UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF OHIO
WESTERN DIVISION

Linda Buck *et al.*,

Plaintiff

v.

Ford Motor Company,

Defendant

Case No. 3:08CV998

ORDER

This is a products liability action brought by plaintiffs Linda and Daniel Buck (Buck), against defendant Ford Motor Company (Ford). In 2006, Linda Buck was injured when a 1999 Ford Expedition, driven by J.D. White, crashed through a wall of the bakery in which Linda Buck was working—allegedly due to an electronic malfunction that suddenly seized control of the throttle.

Jurisdiction is proper under 28 U.S.C. § 1332.

Pending is Buck's motion to exclude Ford's expert Vincent DeClercq. [Doc. 56]. Also pending is Ford's motion to exclude Buck's experts: Samuel Sero [Doc. 58]; Keith Armstrong, [Doc. 60]; and William Berg [Doc. 59].

For the reasons that follow, I grant in part and deny in part the parties' *Daubert* motions.

Background

On April 27, 2006, White pulled his 1999 Ford Expedition into the parking lot of a Nickles Bakery in Toledo, Ohio. As or soon after Mr. White pulled into the lot in front of the store, the vehicle suddenly accelerated over the curb, traveled into the store through the front window, crashed through a brick wall and struck bakery employee Linda Buck, pinning her against a back wall.

Mr. White, who was sixty seven years old, was cited and convicted for failure to control. He has since passed away.

In 2008, Buck sued Ford in the Lucas County, Ohio, Common Pleas Court, asserting that the Expedition had suddenly accelerated because of a design defect that rendered it susceptible to unintended throttle opening due to the impact of electromagnetic interference (EMI) on the electronic throttle control system.[1]

The Expedition had approximately 98,000 miles on it at the time of the incident. It was equipped with a Next Generation Speed Control system (NGSC).

Ford removed the action to the district court and answered the complaint, denying that there was any defect in the subject vehicle and claiming that the accident was due to driver error.

The plaintiffs designated two electronics experts, Keith Armstrong and Samuel Sero, and one human factors and accident reconstruction expert, Dr. William Berg, in support of their claim of defect. Ford has designated its former employee, Victor Declercq, as its expert to rebut that claim.

Discussion

Federal Rule of Evidence 702 requires me to perform a "gate-keeping role" when considering the admissibility of expert testimony. *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 597 (1993). Rule 702 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, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

Rule 702 applies not only to scientific testimony, but also to other types of expert testimony based on technical or other specialized knowledge. *See Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137, 147, 149 (1999).

My gate-keeping function here is three-fold.

[1] Commonly referred to as a speed, or cruise, control system.

First, I must determine whether the witness is qualified as an expert. "When making a preliminary finding regarding an expert's qualifications under Fed. R. Evid. 104(a), the court is to examine 'not the qualifications of a witness in the abstract, but whether those qualifications provide a foundation for a witness to answer a specific question.'" *Smelser v. Norfold Southern Ry. Co.*, 105 F.3d 299, 303 (6th Cir. 1997) (quoting *Berry v. City of Detroit*, 25 F.3d 1342, 1351 (6th Cir. 1994)).

Second, I must determine whether the testimony is reliable. *See Daubert*, *supra*, 509 U.S. at 590. The Court in *Daubert* listed several factors for consideration in assessing the reliability of scientific testimony, including:

- Whether a "theory or technique . . . can be (and has been) tested";
- Whether it "has been subjected to peer review and publication";
- Whether, in respect to a particular technique, there is a high "known or potential rate of error" and whether there are "standards controlling the technique's operation"; and
- Whether the theory or technique enjoys "general acceptance" within a "relevant scientific community."

Kumho Tire, *supra*, 526 U.S. at 149–50 (quoting *Daubert*, *supra*, 509 U.S. at 592–94).

The test of reliability is, however, "flexible, and *Daubert*'s list of specific factors neither necessarily nor exclusively applies to all experts or in every case." *Id.* at 140. "[W]hether *Daubert*'s specific factors are, or are not, reasonable measures of reliability in a particular case is a matter that the law grants the trial judge broad latitude to determine." *Id.* at 153. The focus must be on the principles and methodologies on which the expert's opinion is based, and not on the merits of the expert's conclusions. *Daubert*, *supra*, 509 U.S. at 594-595 n.12; *United States v. Bonds*, 12 F.3d 540, 556 (6th Cir. 1993) (district courts "are not to be concerned with the reliability of the conclusions generated by valid methods, principles and reasoning.").

Finally, I must determine whether the expert's reasoning or methodology properly applies to the facts at issue: *i.e.*, whether the opinion is relevant. *See Daubert, supra*, 509 U.S. at 591–93. To be relevant, the testimony must "assist the trier of fact to understand the evidence or to determine a fact in issue." Fed. R. Evid. 702. This relevance requirement ensures that there is a "fit" between

the testimony and the issue to be resolved at trial. *United States v. Bonds*, 12 F.3d 540, 555 (6th Cir. 1993).

Rejection of expert testimony "is the exception rather than the rule." *In re Scrap Metal Antitrust Litigation*, 527 F.3d 517, 531 (6th Cir. 2008) (quoting Fed. R. Evid. 702 Advisory Committee's Note, 2000 Amend.). My role as gatekeeper "is not intended to serve as a replacement for the adversary system: '[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.'" *U.S. v. 14.38 Acres of Land*, 80 F.3d 1074, 1078 (5th Cir. 1996) (quoting *Daubert*, *supra*, 509 U.S. at 597).

In assessing expert testimony, I "should also be mindful of other applicable rules." *Daubert*, *supra*, 509 U.S. at 595. Federal Rule of Evidence 703 provides that "[i]f the underlying data are so lacking in probative force and reliability that no reasonable expert could base an opinion on them, an opinion which rests entirely upon them must be excluded." *In re Paoli RR. Yard PCB Litig.*, 35 F.3d 717, 748 (quoting *In re "Agent Orange" Prod. Liab. Litig.*, 611 F. Supp. 1223, 1245 (E.D.N.Y. 1985)).

The proponent of the evidence has to establish that all of the pertinent admissibility requirements are met by a preponderance of the evidence. *See* Fed. R. Evid. 104(a); *see also Bourjaily v. United States*, 483 U.S. 171, 175–76 (1987).

Buck offers the expert testimony of Keith Armstrong, Samuel J. Sero, and William Berg. Ford urges the court to exclude all of these experts' opinions, arguing that they are not qualified to offer their opinions, they rely on evidence that is insufficient as a matter of law to establish causation, and their opinions are unreliable.

Ford offers the expert testimony of Vincent Declercq. Buck moves to exclude that testimony, arguing that Declercq is unqualified and that his testimony lacks a sufficient factual basis.

1. Keith Armstrong

Armstrong intends to opine that: 1) the design of Ford's NGSC system is defective in that EMI can open the throttle without a signal from the driver; 2) the system is not failsafe; 3) Ford ignored its own guidelines for electromagnetic compatibility (EMC) and other available alternative measures that would have improved the system's EMC; and 4) Ford's EMC testing protocols and testing results are insufficient bases to ensure the functional safety of the cruise control system.[Doc. 60-7, at 6]. Armstrong does not intend to testify as to the specific cause of the accident giving rise to this litigation.

Ford moves to exclude Armstrong's testimony on the grounds that: 1) his testimony is unreliable under Fed. R. Evid. 702(2); 2) his general causation testimony fails to assist the trier of fact; and 3) he had *ex parte* communications with a Ford employee and obtained Ford documents relating to the subject matter of this case from that employee during the pendency of this case, despite being told not to do so. [Doc. 60].

On review of his testimony, I find that Armstrong's general causation testimony—that EMI can cause a vehicle equipped with a Ford NGSC cruise control to suddenly accelerate and that the NGSC system is therefore defective—is unreliable. As each of Armstrong's other proposed opinions necessarily incorporate this foundational opinion, his entire testimony shall be excluded

A. Background

Keith Armstrong is a chartered electrical engineer in the United Kingdom. Ford does not challenge Armstrong's qualifications.

B. Reliability under Rule 702(2)

Applying the *Daubert* guidelines, Ford argues that Armstrong's proposed testimony in this case is unreliable under Fed. R. Evid. 702(2) because: 1) his theories are untested; 2) his theories have not been peer reviewed through publication; 3) his methodology has not gained general acceptance; and 4) he cannot express his opinions within a reasonable degree of scientific certainty. Though no one element is dispositive, I find that Armstrong's testimony is unreliable because his theory has not been tested and it has not been formally peer-reviewed.

i. Failure Analysis

Ford contends that Armstrong has not identified any actual methodology that he used to reach his conclusion that EMI could cause a vehicle with a NGSC system to suddenly accelerate. Buck states that Armstrong "employed failure analysis, an engineering design methodology that has been the standard in the field of EMC for many years." [Doc. 80 at 4].

This is insufficient, as there are multiple methods of failure analysis, and merely announcing that an expert applied failure analysis does not demonstrate that the methodology is reliable. For example, in *Kumho Tire, supra*, 526 U.S. at 255-256, the Court found that an expert's method of tire failure analysis that employed a visual/tactile inspection was unreliable *vis-a-vis* specific causation.

Armstrong also testified that he relied on the scientific methodology of ISO60000-1-2, a protocol written by a committee of acknowledged EMC experts and approved by the National Standards Committee on EMC. This protocol is entitled "Methodology for the achievement of functional safety of electrical and electronic systems including equipment with regard to electromagnetic phenomena" [Doc. 62-1 at 9]. Armstrong did not provide a complete copy of the document, nor does he explain the methodology espoused therein.

Armstrong's explanation of his methodology is: "[y]ou identify all possible hazards that could result from malfunctions, and then you go through your design and what likelihood will come of it, and you compare that likelihood with acceptable . . . risk." [Doc. 74 at 17-18].

It remains unstated, therefore, how Armstrong determined that EMI could activate a NGSC servo. Having read Armstrong's report and testimony, Armstrong's methodology seems in fact to be an application of his education and experience with EMI and electronics. When pressed on how he "can say beyond it's possible but that [EMI-induced sudden acceleration] actually can happen here," Armstrong responded, "[t]he engineering experience encompassed all over the world for 60 or more years." [Doc. 74 at 93]. He seems to have inferred, from his understanding of general engineering principles, electromagnetic compatibility, and printed circuit board design, that a NGSC will behave in a predictable way.

Armstrong states that EMI is inevitable in all electronics, and explained the effects EMI can have on a microprocessor. Accordingly, he testified that EMI can activate a speed control "[t]hrough interference getting into the microprocessor." [Doc. 74 at 90]. The signal "could come in on the output lines, the output driver to the motor and coupled into the microprocessor and cause it to glitch, put the software into a loop. It's hard to be more precise than that because there's about a million ways which this could happen." [Doc. 74 at 92].

He explained that he can reliably infer that the NGSC system will react to EMI in certain ways, because "the microprocessor is just a microprocessor. They use them all over the world. They all behave the same way." [Doc. 74 at 93].

The design of the microprocessor has "built in protection" to minimize the effects of EMI. [Doc. 74 at 94]. In the case of the NGSC, those protections are the stepper motor and the aluminum enclosure. Armstrong testified to the weaknesses he perceives in those design elements that make them inefficient. He further opines that the NGSC system is "not as robust as it could be. It doesn't follow any good EMC engineering design principles, including those of the Ford Motor Company. And it also doesn't have a proper failsafe." [Doc. 75 at 14-15].

Based on his understanding of how EMI works in a general engineering sense, and having reviewed the design of the NGSC systems, Armstrong concluded that the design is susceptible to EMI-induced sudden acceleration.

So far, so good. But as noted by Buck, "[t]he process is to first do a risk estimation, come up with a design specification, and then to verify it." [Doc. 62 at 5]. As discussed below, I find Armstrong's general causation opinion unreliable in part because he has failed to verify it, and he can not point to others who have. *E.g. Smelser*, *supra*, 105 F.3d at 304 (applying *Daubert* to exclude the testimony of a biomechanical engineer who failed to conduct pertinent testing).

ii. Testing

Ford contends that Armstrong's general causation theory—that EMI can cause a vehicle to accelerate—is unreliable because it is untested.

Ford argues that Armstrong must verify, through testing: 1) the creation of a transient EMI signal by a source within the vehicle; 2) the existence of pathway through which the signal can travel into the speed control electronics; 3) that the signal can activate the stepper motor; and 4) that, even if such a signal or combination thereof could engage the stepper motor, it could be both strong enough and last long enough to maintain a wide-open throttle through a sudden acceleration incident. [Doc. 60 at 13].

Armstrong acknowledges that he has never attempted to replicate or test a transient signal activating a servo in an automobile, and states that he is unaware of anyone who has ever been able to get EMI to actually activate a servo. Based on these statements, Ford argues that this untested hypothesis fails the *Daubert* test.

Buck asserts that "testing is not an appropriate methodology to ensure safety." [Doc. 62 at 6]. This statement is not only illogical, it is unrelated to the issue at hand, *i.e.* verification of a theory. Buck also argues that Armstrong's opinion "is not the type of opinion that can or should be subjected to testing; design verification and failure modes and effects analyses are used instead, for the simple reason that there could be millions, if not trillions, of possible pathways to failure." [Doc. 80 at 6].[2]

Valid scientific methodology usually involves "generating hypotheses and testing them to see if they can be falsified." *Daubert, supra*, 509 U.S. at 593. Indeed, "*Daubert* and its progeny make clear that 'proposed [expert] testimony must be supported by appropriate validation.'" *Pride v. BIC Corp*. 218 F.3d 566, 578 (6th Cir. 2000) (citing *Daubert, supra*, 509 U.S. at 591).

