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SUPREME COURT OF THE STATE OF NEW YORK.
COUNTY OF KINGS: CIVIL TERM: PART 52

- - - - -x

SETH PARISER,
Plaintiff,

- against -

Index No.
1816/2012
TRIAL/EXCERPT

AG MEDALLION MANAGEMENT CORP, MAI-TAI CAB CORP.
and AHMED HARIDI,
Defendants.

- - - - -x

360 Adams Street
Brooklyn, New York 11201

April 20, 2016

B E F O R E:

HONORABLE FRANCOIS A. RIVERA,
Justice of the Supreme Court, and a Jury

A P P E A R A N C E S:

FINKELSTEIN & PARTNERS
Attorney for the Plaintiff
1279 Route 300
Newburgh, New York 12551
BY: SHARON A. SCANLAN, ESQ., Of Counsel

PICCIANO & SCAHILL, PC
Attorney for the Defendants
900 Merchants Concourse, Suite 310
Westbury, New York 11590
BY: FRANCIS J. SCAHILL, ESQ.

MIRIAM KAPLAN
Official Court Reporter

1 MR. SCAHILL: The defendant calls Dr. Robert
2 Fijian.

3 (Whereupon, the witness entered the witness
4 stand.)

5 THE CLERK: Remain standing. Please raise
6 your right hand.

7 Do you solemnly swear or affirm that the
8 testimony you are about to give to this court and jury
9 will be the truth, the whole truth, and nothing but the
10 truth?

11 THE WITNESS: I do.

12 THE CLERK: Thank you. Please have a seat.
13 And may we have your name and business address, please?

14 THE WITNESS: My name is Robert Fijian,
15 F-I-J-I-A-N, 350 Hyland Road, West Chester, Pennsylvania
16 19382.

17 THE CLERK: Thank you.

18 THE COURT: Good afternoon, sir.

19 THE WITNESS: Good afternoon.

20 THE COURT: There's two attorneys. They're
21 going to each get a chance to ask you some questions.
22 The attorney who's standing will go first. What I want
23 you to do is let him finish the question before you
24 answer so that you're not speaking at the same time.
25 Speak loud enough so everyone can hear you. The

1 attorney who's sitting down, if you see that attorney
2 stand up, it means they're going to say "objection," so
3 when you see that happening, just stop and look to me
4 and I'll let you know whether you should answer the
5 question.

6 THE WITNESS: Okay.

7 THE COURT: You have some water?

8 THE WITNESS: Yes, I do. Thank you.

9 THE COURT: That's for you.

10 Okay, proceed.

11 MR. SCAHILL: Thank you, Your Honor.

12 Judge, before we begin questioning Dr. Fijian,
13 I'd ask that the Court allow Defendant's Exhibit E which
14 has been entered into evidence by stipulation to be
15 published to the jury.

16 THE COURT: Sure, why not. Do we have it now?

17 MR. SCAHILL: Yes, Your Honor.

18 THE COURT: I'm going to give Exhibit E. Both
19 counsel have agreed to admit it, and they have agreed --
20 and when I say it's by stipulation, I'm saying this is a
21 given, it doesn't have to be proven.

22 And what they said is that Exhibit E is a
23 photo taken by the plaintiff at the scene of the
24 accident with his cellphone that depicts the back of his
25 car, the Land Rover, and the side of the other car, the

1 taxi, okay. So we'll give it to you.

2 Did you want to wait for them to look at that?

3 MR. SCAHILL: Yes, Judge. Thank you.

4 THE COURT: Let's pass it along, and then when
5 you're finished looking at it, we'll start.

6 (Whereupon, the exhibit was published to the
7 jury.)

8 THE COURT: You can give it to the officer.
9 And the publication is completed.

10 R O B E R T F I J I A N, after having been
11 first duly sworn, was examined and testified as follows:

12 DIRECT EXAMINATION

13 BY MR. SCAHILL:

14 Q Good afternoon, Dr. Fijian.

15 A Good afternoon.

16 Q What is your occupation?

17 A I'm a consultant in accident reconstruction and
18 biomechanics.

19 Q What is accident reconstruction?

20 A Accident reconstruction is taking available
21 information, whether it's photographs or skid marks or
22 testimony or whatever, figuring out how vehicles moved,
23 accelerations, velocity, whatever, during an accident.

24 Q What is injury biomechanics?

25 A Injury biomechanics is the application of physics

1 and mechanical engineering principles to the human body,
2 figuring out motions and forces that can cause damage to
3 various structures of the human body.

4 THE COURT: I'm sorry, what did you say that
5 you do?

6 THE WITNESS: I am a consultant in accident
7 reconstruction and injury biomechanics.

8 THE COURT: And what?

9 THE WITNESS: Injury biomechanics.

10 THE COURT: Please continue.

11 Q Can you give the jury a synopsis of your
12 educational background and professional credentials and
13 experience?

14 A Okay. I have my Bachelor's degree, undergraduate
15 degree in engineering science from the University of Florida
16 and my Master's and Ph.D. degrees in mechanical engineering
17 from MIT. My -- you want me to discuss research or --

18 Q Yes, your professional credentials.

19 A My research in my graduate work at MIT was all in
20 the area or areas of biomechanics, particularly in
21 determining the forces that act on joints in different
22 activities. And also, between my Master's and Ph.D. degrees
23 I worked one year full-time as the technical director of the
24 BioMotion laboratory at Massachusetts General Hospital
25 Department of Orthopedic Surgery where we -- I set up a lab

1 to measure patients pre-and-post operative, undergoing knee
2 and hip surgeries and also cerebral palsy patients. After I
3 finished my Ph.D. at MIT, I took a position as an assistant
4 professor in Department of Mechanical Engineering in the
5 bioengineering program at the University of Michigan in Ann
6 Arbor. There I taught courses in dynamics and control and
7 biomechanics, and I continued my research into biomechanics
8 and extended my work from lower extremities to studying the
9 upper extremities, arms, elbows as well.

10 In 1994 I left the University of Michigan,
11 took a position at a company at that time called Failure
12 Analysis Associates. Now it's called Exponent.

13 THE COURT: What? I didn't hear that.

14 THE WITNESS: In 1994 --

15 THE COURT: You gave the name of the company.

16 THE WITNESS: Failure Analysis Associates.

17 Now it's called Exponent.

18 A They changed the name in early 90's, I think, or
19 something, mid 90's, I guess. And there I continued my work
20 in biomechanics, and I also started applying my mechanical
21 engineering skills to accident reconstruction. And I worked
22 there from 1994 to 2002 including spending two years in
23 their Phoenix office where they have a building with a crash
24 test facility, where they crash vehicles into vehicles. And
25 I was in charge of the biomechanics aspect of that, but also

1 participated in a number of crash tests, that type of thing.
2 Since 2002 I've been working as an independent consultant in
3 accident reconstruction biomechanics.

4 Q Have you testified as an expert witness in accident
5 reconstruction and injury biomechanics in New York?

6 A Yes, I have, about fifty times.

7 Q In this case, are you giving an opinion within a
8 reasonable degree of certainty in your occupation as to
9 accident reconstruction?

10 A Yes.

11 Q Are you also giving an opinion with respect to the
12 biomechanical aspect of this case within a reasonable degree
13 of certainty as a biomechanical engineer?

14 A Yes.

15 Q Are you providing any medical opinions in this
16 case?

17 A No.

18 Q You're not a medical Doctor?

19 A That's correct, that's correct.

20 Q And you are not intending to provide any medical
21 opinion, correct?

22 A Correct.

23 Q And you're not giving any -- you're not an expert
24 in the diagnosis of injuries?

25 A That's correct.

1 Q Or the treatment of injuries, correct?

2 A Right.

3 Q Can you briefly explain what you do?

4 THE COURT: I'm sorry, you said biomechanical
5 injury? That's the expertise, biomechanical injury?

6 THE WITNESS: Injury biomechanics, so
7 biomechanics is simply --

8 THE COURT: It's the first time I ever heard
9 injury biomechanics.

10 THE WITNESS: Okay. Biomechanics is simply
11 application of mechanical engineering principles to,
12 let's say, life, such as trees. In the context of car
13 accident, it's people. Injury of biomechanics is a
14 subset of that, looking at what thresholds have to be
15 exceeded in order to cause damage to the structures of
16 the human body, that would be either in terms of motions
17 or forces.

18 MS. SCANLAN: Objection, Your Honor.

19 THE COURT: Didn't he just ask you whether
20 you'd be giving opinions on medical injury and you said
21 no?

22 THE WITNESS: He said, am I giving medical
23 opinions. I said no, I'm not giving any medical
24 opinions.

25 THE COURT: So injury and what causes injury

1 is not a medical opinion?

2 THE WITNESS: That's correct.

3 MS. SCANLAN: I object to that, Your Honor.

4 THE COURT: Do you wish to voir dire?

5 MS. SCANLAN: Yes, Your Honor.

6 THE COURT: By all means. You can have a seat
7 for a second.

8 MS. SCANLAN: Doctor, you say --

9 THE COURT: Please wait for Mr. Scanlan to be
10 seated.

11 MS. SCANLAN: I'm sorry?

12 THE COURT: Wait for him to be seated.

13 MS. SCANLAN: Oh, I'm sorry. I'll wait for
14 Mr. Scahill to be seated.

15 VOIR DIRE EXAMINATION

16 BY MS. SCANLAN:

17 Q Oh, Doctor, you have never -- you've never been
18 schooled in orthopedics, correct?

19 THE COURT: Schooled?

20 Q You've never gone to school for orthopedics?

21 A I worked in the Department of Orthopedic Surgery.

22 THE COURT: It's the wrong question. Have you
23 taken any medical courses?

24 THE WITNESS: No.

25 MS. SCANLAN: Can I continue, Your Honor?

1 THE COURT: Take it from there.

2 Is anatomy a medical course?

3 THE WITNESS: Well, I haven't taken -- is it
4 anatomy or medical course?

5 THE COURT: The question is going in one
6 direction.

7 THE WITNESS: Right, okay. I'm sure it's one
8 medical course, you could say, medical course.

9 THE COURT: Okay. Please continue.

10 Q So you've not taken any medical courses, you
11 haven't taken any classes in anatomy, correct?

12 A That's correct. I haven't taken classes in
13 anatomy, that's correct.

14 Q You haven't taken any classes in epidemiology?

15 A That's correct, although I have -- I have -- my
16 minor is statistics.

17 THE COURT: You have to both excuse me. I
18 don't know what epidemiology is.

19 THE WITNESS: That's why I was explaining.
20 Epidemiology is the statistics of the spread of
21 diseases, that type of thing.

