "The facts or data in the particular case upon which an expert bases an opinion or inference may be those perceived by the expert or admitted in evidence at the hearing." Evid.R. 703. "Testimony in the form of an opinion or inference otherwise admissible is not objectionable solely because it embraces an ultimate issue to be decided by the trier of fact." Evid.R. 704. "The expert may testify in terms of opinion or inference and give the expert's reasons therefor after disclosure of the underlying facts or data. The disclosure may be in response to a hypothetical question or otherwise." Evid.R. 705. ODOT's arguments to the effect that a car crash does not require an expert opinion because the act of driving was within the ambit of the magistrate's experience as a factfinder, was not based in law, and the

magistrate abused her discretion in heeding it and limiting expert testimony from Dr. Vigilante in creating the body of evidence on which she would base her decision. We point to ODOT's argument before the magistrate:

This is a car crash. We all understand how to drive a car. This isn't something that's going to rise to the level -- and of course this rule is written for juries, but as it's applied to you as a layperson -- you're probably beyond a layperson, but again, this witness has to offer you something beyond your knowledge and experience. He doesn't.

The other thing that Mr. Webb just said is that he's going to tell you how the mind works. Well, there can't be anything more speculative than that. So what they're going to try to do, I guess they are, is to have this witness put himself in the mind of the driver of the PT Cruiser. That is just pure speculation. There's no other way to account for it.

(Tr. Vol. 3 at 773.)

{¶ 59} The State of Ohio's duty exists to maintain Ohio's highways in a reasonably safe condition. R.C. 5501.11; *Knickel v. Ohio Dept. of Transp.*, 49 Ohio App.2d 335, 339 (10th Dist.1976); *White v. Ohio Dept. of Transp.*, 56 Ohio St.3d 39, 42 (1990). As part of what is considered to be "reasonably safe," human and psychological factors cannot be ignored or argued away with rules of informality because an experience may be common to many people. Not all people walk the same way (or even *can* walk for that matter) and not all people experience driving in the same way. The approach advocated by ODOT of working practically straight from the magistrate's own driving experience and apparently adopted by the magistrate in her manner of evidentiary rulings is unreasonable, arbitrary, and unconscionable. *Blakemore*. It constitutes an abuse of discretion. *Id.*

{¶ 60} ODOT is statutorily mandated to adopt a manual and specifications for a uniform system of traffic control devices, and that uniform system "shall correlate with, and so far as possible conform to, the system approved by the federal highway administration." R.C. 4511.09. "The [OMUTCD] has been adopted as the state's official specifications for highway signs and markings pursuant to the mandate of R.C. 4511.09. R.C. 4511.10 requires ODOT to comply with the MUTCD in erecting and maintaining highway signs and markings." *White* at 42, citing *Slavick v. Ohio Dept. of Transp.*, 44 Ohio App.3d 19, 22-24 (10th Dist.1988); *Pierce* at 127-28; *cf. Royce v. Smith*, 68 Ohio St.2d 106 (1981). We

acknowledge that this Court has previously determined that not all portions of the manual are mandatory and, therefore, some areas are within the discretion and engineering judgment of ODOT. *Perkins v. Ohio Dept. of Transp.*, 65 Ohio App.3d 487 (10th Dist.1989). But without a fuller complement of the evidence, O'Brien sought to have admitted to prove both negligence and causation by the State of Ohio as to the placement of roadway signs, considerations of whether certain signs or markings were required or optional is not dispositive of whether the signs were placed correctly and (with expert testimony from Dr. Vigilante) they would have been perceived by an oncoming driver.

{¶ 61} ODOT asserts that O'Brien never proffered the testimony that would have been elicited from Dr. Vigilante regarding the relevant human factors to show significant and substantial error and that "without such a proffer, the Court of Appeals is in no position to determine whether this was a significant and substantial error. 'Failure to make a proffer constitutes a waiver of the right to object to the evidentiary issue on appeal.' *Maghie & Savage, Inc., v. P.J. [D]ick, Inc.*, 10th Dist. No. 08AP-487, 2009-Ohio-2164 ¶50, citing *State v. Grubb*, 28 Ohio St.3d 199, 203 503 N.E.2d 142 (1986)." (ODOT's Brief at 28.)