Though the *Daubert* standard is flexible, that Armstrong failed to verify his theory through testing weighs against finding his opinion reliable. *E.g. Pride, supra,* 218 F.3d at 578 (in a product liability case, the "failure of [plaintiff's] experts to test their hypotheses in a timely and reliable

[2] Buck's argument is also illogical on its face: Armstrong need not catalogue every potential pathway to failure; evidence that scientifically verifies that any transient EMI event ever activated a servo would bolster the reliability of his opinion.

manner" was one basis for holding their testimony inadmissible); *see also, Smelser, supra*, 105 F.3d at 304.

Without testing, all Armstrong has done is identify a hypothesis.[3] It may be a sound one, but the courts must necessarily lag behind science. Untested hypotheses, even if plausible, are insufficient to satisfy Rule 702. *E.g.*, *Rider v. Sandoz Pharm. Corp*., 295 F.3d 1194, 1202 (11th Cir. 2002) ("The courtroom is not the place for scientific guesswork, even of the inspired sort."); *see also Tamraz v. Lincoln Elec. Co.*, 620 F.3d 665, 670 (6th Cir. 2010) (explaining that a "working hypothesis" is not "admissible scientific knowledge").

Armstrong provides no explanation for the analytical leap that the general engineering principles he describes apply to motor vehicles in general and the NGSC system in particular. "Nothing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence which is connected to existing data only by the *ipse dixit* of the expert. A court may conclude that there is simply too great an analytical gap between the data and the opinion offered." *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997).

I conclude, therefore, that Armstrong's theory has not been sufficiently tested by himself or others to sustain a finding of sufficient reliability to allow the jury to hear his testimony.

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[3] Armstrong testified that he uses failure analysis in his consulting. However, he when asked how many times he'd consulted to perform a failure analysis with regard to EMI he clarified:

> Well, I have had over 20 years, and not all of them -- many of them, actually, want me to help them design their product so they don't have a problem. So I -- you bring the same skills to that. You're trying to head off a potential problem. So I guess it's failure analysis, but it's pre-failure, so you don't have a failure. So probably about 500 or so, I would think, were involved in that sort of thing.

[Doc. 74 at 8].

The technique makes sense pre-failure—*i.e.* in the design phase— when an the engineer attempts to prevent potential failures. What is lacking in this case is a showing that EMI-induced acceleration is anything more than a potential problem.

iii. Peer Review and Publication

Ford argues that Armstrong's theory is unreliable because Armstrong has not submitted that theory to a peer-reviewed publication, nor is he aware of any peer-reviewed article which has ever found that EMI has actually caused a speed control system in a vehicle to activate.[4]

Armstrong has written numerous articles and given many presentations on electromagnetic compatibility. In 2008, he presented a paper entitled "EMC for the Functional Safety of Automobiles; why EMC Testing is Insufficient and What is Necessary" at the IEEE EMC symposium in Detroit. [Doc. 74 at 52]. Armstrong testified that it was peer-reviewed in the sense that "they reviewed it, and the could have told me to change it, or they could have not accepted it." [Doc. 74 at 52]. Armstrong also testified that he was, in the near future, planning to give a paper called Sudden Acceleration in Automobiles and Control the Risks Due to EMI at the IEEE Product Safety Engineering Society annual symposium in Boston. *Id.*

At the *Daubert* hearing, Ford asked Armstrong whether the 2008 paper had been "peer-reviewed by people who sat down, picked it apart, asked questions about it." [Doc. 74 at 65]. Armstrong responded, "I understood that it had. It had to be accepted by the papers committee and reviewed . . . these were safety engineers who are very well thought of safety engineers who reviewed my paper. To me that's peer-reviewed." *Id*.

Ford dismisses Armstrong's papers and publications as "symposiums where people make PowerPoint presentations," and asserts that *Daubert* peer review means formal submission and publication through an established journal. Ford contends that "the law recognizes that simply presenting at a conference meets neither the letter nor the spirit of the *Daubert* peer review

[4] Buck responds that Ford misapplies *Daubert* by focusing on whether his conclusions have ever been published and peer-reviewed. Buck argues that there is no support for Ford's contention that the resulting conclusion must be subjected to peer review. This argument is misplaced, as according to *Daubert*, it is simply a "pertinent consideration whether the **theory** or technique has been subjected to peer review." *Daubert, supra,* 509 U.S. at 593-594 (emphasis added).

requirement because a presentation does not subject the theory to the active, critical rigors that a true peer review process involves."[5] [Doc. 84 at 21].

Ford's is precisely the ossified analysis that *Daubert* rejected. The Supreme Court stated that peer review and publication are not identical and need not overlap: "Another pertinent consideration is whether the theory or technique has been subjected to peer review and publication. Publication (which is but one element of peer review) is not a *sine qua non* of admissibility; it does not necessarily correlate with reliability." *Daubert,* 509 U.S. at 593-94.

Peer review through publication in an established journal is the most significant and meaningful form of peer review. Armstrong has not had his theory reviewed in that manner. This is, under *Daubert*, "a relevant, though not dispositive, consideration in assessing" his testimony. *Id*. at 594. I also find, as indeed I must based on Armstrong's testimony, that his theory has been—at least to some modest degree— reviewed by his peers, which is some indication of reliability. It is but one indication that in his field, his theory is not immediately dismissed as junk science.

iv. Probability

Ford argues that because Armstrong cannot express his opinion as to the existence of a defect or the cause of the incident in terms of probability, his testimony should be excluded. Ford contends that to be admissible, an expert must present facts from which a jury could infer that one theory is more likely than not the actual cause in fact. Therefore, Ford argues that Armstrong's opinion must be excluded as speculative.

"Causation can be divided into general causation and specific causation, with proof of general causation being a prerequisite to proving specific causation." *In re Bausch & Lomb Contacts Lens Solution Prods. Liab. Litig.*, 2010 WL 1727807 *1 (D.S.C.). Ford conflates general and specific

[5] The cases Ford cites in support of this assertion are not persuasive because there are important factual distinctions. For example, in *United States v. Birdsbill*, 243 F. Supp. 2d 1128 at 1134-35, the court elaborated numerous reasons why the unpublished papers were insufficient, for example: "Notably, the papers presented to the ATSA national conferences cannot be considered independent for the reason that Dr. Abel is a founder of the ATSA and sits on its publications board."

causation. Armstrong is a general causation witness who intends to testify that EMI can cause sudden acceleration, not that it caused the sudden acceleration in this or any other case.

The admission of expert testimony is fact specific, and the proper inquiry is the helpfulness of the opinion to the trier of fact. *See Daubert, supra,* 509 U.S. at 591-92. Doubts regarding usefulness should generally be resolved in favor of admissibility. *Aluminum Co. of America v. Sperry Prods., Inc.*, 285 F.2d 911, 916 (6th Cir. 1960); *Miles v. General Motors Corp.*, 262 F.3d 720, 724 (8th Cir. 2001).

Were Armstrong's testimony about EMI reliable, the general causation testimony Armstrong offers would likely be helpful to the jury in understanding what appears to me to be many highly technical and complicated engineering principles.

C. Ex Parte Communications

Ford argues that Armstrong's testimony should be excluded as a sanction for his *ex parte* communications with a Ford employee during the pendency of this case. While a district court may issue sanctions to protect its integrity and prevent abuses of the judicial process, such action is unnecessary here.

I disagree with Ford's characterization of Armstrong's contact with Mr. Gunsaya as a "brazen violation" of the *ex parte* communications rule. Armstrong's deposition shows that he did not believe himself to be violating the rule when he repeated a request for documents from Mr. Gunsaya:

> Q. And notwithstanding you being told by those plaintiffs' lawyers not to contact Mr. Gunsaya, you nonetheless reached out to him again in March to try to obtain additional training materials; is that correct?
> A. Well, maybe I was wrong, but it seemed that we had a business arrangement.
> * * * * *. . .
> Q. Mr. Armstrong, were you requesting of Mr. Gunsaya materials regarding EMI or EMC in his capacity as an employee of Ford Motor Company?
> A. Yes, I was, but they were nothing to do with the case.
> Q. Does anything in this case, the Buck case, have anything to do with EMI or EMC?
> A. Yes, it does.
> Q. And were you attempting to obtain documents related to EMI or EMC from Mr. Gunsaya, an employee of Ford Motor Company?
> A. Yes, I was, but they weren't to do with the case.

[Doc. 60 at 15].

Ford cites no case imposing sanction it seeks. Although Armstrong should have known better, his violation does not appear intentional. More importantly, it does not appear to have prejudiced Ford in any way.

2. Samuel J. Sero

Ford moves to exclude plaintiff's expert Samuel J. Sero, an electrical engineer.

Sero has a bachelor of science degree in electrical engineering. He graduated from Carnegie Mellon University in 1967 and worked twelve years with an investor-owned power company. Since 1975, he has performed private consulting on engineering and design of facilities. Since 1989, he has done forensic consulting for litigants, investigating electrocutions, fires, work place injuries, power tool accidents, consumer product accidents, slip and falls, and vehicle related problems including unintended vehicle accelerations as alleged in this case. He is a registered professional engineer in Pennsylvania.

Sero intends to opine that: 1) as a matter of general causation, EMI can induce sudden acceleration; and 2) the sudden acceleration of the White vehicle was more likely than not caused by EMI.

Ford argues that Sero's general causation opinion is unreliable because: 1) it is untested; 2) it has not been peer-reviewed; 3) his methodology has not gained general acceptance; and 4) it is impermissibly based on possibility, not probability. Ford contends that Sero's specific causation opinion should be excluded because he cannot reliably rule out driver error. Finally, Ford claims that Sero's testimony is inadmissible because it is not based on sufficient facts or data.

A. General Causation

Sero intends to testify that EMI can cause a vehicle with an NGSC system to suddenly accelerate. Specifically, Sero opines that "electromagnetic interference generated in and between components in the engine compartment" creates a "signal which activates the cruise control output

to the stepper motor [that] would cause the component to pull the cruise control cable to the wide open position." [Doc. 65-1 at 3].

According to Sero, Ford's NGSC electromagnetic clutch is energized from the moment the vehicle is started. [Doc. 76 at 10-11.] The cruise control's microprocessor contains microelectronic components that operate on small voltage values. *Id.* at 14. The processor takes signals and makes a decision as to whether to activate the clutch and open the throttle. In his view, the system has inadequate filtration and isolation, making it susceptible to electromagnetic interference. "And all it that takes is one voltage input to cause the [stepper motor] to go into operation." [Doc. 76 at 17].

Ford contends that Sero's general causation opinion should be excluded because his opinion fails the threshold requirements for reliability under Rule 702(2). I agree.

On review of his proposed testimony, I find that Sero's opinion general causation opinion is unreliable because: 1) his methodology is not reliably applied; 2) his theory is untested; and 3) his theory has not been submitted for peer review or publication.

(a). Process of Elimination Methodology Standard

Sero uses the same methodology for his opinions as to both general and specific causation: a process of elimination. Ford contends that Sero is applying "differential diagnosis,"[6] in which he eliminates potential causes of sudden acceleration until the only remaining cause is EMI. Ford argues that Sero has not reliably applied his methodology, because he cannot rule in EMI as a potential cause in the first place.

Buck argues that Sero's methodology is not a differential diagnosis, but rather "engineering failure analysis"—an analytical tool that identifies the consequences of a failure in a particular component. [Doc. 65 at 7]. According to Buck, Sero's methodology is a "FMEA"—a Failure Modes and Effects Analysis—in which one first hypothesizes a failure in that component and then

[6] Differential diagnosis is a methodology used to determine causation, and normally associated with medical opinion testimony. *See generally Best v. Lowe's Home Centers, Inc.*, 563 F.3d 171, 182 (6th Cir. 2009)).

ascertains the effect of that failure. Sero also uses the Ford Ishikawa diagram, in which instead of hypothesizing a component failure and extrapolating forward to determine its potential effects, one starts with a malfunction and works backwards to ascertain the specific types of failures that can cause such a malfunction.

Buck distinguishes differential diagnosis, arguing that "that technique does not establish a direct link between exposure to a substance and an injury and is usually confined to the world of medicine . . . It is a far cry from reconstruction and engineering failure analysis where causal links are accurately determined by applying the laws of physics." [Doc. 81 at 3].

The difference, at least with respect to Sero's methodology, appears to be tautological. A brief review of Sero's testimony makes clear that Sero's methodology is in essence that which Buck defines as differential diagnosis: eliminating each of the potential causes until one that cannot be ruled out is isolated.[7]

> Q. And you have no evidence as you sit here today that a transient signal could actually actuate the stepper motor in a Next Generation system, do you?
>
> A. Depends on what you want to call evidence. Having eliminated every other possibility, it's all that's left. So yes, I do have evidence.

[Doc. 76 at 101-102].

When pressed again, Sero gave the same explanation:

> Q. You don't have any evidence that any particular EMI signal has ever caused a sudden acceleration in his vehicle, have you?
>
> A. As I stated before, if the evidence is that nothing else has done it, then it has to be EMI. That's the evidence that you have.