22 THE COURT: Is that what that is?

23 MS. SCANLAN: And injury.

24 THE COURT: Is it?

25 MS. SCANLAN: It's in the medical field, Your

1 Honor.

2 THE COURT: No idea.

3 Q Have you -- have you taken any classes in
4 epidemiology?

5 A No.

6 Q So you haven't taken classes in medicine, anatomy,
7 physiology and epidemiology, correct?

8 A That's absolutely correct.

9 Q You've called yourself a biomechanical injury
10 expert?

11 MR. SCAHILL: I'll object to "called
12 yourself."

13 MS. SCANLAN: Well, that's what he just called
14 himself.

15 THE COURT: Don't do that.

16 MS. SCANLAN: Sorry.

17 THE COURT: I'm interested in perhaps if he's
18 taken orthopedics.

19 Q Have you take any orthopedic courses, Doctor?

20 A Okay, courses, or have I --

21 THE COURT: Courses, that's a question.
22 Wasn't the word "course" -- did I hear the word
23 "course"?

24 MS. SCANLAN: Yes, Your Honor.

25 THE COURT: That's the question.

1 A Have not taken orthopedic courses.

2 Q You are an engineer, correct?

3 A I'm a mechanical engineer and a biomechanical
4 engineer, right.

5 MS. SCANLAN: Your Honor, at this time I renew
6 my application before we began his testimony. Shall I
7 state it?

8 THE COURT: No. I'm just thinking. No
9 classes in anatomy, no classes in medicine, no classes
10 in orthopedic surgery, no classes in epidemiology, no
11 classes in anatomy. Any classes in neurology?

12 THE WITNESS: No classes in neurology, no,
13 I've -- in these fields I've only done research.

14 THE COURT: Hematology?

15 THE WITNESS: No.

16 THE COURT: Know anything about chiropractic
17 work?

18 THE WITNESS: I don't know what you mean,
19 anything about it. Obviously, I know something about
20 it.

21 THE COURT: Never studied it?

22 THE WITNESS: Correct.

23 THE COURT: Wow. What's your objection?

24 MS. SCANLAN: My objection, Your Honor, is
25 he's not qualified to testify as to mechanics of an

1 injury without those qualifications, and I renew my
2 application I made earlier.

3 THE COURT: All right. Ruling of the court is
4 you have to ask foundational questions that permits him
5 to offer an opinion on biomechanical injury, and I
6 haven't heard any yet so feel free to try. Please be
7 seated.

8 MR. SCAHILL: Thank you, Your Honor.

9 DIRECT EXAMINATION

10 BY MR. SCAHILL: (Cont'd.)

11 Q What is injury biomechanics, Doctor?

12 A Injury biomechanics is -- first I said biomechanics
13 is the application of mechanical engineering, principles of
14 the human body. Injury biomechanics is a specific part of
15 biomechanics that looks at tolerance thresholds for forces
16 or motions, different parts of the human body and what
17 causes damage to various structures in the human body.

18 Q What are your qualifications in that field?

19 A In that field I have all of my doctoral research,
20 Master's in doctoral research, the -- in MIT, working with
21 orthopedic surgeons, publishing in the field of biomechanics
22 and working, being employed in the Department of Orthopedic
23 Surgery in Massachusetts General Hospital, in charge of the
24 lab there. And those are the kinds of things that I have
25 for -- and general knowledge of research for both individual

1 parts of the human body that have testing done on them, like
2 the knee, how large of a force is required to tear a
3 ligament in the human knee. That's something that's part of
4 my Master's in and Ph.D. work and those are the types of --
5 those are one type of area of research that I'm familiar
6 with.

7 I'm also familiar with biomechanics with
8 respect to motor vehicle accidents. What types of forces do
9 occupants experience in motor vehicle accidents and the
10 types of damage to various structures in the human body that
11 result from that.

12 Q You understand the plaintiff in this case is
13 claiming injury to his neck, his back and both shoulders as
14 a result of an accident of September 6, 2011, correct?

15 A That's correct.

16 Q And what is your practical experience with respect
17 to your study and analysis of injuries to neck and back and
18 both shoulders as a result of a motor vehicle accident?

19 MS. SCANLAN: Well, objection, Your Honor.

20 THE COURT: Do you understand the question?

21 THE WITNESS: I believe so.

22 THE COURT: You can answer.

23 A With respect to motor vehicle accident, I am
24 through -- first of all, through the principles of
25 biomechanics, which are the same as mechanical engineering

1 being applied to any other thing, whether you're analyzing a
2 car or a person, forces -- when forces are exceeded to
3 certain parts, things break, various types of damages occur,
4 and so that's a fundamental part of biomechanics.
5 Specifically, for the back and the neck and the shoulders,
6 my, my expertise, as I said, at the University of Michigan,
7 my research was in the upper extremities, so the shoulder
8 and the elbow, looking at forces, different activities,
9 forces acting in the shoulder and the elbow. When there's
10 cocontraction to multiple muscles, in muscles acting across
11 joints, including cocontraction, which is when muscles --
12 opposing muscles act at the same time and increase forces on
13 human joints.

14 With respect to my eight years working at
15 Failure Analysis Associates, a lot of that was involved in
16 analyzing and becoming familiar with the guidelines from the
17 National Highway Traffic and Safety Administration with
18 respect to forces that are tolerated in the crash test
19 dummies which are replicated to be approximately human-like,
20 and what forces are allowed to occur in the neck and the
21 back and other parts of the body in crash tests. And the
22 underlying research papers that justify why -- where those
23 numbers come from.

24 So those are the types of -- those are the
25 types of experiences I have with respect to the back, the

1 neck and the shoulders, as far as performing a biomechanical
2 analysis.

3 Q Outside of the realm of legal cases, how is
4 biomechanical engineering used in science?

5 A Okay. Outside of legal cases, biomechanical
6 engineering is used, for example, to design artificial hips,
7 artificial knees. It's used to make cars safer, you know.
8 The - most of you look like younger than I am, but anyway,
9 used to be cars didn't have seat belts. Now they have seat
10 belts, they have airbags. They have all kinds of
11 collapsable steering columns. All of that is based on
12 biomechanical analysis of injury. How is injury being
13 reduced in motor vehicle accidents? And it's just by
14 considering a motor vehicle and the occupants. The people
15 obey the laws of physics just like everything else does.
16 And so biomechanics is used in designing tennis shoes,
17 making, you know, making them more comfortable, that type of
18 thing. There are a multitude of applications.

19 Q You said you have a Ph.D. in biomechanical injury
20 biomechanics?

21 A My Ph.D. is in biomechanical engineering. My
22 research was all in biomechanics.

23 THE COURT: I'm sorry, you have a doctorate in
24 biomechanical engineering?

25 THE WITNESS: Ph.D. in mechanical engineering.

1 THE COURT: Not biomechanical engineering?

2 THE WITNESS: MIT doesn't have a department --

3 THE COURT: I wasn't asking you why. It's
4 mechanical engineering?

5 THE WITNESS: That's correct, yes.

6 THE COURT: So there is a study called
7 biomechanical engineering, yes?

8 THE WITNESS: I'm not sure even that there is
9 a study.

10 THE COURT: Can you get a Ph.D. in
11 biomechanical engineering? Does that exist?

12 THE WITNESS: I don't know, I don't know.
13 There may be some schools where you can. I don't know.

14 THE COURT: You don't know this?

15 THE WITNESS: I mean, I have my Ph.D. The
16 people in my field --

17 THE COURT: Here's my question. If you have a
18 Ph.D. in mechanical engineering, is that different than
19 a Ph.D. in biomechanical engineering, or is my question
20 meaningless because there's no such thing as a Ph.D. in
21 biomechanical engineering?

22 THE WITNESS: I know there are some programs
23 where people can get a Ph.D. in bioengineering.

24 THE COURT: Bioengineering.

25 THE WITNESS: Okay. There may be schools

1 where you can get Ph.D. in biomechanics. I'm not quite
2 sure what the titles of the diplomas would be because --

3 THE COURT: All right. Is there such a thing
4 as a Ph.D. in biomedical engineering?

5 THE WITNESS: I believe so, yeah.

6 THE COURT: That's not you?

7 THE WITNESS: Correct.

8 THE COURT: And is there such a thing as a
9 degree in biomechanical engineering?

10 THE WITNESS: That, I don't know.

11 THE COURT: I thought you just said that some,
12 you know some programs give Ph.D.'s in that.

13 THE WITNESS: I think there might be some
14 biomechanics, but I'm not sure.

15 THE COURT: There's a Ph.D. in biomechanics?

16 THE WITNESS: There may be.

17 THE COURT: That's not you?

18 THE WITNESS: Correct.

19 THE COURT: Yours is mechanical engineering?

20 THE WITNESS: Correct.

21 THE COURT: Okay. Do you know the difference?

22 THE WITNESS: It has to do with --

23 THE COURT: Like between bioengineering and
24 mechanical engineering, do you know the difference?

25 THE WITNESS: Right. It's kind of a

1 philosophical difference. At MIT, where -- MIT, where I
2 went to school, the philosophy is be founded, be
3 grounded in a field. There are a lot of biomedical
4 researchers at MIT that have Ph.D.'s in electrical
5 engineering or physics, whatever it happens to be. The
6 research is in a particular field, so people who have
7 the top expertise in mechanical engineering apply that
8 knowledge to solving problems in the human body.

9 And so, for example, in my department of
10 mechanical engineering, there are people that develop
11 artificial skin. That person had a Ph.D. in mechanical
12 engineering. There are people that developed a lot of
13 research on artificial limbs in my laboratory, everyone
14 who had a Ph.D. in mechanical engineering.

15 THE COURT: So help me with this.

16 THE WITNESS: Cross DV's.

17 THE COURT: You described injury biomechanics
18 -- am I saying that correctly?

19 THE WITNESS: Sure.

20 THE COURT: Can you get a Ph.D. in that?

21 THE WITNESS: I don't know.

22 THE COURT: Is injury biomechanics a phrase
23 that you've coined? Does this exist as a specialty?

24 THE WITNESS: It is an application.

25 Biomechanics is used in many place. Injury biomechanics

1 is also used.

2 THE COURT: I'm just saying, are you a
3 biomechanic who's going to give opinion on injury, but
4 is there such a field called injury biomechanics?

5 THE WITNESS: I believe there is, yes.

6 THE COURT: You believe or you know?

7 THE WITNESS: Well, it's not -- it's not --
8 for most applications it doesn't matter if there's that
9 field or not.

10 MS. SCANLAN: Objection, Your Honor.

11 THE COURT: You can't tell us if there's a
12 degree in injury biomechanics?

13 THE WITNESS: That's correct.

14 THE COURT: So this is -- are you calling
15 yourself an injury biomechanics?

16 THE WITNESS: I am an expert in accident
17 reconstruction and biomechanics.

18 THE COURT: I'm not asking about accident
19 reconstruction. Accident reconstruction, I have no
20 problem with. And the word injury biomechanics, that's
21 a thing that actually exists?