{¶ 62} Based on our review of the record, we find that O'Brien adequately proffered the testimony that would have been elicited from Dr. Vigilante regarding human factors, had Dr. Vigilante been permitted by the magistrate to testify on that issue. O'Brien specifically proffered that Dr. Vigilante was going to testify, from a human factors standpoint and from a psychologist's standpoint, how Alexander could have driven down SR 95, seen or perceived the signs, and then not remembered them right after the accident, a concept well beyond the knowledge of layperson.

{¶ 63} In *Deffinbaugh v. Ohio Turnpike Comm.*, 67 Ohio App.3d 692, 699-700 (8th Dist.1990), the Eighth District Court of Appeals considered the admissibility of expert human factors testimony:

Joe Kent, O.T.C.'s expert with respect to accident reconstruction, prepared two computer generated simulations, the printouts of which were admitted into evidence.

* * *

It appears that the courts of the state of Ohio have not considered the admissibility of computer simulation for purposes of accident reconstruction. When confronted with a newly applied scientific principle, the Supreme Court of Ohio

has endorsed a flexible standard in accord with our Rules of Evidence. *State v. Williams* (1983), 4 Ohio St.3d 53, 4 OBR 144, 446 N.E.2d 444. In *Williams*, the Supreme Court of Ohio stated:

"We believe the Rules of Evidence establish adequate preconditions for admissibility of expert testimony, and we leave to the discretion of the state's judiciary, on a case by case basis, to decide whether the questioned testimony is relevant and will assist the trier of fact to understand the evidence or to determine a fact in issue." *Id.* at 53, 4 OBR at 144, 446 N.E.2d at 444.

Evid.R. 402 provides:

"All relevant evidence is admissible, except as otherwise provided by the Constitution of the United States, by the Constitution of the State of Ohio, by statute enacted by the General Assembly not in conflict with a rule of the Supreme Court of Ohio, by these rules, or by other rules prescribed by the Supreme Court of Ohio. Evidence which is not relevant is not admissible."

The admissibility of scientific testimony is referred to specifically in Evid.R. 702, which provides:

"If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education may testify thereto in the form of an opinion or otherwise."

We find that the trial court properly admitted Kent's computer simulations. Kent's first computer simulation, Exhibit D, represents his opinion of how the accident occurred. It demonstrates that the tractor trailer, given its weight and size, traveling at thirty-five m.p.h., requires two hundred feet to reach full jackknife. Mr. Kent's second computer simulation established that if the accident occurred as plaintiff's expert claimed, then the trailer would have come to rest left of the through lanes and therefore not have struck the guardrail and bridge pier.

Id.

{¶ 64} The magistrate excluded Dr. Vigilante's testimony about the science of human factors that addresses the related issues of negligence regarding the signage of the intersection and causation of the accident. While we acknowledge that Alexander obviously

made a mistake in navigating the intersection as he did, we are persuaded that the facts here show that a question remains as to whether his mistake was caused by the information a driver such as Alexander would have absorbed from the intersection signage and whether it properly or adequately informed him what to expect on the roadway ahead.

{¶ 65} Based on Dr. Vigilante's report (Trial Exhibit 22, including E.4. therein), Alexander's excited utterances could be easily taken to be remarks of self-castigation by a seasoned driver made on experiencing an accident the magnitude that he and his passengers suffered. These utterances also would be consistent with his not specifically remembering any signage. Because Dr. Vigilante's expert testimony was unnecessarily limited, we find the Court of Claims erred in excluding it, thus denying O'Brien the opportunity for a complete and fair decision on his claims against ODOT. Having thoroughly reviewed the record, we are persuaded that Dr. Vigilante's testimony about human factors, including but not limited to working memory, long-term memory, positive guidance and perception/reaction time, was relevant to the issue of causation in this matter. Consequently, we find that the magistrate's ruling to exclude Dr. Vigilante's testimony was an abuse of discretion that amounted to prejudicial error.

{¶ 66} Therefore, O'Brien's fourth assignment of error is sustained.

C. O'Brien's First, Second, and Third Assignments of Error

{¶ 67} Because we have determined to reverse and remand this matter based on O'Brien's fourth assignment of error, the remaining assignments of error are moot and are considered no further.

IV. CONCLUSION

{¶ 68} Accordingly, based on the foregoing reasons, we sustain O'Brien's fourth assignment of error and decline to consider his first, second, and third assignments of error, finding them to be moot. This matter is hereby remanded to the Court of Claims of Ohio for a new trial consistent with this decision.

Judgment reversed and cause remanded.

DORRIAN and HORTON, JJ., concur.