[Doc. 76 at 105-106].

[7] The parties do not dispute the definition of differential diagnosis. Buck states that "differential diagnosis or differential etiology, [is] an excepted [sic] technique of identifying the cause of a medical problem, by eliminating each of the potential causes until isolating one that cannot be ruled out, or by determining which of those that cannot be excluded is the most likely." [Doc. 81 at 1-2].

Though Buck argues that Sero does not apply a differential diagnosis, the validity of that technical distinction is ultimately irrelevant to this issue because Sero admittedly applies a process of elimination.

Having determined that Sero's methodology is essentially the same as differential diagnosis, this Circuit's differential diagnosis standard guides determination of the reliability of Sero's opinion.

In *Best, supra*, 563 F.3d at 179, the court adopted the following standard for a reliable differential diagnosis: 1) the [witness] must objectively ascertain the nature of the patient's injury or disease; 2) he or she must "rule in" one or more causes of the injury using a valid methodology; and 3) engage in "standard diagnostic techniques" to rule out alternative causes to reach a conclusion as to which cause is the most likely.

In using this methodology to come to a conclusion regarding general causation, "[i]t is important to realize that a fundamental assumption underlying [differential diagnosis] is that the final, suspected 'cause' . . . must actually be capable of causing the injury." *Clausen v. M/V New Carissa*, 339 F.3d 1049, 1057-58 (9th Cir. 2003) (internal citations omitted). As noted by the Second Circuit, differential diagnosis might not support a general causation opinion because, "*like any process of elimination,* it assumes that the final, suspected cause remaining after this process of elimination must actually be capable of causing the injury." *Ruggiero v. Warner-Lambert Co.*, 424 F.3d 249, 254 (2d Cir. 2005) (emphasis supplied).

Thus, where an expert employs differential diagnosis to "rule out other potential causes for the injury at issue, he must also rule in the suspected cause, and do so using scientifically valid methodology." *Ruggiero, supra*, 424 F.3d at 254 (internal quotations omitted); *Tamraz, supra*, 620 F.3d at 674 (expert's differential diagnosis testimony excluded where he could not reliably conclude that manganese could cause Parkinson's disease).

Buck argues that the "ruling in/ruling out" analysis described in medical diagnosis/etiology cases is not germane because here Sero testified that there is only one explanation for a stationary car that suddenly accelerates at a high rate of speed on its own—an EMI-induced fault in the

electronics. This is obviously circular, as Sero must have some methodology to conclude that EMI-induced fault is a possibility in the first place.

Buck contends, in any case, that "in this case Mr. Sero reliably 'ruled in' EMI as a possible cause of sudden acceleration, which is the same thing as establishing general causation." [Doc. 81 at 4]. Ford disagrees, and so do I.

ii. Application of the Methodology—Ruling in EMI

Sero concludes that EMI can cause sudden acceleration on the basis of two Ford documents, and application of general principles of engineering.[8] Sero has not reliably ruled in EMI.

In brief, Sero's opinion is that EMI can cause sudden acceleration because: 1) numerous components under the hood generate an infinite variety of transient electronic signals; 2) these signals can potentially travel along the numerous interconnections between and among the various wiring harnesses, ground connections and power connections in the car; and 3) because of these interconnections, transient electronic impulses can sometimes invade pathways not intended by the design, and some of those pathways, in turn, could lead to the output transistors on the cruise control's printed circuit board, signaling the throttle to open to a near wide-open condition.

Sero thus testifies persuasively about the scientific and engineering principles suggesting the existence of EMI and its ability to trigger sudden acceleration. But although appeals to general scientific principles are appropriate as part and parcel of a reliable methodology, a wholesale, unexplained reliance on those principles as the sum total of an expert's methodology does not pass *Daubert* scrutiny. *E.g.*, *Meadows v. Anchor Longwall & Rebuild, Inc*., 306 Fed. App'x. 781, 789 (3d

[8] Sero relies on Ford's Ishikawa Diagram and FMEAs as evidence of general causation. Buck argues that "[s]ince Ford's own engineering analyses show that EMI can cause sudden acceleration, the only way Ford could justify exclusion under *Daubert* would be to convince this Court that the methodologies advanced by the company itself are somehow not "generally accepted.'" [Doc. 65 at 3-4]. This is incorrect, as FMEAs identify potential causes—in Buck's terms "hypothesiz[e] a failure," [Doc. 65 at 7]—and do not purport to confirm that EMI can cause sudden acceleration. Similarly, Ford states that the Ishikawa diagram is a document in which Ford considered and rejected that possibility. [Doc. 70 at 9].

Cir. 2009) (affirming the exclusion of expert evidence solely on "generally accepted principles of basic physics (recognized since the time of Sir Isaac Newton).").

"[T]he courtroom is not the place for scientific guesswork, even of the inspired sort." *Rosen v. Ciba-Geigy Corp*., 78 F.3d 316, 319 (7th Cir.1996). Rather, "[t]he important thing is not that experts reach the right conclusion, but that they reach it via a sound methodology." *Tamraz, supra*, 620 F. 3d at 675 (citing *Daubert, supra*, 509 U.S. at 595).

Sero has not reliably ruled in EMI as a potential cause of sudden acceleration, because he has not "supplemented his conclusions based on general engineering principles with reliable methodology." *Meadows, supra*, 306 Fed. App'x at 789. As discussed below, Sero's opinion lacks the indica of reliability as set forth in *Daubert*. Sero's theory has not been: 1) verified through testing; 2) published or peer reviewed; 3) generally accepted. Finally, Sero's theory is not based on sufficient facts or data.

"Nothing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert." *Joiner, supra*, 522 U.S. at 146. Therefore I find that "there is simply too great an analytical gap between the data and the opinion proffered", *id*., to permit Sero's opinions to go to the jury.

(a). Testing

Ford contends that Sero's general causation opinion fails the *Daubert* standard because his theory is untested. Either Sero's general causation opinion should be excluded for failure to test a clearly testable theory, argues Ford, or because an untestable theory is unreliable.

Sero acknowledges that he has never found a signal capable of activating the servo in any of the speed control systems he has tested. Nor is Sero aware of anyone who has ever found such a signal. But Sero asserts that he has "tested for the impact of EMI upon the Next Generation cruise control system and I have simulated the effects. However, it is not feasible economically or practically to conduct the type of testing that would be all inclusive." [Doc. 65-2 at 3-4].

Sero testified that he could "trigger throttle opening due to an injection of EMI." [Doc. 76 at 41]. "I can take a device and put it on a bench, and knowing what the operating parameters are of the signals that it takes to operate the device, I can do that. And I can inject them at the signal point and have the device take off and do what it's suppose to do." *Id.*

This is entirely insufficient to verify Sero's theory. Sero does not, for example, describe: what he did; how he did it; what, if any controls he used; what voltages he used; what "simulated the effects" means; or whether the effects can be reliably analogized to a cruise control in a car. Indeed, at the *Daubert* hearing he also testified that he had never "simulated a fault" on an NGSC system, and that he has never attempted to try to get any electrical transients to activate a NGSC system at all. [Doc. 76 at 101].

We are left to wonder how Sero knows what he says he knows. For example, Sero states in his report that "[w]hen an EMI-induced failure sends an unintended signal to the throttle, there are usually no detectable marks." [Doc. 65-1 at 3]. But he testified that he has also never been able to get a transient signal to activate any other kind of speed control. [Doc. 76 at 102]. Without any person ever having found a signal that could activate a servo, how can Sero state what usually occurs?

"The criterion of the scientific status of a theory is its falsifiability, or refutability, or testability." *Daubert, supra*, 509 U.S. 593. Without providing any guidelines by which Sero's simulation might be replicated, its results verified and critiqued, his testing cannot meet this element of the *Daubert* standard.[9] *E.g. Smelser, supra,*105 F.3d 304-305.

But Ford's argument that an untestable or untested theory is *per se* unreliable is an overstatement. The test of reliability is "flexible, and *Daubert*'s list of specific factors neither necessarily nor exclusively applies to all experts or in every case." *Kumho Tire, supra*, 526 U.S. at

[9] This is true regardless of whether Sero is correct that it is possible to test for EMI, but that testing is not "economically feasible." [Doc. 76 at 106]. In his *Daubert* testimony, Sero explained that he has used oscilloscopes on the wires that go to the cruise control and "every wire was sending these signals into the cruise control system . . . I tried for a number of years to try to pinpoint what was going on an finally realized the actual futility of the effort. It was just too monumental a task." [Doc. 76 at 41].

140. "[W]hether *Daubert*'s specific factors are, or are not, reasonable measures of reliability in a particular case is a matter that the law grants the trial judge broad latitude to determine." *Id.* at 153. Though whether a technique can be and has been tested is ordinarily a "key question" to be answered under *Daubert, supra* at 593-594, a hypothesis may satisfy *Daubert* even if it is untested so long as the expert provides sufficient alternative indicia of reliability.

Ford relies on the Sixth Circuit's opinion in *Pride, supra*, 218 F.3d 566 for the contention that an untested hypothesis fails the *Daubert* test. But Ford's reliance on *Pride* is not persuasive. There, while the expert's failure to test was significant, more important was the fact that the expert's theory was actually contradicted by the physical evidence in the case. *Id.* at 578.

The fact that Sero has not verified his theory through any testing on the subject vehicle, an exemplar vehicle, or any other vehicle with an NGSC system weighs against finding his opinion reliable, but it is not a *per se* bar.

(b). Peer Review

As the Court indicated in *Daubert*, peer review and publication are good indicators of reliability. Submission of a theory to the "scrutiny of the scientific community" is, generally, a part of "good science," and therefore whether or not a proposed theory has been published for peer review "will be a relevant, though not dispositive, consideration in assessing the scientific validity of a particular technique or methodology on which an opinion is premised." *Daubert, supra*, 509 U.S. at 593.

Neither Sero's EMI theory nor any of his work on sudden acceleration has ever been published or peer reviewed. [Doc. 76 at 78-79].[10] Nor is Sero aware of any peer-reviewed article in

[10] To rebut this assertion and to illustrate Sero's the putative theory's general acceptance of Sero's theory, Buck submits an affidavit from Albert Whittlesey, a scientist and an electromagnetic compatibility engineer. Mr. Whittlesey states that he "believes that Mr. Sero's theories set forth herein are based on sound and common engineering principles . . . His explanations require no new or novel theories or methods. " [Doc.65-5, at ¶ 6]. Ford suggests that Mr. Whittlesey has a conflict of interest. I make no finding in that regard, as one affidavit is insufficient to overcome the utter lack of published literature embracing Sero's theory.

a recognized journal finding that a transient signal can cause a cruise control to activate and result in sudden acceleration. *Id*. at 105. Buck does not dispute this, but instead argues that "the presence of a peer-reviewed article is only one facet of determining reliability of a methodology."[11] [Doc. 81 at 7].

While Buck is correct that the lack of peer review is not dispositive of reliability, the fact that Sero, who has worked in this field for decades, has never had this theory reviewed weighs heavily against admitting his testimony.

(c). Factual Basis

Under Federal Rule of Evidence 702, an expert witness's testimony is admissible if it is based on "sufficient facts or data." Ford argues that Sero's opinion that EMI can ever cause sudden acceleration lacks the necessary factual predicate and should therefore be excluded. Specifically, Ford contends that Sero is unaware of key mechanical components of the NGSC system that make it impervious to EMI.

According to Ford, Sero: 1) does not understand the NGSC three-phase system; 2) incorrectly believes that the NGSC system only has one filter to protect against transient signals; 3) erroneously claims that the NGSC system is not enclosed in aluminum; and 4) misunderstands the function of the brake on/off switch in vehicles equipped with the NGSC system.

(i). Three-Phase System

According to Sero, Ford's cruise control is negligently designed because power is supplied to the cruise control immediately upon ignition. As such, Sero contends, it takes only one fault to

[11] Buck makes the remarkable assertion that requiring peer review for Sero's "universally accepted" findings is like requiring peer review for gravity: "No one would so [require] because concepts such as velocity, acceleration, and gravity have been well known in Newtonion physics for centuries. Sero's findings are no different; he is simply applying well known principles of physics and failure analysis to automotive electronics." If this were the case, Sero could cite a high school textbook and be done with it. This argument was also rejected in *Meadows*, *supra*, 306 Fed. App'x. at 789 (affirming the exclusion of expert evidence solely on "generally accepted principles of basic physics (recognized since the time of Sir Isaac Newton).").

open the throttle. [Doc. 76 at 16-17] According to Sero, as long as one transient signal enters the integrated chip, the pulse generator will "set in motion" the stepper motor. *Id*. at 16.

Ford argues that Sero's assumption that a single transient signal is capable of activating the NGSC system and can cause the vehicle to reach wide-open throttle is faulty. Ford insists that Sero "ignores the NGSC system's unique EMI safeguard – namely, that the system requires three separate signals to interact with the system in a specific order and for a specific duration to cause the system to work at all." [Doc. 83 at 8]

Ford argues that Sero's misunderstanding of the NGSC system demonstrates complete ignorance of the basic circuitry of the system. According to Ford's expert, Sero's single transient signal theory is scientifically impossible because the signals that actually cause the NGSC system to work come from three different locations.