22 THE WITNESS: Yes.

23 THE COURT: That's what you consider yourself
24 to be an expert in?

25 THE WITNESS: Okay.

1 THE COURT: We're going to take a short
2 recess. You may follow Officer Sheppard. Please do not
3 discuss the case. Keep an open mind and form no
4 judgments about the case.

5 (Whereupon, the jury exited the court room.)

6 THE COURT: I'm going to ask the doctor a few
7 questions outside of the jury's presence.

8 If you have other questions you'd like me to
9 ask him, let me know.

10 You will be expecting to give an opinion on
11 forces that need to be applied to cause injury to human
12 body, correct?

13 THE WITNESS: Yes.

14 THE COURT: Okay. The opinions that you give
15 on the forces necessary to cause injury to human body,
16 you believe that you're qualified to give this opinion
17 based on your training, education and experience?

18 THE WITNESS: Yes.

19 THE COURT: Okay. And the opinion that you
20 give on forces needed to cause injury to human body, is
21 that to the general population or to every specific
22 individual?

23 THE WITNESS: Many of my opinions will
24 compare, for example, this motor vehicle accident with
25 everyday activities. So those opinions will be for the

1 particular individual, because it will basically be
2 saying this individual in his everyday activities has
3 forces on his shoulder that are X. In this accident
4 they are one half of X. One half is less than one, this
5 accident did not cause injury.

6 THE COURT: The general principle of forces
7 needed to cause injury, is that for a general human
8 being, understanding the anatomy of a general human
9 being?

10 THE WITNESS: Yes.

11 THE COURT: So it's a general principle, so
12 would it be fair to say that your principle does not
13 take into account an eggshell plaintiff?

14 THE WITNESS: No, that's false, as I said.

15 THE COURT: So are we beginning with the
16 premise that every human body requires the same amount
17 of force to cause injury?

18 THE WITNESS: No. What I started saying
19 before was if I take an individual, whether it's an
20 eggshell plaintiff or a robust weight lifter, whatever
21 it happens to be, and I look at that person in one
22 activity that this person has performed every day for
23 years, and then this person is in one event and I
24 compare the force level in that event with the forces to
25 which that body part has been exposed for decades, and I

1 say the force of that event are much smaller than the
2 force, than independent of how eggshell this person is,
3 it's pretty clear, based on that evidence, that this
4 particular individual was not injured by these larger
5 forces that's applied many times. So here, once, it
6 doesn't make sense.

7 THE COURT: Now, the forces applied, how do
8 you derive the force that's applied to a specific event?

9 THE WITNESS: Force as applied to specific
10 event?

11 THE COURT: I assume it's some kind of
12 calculation, right?

13 THE WITNESS: Some calculation and some is
14 using measurements from state-of-the-art crash test
15 dummies during events that are similar, like rear-end
16 crash tests and such. What are the forces measured in
17 the low back and in the neck, and what are the
18 accelerations of the head and chest and those types of
19 things of the -- the crash dummies are not perfect but
20 they are made to simulate. Then I'd say, okay, you can
21 scale it for a person's weight, but scale it
22 appropriately and say, in a 7-mile per hour rear-end
23 impact delta V, the force in the back are 150 pounds or
24 whatever it happens to be.

25 THE COURT: Okay. I'm going to need you to

1 wait outside for just a minute while I confer with
2 counsel and then we'll bring you back in. Okay?

3 THE WITNESS: Yes.

4 (Whereupon, the witness exited the court
5 room.)

6 THE COURT: I am not in a position in the
7 middle of a jury trial to conduct a Frei hearing as a
8 gatekeeper role to his testimony. He's offering an
9 opinion based on his experience, background, training,
10 et cetera that he's qualified to give an opinion in this
11 area. I have nothing before me that tells me the
12 contrary, from any other expert. So I believe I have to
13 let him proceed.

14 I am permitted to look at whether or not his
15 opinion has any foundation in facts or is purely
16 speculative, but that's something that's left to your
17 skillful cross-examination or appropriate voir dire, but
18 the voir dire has been done. And while he doesn't have
19 specific trainings in anatomic orthopedic surgery,
20 medical -- specific medical specialties, he is
21 describing consultations with orthopedic surgeons and
22 engaging in crash dummy studies and the like, which
23 means I can't bar his testimony, not at this stage.
24 It's going to have to be subject to objection on
25 specific points and with voir dire on areas that you

1 believe are outside of his expertise. But he's
2 represented that he's able to give an opinion in this
3 expertise so I guess I leave it to you to cross-examine
4 him.

5 MS. SCANLAN: Your Honor, if I could be heard
6 on this. I feel he is completely not qualified to
7 testify to anything with respect to the bio part of it.
8 He is saying he does research now, so he hangs out with
9 doctors, but he hasn't been schooled in it. And there
10 absolutely is a degree in biomechanics, because
11 Dr. Ivancic is a doctor in biomechanical engineering and
12 biomedical engineering. He had two Ph.D's.

13 THE COURT: I understand.

14 MS. SCANLAN: But Judge, the bigger issue is
15 you could tell from his testimony a snapshot of what he
16 anticipates to do. He was saying, well, I'm gonna be
17 able to say that -- he didn't use his name -- but
18 Mr. Pariser uses his arms all the time for his job and
19 those forces are X, and this accident was less force so
20 we know it wasn't caused by this accident.

21 How in the world can he say that based upon
22 the lack of knowledge he has and lack of experience?

23 THE COURT: I didn't get the impression that's
24 what he's going to say here.

25 MS. SCANLAN: He's going to say --

1 THE COURT: Please don't interrupt me, Miss
2 Scanlan. The impression I got was when I asked him, do
3 his studies refer to general population as opposed to a
4 specific, his response was it could be to a specific if
5 the force applied is less than the force of daily
6 activity. That's an answer that you can easily
7 cross-examine him about if he tries to elicit it here,
8 but I don't know what he's going to say, and I'm not
9 going to conduct an interview on what he's going to say.
10 You have your reports, and there's a good chunk of it
11 that I think is probably within his expertise to testify
12 to.

13 MS. SCANLAN: Your Honor, he's gonna be making
14 quantum leaps, and what it's gonna force me to do --

15 THE COURT: You're going to object when you
16 have to.

17 MS. SCANLAN: It's not good for me to object
18 constantly in front of this jury. It looks like I'm
19 hiding something. The procedure would be to shut them
20 down on those areas that he's clearly not qualified.

21 THE COURT: The procedure would be to ask for
22 a Frei hearing before you select a jury. That wasn't
23 done. I'm not conducting a Frei hearing now. I have to
24 take him at his word that what he's speaking about is
25 within his expertise, until an expert tells me that it's

1 that's not within his expertise, and I'm not there, so
2 do the best you can. All right. We'll take two minutes
3 then we'll start.

4 (Whereupon, a recess was taken.)

5 THE COURT OFFICER: Jury entering.

6 (Whereupon, the jury entered the court room.)

7 THE COURT: All right. Please be seated
8 everyone. Thank you. You may continue your
9 examination.

10 MR. SCAHILL: Thank you, Your Honor.

11 DIRECT EXAMINATION

12 BY MR. SCAHILL: (Cont'd.)

13 Q Doctor, we were discussing your qualification as a
14 biomechanical engineer and your practical experience.

15 Can you tell the jury, first, your practical
16 experience as a biomechanical engineer?

17 A I guess, starting, as I said, I worked for a year
18 at Massachusetts General Hospital as the technical director
19 of the BioMotion laboratory. Also, while I worked at
20 Exponent, Failure Analysis Associates, I worked with crash
21 test dummies analyzing the types of motions that human
22 occupants undergo during crash tests, the types of forces
23 that they sustain during different accidents, and I guess
24 correlate that with injuries and injury tolerance thresholds
25 that are accepted by the federal government for various test

1 modalities. And that's in addition to all of my research,
2 both at University of Michigan and my Ph.D. work at MIT.

3 Q Have you published in your field?

4 A Yes, I have.

5 Q And how many publications do you have in the field?

6 A Maybe a dozen, not a large number.

7 Q Have you taught in this field?

8 A Yes, I have.

9 Q Where have you taught in this field?

10 A I taught biomechanics at University of Michigan to
11 graduate students and medical students.

12 Q Now, were you requested to perform an accident
13 reconstruction and biomechanical analysis in this case?

14 A Yes, I was.

15 Q And generate a report summarizing your findings?

16 A Yes.

17 MS. SCANLAN: Your Honor, may we approach?

18 THE COURT: Yes.

19 (Whereupon, an off-the-record discussion was
20 held at the bench.)

21 THE COURT: Please continue.

22 MS. SCANLAN: Just objection, Your Honor.

23 THE COURT: Overruled.

24 Q My question was, were you requested to perform an
25 accident reconstruction and biomechanical analysis in this

1 case and generate a report?

2 A Yes.

3 Q Okay. Now I want to ask you about the case
4 materials that you were provided with prior to your review?

5 A Okay.

6 Q You were given certain materials; is that correct?

7 A That's correct.

8 Q Were you given the photographs which have been
9 admitted into evidence as the Defendant's Exhibit A and the
10 Defendant's Exhibit E?

11 MS. SCANLAN: Objection.

12 THE COURT: Unless he was sitting in the
13 trial, how would he know? You'd have to show him A and
14 E.

15 MR. SCAHILL: That was my next question.

16 THE COURT: He can't answer the question
17 unless he was sitting in the trial and knows what A and
18 E is.

19 MR. SCAHILL: I'd ask that he be provided
20 those photographs.

21 THE COURT: Exhibit A and E, sure.

22 Mr. Scahill, please pull out A and E from the
23 evidence file and hand it to the officer.

24 MR. SCAHILL: Can I also give the officer
25 Defendant's Exhibit B?

1 THE COURT: So it's A, B and E?

2 MR. SCAHILL: Yes.

3 THE COURT: Let's show it to Miss Scanlan.

4 MR. SCAHILL: And Plaintiff's 7 and 8, Your
5 Honor.

6 THE COURT: And Plaintiff's 7 and 8. Those
7 are also photographs?

8 MR. SCAHILL: Yes, Your Honor.

9 THE COURT: Let's get 7 and 8. And now your
10 question has to be asked all over again.

11 (Document handed.)

12 BY MR. SCAHILL:

13 Q Doctor, I gave you a series of exhibits that have
14 been marked in evidence. Were you provided Defendant's
15 Exhibit A?