Sero responds that, although it is true that the system opens the throttle through the receipt of three signals in a sequence, all three phases are triggered by one input. In an affidavit submitted after the *Daubert* hearings, Sero contends that—based on the NGSC schematic—a single signal to the main integrated circuit chip, U1, sets the three-step function into action.[12] It is this signal which Sero contends could trigger the cruise control. According to Buck, "the problem resides in the fact that the input signal is unintended and triggers the sequence of outputs when it should not." [Doc. 88 at 4].

[12] "Internally in [U1, the main integrated circuit chip] is where decisions are made regarding cruise control operation. When a decision is made to activate the cruise stepper motor, a single signal sets the step function into action inside the integrated circuit chip. Sequentially, each of the connections to a coil of the stepper motor is turned on and off by a sequencer function inside the chip. A function which is activated by a single command signal generated out of the comparator circuit in this same chip. As can also be seen on the schematic, all three coils take their voltage from the same V(sub m) source, just as all three take their operating command from the same chip, U1. Sequential or stepping operation from a single signal generating source based in an integrated circuit chip is a well-known and often used control device. Mr. Declercq and Ford would like the world to believe that somehow three distinct signals are necessary at points PC01, PC1, and PC2 from some external entity to make the stepper motor function. This is not even how this device functions under normal operation. Its normal cruise function is that a comparison is made in U1 of operating conditions and a single output signal, internal to U1, is given to the on/off sequencer located in U1. All that is required for the malfunction of the cruise and the sudden acceleration of the vehicle is that this same operating signal is seen by the input to the sequencer." [Doc. 88-1].

Sero says that it is possible, Declercq says that it is not. Sero's qualifications make him qualified to testify as to his reading of the NGSC schematic. It is not my role as a gatekeeper to determine whether Sero's conclusion is correct. *E.g.*, *Jahn v. Equine Servs., PSC*, 233 F.3d 382, 391 (6th Cir. 2000) ("But comparing two pieces of evidence and determining which is more credible should be left for the finder of fact and should not be considered when ruling on Rule 702 admissibility."). Were Sero's testimony otherwise reliable, this dispute would be for the jury to resolve.

(ii). Filter

Ford argues that "Sero's assumption that the NGSC system only has one capacitor to filter potential transient signals is incorrect. Rather, the NGSC system has a series of barriers that prevent EMI at varying frequencies from interfering with the system." [Doc. 83 at 15].

A closer read of the deposition testimony to which Ford refers makes clear that Sero's point was not that there was only one capacitor, but rather that capacitors are insufficient to filter every potential signal.

> Q. And one of design features of the Next Generation system that [Declercq] claims eliminates EMI effects is the following: All input and output circuits are filtered. Do you agree with that?
>
> A. I'll agree that there's probably some form of capacitor at the termination point of all of the wire connectors coming in. The problem with it, especially in a microcircuit like this, is that the capacitors are extremely small, have very low power ratings, and because of that, they are also only good for certain ranges of frequencies. So that anything above or below that range goes right past it. It doesn't -- you know, you can't put in a single capacitor conductor or even capacitor conductor combination that's going to filter out everything.

[Doc. 81-1 at 56]. As Ford's argument is based on a misunderstanding of Sero's point, I need not address it.

(iii). Aluminum Enclosure

The parties and their experts spent considerable time both at the *Daubert* hearing and in their briefs debating whether the cruise control's electromagnetic clutch is fully enclosed in aluminum-shielded package that eliminates any external effects of EMI.

According to Sero, the cruise control is not entirely protected by metal. According to Ford, though a portion of the enclosure is made of plastic, the enclosure creates a metal seal around the entire unit.

Again, Ford is imprecise. Declercq, Ford's expert, did not testify that the aluminum box entirely seals the unit when closed. Instead, he said:

> A. [W]hen you close the thing, there's a spacing of perhaps a few thousandths of an inch, 5/1000 of an inch, something like that . . . So your wavelength is about an inch and a half long. *And so the wavelength is not going to penetrate or get into that small crack. Similarly, all the way around the pulley outlet, that is not dramatically sealed either, and it also is an opening*; but it, again, takes a very specific frequency directed in a very specific direction because when you get above 400 megahertz, we are talking about line of sight transmission . . . . The signals that could possibly get in here would have to be well into the gigahertz region, and there are very few of those kind of emitters.
>
> Q. You mean they just don't exist?
>
> A. They do exist.
>
> Q. They don't exist inside the vehicle?
>
> A. In general. Then if they do exist -- they can be generated inside the vehicle, the wiring harness and the componentry inside the vehicle, they can be generated. But if they are generated externally, then the shield and various sheet metal of the vehicle is a super good shield to prevent it from entering the vehicle.

[Doc. 81-3 at 47-49] (emphasis supplied).

In short, while Declercq is clear that he does not believe that any EMI would penetrate the aluminum box, he does not testify that the NGSC system is fully enclosed in aluminum. Though the crack is small, Declercq's testimony is that there is a crack. Ford's argument on this ground is misplaced.

(iv). BOO Switch

Ford also disputes Sero's description of the brake on/off, or BOO, switch. Ford states that "[u]nlike past systems, where the speed control system theoretically could reactivate after the driver hits the brake and then releases it, the NGSC system functions differently, by disengaging the speed control system as soon as the driver applies the brake, and does not re-engage when the brake is released, regardless of the cause of the speed control's initial activation." [Doc. 75 at 74-75].

Sero cites two sources for his theory that when EMI causes a vehicle to suddenly accelerate, applying the brake would not deactivate the speed control system and would allow the system to re-engage when the brake is released.

First, Sero argues that his opinion is confirmed by Ford engineer Casey Mulder. In a 1998 email, Mulder explains that in wide open throttle, the engine no longer produces vacuum. Thus, an operator of a vehicle with power assist brakes would only have one press of the brakes with the assist, and then subsequent depressions of the brakes would have substantially less braking power. This loss of braking assist would make it much harder "to push hard enough to open the brake pressure switch." [Doc. 81-5].

Buck characterizes this email as a description of "a sudden acceleration event in an Explorer equipped with the NGSC system where he found both that the BOO did not work and that the brakes were impeded -- placing the driver in 'big trouble.'" [Doc. 88 at 4]. Buck neglects to note that Mulder specifically limited discussion to situations in which the BOO switch independently malfunctioned:

> Why would the BOO switch not work? If you ground the indicator light line .pin4, like when we download calibrations to the module) [sic] BOO will not respond. So if an 'event' occurred where speed control went to WOT and for some reason pin 4 were grounded, incidents just as described by customers could occur.

[Doc. 88-2 at 2].

This email does not support Sero's contention that applying the brake would not deactivate the speed control system. Instead, Mulder says that it would be significantly more difficult to trigger the BOO switch on a second application of the brakes due to a loss of power assist. This email also does not support Sero's contention that the system might re-engage with the brake is released—it is simply not addressed.

Sero states that he did testing on the White vehicle: he floored the accelerator and braked at the same time, and found that he was unable to get the vehicle to stop even though he was applying approximately 150-200 lbs. of force. [Doc 81 at 10-11].

Sero does not explain whether and why this "test"—holding down the accelerator—is analogous to an errant transient signal. Additionally, this test does not seem analogous to the issue in question—depletion of the power assist—in the Mulder email.

Accordingly, I find that Sero's opinion regarding the BOO switch is not reliable.

B. Specific Causation

Sero intends to opine "that the most likely cause of the crash of the subject 1999 Ford Expedition on April 27, 2006 was a failure of the vehicle's cruise control system." [Doc. 58-7 at 68]. Ford argues that Sero's specific causation opinion should be excluded because his methodology is not reliably applied. I agree.

i. Methodology

Sero relies on the same "engineering failure analysis" to determine that EMI caused the incident in this case. [Doc. 81 at 14]. Buck asserts that this methodology is generally accepted and reliable.

As discussed above, Sero's opinion relies on his ability to rule in EMI as a potential cause. His specific causation opinion also requires that he reliably ruling out mechanical problems and driver error. *Tamraz, supra*, 620 F.3d 665. Buck contends that "differential diagnosis . . . is not applicable to engineering failure analysis. As to the latter, there is no authority requiring an expert to definitively rule out all possible causes of the failure of a machine." [Doc. 81 at 3-4].

The cases Buck cites for this proposition are unpersuasive and distinguishable. The major case on which Buck relies, *Jahn, supra*, 233 F.3d 382, is, in fact, a medical diagnosis case, not an engineering failure analysis. In that case, the experts' opinions were "based on undisputed objective medical facts," *id.* at 392. The court noted that "[l]ooking at the records of test results and physical symptoms to infer the presence of an infection is not a methodologically unsound 'assumption' or 'guess'--it is a diagnosis." *Id.* at 391. The court emphasized that "[c]ertainty [was] not to be found

in this case [was] due in considerable part to the lack of medical records kept by the defendants." *Id.* at 390.[13]

The decision in *Christie v. Mazda Motor of Amer. Inc.*, 2006 WL 2128897, at *4 (E.D. Tenn), is likewise distinguishable. The expert in that case used reliable methodology to narrow the possible causes of the plaintiff's injuries to two potential design defects. He reliably eliminated the plaintiff's negligence as a possible cause. *Id.* The court held that the expert's inability to further narrow his opinion to determine which of the two defects was the actual cause did not make his testimony inadmissable. *Id.* at *3.

This issue is instead directly analogous to that in *Viking Yacht Co. v. Composites One LLC,* 615 F. Supp. 2d 327 (D.N.J. 2009). In that case, the expert, an engineer, concluded that a product was defective "by eliminating other possible causes by a process of elimination." *Id*. at 335. The court, analogizing this methodology to differential diagnosis in medical cases, excluded the expert's causation testimony because he was not qualified to reliably rule out environmental causes. *Id*.

Thus, the law does not support Buck's proposed distinction between differential diagnosis and engineering failure analysis. Buck's assertion is further undermined both by the fact that Buck is unable to articulate any difference between Sero's ruling-out process of elimination analysis and differential diagnosis in practice, because Buck defines Sero's methodology as a differential diagnosis in her opposition to Ford's motion *in limine,*[14] and because Buck acknowledges that "plaintiffs have the burden of ruling out driver error." [Doc. 81 at 4].

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[13] Buck cites *Hartley v. St. Paul Fire & Marine Ins. Co.*, 118 Fed. Appx. 914, 920 (6th Cir. 2004), which simply restates the holding in *Jahn, supra,* without analysis.

[14] After an inspection of the subject vehicle revealed no mechanical malfunction that could have caused the sudden acceleration, Mr. Sero then applied another well - accepted scientific tool, a differential diagnosis or "ruling out" exercise, to determine that the cause of sudden acceleration in the vehicle could only have been an electronic malfunction of the types identified on Ford's Ishikawa diagram.

[Doc. 65 at 13].

Thus, the alleged distinction between Sero's ruling-out analysis and a differential diagnosis appears to be a distinction without a difference for the specific causation question in this case.

Regardless of what it is called, Ford characterizes Sero's methodology as a flawed process of elimination that purportedly rules out all potential causes of sudden acceleration. Ford argues that Sero's opinion does not have a reliable basis and therefore his opinion that EMI most likely caused this incident should be excluded. I agree.

In short, Sero determined that there are three potential causes of sudden acceleration, eliminated two of those causes, and therefore concluded that the one cause remaining is the likely cause.[15] There is nothing inherently unreliable about a process of elimination methodology, call it what you will. *E.g.*, *Carmichael v. Samyang Tire, Inc.* 923 F. Supp. 1514, 1520 (S.D. Ala. 1996) ("the Court perceives no inherent flaw in a process-of-elimination form of proof *per se*, so long as the underlying methodology is scientifically valid"), *rev'd*, 131 F.3d 1433 (11th Cir.1997), *rev'd sub nom Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137 (1999).

However, as discussed in the next section, Sero applied this methodology in an unreliable manner on the basis of insufficient facts or data.

ii. Reliable Bases for Ruling out Driver Error

Sero intends to testify that he reliably eliminated two of his purported three potential causes for the vehicle's sudden acceleration: namely, vehicle mechanical problems and driver error. Thus, according to Buck, Sero has reliably concluded that an electrical malfunction is the most likely cause. [Doc. 58-7 at 11, 73].

[15] "This ruling out of other potential factors rests upon two facts: (1) that the cruise control is the only component in the car, other than the accelerator pedal, that can open the throttle (with which Ford agrees), and (2) that of the several failure modes identified on Ford's FMEA's and Ishikawa diagram, those that are mechanical in nature (such as a stuck or broken part) would leave physical evidence, while an electronic failure would not necessarily leave such evidence. That being so, if no mechanical reason is found in the post-accident inspection, the cause of the sudden rapid acceleration could only be one of two explanations -- either the driver mistakenly put "pedal to the metal" or the cruise control system electronically failed." [Doc. 65 at 13].

Having found no mechanical fault,[16] Sero concluded that the cause of the sudden rapid acceleration could only be one of two explanations: "either the driver mistakenly put 'pedal to the metal' or the cruise control system electronically failed." [Doc. 65 at 13]. Sero then proceeded to rule out driver error as a potential cause. To make this determination, Sero relied on: 1) witness testimony; 2) brake pedal wear; and 3) driver habit.

Sero's specific causation opinion must be excluded because he has not reliably ruled out driver error.

(a). Witness testimony

In the *Daubert* hearing, Sero testified that he relied on witness testimony of individuals who were present at the Nickles Bakery during the incident who saw White's feet on the ground while the vehicle continued to accelerate.[17] Sero repeatedly testified that this deposition testimony was a major predicate for his opinion:

> THE COURT: you rule out operator error because the brake pedal was not worn in a manner indicative of a, quote, two-footed driver?
>
> THE WITNESS: Well, partly. And also the fact when the vehicle came to a stop and the man was not on any of the pedals, the vehicle was still trying to accelerate.

[Doc. 76 at 73-74].

> THE COURT: At some point in expressing your opinion you expressed the view that -- well, what view do you express about the brake pedal and the unlikelihood or likelihood that Mr. White was a two-footed driver?

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[16] Sero reviewed Ford's FMEA and Ishikawa diagram and determined that of the several failure modes Ford identified, those mechanical in nature would leave physical evidence. [Doc. 58-7 at 11]. Sero concluded that mechanical malfunction did not cause the White incident by inspecting the vehicle. Ford does not contest this conclusion.

[17] THE COURT: And you said that at that time his feet were not on the pedals. What is the basis in the record for that understanding on your part?
THE WITNESS: Other people that were there, their depositions.
THE COURT: So it's your understanding that people saw him with neither feet [sic] on either pedal?
THE WITNESS: That's correct.

[Doc. 76 at 87]

> THE WITNESS: I think that the fact that when the car came to rest that -- and I don't remember the name of the person that came over to the car while he was in it and actually turned the car off, noticed that he was actually not on any pedals, and yet the vehicle was still going high speed, the wheels were turning. So that whatever Mr. White may have thought he was doing or anything else, the simple fact is that the vehicle, when it came to rest, was still under idle and throttle condition without anybody's feet on any pedals, which only leaves the car.

[Doc. 76 at 137-138].

Ford asserts that no such testimony exists,[18] and neither Buck nor Sero has identified where in the record any witness made this statement. I therefore find that Sero cannot rely on this witness testimony to rule out driver error.

(b). Brake Pedal Wear

Sero intends to testify that his investigation of White's car revealed wear on the brake pedal consistent with a right-footed driver, and that a right-footed driver would have hit the brake, not the accelerator in the circumstances of this incident.

Sero opines that the vehicle's pedal wear is not consistent with a two-footed driver. Nothing in Sero's curriculum vitae indicates that he is qualified to make such a determination. Nor has Sero conducted any testing to determine how many times a driver must drive with two feet before observable brake pedal wear would appear. [Doc. 76 at 139].

Even if Sero were qualified to testify as to the pedal wear on the White vehicle, he could not reliably base any opinion about White's driving habits on that pedal wear. Sero testified that he did not know: 1) how many miles were on the White vehicle; 2) whether White was the original owner of the vehicle; 3) whether White was the primary driver; 4) whether the wear on the pedals of this vehicle came from White or some other driver; 5) how many times White had driven the vehicle. [Doc. 76 at 81-82;139].

[18] [Doc. 83 at 37]; [83-12 at 26; 83-13 at 14-15; 83-14 at 27; 83-15 at 27; 83-16 at 21; 83-17 at 15; 83-18 at 14, 20-21]

(c). Human Habit

Relying on his conclusion that White was a right-footed driver, Sero testified that as White was slowing down, he would have had his foot hovering over the break and would not be likely to hit the accelerator. This is true, Sero contends, because "[i]t's a matter of habit of what you do in a vehicle." [Doc. 65 at 13]. At deposition, when asked how he had eliminated driver error as a potential cause of the crash, Sero explained:

> So he took his foot off the brake and then the vehicle takes off . . . And it had to be going more than idle speed in order to just get over the curb . . . So the vehicle had to have gone to an acceleration rate. His foot as it came off the brake would have still been in the brake position where he could have hit the brake and would have hit the brake rather than going over to the accelerator; would never have thought—been an occurrence that he would have thought he was hitting the brake and was hitting the accelerator.

[Doc. 58-7 at 12].

Sero is not a human factors expert and is not qualified to give this opinion. Buck intends to call a separate expert to testify with respect to human factors.[19] Buck argues that "the analysis is the province of Dr. William Berg" and "[t]here is no requirement that one expert opine as to all facets of a specific causation determination." [Doc. 81 at 14]. But Sero did not rely on Dr. Berg's analysis, and therefore Dr. Berg's conclusions cannot supply a post-hoc reliable basis for Sero's specific causation determination.

3. Dr. William Berg

Dr. Berg intends to testify to the following: 1) that a human factors analysis and reconstruction of subject accident demonstrates that it is not probable that the incident was caused by a pedal error on the part of Mr. White; 2) that an analysis of Ford's Updegrove investigation demonstrates that the substantial majority of the 2,877 events catalogued in that study were not caused by driver error; 3) that the design of the NGSC is defective in that it does not provide a failsafe mechanism to automatically overcome a sudden, unintended throttle opening; and 4) that the

[19] Buck states that "everyone agrees that no mechanical explanations for the event were found. As to human factors, plaintiffs' other expert, Dr. William Berg, will address those aspects." [Doc. 65 at 13].

various government studies of sudden acceleration relied upon by Ford's experts are unscientific and outdated. [Doc. 63, at 5].

Ford moves to preclude Dr. Berg from testifying at trial on the grounds that: 1) he is unqualified to render expert opinions regarding Ford documents and government studies pertaining to sudden acceleration, general causation of sudden acceleration or the specific cause of the incident at issue in this case, or the design of the subject vehicle; 2) his "process of elimination" general and specific causation analyses are inadmissible under the *Daubert* test; 3) his analysis of Ford documents is based on inadmissible "other incidents" evidence that is not substantially similar to the subject incident; 4) his analysis of Ford documents and "critique" of government studies do not aid the trier of fact; and 5) his accident reconstruction and causation opinions are not based on sufficient facts or data pursuant to Fed. R. Evid. 702.[20]

For the following reasons, I find that Dr. Berg is qualified to testify that a human factors analysis and reconstruction of subject accident demonstrates that it is not probable that it was caused by a pedal error on the part of Mr. White. Dr. Berg may also opine as to the reliability of the three government studies. Dr. Berg's testimony regarding the Updegrove data is excluded, as is any testimony regarding a failsafe mechanism or the likelihood of electronic malfunctions in NGSC systems.

A. Background

Dr. Berg has a Ph.D. in Civil Engineering from the University of Illinois and is a licensed professional engineer in the State of Wisconsin. He taught engineering as a full professor at the University of Wisconsin in the Department of Civil Engineering. He has over forty years experience

[20] I allowed the parties to submit supplemental briefing following the *Daubert* hearing. Rather than respond to the allegations contained in Ford's briefing with respect to Dr. Berg's *Daubert* admissibility, Buck submitted briefing arguing for punitive damages with "a step by step analysis of how Ford covered up the results of a massive study that at might have prevented the carnage caused by runaway automobiles over the past two decades." [Doc. 87 at 3]. This supplement was not responsive to the leave granted to file it.

in the area of highway and traffic engineering, accident reconstruction and human factors as it relates to driver error.

He has experience in engineering decision-making and fault trees, having taught a course covering those topics at the University of Wisconsin. Additionally, Dr. Berg has expertise in research methodology, statistics and experimental design. He has used that expertise in his professorial research and during his tenure as a highway research engineer for the Federal Highway Administration. He has served as a reviewer of research papers and proposals for the Federal Highway Administration, the Transportation Research Board of the National Research Council, the American Society of Engineers and other research organizations. He has conducted numerous research studies of his own the results of which have been published.

B. Dr. Berg's Specific Causation Opinion

Dr. Berg intends to testify that driver pedal error can be ruled out as the cause of the sudden acceleration of the White vehicle. Dr. Berg bases his opinion on: 1) his dismissal of government studies showing that pedal error is common; 2) published research determining the common characteristics of pedal error; 3) the human factors in play during the White incident that suggest pedal error is unlikely. Dr. Berg's methodology in this case is, much like that of Mr. Sero, a process of elimination by which he determined the most plausible cause of the subject incident. Dr. Berg's role in Buck's case is to eliminate pedal error as a potential cause.

Ford argues that Dr. Berg's testimony as to driver error as a cause of the incident is inadmissible because it is unreliable under Fed. R. Evid. 702(2). Specifically, Ford argues that: 1) his opinion is not based on sufficient facts or data; 2) his application of research on pedal errors is inadmissible; and 3) he is not qualified as an expert regarding the cause of driver pedal errors or human factors in sudden acceleration incidents.

On review of Dr. Berg's proposed opinions and testimony, I find that his specific causation opinion is reliable under Rule 702(2).

i. Qualifications

Ford moves to exclude Dr. Berg's testimony regarding driver pedal errors and sudden acceleration because it exceeds the scope of his expertise, and that any selective knowledge in those areas he has obtained solely for the purpose of testifying as an expert in litigation.

Dr. Berg has extensive expertise in traffic safety, including driver behavior, human factors and the study of accident causation.[21]

Ford argues that Dr. Berg's testimony exceeds the scope of his expertise, because he lacks specialized expertise in driver pedal error or sudden acceleration. Ford notes that Dr. Berg has never conducted any testing or studies on driver pedal errors; has never published on driver pedal errors; and has never published anything on human factors in connection with sudden acceleration. [Doc. 77 at 65-66].

"Expertise in the technology of fruit is not sufficient when analyzing the science of apples[, and c]ourts have excluded the testimony of engineers because their expertise was not particular to the science involved in the case." *Diviero v. Uniroyal Goodrich Tire Co.,* 919 F. Supp. 1353, 1357 (D. Ariz. 1996). The question, therefore, is whether Dr. Berg's testimony is "about matters growing naturally and directly out of research they have conducted independent of the litigation, or whether

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[21] Dr. Berg described his experience thusly:

> Well, I've spent probably the majority of my career dealing with matters dealing with highway traffic safety. That includes everything from the design and maintenance and operation of the highway system to achieve high levels of safety to the study of individual traffic accidents that, in effect, constitute failures in the system to identify causal factors, whether they are driver or vehicle or the roadway. Research on safety has involved not only case study investigations and formal research, but obviously each time I'm retained to look at an incident, that constitutes a case study. I've also conducted studies of large databases and accident databases. And the work that I've done in the sense of formal research has been published in the engineering literature, and I've given presentations, so my work involves, as I said, virtually anything dealing with traffic operations and traffic safety and, in particular, large focus on driver behavior, human factors, and the study of accident causation.

[Doc. 77 At 64-65].

they have developed their opinions expressly for purposes of testifying." *Smelser, supra,* 105 F.3d at 303.

I find that Dr. Berg's testimony regarding the likelihood of pedal error in this case grows naturally and directly out of his experience unrelated to this litigation. Though Dr. Berg relied on published literature for his understanding of the normal circumstances in which pedal errors occur, there is no allegation that the literature is unreliable or inapplicable. Having testified that it is commonplace for an engineer to rely on research conducted by others, and having reviewed that research with the critical eye he has develop in his professional career, Dr. Berg applied that research to the facts of this case—a task he was qualified to undertake by his education and many year of experience in the accident causation field.

The limits of his experience with pedal error goes to the weight of his opinion, as does the fact that Dr. Berg's work on sudden acceleration has been in connection with litigation. "Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence." *Daubert,* 509 U.S. at 596.

ii. Sufficient Facts or Data

Dr. Berg testified that "I am simply saying in all the published research and everything I know about this incident, their assumption that a pedal error—there's nothing to support that [the driver made a pedal error]**."** [Doc. 77 at 7].

To be admissible under Rule 702, an expert's testimony must be based on sufficient facts or data. Ford argues that Dr. Berg's testimony ruling out driver error lacks a factual predicate. At issue is Dr. Berg's ignorance of White's testimony that he was a two-footed driver at the time of the incident.[22]

[22] Ford also argues that Dr. Berg's factual predicate is lacking because there is additional evidence that suggests that a more plausible explanation for the incident is driver error: 1) acceleration scuff marks suggest braking; and 2) Declercq's testimony that BOO switch would deactivate the NGSC system. These are factual disputes for trial, as Dr. Berg explained his analysis of both of these issues in his testimony. *E.g., Jahn, supra,* 233 F.3d at 391. ("But comparing two pieces of evidence and

In his August 12, 2008 deposition, White stated that he was a two-footed driver at the time of the incident. [Doc. 86-1 at 21]. White also told the investigating officer on the day of the incident that he was unsure whether he hit the gas or missed the brakes at the time of the incident. [Doc. 86-1 at 39; Doc. 86-2 at 11-14].

Dr. Berg was advised of this testimony during his deposition, but did not read the August 12, 2008 transcript prior to testifying at the *Daubert* hearing. [Doc. 77 at 99]. When pressed, Dr. Berg responded, "I read enough testimony from both he and the investigating police officer to understand that his recollections of what took place are confused." [Doc. 77 at 97]. On this basis, Dr. Berg chose to ignore White's testimony.