16 A Yes.

17 Q The photographs 1 through 7, were you provided an
18 estimate of the damage to the plaintiff's vehicle, which is
19 Defendant's Exhibit B in evidence?

20 A Defendant's Exhibit B, to me, looks like -- oh, I
21 see, okay, okay, yes.

22 Q Were you also given photograph, Plaintiff's
23 Exhibit 7 and 8?

24 A Yes.

25 Q And also Defendant's Exhibit E, the photograph of

1 the two vehicles at the scene?

2 A Yes.

3 Q Okay. Did you also -- were you also given --

4 THE COURT: You mean was he given that before
5 he wrote his report?

6 MR. SCAHILL: Correct.

7 THE COURT: You understand the question?

8 THE WITNESS: Yes.

9 THE COURT: Please continue.

10 Q Were you given it then before you wrote your
11 report?

12 A Yes.

13 Q Were you also given the plaintiff's verified bill
14 of particulars?

15 A Yes.

16 Q And also the plaintiff's transcript of the
17 examination before trial in this case, correct?

18 A Yes.

19 Q Were you also provided medical records of the
20 plaintiff, Mr. Seth Pariser?

21 A Yes.

22 Q Now, I know you're not an expert in diagnosis of
23 treatment, but what information did you obtain from the
24 medical records?

25 MS. SCANLAN: Objection.

1 THE COURT: Sustained.

2 Q In order to analyze this accident, did you obtain
3 any other information with respect to the vehicles involved
4 in the accident?

5 A Yes.

6 Q What did you obtain with respect to the vehicles
7 involved in the accident?

8 A Specifications from motor vehicle manufacturers as
9 well, so like curb weight and dimension, length, width, that
10 type of thing, and also crash test results both from low
11 speed crash tests --

12 MS. SCANLAN: Objection.

13 A -- bumper tests.

14 THE COURT: To the answer?

15 MS. SCANLAN: To low speed, yes, Your Honor.

16 THE COURT: The objection is premature.

17 Remain standing, and if you have an objection to his
18 answer, you could move to strike whatever you deem
19 appropriate when he's done. Please continue.

20 A Okay. And for barrier crash tests and moving
21 barrier crash tests involving similar vehicles to those
22 involved in the accident.

23 MS. SCANLAN: Objection.

24 THE COURT: Overruled.

25 Q I'm gonna ask you to break that down, what you just

1 talked about.

2 You talked about specifications for the
3 vehicles, and you said curb weight. What does that mean?

4 A Curb weight is just what a vehicle weighs with no
5 occupants with all of the liquids. So full tank of gas, the
6 amount of oil you're supposed to have, that type of thing.

7 Q What was the curb weight for the plaintiff's
8 vehicle, the 2006 Land Rover LR3?

9 A It was around 5,300 pounds.

10 Q What about the defendant's vehicle, the 2010 Ford
11 Escape?

12 A It's around 3,600 pounds.

13 Q Why is that important in accident reconstruction?

14 A The reason that's important in accident
15 reconstruction is vehicle weight very much affects the
16 change in speed that a vehicle withstands. So, for example,
17 an 80,000 pound tractor trailer, if it hits the back of your
18 car when you're stopped, if it's going 40 miles an hour
19 after the impact, it's not gonna slow down by much at all.
20 So you will have a huge change in speed and large
21 acceleration. The truck will have a very small one. So
22 heavier vehicle will sustain much smaller changes in speed
23 and accelerations than will lighter vehicle.

24 Q You talked about barrier test. What does that
25 mean?

1 A A barrier test is if there's -- most of them are
2 flat surface, flat surface. In order to pass, in order to
3 be able to sell a new car in the US, you have to take a
4 vehicle and put crash test dummies in it, crash them into a
5 wall at 25 miles an hour, 30-miles an hour, 35 miles an
6 hour, those types of things. And whether or not a car
7 passes depends on measurement inside the vehicle, like to
8 the crash test dummy. So if its neck has forces that are
9 measured larger than a certain threshold, a car fails, you
10 won't be able to sell that in the US. So those are the
11 types of things.

12 There are other tests that are done where a
13 barrier they -- for a different test, they use a deformable
14 barrier, which means the front of it is honeycomb, stiffness
15 of a typical car, smash it into a car, turn the car upside
16 down, see if it leaks any fuel.

17 You all look too young for that, but in the
18 early 70's there was a large issue of Ford Pinto, when its
19 rear end blew up, those kinds of things. So all of these
20 types of crash tests are required by the federal government.

21 THE COURT: Continue.

22 A They are all required by the federal government,
23 and they involve taking a car and smashing it into a
24 barrier. There also are vehicle to vehicle crash tests as
25 well, besides those, but anyway, those are the barrier crash

1 tests I was describing.

2 Q You also mentioned other crash tests. I think you
3 said there was a threshold for crash test; is that correct?

4 A Well, within crash tests the thresholds are set by
5 the federal government. The National Highway Traffic Safety
6 Administration sets standards for deciding whether or not
7 cars are safe, and there are levels. Like in a frontal
8 impact for an unbelted occupant, the force in the leg can't
9 be more than 2,250 pounds or something like that. I forget
10 the exact number but there are numbers that come from
11 testing of cadavers and looking at motor vehicle crash
12 tests, regular accident results, that type of thing. So
13 there are thresholds that are known above which you're not
14 allowed to have a car -- a car is not deemed safe if it
15 doesn't meet these standards.

16 Q Did you perform an accident reconstruction in this
17 case?

18 A I performed an accident reconstruction in this
19 case.

20 MS. SCANLAN: Objection, Your Honor.

21 THE COURT: Overruled.

22 Q And what calculations did you use to perform --
23 first of all, did you use the documents which I just
24 provided to you and the photographs and the damage estimate
25 in performing your accident reconstruction?

1 A Yes.

2 Q And were you able to perform an accident
3 reconstruction from the documents that I provided you that
4 are in evidence?

5 A Yes.

6 Q And --

7 MS. SCANLAN: Objection.

8 THE COURT: Overruled.

9 Q Specifically, with respect to the damage estimate,
10 the damage estimate that is in evidence which shows the
11 damage to the plaintiff's vehicle at approximately 1,100
12 dollars, is that an important component of your accident
13 reconstruction?

14 A Not the number, but the details of that verify that
15 what you can see in the photograph is essentially what was
16 damaged in the car, that it was the rear bumper.

17 THE COURT: I'm sorry, is the damage
18 assessment important; yes or no?

19 THE WITNESS: Not the dollar amount.

20 THE COURT: I'm sorry. He didn't ask you
21 whether the dollar amount was important. He asked you
22 was the damage assessment important; yes or no?

23 THE WITNESS: It's somewhat important.
24 Photographs are more important, but it's somewhat
25 important.

1 THE COURT: Would you mind whenever possible
2 to answer the question put to you and not volunteer
3 anything not asked of you.

4 THE WITNESS: Sure.

5 THE COURT: Please continue.

6 Q Is the damage description in the estimate that's in
7 evidence important?

8 A Sure.

9 Q And why is that?

10 A It's just reenforcement that the photographs show
11 the damage. And as I said, it's just another source of
12 showing the same thing that I saw in the photographs.

13 Q Okay. What calculations did you perform in the
14 accident reconstruction?

15 A In the accident reconstruction I performed
16 calculations to determine the change in speed of each of the
17 vehicles involved in the accident. So in this case, the
18 Ford Escape rear-ended the Land Rover. The Ford Escape
19 slowed down --

20 MS. SCANLAN: Objection.

21 THE COURT: Sustained.

22 There's been absolutely no evidence anywhere
23 in this case at all about the speed of the yellow cab,
24 none. Understood?

25 THE WITNESS: I didn't say there was.

1 THE COURT: I'm not speaking to you, sir. I'm
2 speaking to the jury.

3 THE WITNESS: Oh, I thought you were talking
4 to me. I apologize.

5 THE COURT: Please continue.

6 MS. SCANLAN: Your Honor, I ask that that
7 testimony be stricken because he's describing the rate
8 of speed of the Ford Escape.

9 THE COURT: Is that the yellow cab?

10 MS. SCANLAN: Yes.

11 THE COURT: Yes, there is no evidence as to
12 the speed of the yellow cab, so there can be no
13 testimony regarding the speed of the yellow cab. All
14 right. Please continue.

15 Q Please continue, Doctor.

16 A Okay. I calculated the changes in speed of the --
17 of the vehicles involved in the accident --

18 MS. SCANLAN: Objection.

19 THE COURT: Vehicles, plural.

20 THE WITNESS: Vehicles plural. It's
21 impossible to calculate just one of them. They both are
22 exactly the same thing, related by their weights.

23 MS. SCANLAN: Objection.

24 THE COURT: You may continue.

25 MS. SCANLAN: Your Honor --

1 Q Go ahead.

2 THE COURT: The problem is change in vehicle
3 speed. I don't know what that means within his
4 expertise. I suppose we'll find out shortly.

5 MS. SCANLAN: He said -- Your Honor, my
6 objection is he said vehicles' change of speed. I think
7 "S apostrophe." We're back to that original objection
8 to that original question.

9 THE COURT: Could be "apostrophe S." You'll
10 find out in cross.

11 Please continue.

12 Q Please continue, Doctor.

13 A So basically, in the accident reconstruction
14 community there are two methods performing accident
15 reconstruction generally. One of them is typically in
16 higher-speed accidents where you know the location where
17 vehicles impact and one of them ends up, you know, 150 feet
18 down the road on the side and the other one ends up over
19 there. That's not what we have here. I'm just explaining
20 that that's the kind of thing that happens sometimes.

21 In that case you perform what's called
22 momentum-based accident reconstruction.

23 In this case we perform what is called a
24 damage-based accident reconstruction where the damage to the
25 vehicles is used to determine the changes in speed. So for

1 a particular vehicle its change in speed will be
2 determined -- will be related to the amount of damage that
3 it sustains in an accident. And an impact -- when two
4 vehicles are in an accident an impact happens at about a
5 tenth of a second. Typically, if you're going along
6 20 miles an hour, there's an identical vehicle stopped in
7 front of you and you hit it, after about a tenth of a second
8 you'll sort of reach steady rate of speed. That's pretty
9 fast, obviously, and you'll be going roughly half as fast.
10 You might slow down from 20 to 10 miles an hour. You may
11 have a 20, 10-mile per hour -- the rear vehicle that's rear
12 ended will have 10-mile an hour change in speed. So those
13 changes in speed are related to the amount of damage that a
14 vehicle sustains in an accident. And crushed damage is what
15 I'd be talking about.