Dr. Berg clarified that he did not reject White's testimony about being a two-footed driver, but

> [a]s I explained, there are so many contradictions in his testimony. Even the police officer testified that he was confused, distraught, so forth. The problem we have is where you've got two different statements, which one are you going to assume is accurate? There is no basis to distinguish between the two. What you must rely upon obviously are other factors independent of his recollection, what other people observed, what the physical evidence is, what the configuration of the site is, what normal patterns of human behavior are, what physical things would have to occur to create all of the physical evidence that is present? My opinion is the same as it was the time I wrote the report. In my opinion the evidence does not support a finding that there was a sustained pedal error, that he by mistake, while in the parking lot, put a pedal to the metal and kept it there during the entire event.

[Doc. 77 at 113].

While Dr. Berg's decision to testify in this case without having read all available and pertinent testimony was unprofessional, White's testimony is self-contradictory and appears to be very unreliable. He had previously testified that he was at one time a two-footed driver, but had been driving one-footed for the previous fifteen to twenty years. [Doc. 63-2 at 47].

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determining which is more credible should be left for the finder of fact and should not be considered when ruling on Rule 702 admissibility.")

Dr. Berg's testimony is based on "published literature about pedal error [and] the information about physical evidence at the site, in my opinion that does not support the conclusion that he made a sustained pedal error." [Doc. 63-3 at 117]. I find that Dr. Berg's decision not to credit any of White's testimony does not render Dr. Berg's opinion unreliable.

ii. Application of Pedal Research

Dr. Berg ruled out pedal error by relying on the conclusions reached in published research listed in his report. According to Dr. Berg, the research he reviewed regarding pedal error allows him to conclude that pedal error is rare, and occurs when a driver is faced with a sudden hazard. Dr. Berg relies on this information to determine that White likely did not make a pedal error.

Ford argues that Dr. Berg's application of this research should be excluded both because Dr. Berg did not reliably apply the research to the case at hand, and because his analysis did not require specialized skill or knowledge.

(a). Pedal Error Research

Dr. Berg acknowledges that he relies on published research studies. "Based on the findings from published research studies regarding driver behavior and driver pedal error, I have analyzed whether the subject even could have been caused by driver pedal error and have concluded that this is highly unlikely." [Doc. 63-9 at 3].

Ford asserts, therefore, that in reaching his opinion that driver pedal error would not occur absent a sudden, unexpected hazard, Dr. Berg did not use any specialized skill or knowledge beyond that possessed by ordinary lay persons. [Doc. 86 at 19].

An expert "must make some findings and not merely regurgitate another expert's opinion." *Eberli v. Cirrus Design Corp.*, 615 F. Supp. 2d 1357, 1364 (S.D. Fla. 2009); *see also Siegel v. Fisher & Paykel Appliances Holdings Ltd.*, 2010 WL 4174629 *2 (W.D. Ky.) (expert may not simply adopt another expert's opinions wholesale).

However, "the process of analyzing assembled data while using experience to interpret the data is not illicit; an expert need not actively conduct his or her own tests to have a valid

methodology. *Phillips v. Raymond Corp*., 364 F. Supp. 2d 730, 743 (N.D. Ill. 2005) (citing *Clark v. Takata Corp*., 192 F.3d 750, 758 (7th Cir. 1999) (holding that either "hands on testing" or "review of experimental, statistical, or other scientific data generated by others in the field" may suffice as a reasonable methodology upon which to base an opinion).

Rather, "an expert's testimony may be formulated by the use of the facts, data and conclusions of other experts." *Ohio Envt'l Dev. Ltd. P'ship v. Envirotest Sys. Corp*., 478 F. Supp. 2d 963, 976 (N.D. Ohio 2007) (internal citation omitted). Indeed, "[i]f an expert's consultation of another expert's opinion is a resource 'reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject, the facts or data need not be admissible in evidence in order for the opinion or inference to be admitted.' *Id*. at 974-975 (citing Rule 703). Here, Dr. Berg testified that it is standard for engineers to review published studies:

> That's a study of what's been learned by others, which is the standard way, I think, we do it in engineering. In other words, we don't want everybody to go out and reinvent the wheel. That's why you publish . . . That's the whole point of publishing it, so I don't have to go out and repeat what someone else has done. That's the nature of research.

[Doc. 77 at 66-67].[23]

Therefore I find that it is reliable for Dr. Berg to have looked to published research in forming his opinions in this case. That the data may be available for the jury to review does not mean that his opinion will not assist the jury.

[23] In his affidavit, Dr. Berg stated that "Using the same research metholodogies that I applied as a Professor of Civil and Environmental Engineering at the University of Wisconsin, a Highway Research Engineer with the Federal Highway Administration, and a member of several technical committees of the National Research Council's Transportation Research Board, I have researched and evaluated the engineering and scientific literature in assessing pedal errors in motor vehicles, including alleged pedal misapplications in the context of sudden acceleration. This literature shows that pedal error is relatively rare and that, even in those situations where it does occur, the vast majority of drivers immediately recognize their mistake and take corrective action. Using the same methods that I have utilized in peer-reviewing papers submitted for publication, as well as dissertations submitted by PhD candidates in engineering, I have identified when authors of research reports have offered opinions that are not supported by their analyses and findings. [Doc. 63-9 at 2-3]

(b). Quinn Bracket Studies

Ford argues that two of the nine studies, the Quinn Bracket studies, neither identify, nor profess to identify, the universe of potential causes of driver pedal misapplication, but rather were designed to determine the extent to which one hypothesized cause of pedal error—pedal placement—plays a role. In his report, Dr. Berg opines that:

> The research findings documented in the above publications show that the occurrence of driver pedal error is very rare, is essentially independent of pedal configuration, and can only be induced in a laboratory environment by artificially creating a sudden, unexpected, hazard that the subject is to respond to as rapidly as possible.

[Doc. 86-11 at 5].

Ford argues that Dr. Berg cites research that does not support his opinion. Specifically, Ford asserts that the purpose of the two Quinn Bracket studies on which Dr. Berg relies was to determine the extent to which pedal placement plays a role in driver pedal errors. Neither study purports to determine whether sudden hazards are the only cause of driver pedal errors. Instead, the researches used sudden unexpected hazards in an attempt to induce pedal errors.

Ford's argument is unpersuasive. Dr. Berg lists nine publications he reviewed in coming to his multiple conclusions, and there is no indication in his report or his testimony that he relied on the two articles Ford cites for the particular conclusion that sudden accelerations are caused by sudden hazards. Ford has only provided the two articles for my review, and they support Dr. Berg's conclusion that pedal error is essentially independent of pedal configuration.

Dr. Berg's testimony is consistent with this assumption. Dr. Berg stated, in reference to the Quinn Bracket studies, that:

> what they found in that paper study was that regardless of pedal configuration and regardless of their attempt to induce a high rate of pedal error, they found the pedal configuration had no impact whatsoever on brake pedal errors. The rate of errors were quite low. And virtually without exception where there was a pedal error made in an experimental situation, the driver immediately recognized it and corrected it.

[Doc. 77 at 135-136].

Because there is no indication that Dr. Berg relied on the Quinn Bracket studies for anything other than what he describes in his testimony, Ford's argument is unpersuasive.

C. General Causation

Buck states that Dr. Berg "will not be testifying as to how a sudden, unintended acceleration can be induced through a design defect in the componentry." [Doc. 63 at 6-7].

At the *Daubert* hearing, Dr. Berg was asked, "your opinion that electromagnetic interference can cause a vehicle to suddenly accelerate is based upon ruling out driver error and mechanical issues, correct?" to which Dr. Berg responded, "I don't have any opinion." [Doc. 77 at 82].

Despite this assertion, Dr. Berg summarized his causation opinion thusly:

> As I indicated in my report, the likelihood of the event occurring as a result of a sustained driver pedal error is highly unlikely. And secondly, I point out the only other mechanism other than the accelerator pedal at open throttle and caused a sudden unintended acceleration event is the speed control system, which I think that statement, of course—I don't think that's in dispute.

[Doc. 77 at 84].

Even if Buck's either/or theory were not in dispute,[24] Dr. Berg is not qualified to make that second observation. Dr. Berg concludes that because Ford's fault trees from the late 1970s and 1980s did not identify any other possible explanation, no other explanation exists. [Doc. 63-8 at 78]. Wholesale reliance on Ford's fault trees and failure mode analyses[25] is an unreliable basis for an expert opinion, and the opinion is one that Dr. Berg, being neither a mechanical nor electrical engineer, is unqualified to give.

Dr. Berg will limit his testimony to his opinion that pedal error in this case was unlikely, without reference to the relative likelihood of an electrical malfunction.[26]

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[24] Which it undoubtedly is. [Doc. 72 at 5].

[25] Dr.Berg asserts that "[b]ecause the various failure modes that can cause unintended throttle opening have already been identified by Ford in its Fault Trees and Failure Mode Analyses, it is unnecessary to have any special training or experience in designing cruise control or other vehicle systems to identify the range of possible failure modes." [Doc. 63-9 at 3].

[26] This includes such statements as that in Dr. Berg's report that "the only other mechanism other than the accelerator pedal that can open the throttle and cause a sudden unintended acceleration event is the speed control system," [Doc. 63-3 at 8], as well as that in his affidavit that "it is undisputed that if a driver does not commit a pedal error, the only other possible explanation for sudden acceleration is a cruise control malfunction." [Doc. 63-9 at 3].

E. Fail Safe

Dr. Berg's report contains a discussion of the Ford "dump valve" as a fail-safe mechanism. Dr. Berg outlines what he believes to be the inadequacies of that design[27] and adds that the "results of the Updegrove study clearly indicate that, especially in confined areas, the dump valve is not an effective fail-safe mechanism because the majority of the involved drivers were unable to bring their vehicle to a safe stop." [Doc. 63-3 at 6].

As discussed below, the Updegrove data is not sufficiently similar to the subject incident and therefore is inadmissible. But more importantly, Dr. Berg is not qualified to opine on the defects of the Ford fail-safe, including a failure to warn. He is not a mechanical or electrical engineer, has never designed any motor vehicle component, fail-safe or otherwise, and has no other training or background that makes him competent to render an opinion about design defects in the electronic or mechanical functions of components of motor vehicles.

F. Updegrove Data

According to Dr. Berg, the Updegrove methodology was reliable and the universe of events studied sufficiently large to support extrapolation. He opines that the majority of the incidents were not caused by pedal error. Ford argues that Berg's analysis of the Updegrove data is inadmissible because plaintiffs cannot establish that the incidents discussed in the data are "substantially similar" to the subject incident.

To be admissible, evidence of prior occurrences and accidents must involve products, facts and circumstances substantially similar to those involved in the case under consideration. *Morales v. Am. Honda Motor Co., Inc.*, 151 F.3d 500, 511-512 (6th Cir. 1998). The Sixth Circuit "has concluded that 'substantial similarity' exists in incidents involving the same model, the same design, the same defect and occurring under similar circumstances." *Tolstih v. L.G. Elecs., USA, Inc*., 2009

[27] According to Dr. Bert, these inadequacies include: 1) It requires perception and reaction on the part of the driver before it comes into play; 2) drivers are not advised or trained regarding how the fail-safe must be used; 3) the driver who pumps the brakes will quickly lose power assist and may not be able to avoid a collision; and 4) the driver may not be able to apply sufficient constant pedal force to stop the vehicle. [Doc. 63-3 at 6].

WL 439564 *6 (S.D. Ohio) (collecting cases); *see also Rye v. Black & Decker Manu. Co.*, 889 F.2d 100, 102 (6th Cir. 1989) (To admit evidence of other incidents, plaintiffs must demonstrate that any alleged incident is caused by the same defect as they claim caused the subject incident.)

Thus, the Updegrove data must be excluded if the cruise control model or circumstances of the accident were different. *See, E.g., Jaramillo v. Ford Motor Co.*, 116 Fed. App'x. 76 (9th Cir. 2004) (unpublished disposition) (court abused its discretion in admitting Ford's comparative accident statistics that were not limited to accidents that occurred under circumstances similar to plaintiff's accident, *i.e.*, rollover on smooth, dry pavement).

The product in question in the White incident and those in the Updegrove data were not substantially similar. The Updegrove data was compiled from 1988 to 1992, prior to the manufacture of Ford Expeditions. Only one vehicle out of the 2,877 documented contained a NGSC system. [Doc. 86 at 24].

Buck argues that the model of cruise control system is irrelevant. Buck claims that because "the cruise control system, other than the driver's foot on the accelerator, is the only device that can cause a car to suddenly accelerate, plus the fact that no mechanical problem was found in the vast majority of the cases . . . the only dissimilarity in the vehicles that could vitiate Dr. Berg's analysis would be with respect to cars not equipped with a cruise control." [Doc. 63 at 11]. Thus, Buck claims that "the specific type of cruise control is irrelevant, since all are capable of unintended throttle opening." [Doc.63 at 12].

Ford disagrees. Ford's case is founded on its assertions that the design of the NGSC system is a stepper-motor system that is vastly different from its predecessors, and was specifically designed to be impervious to EMI.

The circumstances of the incidents in the Updegrove data also were not substantially similar. The Updegrove data is limited to: 1) increase in engine RPMs or vehicle speed upon engagement from park to drive or reverse; 2) deceleration or slowing of the vehicle when the accelerator is released or the speed control is cancelled through brake pedal actuation or pressing the "off" switch;

or 3) slow increase in engine or vehicle speed. [Doc. 77 at 67-70]. Berg acknowledges that the subject incident does not easily fit into any of these categories. [Doc. 7 at 67-70].