16 MS. SCANLAN: Your Honor, Your Honor, may we
17 have a side bar?

18 THE COURT: You may.

19 (Whereupon, an off-the-record discussion was
20 held at the bench.)

21 MS. SCANLAN: Can I note my objection, Your
22 Honor?

23 THE COURT: Objection overruled. Please
24 continue.

25 MS. SCANLAN: Thank you, Your Honor.

1 Q You were discussing crushed damage. Can you
2 describe to the jury what that means, how you use that in
3 accident reconstruction?

4 A Crushed damage is if you would measure a vehicle
5 before an accident then measure it after the accident, then
6 measure the difference of -- if the right corner is pushed
7 in 3 inches over here, 2 inches over there, that's the
8 crushed damage. It's the difference between an undeformed
9 car and deformed car. And you know -- and in general, it
10 may depend on exactly where it is on the vehicle. Or
11 sometimes you may talk about average crush damage which
12 would be averaged over like the entire back or entire front
13 of a vehicle.

14 Q Did you take into account the testimony of
15 Mr. Pariser in your accident reconstruction?

16 A Oh, sure. I take testimony into account.
17 Sometimes testimony violates --

18 THE COURT: So the answer was yes, right?

19 THE WITNESS: Sure.

20 THE COURT: All right. Next question.

21 Q The methods that you used to perform this accident
22 reconstruction, are they peer-reviewed?

23 Are those methods taught in university, are
24 they generally accepted within the field of accident
25 reconstruction?

1 A Those methods are definitely generally accepted in
2 the field of accident reconstruction for at least the last
3 50 years, and so yes.

4 Q Are those methods described in peer-reviewed
5 papers?

6 A Yes.

7 Q And does the stiffness parameter come into account?
8 Could you describe to the jury what that is?

9 A Yeah. Stiffness is the relationship between how
10 large the applied forces are on something and how much it
11 gets deformed. So something that's very stiff would take
12 larger forces to deform. So, for example, a car in
13 Indianapolis 500 race car crashes into a wall at high speed
14 but it has a low stiffness because it has more low stopping
15 distance, so you'll have smaller acceleration type of thing,
16 but the stiffness of a vehicle has to do with how large the
17 forces are required in order to deform it.

18 Q You talked about change of speed, crushed damage.
19 Do they interact in performing accident reconstruction?

20 A Yes.

21 Q How do they do that?

22 A If you perform crash tests, either
23 vehicle-to-vehicle crash tests or vehicle-to-barrier crash
24 tests, and you plot the change in speed that the vehicle had
25 on one axis and the amount of crush on another axis, you get

1 pretty close to a straight line. So below a certain level
2 you'll have no damage to your car. You can back in half a
3 mile an hour, one mile an hour, whatever it is, nothing will
4 happen to your car. If you back into the wall 10-miles an
5 hour, you're definitely gonna have damage to your car. If
6 you plot it incrementally at higher velocities, it's
7 approximate straight line relationship between crushed
8 damage and change in speed.

9 Q Did you use crash tests data in performing your
10 accident reconstruction analysis?

11 A Yes, I did.

12 Q Why is that important -- how do you use it?

13 A You use crash test data to figure out what that
14 relationship is for the vehicles that you're interested in.
15 So in this case, I have a 2006 Land Rover and I want to know
16 how large do the forces have to be on the back of this 2006
17 Land Rover in order to start smashing in the car. In the
18 same way for the front of the Ford Escape based on crash
19 tests, both bumper tests and vehicle-into-barrier tests and
20 vehicle-into-vehicle tests, how large do the forces have to
21 be to the front of the Ford Escape in order to deform it
22 that way.

23 Q You mentioned the rebound effect when the vehicles
24 come to rest after the collision. Does that come into play
25 in your analysis?

1 A Yes. In mechanics there's something called
2 co-efficient of restitution, which basically is a number
3 that tells you how elastic this collision was or how much of
4 the energy is lost due to an impact. If you drop something
5 and it just sticks to the ground, all of the energy was
6 lost. That would be a co-efficient restitution of zero. If
7 you drop something, it bounces back to the height that you
8 dropped it from, all of the energy was recovered, that would
9 be co-efficient restitution of one. And numerous
10 vehicle-to-vehicle crash tests have been performed to show
11 that in extremely low-impact velocities, like one or
12 two miles per hour, the co-efficient of restitution is,
13 let's say, a half or something, less than that. As the
14 closing speed of the vehicles get -- the larger one
15 approaches the 20 miles per hour, then the co-efficient of
16 restitution is about 10, and in between there's a smooth
17 curve. That seems to fit data pretty well.

18 Q Is there also a separation speed?

19 A Yes. When an accident happens, if two vehicles
20 come together, what really matters is not necessarily
21 whether one vehicle is stopped and the other one is moving.
22 What really matters is the closing speed and the separation
23 velocity. So the closing speed is how much faster the one
24 vehicle is going than the other one. And so, if someone's
25 car is going 5 miles per hour, another one is going 15 miles

1 per hour, the closing speed is 10 miles per hour. After
2 they hit, they will separate. So to some speed, less than
3 10 miles an hour, it might be 5, it might be 3. The ratio
4 of that separation velocity to the closing velocity is
5 co-efficient of restitution. Zero would mean they stuck
6 together initially. They came together, they just stuck. A
7 half would be if before the accident they're coming together
8 10 miles an hour, they separate at 5 miles per hour. In car
9 accidents, as I said, the numbers tend to be low, low
10 numbers, .1, .2 or less, depending on the closing speed.

11 Q Now, in this particular case, what did you learn
12 with respect to the damage to the Land Rover from the items
13 that are in evidence before you?

14 A Okay. To the Land Rover, the damage was
15 predominantly to the rear bumper cover, rear bumper cover.
16 There's a rubber rear bumper cover, and it has -- in the
17 middle it has a little slot that covers the trailer hitch.
18 And there's a little piece of plastic, square piece of
19 plastic that popped off. Underneath that there's a crack in
20 the bumper cover. The top step pad that sticks on the
21 bumper cover was peeled up a little bit on one side on the
22 driver's side. And also on the back of the bumper cover
23 there are two rectangular reflectors that are maybe 1 inch
24 by 5 inches, something like that. One of that fell off.
25 That was the damage to the back of the Land Rover as a

1 result of this accident.

2 Q Okay. And did you explain crush damage before?
3 Did the Land Rover sustain any crushed damage?

4 A Not any appreciable crush damage, no.

5 MS. SCANLAN: I'm sorry, objection, I think he
6 said appreciable.

7 THE COURT: Did it sustain any crushed damage;
8 yes, no?

9 THE WITNESS: No.

10 THE COURT: No, it did not sustain any crushed
11 damage?

12 THE WITNESS: Correct.

13 THE COURT: Please continue. And crushed
14 damage you've already described to us?

15 THE WITNESS: Right. It's how much the
16 vehicle was pushed in.

17 THE COURT: You described that to us already?

18 THE WITNESS: Yes.

19 THE COURT: Please continue.

20 BY MR. SCAHILL:

21 Q What damage did the Ford taxi sustain?

22 A The Ford taxi?

23 MS. SCANLAN: Objection.

24 THE COURT: Overruled.

25 Q Go ahead, Doctor.

1 MS. SCANLAN: Your Honor, may we have a
2 sidebar?

3 THE COURT: I don't think that's necessary,
4 no.

5 You may answer.

6 A Okay. Based on the documents that I initially
7 reviewed --

8 THE COURT: What documents are those again?

9 A All of the various photos, the repair estimates,
10 testimony. I guess those are the most relevant ones.

11 THE COURT: Plaintiff's testimony, repair to
12 the Land Rover and those photographs?

13 THE WITNESS: Right.

14 THE COURT: Okay, please continue.

15 A Based on that, the Ford Escape had no, no damage
16 along the driver's side of the vehicle, no, no significant
17 damage to the hood.

18 THE COURT: Significant?

19 THE WITNESS: Right.

20 THE COURT: Could you define significant for
21 us?

22 THE WITNESS: Sure. In this case?

23 THE COURT: Well, no. What the word
24 significant means in any case.

25 THE WITNESS: Well, significant is a pretty

1 clear word in general. Significant damage, I would just
2 say --

3 THE COURT: I'm sorry, are you quibbling with
4 me?

5 THE WITNESS: No, sir.

6 THE COURT: When you use an adjective if it's
7 a term of art, we need to know. If it's not a term of
8 art, I'd like you to describe it. So there either is
9 damage, there's no damage. And you indicated there's no
10 significant. Please describe what you mean by
11 significant.

12 THE WITNESS: I'd say there's no visible
13 damage to the hood.

14 THE COURT: No visible damage to the hood.
15 We're talking about the cab, right?

16 THE WITNESS: Absolutely, yeah. From the view
17 from the driver's side, you can see that the driver's
18 head lamp assembly is intact, in position properly. You
19 can see that the --

20 THE COURT: I'm sorry, when you say view from
21 the driver's side --

22 THE WITNESS: View.

23 THE COURT: Do you mean if I'm a driver inside
24 the cab, my view, or do you mean something else?

25 THE WITNESS: I mean, in the United States the

1 driver's side in the left side of the vehicle if you're
2 standing --

3 THE COURT: If you mean left side of the
4 vehicle, say the view from the left side of the vehicle.

5 THE WITNESS: Right, okay.

6 THE COURT: Please continue.

7 THE WITNESS: Okay.

8 A If I may, just -- the reason I'm interested in
9 driver's side opposed to left side, people, if they're
10 looking from the front to the back, and driver's side is
11 pretty clear --

12 THE COURT: Let's do it this way then. Since
13 we're not accident reconstructionists, we'll do it this
14 way. We'll begin with the premise that a car has four
15 sides.

16 THE WITNESS: Sure.

17 THE COURT: The front is the front, the back
18 is the back.

19 THE WITNESS: Okay.

20 THE COURT: Then there's the sides.

21 THE WITNESS: Right.

22 THE COURT: For the front, when you mean a
23 part of the front that's near the steering wheel, we'll
24 call it driver's front side. Is that --

25 THE WITNESS: That's fine by me, sure.

1 THE COURT: When we mean the back, we'll call
2 it the rear of the vehicle.

3 THE WITNESS: Sure.

4 THE COURT: Terrific. Can we all work with
5 that in our questioning?

6 MR. SCAHILL: Yes, Your Honor.

7 THE COURT: Okay, proceed.

8 A From the view -- looking at the photo from the view
9 -- photo taken by the plaintiff at the accident scene, you
10 can see the side of the front grill, but you can't see
11 any --

12 THE COURT: You already lost us. Are we on
13 the side, the front or the back?

14 THE WITNESS: He'll -- this view is if you
15 would -- if you would think -- if you're at the corner
16 and the car has four corners, if you're at the driver's
17 side front corner of the vehicle and you move sideways
18 away from the vehicle then a little bit rearward, that's
19 approximately where this photo was taken from, so this
20 photo is looking --

21 THE COURT: I'm not asking for the perception
22 of the observant who took the picture. I'm asking for
23 what part of the car is in view, front, back or sides?