The vast majority of cases resulted in a finding that there was "no cause identified." Buck interprets this designation to be "tantamount to a finding that the most reasonable explanation for an event is an electronic malfunction," because "those causal factors cover all possibilities except EMI." [Doc. 63 at 11]. This logical fallacy does little for Buck's case, as one could just as easily conclude that the only remaining cause is black magic.

As the other incidents have minimal probative value, and threaten to be highly prejudicial and confusing to the jury, Dr. Berg's testimony regarding the Updegrove data is excluded.[28]

G. Government Studies

Ford argues that Dr. Berg is unqualified to analyze certain government studies,[29] and even if he were so qualified, his analysis of them would not require specialized skill or knowledge.

Buck argues that "Ford will extol the merits of these studies by contending they were prepared by the finest blue-ribbon scientists in the world. Because they were prepared by experts, they obviously must be critiqued by experts." [Doc. 63 at 15]. Buck cites no authority for this assertion. While Buck may present admissible expert testimony to critique the reliability of these government studies, Dr. Berg may not opine as to matters beyond his specialized knowledge or expertise.

Dr. Berg looked at three government studies from the late 1980s and concluded:

> The above studies did not have the benefit of the Updegrove data base. In addition, the researchers did not have a good understanding of the various failure mechanisms that can produce high engine rpm and a sudden acceleration incident, as is revealed in the Ford speed control fault tree. As a consequence, although the above studies are of historical interest, the current applicability of their findings and conclusions is quite limited, especially because of the knowledge gained from subsequent investigations and published research.

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[28] I need not, therefore, address Ford's contention that the Updegrove data is inadmissible hearsay, or that Dr. Berg's analysis of the data requires no specialized skill or knowledge.

[29] "Sudden Starting and Acceleration in Automatic Transmission Vehicles," Japanese Ministry of Transport, 1988. "Investigation of 'Sudden Acceleration' Incidents," Transport Canada, 1988. "Evaluation of Sudden Acceleration," NHTSA, January 1989.

[Doc. 63-3 at 4].

That the studies did not have the benefit of the Updegrove data is obvious due to the relative timing of the studies, and I have already concluded that the Updegrove data is inadmissible. Therefore Dr. Berg may not opine in that vein.

Whether the researchers had a "good understanding of the various failure mechanisms that can produce high engine rpm and a sudden acceleration incident, as is revealed in the Ford speed control fault tree," may be debatable, but not by Dr. Berg. Dr. Berg is not a mechanical or electrical engineer and has no expertise the potential mechanical or electrical causes of sudden acceleration. That he has read a Ford fault tree does not make him an expert in the various failure mechanisms.

I find, therefore that Dr. Berg is not qualified to testify with respect to the validity of the conclusions in the studies as informed by his knowledge of the Updegrove data, Ford's fault trees, or the various failure mechanisms that may cause sudden acceleration.[30]

However, Dr. Berg may opine as to the lack of human factors research and data analysis that undergirds those studies. It is Dr. Berg's opinion that the conclusion that pedal error is the most likely cause of sudden acceleration is not supported by the data in these studies.

The NHTSA study concluded that because they found no evidence of a mechanical or electronic problem, pedal error was the most likely cause of the sudden acceleration events it analyzed. However, according to Dr. Berg that conclusion is

> not based on any analysis of actual data or incidents, they're just theorizing what might influence a pedal mistake. And they talk about familiarity of the driver with the vehicle, demographics, strengths/body dimensions, psychological traits. But my observation is there's absolutely no analysis of these human factors, attributes. They were simply in effect suggesting, well, if someone else is going to study this, these are the things you might want to look at.

[Doc. 63-8 at 95].

In other words, according to Dr. Berg, the NHTSA failed to reliably rule in pedal error as a potential cause.

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[30] These include his opinions on whether EMI is likely to leave physical evidence or be reproducible in a laboratory.

Dr. Berg is qualified to make this assessment. He testified that "if I were reviewing that paper or that report, by using the typical paper review practices and the research in the technical field, engineering field, I would say the conclusion the authors stated is not supported by the data and findings." [Doc. 77 at 77].

Dr. Berg's analysis of the Japanese study does not criticize the underlying data or interpretation. Instead, Dr. Berg would testify that the scope of the Japanese study did not include a determination of the likelihood that pedal error caused the sudden acceleration events in the complaint data. Instead, the Japanese study determined the vehicle mechanisms common to those incidents. "In other words, the focus was not on the driver at all." [Doc. 63-8 at 101].

Dr. Berg opined that the Canadian study is "of such poor qualify, it should never have been distributed." [Doc. 63-8 at 86]. He added that "If that had been done by one of my graduate students, I would have sent the student right back and said, 'Start over. This is not graduate level work.'" [Doc. 63-8 at 99]. In his report, Dr. Berg noted that "there was no reconstruction or causal factors analysis of actual [sudden acceleration incidents]. The data base and analytical methods used were very weak. Their conclusion that [sudden acceleration incidents] occur due to driver error was not supported by findings in the study." [Doc. 63-3 at 4].

Because Dr. Berg has conducted, directed and evaluated numerous research studies—in the areas of accident reconstruction, driver behavior and otherwise—I find that he has the expertise to reliably opine on the flaws and limitations of these government studies with respect to human factors and general data analysis. To the extent that his conclusions are incorrect, Ford will have the opportunity to expose those weaknesses on cross examination.

Finally, I find that Dr. Berg's opinions in this respect will be helpful to the jury. Though the jury may be quite capable of reading through these studies, the jury is not presumed to be familiar with accepted research techniques and data analysis.

H. Accident Reconstruction Opinion

Ford contends that Dr. Berg's accident reconstruction opinion is inadmissible under Rule 702 because it is not based on sufficient facts or data. Specifically, Ford argues that Dr. Berg's opinion is speculation because Dr. Berg "made up numbers based on makeshift 'boundary conditions.'" [Doc. 86 at 27].

On the contrary, Dr. Berg's report outlines the evidence on which he based his accident reconstruction opinion, including: 1) witness testimony; 2) photographs taken at the Nickle's bakery shortly after the incident showing acceleration scuff marks and debris; 3) other physical evidence including the dimensions of the site and the interior building; 4) the police accident report; 5) photographs taken of the subject vehicle; 5) the repair estimate for the vehicle; and 6) the complaint.

Dr. Berg acknowledged that the acceleration of the vehicle is unknown, but that "we know what the boundary conditions are likely to be." [Doc 77 at 107]. First, Dr. Berg determined that the vehicle's likely maximum acceleration capability as approximately .35g.[31] [Doc. 63-8 at 191]. He used that number as an upper boundary condition. Dr. Berg also could did not have data regarding the full extend of retarding forces that would have impeded the vehicle's movement during the incident. However, Dr. Berg testified that he was conservative in his calculations to allow for the possibility of significant retardation.[32] [Doc. 86-8 at 4].

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[31] Dr. Berg explained:

> If we had an exemplar out here, we went out and made some measurements and tromped on the accelerator pedal to see how rapidly it would accelerate, you might be somewhere around .35 Gs [but there was some retardation so] I'll take .3g's as the maximum rate that it accelerated under any set of conditions you want to assume. And I said, well, what's the slowest? I said, well, I'll take something half that. That's close to just normal acceleration. And now let's assume that range of possible acceleration units over the known distance and how long does it take you to travel that distance.

[Doc. 63-8 at 192].

[32] "I'm going to assume that the maximum rate that this vehicle can accelerate, whether you assume it was driving, putting the accelerator pedal to the floor, or the cruise control and the throttle to the maximum extent it's capable of, that, in fact, the vehicle, instead of accelerating at .35 Gs, the maximum would be .3. I said, well, so I'll try to be conservative and say I'll use half of that, .15 Gs."

Dr. Berg thus used "a range of reasonable values where [he] had lacked information." And using those boundary conditions, Dr. Berg determined that "no matter what the actual rate of acceleration was, this event from the time it started until it ended lasted a little less than 4 seconds." [Doc. 63-8 at 191].

Dr. Berg determined that "when you apply those boundary conditions, even when they vary by 100 percent, that the variation for the event is insignificant. It makes no difference in terms of the event. You can assume what you want, and it's not going to have any significant effect on the duration of the event." [Doc. 77 at 107].

Dr. Berg's testimony, therefore, is that the broad boundary conditions he chose accommodate the uncertainty, rather than exacerbate it. Dr. Berg states that "it is customary in engineering practice to analyze boundary conditions as part of a sensitivity analysis . . . . This methodology is generally accepted among engineers in reconstructing traffic accidents." [Doc. 63-9 at 3]. If Ford disagrees with Dr. Berg's math, it may cross-examine him to that effect.

4. Vincent Declercq

Ford's expert, Vincent Declercq, opines that the most likely cause of the sudden acceleration incident in this case was driver pedal misapplication—not electromagnetic interference. Buck moves to exclude Declercq's testimony. [Doc 56]. According to Declercq, "[i]t is virtually impossible for the speed control to malfunction in the manner described by plaintiffs' experts for such an extended period then operate normally and leave no physical evidence." [Doc. 61-2 at 3-6]. Buck argues that Declercq is unqualified, and that his conclusions are unreliable.

Buck argues Declercq's testimony should be excluded because "the predicates for [Declercq's] opinions have no basis in fact or science," and that "[o]ne could no more admit an opinion based on a belief that the earth revolves around the moon." [Doc. 69 at 4].

[Doc. 86-8 at 4].

Hyperbole aside, Buck's arguments must fail because they are based on a mischaracterization of Declercq's testimony and a misunderstanding of the *Daubert* standard.

A. Qualifications

Declercq has a bachelor's degree in physics from Adelphi University, the completion of which included several electronics-related courses.[33] Prior to earning his degree, he had worked for twelve years in electronics and circuitry for companies such as Chrysler Missile and Kaiser Aerospace.

Declercq joined Ford Motor Company in 1971, where he designed and tested vehicle electronics and evaluated vehicle electromagnetic compatibility for almost thirty years.[34] From 1984 to 1994 Declercq was a supervisor at Ford's Romeo, Michigan electromagnetic compatibility facility, which he helped design. There he directed electronic systems testing for all Ford vehicles, including testing of Ford speed control systems. In addition to participating in the testing of numerous vehicles for electromagnetic compatibility, Declercq was involved in the interpretation of the test data.

From 1994 to 1999 Declercq worked in Ford's Design Analysis and Engineering division. There he reviewed vehicle designs and conducted accident investigations. Since leaving Ford, Declercq has worked as an independent consultant and design analysis engineer at Declercq Engineering, Inc.

During his forty-year career, Declercq has been a member of numerous engineering and electronics professional organizations such as the Society of Automotive Engineers (SAE), the Institute of Electrical & Electronics Engineers (IEEE), and the Electromagnetic Compatibility Society (ECS). He has attended numerous annual EMC symposiums as well as SAE Technical Committee

[33] Buck asserts that "[c]alling oneself a 'physicist' is just like a person calling himself a 'therapist' or an 'astronomer'-- there are no standardized qualifications and anybody can claim such descriptive titles. On the other hand, one needs a license to hold oneself out as a professional engineer." [Doc. 69 at 2]. But Declercq's CV makes clear he is not just anybody claiming a descriptive title.

[34] Buck's attempt to argue that Declercq did not really help design the electronics because his role was to test systems through the development process is illogical, as testing is an inextricable part of design.

meetings related to the developing procedures for EMC vehicle testing and EMC electronic component testing.[35] In addition, while still with Ford, he attended Ford internal training courses relating to powertrain electronic controls and statistical methods for determining failure modes.

Buck argues that "[t]here is nothing in [Declercq's] training and background that qualifies him to pronounce it is 'impossible' for EMI to unintentionally open a throttle." [Doc. 57 at 10].[36] Declercq did not testify that it is impossible that EMI could ever cause unintended acceleration. He testified that, to a reasonable degree of engineering and scientific certainty, it is "far more probable" that driver error caused this incident. [Doc. 61-2 at 8-9].

Buck complains that Declercq is not a licensed professional engineer; he has no engineering degree; and he has never published in the field of engineering. However, a review of Declercq's curriculum vitae makes clear that his qualifications in this field are significant.

Given Declercq's knowledge, skill, experience, training and education, it is unsurprising that his qualifications have never been excluded in the many sudden acceleration cases in which he has given expert testimony. I find that he is qualified to testify that more likely that not, electromagnetic interference did not cause Mr. White's vehicle to suddenly accelerate.

B. Physical Evidence of EMI

Buck asserts that "as to Declercq's belief that EMI would always leave a palpable footprint in its wake, anyone who operates a computer knows that is not true." [Doc. 69 at 4].

Declercq did not testify that EMI would always leave a palpable footprint in its wake. In the *Daubert* hearing, I asked whether I was correct in my understanding that it is Declercq's opinion that

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[35] Buck retorts that "anyone can join [the SAE and the Electromagnetic Compatibility Society] who has enough work experience and pays the fee. Membership does not require passing a test or being nominated and elected by one's peers." [Doc. 69 at 2]. I fail to see how this detracts from the experiential value of his membership, especially given his testimony that he frequently attended SAE meetings related to EMC testing.

[36] As noted above, Declercq's opinion is more nuanced than this statement would suggest. [Doc. 61-2 at 3-6]. Such mischaracterizations undermine Buck's argument that Declercq's "lack of scientific background is also evident in the way he frames his opinions . . . no scientist would ever utter such superlative statements." [Doc. 69 at 4].

"at least in some circumstances were electromagnetic interference to have affected the operation of the motor vehicle, that might be detectable after the incident." [Doc. 79-1 at 4-5]. Declercq answered:

> *The answer to that is, not necessarily*. It's possible. And I have seen many instances of where it is detectable because we have damaged components. But there are other instances where you can just come up to that particular level and then you can drop a level, and then it does not -- it can show an immediate effect, but then it would go away. But if you bring it back up to that level, it will reappear. So it is repeatable.

Id. (emphasis supplied).

Declercq's opinion is "[i]t is virtually impossible for the speed control to malfunction in the manner described by plaintiffs' experts for such an extended period then operate normally and leave no physical evidence." [Doc. 61-2 at 3-6].

Declercq did not testify that it is impossible that EMI could ever cause unintended acceleration; he did not testify that EMI always leaves physical evidence. He testified that, in part due to the lack of physical evidence, to a reasonable degree of engineering and scientific certainty, it is "far more probable" that driver error caused this incident. [Doc. 61-2 at 8-9].

C. Testing

Declercq bases his opinion in part on testing conducted at Ford's Romeo EMC facility and more recent case-specific testing of a substantially similar system. Buck argues that this testing does not provide a reliable basis for Declercq's testimony. I disagree.

During his tenure with Ford, Declercq helped design the Romeo EMC facility—a state of the art facility intended to test Ford's and other manufacturer's vehicles to ensure EMC compliance. Declercq was a supervisor at the facility for ten years, and during that time he actively participated in vehicle EMC testing and in the interpretation of test data. Engineers conducting the EMC testing reported to Declercq. This testing was generally accepted and regularly used within the automotive industry. [Doc.61-1 at 4].[37]

[37] Declercq adds that the EMC testing specifications he used were not only generally accepted, but met or exceeded SAE recommendations—as well as the EMC testing parameters of many other automotive manufacturers. [Doc. 61-1 at 4].

Buck argues that "[a]lthough he operated testing machinery at the EMC facility and supervised other people doing the same, he did not create the test protocols, which were established by other engineers." Buck does not explain why this might make his experience unreliable. [Doc. 69 at 2]. In fact, that Declercq testified that Ford used at least two testing protocols developed by the Society of Automotive Engineering lends those protocols additional reliability. [Doc. 74 at 18-19].

Buck also argues that Declercq's role at the Romeo facility was merely "zapping cars, collecting the data, and transmitting the data back to the engineers." [Doc. 57 at 10]. Buck contends that though Declercq is competent to testify as to the facts—the testing he did and the data he gathered—he is not competent to interpret those data. Based on Declercq's extensive experience in the design analysis field and EMC testing, as well as his assertion that he was involved in interpreting the data he gathered, I disagree.

Buck suggests that the Romeo facility testing was inadequate by stating that "Mr. Declercq admits that the facility did not test as to whether EMI could affect the output devices in the electronic speed control system, that is, those that directly instruct the throttle to open." [Doc. 57 at 4-5]. For this argument, Buck cites Declercq testimony from cases involving stand-alone or integrated speed control systems, in which the electronic throttle control unit was separate from the servo, and the signals from the control unit were sent to the servo through the vehicle wiring harness.

"The NGSC system, in contrast, is a completely self-contained unit, and the only output from the unit is the rotation of a pulley from a stepper motor. Thus, there are [no] electronic output devices on a NGSC system to test." [Doc. 61 at 8-9]. Buck does not, in her reply, clarify how an EMI might affect the output device—a mechanical pulley.

Buck also contends that "conventional EMC testing, such as Ford's is inadequate for functional safety purposes since it does not simulate real-life EMI environments." [Doc. 57 at 6]. According to Declercq, in addition to extensive pre-release testing, "extensive vehicle level testing further demonstrated that there were no EMI effects on the system even at levels substantially higher

than U.S. human exposure limits." [Doc. 61-2 at 6-7].[38] Declercq also testified that Ford's facility tested "the entire frequency spectrum that you normally encounter," as well as "at the extremes." [Doc. 75 at 25, 30]. Declercq testified that to determine real-life EMI environments, "we have gone through [multiple locations with differing EMI profiles] with an automobile and monitored exactly what kinds of fields this vehicle is exposed to." [Doc. 75 at 38-40].

Declercq directed further component testing of a substantially similar servo at Dayton T. Brown's Engineering and Test Division located in Bohemia, New York. Dayton T. Brown is a fully certified and accredited EMC test facility. The testing, performed in accordance with Ford procedure, was designed to

> demonstrate that there are no known conducted or radiated EMI signals that could cause the NGSC servo to malfunction in the manner described by the plaintiff's experts . . . . After each test phase, the servo was dynamically tested and found to be fully functional. Throughout all test phases there were no instances of inadvertent servo activation or any movement of the throttle actuation pulley.

Id. at 7.

"Although the servo allegedly passed Ford's specification," Buck argues, "testing on one component can never be the basis for ruling out a dangerous design defect in a complex system." [Doc. 57 at 5]. In support of this declaration, Buck cites Sero, who states, with no support, that "tests performed on only one component such as the Dayton Brown analysis, can never be the basis for ruling out a dangerous malfunction such as unintended acceleration." [Doc. 57-1 at 3]. This is unpersuasive; "nothing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert."

[38] Buck retorts that such testing "does not ensure the device won't fail upon minute fluctuation in voltage and current levels, which are the operating parameters of the device." [Doc. 69 at 6]. There is no suggestion that the testing did not also include low-voltage levels—in fact, Declercq testified that the testing "really covers real world conditions as well," because "when a vehicle is running, and it's operation, you have the engine and everything else . . . operating, and so all of those are in normal operating conditions for the vehicle. You are bombarding them from an external source throughout that very range." [Doc. 75 at 35-37]. Buck can press this factual issue further on cross-examination.

Kumho Tire Co. v. Carmichael, 526 U.S. 137 at 157 (1999) (citing *General Electric Co., supra*, 522 U.S. 146).

Buck does not dispute that the EMC testing specifications that Declercq used—both at Dayton T. Brown and the Romeo facility—were generally accepted in the industry and followed by many other major automotive manufacturers at the time the NGSC system was designed and tested. Instead, Buck argues that "Ford's EMC testing may have been accepted in the industry" is meaningless, because "'[s]tate-of-the-art' means simply that everyone is doing it," and "has never been a basis for assessing reliability of a test protocol." [Doc. 69 at 5].

This argument is fundamentally at odds with *Daubert*. The fourth *Daubert* factor considers whether the theory or technique has "general acceptance" in the relevant community. *Daubert, supra,* at 509 U.S. at 594. "Widespread acceptance can be an important factor in ruling particular evidence admissible, and 'a known technique which has been able to attract only minimal support within the community' may properly be viewed with skepticism." *Id*. at 594 (internal citation omitted).

I find that Declercq's testing provides a reliable basis for his testimony.

D. Factual Predicates

Buck argues that a 1989 National Highway Traffic Safety Administration (NHTSA) report entitled "Examination of Sudden Acceleration" is not a valid factual basis for Declercq's opinion. Buck also contends that Declercq is unqualified to reach his conclusions because of his unfamiliarity with certain information, namely the: 1) United Kingdom investigation into sudden acceleration; 2) Updegrove study; and 3) documents in Ford's sudden acceleration reading rooms.

i. NHTSA Investigation Report

In his report, Declercq lists review of the NHTSA study as one of many bases for his observations and opinions. Buck argues that the study is not a reliable basis for Declercq's opinions because it is outdated and that the testing was inadequate.

I find Buck's argument that the "sheer age of these government reports disqualifies them as reliable bases for an opinion as to the effects of EMI" disingenuous. [Doc. 57 at 10]. In her briefing,

Buck spends page after page arguing that Declercq is not qualified to testify because Ford did not provide him with full details of the Updegrove study—which took place from 1987 to 1991. Ford also relies on documents from the 1970s. [Doc. 93 at 2-3].

Even if I were to find the study to be unreliable due to its age, or that it's conclusions were based on insufficient testing, Declercq testimony suggests that the findings of the study do not play a major role in his opinion:

> Q: And you've come in many times, and you've come into court, and you used the NHTSA study as a basis, as a foundation or part of your opinion for the conclusion that EMI cannot cause a sudden acceleration?
>
> A. No. I used the NHTSA study more as a guideline of the kinds of things that I should be doing when I examine a vehicle. My main focus should be and is to examine the accident or the crash vehicle that we are talking about because occasionally we do have a fault in those vehicles. And my job is to find that fault and report it.

[Doc. 75 at 133].

ii. United Kingdom Investigation

Buck argues that Declercq's substantial ignorance of a Ford UK investigation in the late 1990s makes him unqualified to testify. But in Declercq's deposition he testified that not only was he aware of the investigation, he was "part of the group that was investigating the UK incidents." [Doc. 61-5 at 10-11].

In addition, Ford disputes Buck's characterization of the outcome of that investigation. According to Ford, the UK investigation ruled out EMI as a potential cause of the sudden acceleration incidents, and the emails Buck cites to the contrary pre-date the conclusion of the study. [Doc. 61-6 at 21, 29-30, 34-35].

Buck responds that Declercq has not seen important documents and cannot remember details of the investigation, such as its duration or team members' names, and that the UK investigation in fact showed that unintended acceleration can take place in vehicles with a NGSC system. [Doc. 69 at 8]. Buck may assail Declercq's familiarity with the study on cross-examination.

iii. Ford Sudden Acceleration reading room

Buck's argument that Declercq's testimony should be excluded because he has not reviewed the documents in Ford's Sudden Acceleration Reading Room also has no merit.

Ford's reading rooms are intended to provide plaintiffs' attorneys the opportunity to review a large volume of documents during the course of litigation. These are not unique documents unavailable elsewhere, but rather a collection made available for more streamlined review. Declercq testified that he has reviewed thousands of documents relating to sudden acceleration during the last two decades in his role as an expert in sudden acceleration litigation, and whether he read them in Ford's reading rooms or elsewhere has no implications for the question of his admissibility as an expert.

iv. Updegrove Study

Buck devoted both of her post-*Daubert* hearing briefs to her contention that Ford has intentionally withheld from Declercq "evidence proving his testimony is false and misleading," and that therefore allowing "Declercq to repeat the claims he made during his *Daubert* testimony would defile these proceedings." [Doc. 93 at 1].

Declercq stated the following in his deposition:

> I became aware of Mr. Updegrove's investigation into alleged sudden acceleration incidents more than a decade ago. Although I may not have reviewed what is now being referred to as Mr. Updegrove's "final report" prior to testifying in the case *Jarvis v. Ford*, I was well aware of Mr. Updegrove's investigation and findings years prior to that case. It is my understanding that Mr. Updegrove's investigation into alleged sudden acceleration incidents revealed that driver pedal misapplication – not electromagnetic interference – was the most likely cause of sudden acceleration incidents.

[Doc. 61-1 at 3]

Ford expends significant effort distinguishing the vehicles in the Updegrove study from those equipped with the NGSC system, and the scenarios in which the unintended accelerations reportedly occurred. Additionally, Ford contests Buck's assertion that the Updegrove data concluded that EMI is the cause of sudden acceleration.

Buck repeatedly stresses how it was plaintiffs, not Ford, that had to draw Declercq's attention to this data—evidence that Declercq had been intentionally kept in the dark. Buck even delves into a narrative explanation of Ford's negligence and its choice to gamble with people's lives and its years-long attempt to hide this information from its loyal employee.[39]

Buck states that "[t]he shocking truth is stark and sickening: a corporate American icon, with premeditated intent, deceived the federal government to cover up its negligence. While everything else is essentially commentary, the burning question is how this court should respond to this cynical contempt for the law." [Doc. 93 at 21].

Wrong.

This is a *Daubert* motion, not an opportunity to rally the local villagers and arm them with torches and pitchforks. Ford's morals are not on trial in these motions *in limine*; at issue is whether Vincent Declercq is sufficiently qualified to testify and whether his testimony is reliable. I find both to be so.

Declercq is undisputedly aware of the study and possesses the report. Therefore any contention that Declercq is unqualified because he has not seen it is meritless.

Conclusion

For the foregoing reasons, it is hereby

ORDERED THAT:

1. Defendant's motion to exclude Keith Armstrong's general causation testimony [Doc. 60] be, and the same hereby is granted;
2. Defendant's motion to exclude Samuel J. Sero's general causation and specific causation testimony [Doc. 58] be, and the same hereby is granted;

[39] Buck states that "Ford's OGC cared so little about the hopeless moral conflict they had created for this loyal former employee, it essentially left Declercq to fend for himself regarding this massive study. The result is clearly reflected in Declercq's Daubert testimony. That's why it is high time this utterly cynical assault on truth and justice be put to a judicial sword." The brief is rife with such language.

3. Defendant's motion to exclude the opinion testimony of Dr. Berg [Doc. 59] be, and the same hereby is granted in part and denied in part, as provided herein;

4. Plaintiffs' motion to exclude the testimony of Vincent DeClercq [Doc. 56] be, and the same hereby is denied.

5. A scheduling conference is set for September 20, 2011 at noon. Out of town counsel may participate by phone; the Court will initiate the phone call.

So ordered.

/s/ James G. Carr
Sr. United States District Judge