24 THE WITNESS: You can see the driver's side.
25 You can see the front portion of the driver's side of

1 the vehicle and the hood, and part of the head lamp
2 assembly that wraps around. Also, you can see the side
3 of the grill.

4 Q Were you able to perform --

5 THE COURT: Is the grill on the front of the
6 vehicle?

7 THE WITNESS: The grill is the thing on the
8 front of the vehicle that's between the bumper and the
9 hood.

10 THE COURT: Does this picture show the front
11 of the vehicle?

12 THE WITNESS: Shows a portion of the front of
13 the vehicle. It's not a front view.

14 THE COURT: All right. Does it show a portion
15 of the front of the vehicle?

16 THE WITNESS: Yes.

17 THE COURT: Does it show a portion of either
18 of the sides of the vehicle.

19 THE WITNESS: Yes, it shows a portion of the
20 driver's side of the vehicle.

21 THE COURT: All right. Does it show the other
22 side of the vehicle?

23 THE WITNESS: Not in this photo, no.

24 THE COURT: That's the only one we're asking
25 about.

1 THE WITNESS: Right. No.

2 THE COURT: It shows part of the front and
3 part of the driver's side?

4 THE WITNESS: Yes.

5 THE COURT: All right. Next question.

6 MR. SCAHILL: Thank you, Judge.

7 Q Did you also take into account the testimony of
8 Mr. Pariser that the front grill of the taxi was cracked and
9 the headlight on the right side was out of its socket?

10 A Well, now we're getting into material that I
11 reviewed in trial testimony at the time of trial and time of
12 my original report. I'm not sure how you want me to answer
13 that.

14 MS. SCANLAN: Objection.

15 Q At the time of your original report?

16 A At the time of my original report, I don't believe
17 that Mr. Pariser said anything about --

18 Q I'll refer you to page 8 of your August 28, 2013,
19 report, if that refreshes your recollection.

20 MS. SCANLAN: Objection; leading.

21 THE COURT: Overruled.

22 Q So my question was, did you take into account the
23 fact that Mr. Pariser testified the Land Rover's rear bumper
24 was hit, and he also testified that the Ford Escape's grill
25 was cracked and there was plastic on the ground?

1 A Oh, that, that, definitely, I took that into
2 account, yes.

3 Q And based on Mr. Pariser's testimony and the
4 documents that are in evidence that you described, were you
5 able to conduct an accident reconstruction in this case?

6 A Yes.

7 THE COURT: Are we discussing the documents in
8 evidence that were just presented to him that you just
9 handed up?

10 MR. SCAHILL: He had those documents prior
11 to --

12 THE COURT: When you say documents in
13 evidence, it means everything, absolutely everything.

14 MR. SCAHILL: Okay.

15 THE COURT: So I'd like to know what you mean
16 by that.

17 MR. SCAHILL: And I'll specify.

18 THE COURT: Please do.

19 Q The photographs, Plaintiff's photographs 7 and 8
20 that were taken at the scene of the accident by Mr. Pariser,
21 the photographs of the damage to the Land Rover, and the
22 property damage estimate of the damage to the Land Rover
23 that's Defendant's Exhibit A, B and E, were you able to
24 conduct an accident reconstruction based on those materials
25 that I just discussed, as well as the testimony of

1 Mr. Pariser?

2 A Yes.

3 MS. SCANLAN: Same objection.

4 THE COURT: What testimony?

5 MS. SCANLAN: The testimony -- the testimony
6 that I just described.

7 THE COURT: The deposition testimony?

8 MR. SCAHILL: Yes.

9 THE COURT: Is that the only testimony of the
10 plaintiff you've seen, his deposition?

11 THE WITNESS: At the time I read his report.
12 I've read trial transcripts but it's not what my report
13 was based on.

14 THE COURT: Oh, you've read trial transcripts.
15 If the questions pertain to your report, they're going
16 to be limited to what you had to write the report.

17 THE WITNESS: That's all I'm gonna be
18 answering.

19 THE COURT: If you're asking about writing of
20 your report -- by the way, you only wrote one report?

21 THE WITNESS: Two reports.

22 THE COURT: There's a second report?

23 THE WITNESS: Yes.

24 THE COURT: So I suppose we need to know which
25 report he's asking about. I guess one is earlier, one

1 is later?

2 THE WITNESS: Yes.

3 THE COURT: All right. So please specify when
4 you're asking about a report whether you mean his
5 earlier or his later report.

6 MR. SCAHILL: By earlier report, I'm --

7 THE COURT: By earlier, I mean whatever one he
8 wrote first.

9 MR. SCAHILL: Correct.

10 MS. SCANLAN: I'm sorry, Your Honor.

11 THE COURT: I'm simply defining terms so that
12 the question is understood by the witness and we can all
13 understand the answer.

14 Yes, ma'am.

15 MS. SCANLAN: May we please have a sidebar?

16 THE COURT: Yes, you may.

17 (Whereupon, an off-the-record discussion was
18 held at the bench.)

19 THE COURT: Please continue.

20 BY MR. SCAHILL:

21 Q So Doctor, I was asking you whether you were able
22 to perform an accident reconstruction in this case?

23 A Yes, I was.

24 Q What were the results of your accident
25 reconstruction in this particular case?

1 MS. SCANLAN: Objection.

2 THE COURT: More specifically, were you able
3 to perform an accident reconstruction at the time of
4 your earliest report?

5 THE WITNESS: Yes.

6 THE COURT: And that's what we're going to ask
7 you.

8 THE WITNESS: If you want --

9 THE COURT: I don't want you to do anything
10 except listen to my instructions and volunteer nothing.
11 Please continue.

12 Q Yes, Doctor, please continue.

13 A Okay, the accident. So I was able to perform an
14 accident reconstruction prior to submitting my first report.

15 Q What were the results of your accident
16 reconstruction?

17 A The results of that accident reconstruction were
18 that the change in speed sustained by the plaintiff's Land
19 Rover was approximately 7 miles per hour or less.

20 Q Can I stop you there for a minute? How did you
21 come to that figure? When you say 7 miles per hour or less,
22 how did you get to that calculation?

23 A 7 miles per hour or less, I get to that doing two
24 sets of calculations. First, calculation on the Land Rover
25 and also calculations on the Ford Escape, because it's

1 impossible for the Land Rover to have had a change in speed
2 unless the Ford Escape also had a change in speed. And not
3 just had a change in speed. The Ford Escape had to have a
4 change in speed that was 44 percent larger than the change
5 of speed sustained by the Land Rover. That's just based on
6 physics for the last 400 years. So my calculations come
7 from crash tests, looking at how much deformation there was
8 to the back of the Land Rover. And I don't see any
9 deformation to the back of the Land Rover. A reflector fell
10 off, a little part cracked. I assume, the worst case
11 scenario, of across the back of the Land Rover, the height
12 of the Land Rover, the entire vehicle was pushed in an inch.
13 I used that number along with crash test results of vehicles
14 similar to the vehicle to come up with maximum change of
15 speed for the Land Rover of 7 miles per hour. That
16 corresponds to a change in speed of 10 miles per hour for
17 the front of the Ford Escape. And for the Ford Escape, that
18 corresponds to the entire front of the Ford Escape, from the
19 front bumper all the way to the hood and the quarter panels
20 crumpled in 3-inches across the entire front of the vehicle.
21 So my calculations, based on crash tests of both vehicles,
22 was that the Land Rover sustained an increase in speed of
23 about 7 miles per hour or less in this accident.

24 MS. SCANLAN: Your Honor, objection, move to
25 strike that portion where he gives a calculation with

1 respect to the speed, change of speed of the Ford
2 Escape.

3 THE COURT: Denied. Please continue.

4 Q You talked about laws of physics that have been
5 used for 400 years. What do you mean by that, the laws of
6 physics -- specifically, what laws are you talking about?

7 A The conservation of momentum, where the -- if we
8 include the occupants, that the Land Rover weighed about
9 5,500 pounds at the time of the accident and the Ford Escape
10 weighed about 3,800 pounds. And there's no getting around
11 it that. If the Ford Escape -- I mean, if the Land Rover
12 had a certain increase in speed, then the Ford Escape
13 necessarily had the opposite. It had a decrease in speed
14 instead of increase. But the magnitude had to be 44 percent
15 larger than the Land Rover experienced because the Land
16 Rover weighs about 44 percent more than the Ford Escape.
17 That's all I was talking about.

18 Q Is there a minimum change in speed that is
19 necessary to sustain damage?

20 THE COURT: Please don't lead.

21 Q We talked about change of speed. I want to ask you
22 about damage to the Ford Land Rover.

23 A That's -- you made a mistake there, Ford Land
24 Rover.

25 Q I'm sorry, the Land Rover.

1 THE COURT: Can we do this so that no one's
2 confused. We'll say plaintiff's car and the cab.

3 THE WITNESS: Okay.

4 THE COURT: How's that?

5 MR. SCAHILL: Can we say plaintiff's car and
6 defendant's car?

7 THE COURT: Well, one is yellow and one is
8 what color?

9 MR. SCAHILL: Black, I believe.

10 THE COURT: Why don't we say plaintiff's car
11 and defendant's car? Yes, you could do it that way.
12 You want to do it that way?

13 MR. SCAHILL: Yes.

14 Q Is there a minimum amount of force necessary to
15 cause damage to plaintiff's rear in this accident?

16 A I'm not quite sure what that question means. Is
17 there -- because it's sort of two parts. Is there a minimum
18 amount that can cause damage?

19 THE COURT: Are you saying you don't
20 understand the question?

21 THE WITNESS: Right.

22 THE COURT: So rephrase.

23 Q You talked about a change in speed of 7 miles per
24 hour. What speed is necessary to cause the damage that's
25 shown in the photograph to the back of the Land Rover, the

1 plaintiff's car?

2 A Oh, I see.

3 THE COURT: What speed is necessary to cause
4 the damage?

5 A You mean change in speed?

6 Q Yes.

7 A You have a change in speed. As I said. I believe
8 could be less than 7 miles per hour. It could not have been
9 more than 7 miles per hour.

10 Q How can you say that as an accident reconstruction
11 expert?

12 A Because as it is, I'm already assuming more
13 deformation than what is clearly visible in the photographs.
14 As I was saying before, the relationship between change in
15 speed and crush is fairly linear. And so for 7 miles an
16 hour, every inch above that would be 2 miles per hour.
17 Increase in speed 7 miles an hour would be an inch. 9 would
18 be about 2 inches, et cetera, based on crash tests, and so
19 that's where that comes from. I believe 1 inch is extremely
20 upper bound, worse case scenario, for the back of the Land
21 Rover in this accident.

22 Q You talked about crash test. I think you mentioned
23 IIHS?

24 A That's correct.

25 Q What does that stand for?

1 A Insurance Institute For Highway Safety.

2 Q Is that a body that studies crash -- that does
3 crash analysis?

4 A That's a body that performs a lot of tests on
5 vehicles at lower speeds than the federal government would
6 do, like I said. The federal government requires cars
7 crushing barriers at 30, 35 miles an hour. There are some
8 standards by the government about bumpers, but the federal
9 government doesn't really perform lower speed crash tests.
10 And a lot of those are performed by Consumer Reports,
11 Consumer Union, Insurance Institute for Highway Safety,
12 IIHS. Those two groups perform tests at lower speeds. And
13 they say, for example, this vehicle had so much damage, this
14 is a good car, this one is safer than another one, that type
15 of thing.

16 Q And the National Highway Traffic Safety
17 Administration also performed these types of tests?

18 A National Highway Traffic Safety is part of the US
19 government, and they are the ones who design the tests that
20 have to be done on cars that are gonna be sold in the US,
21 and they set the criteria by which a vehicle will either
22 pass or fail those tests. And so they also set standards,
23 like how -- how much impact does a bumper have to withstand
24 for a car to be sold in the US. Those kind of things.

25 Q Are those bumper tests, do they have any

1 importance? Do they factor into your analysis?

2 A Certainly.

3 Q How so?

4 A For example, when reviewing the literature in order
5 to look at the relationship between crush and changes in
6 speed. Vehicles change. Around 1983, the requirements of
7 the United States were changed by the federal government.
8 Before that time, bumpers were, what is called a 5-mile per
9 hour bumper. Like the safest car of all time was a fairly
10 inexpensive car, in terms of bumper damage. It was 1981
11 Ford Escort, and you could smash it into the wall at 5 miles
12 per hour, nothing would happen to it. That was -- and the
13 requirement around 1980 was that a car had to have what's
14 called 5-mile per hour bumper. If you impact that at
15 something that was the same height as the bumper, it had
16 5-mile per hour impact. Then there could be no damage even
17 to the bumper. In 1983, that number was reduced to 2
18 1/2-miles per hour, and it's still stayed the same.
19 Nowadays vehicles have to have at least 2 1/2-mile bumper on
20 them, which means it has to have a 2 1/2-mile per hour
21 impact without having damage to the bumper. So that's --
22 you know, that goes into the analysis of understanding
23 vehicle damage and changes in speed, that type of thing.

24 Q How about the different weights of the two cars.
25 You testified the Land Rover was 5,300 pounds, I believe,

1 and the taxi 3,800 pounds. How does that factor into your
2 analysis?

3 A Yes. I said with the occupant it was around
4 5,500 pounds and 3,800 pounds. Those go into the
5 defendant's vehicle was much lighter and it had to have much
6 larger changes in speed in this accident. And also -- and
7 therefore, it ends up, based on the crash test, that it
8 would have had to have much greater damage to the front end
9 than would the back of the plaintiff's car.

10 Q Now, you talked about the two vehicles. Do they
11 have different bumper heights?

12 A Yes.

13 Q Did that factor into your analysis?

14 A No.

15 Q Why is that important?

16 A The combination of the bumper heights and also --
17 well, all I know is at the time it could be due to braking.
18 I don't know exactly what the driver of the defendant's
19 vehicle was doing, but I do know this. Based on the damage,
20 it's pretty clear that the grill of the trailing vehicle
21 struck the bumper of the front vehicle, and that's bumper
22 height mismatch.

23 MS. SCANLAN: Objection.

24 A In many -- there are a lot of studies nowadays.
25 People worried that SUV's have higher bumpers, it's sort of

1 unfair when they hit cars with lower bumpers, that type of
2 thing. There are a lot of crash tests to look into that,
3 other ways that there's bumper height. Even if you have two
4 identical cars, you see you're gonna rear end into somebody,
5 you slam on the brakes, your bumper can gradually go down in
6 front. The rear bumper, it will hit your grill. You'll
7 have, typically, in that situation, more damage to the
8 trailing vehicle than you would to the struck vehicle.

9 MS. SCANLAN: Objection, Your Honor. Move to
10 strike that portion referring to any action by the cab
11 driver.

12 THE COURT: Overruled.

13 Q Now, you talked about a change of speed to the Land
14 Rover, approximately 7 miles per hour. What happened to the
15 Land Rover as a result of that change of speed?

16 THE COURT: You mean the plaintiff's vehicle?

17 Q The plaintiff's vehicle.

18 A I'm sorry. The plaintiff's vehicle, whatever speed
19 he was travelling at, immediately before that impact, about
20 a tenth of a second later he was travelling at a higher
21 speed, somewhere between 0 and 7 miles. If he was going
22 5 miles per hour before the impact, after the impact he was
23 going somewhere between 5 and 12 miles per hour. The
24 maximum he could have been going was 12. It's somewhere
25 between those two values due to the impact.

1 Q And you read his testimony, correct, Mr. Pariser,
2 the plaintiff?

3 A His deposition testimony, yes.

4 Q That he was pushed forward approximately 4 feet
5 after the impact?

6 A In his deposition he said his vehicle was
7 accelerated for 10 feet due to the impact.

8 Q Did that factor into your analysis?

9 A Not really, because it's meaningless, unless he
10 would have said his vehicle was stopped at the time. If --
11 and also, he didn't have any testimony at his deposition of
12 how fast he was going at the time. There's not really any
13 quantitative way to interpret that.

14 MS. SCANLAN: Objection.

15 THE COURT: Overruled. You're going to get a
16 chance to cross, counsel.

17 MS. SCANLAN: But if we're going to finish
18 today, Your Honor, I need to do that soon.

19 THE COURT: I didn't say we're finishing
20 today. I'm not expecting your cross-examination to take
21 less than 20 minutes. That's assuming he was done now.
22 All right. Please continue.

23 MS. SCANLAN: Thank you, Your Honor.

24 Q When you talked about what happened to the Land
25 Rover, was there a change in velocity to the Land Rover?

1 THE COURT: Please don't lead.

2 A Yes. The plaintiff's vehicle?

3 Q Correct.

4 A The plaintiff's vehicle. As I said, the
5 plaintiff's vehicle had change in speed of, at most, 7 miles
6 per hour.

7 Q Why do you say "at most." Would it have been more
8 than 7 miles per hour?

9 A No.

10 Q Why is that?

11 A I believe --

12 THE COURT: I'm sorry, you already answered
13 that, didn't you?

14 THE WITNESS: Yes.

15 THE COURT: Next question.

16 Q Are all the opinions on accident reconstruction
17 given within a reasonable degree of certainty as an accident
18 reconstruction expert?

19 A Yes.

20 Q Is there any other opinion with respect to accident
21 reconstruction that we haven't discussed?

22 THE COURT: I don't understand the question.

23 THE WITNESS: I'm just trying to think.

24 A We're talking about with respect to my report; is
25 that correct?

1 Q Your accident reconstruction in this case.

2 A We're just limiting it to the time of the report?

3 Q Yes.

4 A Yes, I believe that's it.

5 Q Is there something in accident reconstruction known
6 as delta v?

7 A Yes.

8 Q Could you describe to the jury what that is?

9 A Delta V, delta v is a term that's used in math or
10 engineering, whatever, for change. So delta V is change in
11 velocity or change in speed. That's what we're talking
12 about, when a vehicle either speeds up or slows down due to
13 impact.

14 Q Now I want to ask you about your biomechanical
15 analysis. How does your accident reconstruction analysis
16 factor into your biomechanical analysis?

17 A It's impossible to perform an accident
18 reconstruction, I mean a biomechanical analysis without
19 having already performed an accident reconstruction
20 analysis, otherwise it would just be guessing. Because you
21 need to know something about how the vehicles moved around,
22 the types of forces, acceleration and velocity that the
23 vehicle sustained in order to determine how the occupants
24 moved around, the types of forces they sustained, different
25 body parts, et cetera.

1 Q Okay. So from -- you talked about change of speed
2 sustained by a vehicle. Is that the only information that
3 you need to conduct a biomechanical analysis or to determine
4 the forces and motions that are subjected on a person inside
5 the vehicle?

6 A No. You also need to know, if you want to know the
7 forces, you know, approximately, the person's height and
8 weight, where the person was seated in the vehicle, their
9 restraint use. Those are things, excuse me, depending on
10 the accident, those are factors that might be important in
11 order to make calculations like that.

12 Q You understand that Mr. Pariser was wearing his
13 seat belt at the time of the accident?

14 A That's correct.

15 Q The front seat of that Land Rover, the plaintiff's
16 vehicle, was not a bench-type seat but an individual bucket
17 seat?

18 A Correct.

19 Q What type of calculations do you perform when
20 you're conducting a biomechanical analysis?

21 A Biomechanical analysis involves first determining,
22 generally, how the person moved around in the vehicle based
23 on crash tests involving both human volunteers and crash
24 test dummies. Given the acceleration and motions that the
25 vehicle sustained, what would happen -- which way would the

1 occupant move first and how would they move if they had a
2 seat belt on? Would they impact anything? What would the
3 forces be experienced in different parts of their body?

4 In this case it would be the shoulder, the
5 neck and the back. I would calculate the forces that act in
6 the shoulder, the neck and the back in the course of this
7 accident, and also compare that to forces that act in the
8 neck, in the back, in the shoulders in everyday activities,
9 like if you lift a gallon of milk, bend over, pick up a
10 child. How large are the forces acting in your back if you
11 bend over to pick something up compared to how large are the
12 forces that could have been exerted in your back in this
13 motor vehicle accident. Those are some of the type of
14 biomechanical calculations that I perform.

15 Q Is this some type of new theory?

16 A No, this has been around for decades, many decades.

17 Q This is thought and peer-reviewed?

18 A Yes.

19 Q So what type of calculations could you make with
20 respect to this particular biomechanical analysis?

21 MS. SCANLAN: Objection. As to what?

22 THE COURT: Could you be more specific?

23 Q Well, you said you conducted a biomechanical
24 analysis here. Did you use rear-end crash tests as part of
25 your biomechanical analysis?

1 A Yes, I did.

2 Q And were they important?

3 A Yes.

4 Q Okay. And what else did you do in performing your
5 biomechanical analysis?

6 A Well, from the rear-end crash test I took
7 measurements that are made at crash test dummies of how
8 large the force is that's acting in the low back in a worse
9 case scenario, 7-mile per hour change in speed for the Land
10 Rover, in this case for the plaintiff's vehicle, and figured
11 out what the force would be in the back, in the neck, the
12 accelerations and calculated forces acting in the shoulders.
13 And as I said, then I compared those with various things
14 that I discussed briefly a minute ago.

15 Q Did you analyze Mr. Pariser's deposition testimony
16 with respect to your biomechanical analysis and use his
17 testimony as to where he was in the vehicle, what happened
18 to him after the accident?

19 A Yes.

20 Q Okay. And how did that factor into your analysis?

21 A Well, he was a seat belted driver. And I
22 considered scenarios where either he was holding the
23 steering wheel or he wasn't, and what the forces would be
24 acting on his body in this accident as a result of the
25 motion of the vehicle that he was in.

1 Q Okay. And based on your actual reconstruction and
2 the biomechanical analysis, was his motion inside the
3 vehicle consistent with the damage to his vehicle and the
4 change in speed that you described, 7 miles per hour?

5 MS. SCANLAN: Objection.

6 THE COURT: It's a compound question. Split
7 it up.

8 Q You talked about a change in speed of 7 miles per
9 hour. What happens to Mr. Pariser inside the vehicle based
10 on a biomechanical analysis when there's a change in speed
11 of 7 miles per hour for the plaintiff's vehicle?

12 A Okay. An occupant inside a vehicle that undergoes
13 a 7-mile per hour change in speed, which is the worst case
14 scenario for this accident --

15 MS. SCANLAN: Objection, objection, Your
16 Honor.

17 THE COURT: Overruled. Please continue.

18 A Okay. As a result of that, when the vehicle is
19 pushed forward, going from 0 miles per hour to 7 miles per
20 hour pretty rapidly, initially the occupant moves rearward
21 relative to the vehicle. If you had a camera, it would look
22 like the person is pressing against the seat back, then they
23 would recover forward initially. It would look like they're
24 going rearward up to 7 miles per hour. That's how much the
25 vehicle is -- one they're stopped, the car is going forward

1 7 miles per hour, he will press against the seat back,
2 recover forward, although energy is lost due to them
3 interacting into the seat back and such. And so, based on
4 crash test dummies as well as human volunteers, they would
5 rebound at about maybe 4 miles per hour relative to the car.
6 So they initially go back against -- 4 miles per hour, come
7 forward -- excuse me. Go back rearward at about 7 miles per
8 hour, maximum, recover forward at about 4 miles per hour
9 into the seat belt. And seat belt forces are very small.
10 For a rear-end impact of 7 miles per hour, the measured seat
11 belt force would be about 10 pounds or less, which is a very
12 small force relative to biomechanical criteria. So
13 basically, you'd go back, come forward and settle about
14 where you were before the impact happened.

15 Q And how does that translate on the forces that were
16 impacted on Mr. Pariser's body within the plaintiff's
17 vehicle, meaning his shoulders, and his neck, and his back?

18 A Okay. Based on crash test results using crash test
19 dummies, because we don't measure the force, even though
20 human volunteers have been in many hundreds of crashes, at
21 times more severe than this, if you really want to know what
22 the forces are, you measure in a crash test dummy. And the
23 forces in the low back of a crash test dummy that's
24 comparable size to Mr. Pariser is about 130 pounds maximum
25 force acting in the back. And similar type of thing. You

1 measure the forces on the neck and also for the shoulders.
2 Forces acting in the shoulder, based on measurements from a
3 crash test dummy, are about, probably, about 50 pounds or
4 less acting in this accident.

5 Q Okay. I want to break that down to the neck, the
6 back and the shoulders. You talked about the forces that
7 were acting upon Mr. Pariser within the vehicle from a
8 biomechanical perspective?

9 A Right.

10 Q Now you also talked about the forces in everyday
11 activity. So can you tell us, from a biomechanical
12 perspective the forces that were involved on Mr. Pariser's
13 neck in this accident and what the forces are that are in
14 everyday activities?

15 MS. SCANLAN: Objection.

16 THE COURT: Can I hear the question again?

17 (Whereupon, the requested portion was read
18 back by the reporter.)

19 THE COURT: Sustained.

20 Q You came to a calculation on specifically the
21 forces that were involved on Mr. Pariser's neck and back,
22 correct?

23 MS. SCANLAN: Objection.

24 A Yes.

25 THE COURT: Overruled.

1 MS. SCANLAN: Your Honor, it's the same
2 objection. It's the same question.

3 THE COURT: I'm sorry. Are we having an
4 argument or something?

5 MS. SCANLAN: No, Your Honor.

6 THE COURT: Please be seated. The objection
7 to his question which -- your question is finished?

8 MR. SCAHILL: Yes.

9 THE COURT: You may answer.

10 A I thought I answered yes, I did calculate the
11 forces acting in the neck and back in this accident.

12 Q So specifically asking for the neck and back, what
13 were the forces that were acting on the neck and back in
14 this accident?

15 MS. SCANLAN: Continuing objection.

16 THE COURT: This has already been answered,
17 hasn't it?

18 THE WITNESS: Yeah, I gave specific numbers of
19 130 pounds.

20 THE COURT: Did you answer that already?

21 THE WITNESS: Partially. I don't know if I
22 gave the number for the neck.

23 THE COURT: Do you want the number?

24 MR. SCAHILL: Yes, Judge.

25 THE COURT: The number of what?

1 MR. SCAHILL: Forces that were acting upon his
2 neck as a result of this crash.

3 THE COURT: You may answer.

4 A Okay. Well, the maximum compressing force acting
5 on his neck in this accident was definitely less than 40 or
6 50 pounds, so less than 50 pounds definitely.

7 Q So as to the neck and the back, how do you compare
8 that? When you say 40, 50 pounds of force, how do you
9 compare that with the forces of everyday activities?

10 A The forces of everyday activities are determined
11 for the neck, for example, in two ways, or two or three
12 ways. One of the ways those are calculated is by asking
13 volunteers to -- they have an attachment -- this is a study
14 by Moroney SP, the researcher of University of Michigan.
15 They had a contraption attached to somebody's head. They
16 basically had a pulley with weights on the end and how large
17 a force can you pull sideways, forward, et cetera. And then
18 through doing calculations of all the muscle forces,
19 figuring out what the forces were that were acting in the
20 neck in different activities. And that gave them maximum
21 force somebody could apply using human voluntary contraction
22 of the neck and those forces are larger than in this
23 accident. Another way of comparing is looking at
24 accelerations that people sustain when you step off a curve
25 or plop into a chair or something like that. The forces

1 there are based on the acceleration you undergo and the
2 weight of your head, which is about 10 pounds. If you
3 undergo acceleration of 5 G's which is -- sneezing is
4 something like 4 G's, just so you know, so the forces in
5 this accident are really not that much more than sneezing.
6 The forces in this accident are comparable to the larger
7 forces you would have on your neck in everyday activities,
8 because obviously you don't do head stands. Most days you
9 go around, you don't do anything to your neck. But stepping
10 off a curb, those types of things, those accelerations and
11 forces are comparable to the neck forces that Mr. Pariser
12 sustained in this accident.

13 Q 130 pounds sounds like a lot of force. Could you
14 explain to us how that correlates to forces in everyday
15 activity, for example, for the back?

16 A Yeah, this was for the back. I said 130 pounds for
17 the back. For the back, studies are trying to figure out
18 what the forces are in the back in everyday activities.
19 When somebody bends over, first off all, you have a lot of
20 muscles acting there. But the accepted method of
21 calculating forces in the back in different activities is to
22 use muscle electrical activity, EMT measurements, along with
23 knowing a lot about the goniometry of the back, along with
24 figuring out what force must be sustained by the spine in
25 all of the muscle forces in order to have equilibrium. Even

1 just bending over, standing up and bending over, not holding
2 anything, somebody who weighs about 170 pounds, 180 pounds
3 would have 500 pounds acting in their back. If you bend
4 over to pick something up, you can easily have 5 or
5 600 pounds acting in your back, depending on exactly what
6 angle you're at. I'm not talking about lifting hundreds of
7 pounds. I'm talking about lifting up something that weighs
8 20 pounds, 30 pounds. You bend over. So everyday activity,
9 forces of a typical person who weighs 170, 180 pounds would
10 be 4or 500 pounds acting in the back many times in any given
11 day.

12 Q So is it your testimony that the forces that acted
13 upon --

14 THE COURT: Please don't lead.

15 Q Were the forces that were acted upon Mr. Pariser in
16 this accident greater or less than the forces that he would
17 experience in everyday activities?

18 A In this accident he experienced forces in his back
19 that are, at most, about a quarter of what he experienced
20 many times every single day of his life.

21 Q Is that also true to his neck?

22 A No. The forces acting in his neck are probably
23 about comparable to the larger forces he has in everyday
24 activities.

25 Q Now, what did that analysis demonstrate with

1 respect to his spine and the injuries that are claimed in
2 this accident?

3 A Well, first of all, the forces are small. The
4 injuries that he's claiming in this accident are related to
5 disc herniation, those types of things. And from
6 biomechanical tests that are performed on portions of the
7 spine at least since about 1950, people have been studying,
8 trying to figure out how large a force you have to apply to
9 the spine in order to have something really bad happen. And
10 what happens first, and I'm trying to use layman's terms,
11 but if you take a portion of the spine, the early tests
12 found that if you take a portion of the spine and you
13 increase the force until some kind of damage occurs, what
14 happens is the endplates, the vertebrae, the bones in the
15 spine break before the disc is damaged. That's the first
16 thing that was discovered. And further tests were performed
17 trying different ranges of motion -- if you -- if -- the
18 extreme near or beyond the level that you can have the spine
19 flex without being damaged, without damaging the ligaments
20 and such, and then you apply a rapid compressor force.
21 People are eventually able to find that you could, you could
22 produce disc bulge or herniation through one application of
23 a load, but only if the spine was extremely complexed or
24 hyperflexed, which it wasn't at any time in this accident.

25 MS. SCANLAN: Objection.

1 A Other tests were performed to look at what, what
2 happens -- the disc -- if you think of the disc, there's a
3 ring, outer ring and there's a nucleus in the middle. What
4 types of -- what happens if you already damage the barrier
5 between the nucleus and the outer part. And again, they
6 were not able, from one single load, were not able to apply
7 to create a bulge or herniation even with a previous damage.
8 And so the bio, from a biomechanical standpoint, from one
9 load, unless the spine is in an extremely flexed position,
10 one application of a load does not produce a herniation or a
11 bulge.

12 MS. SCANLAN: Objection. Move to strike that
13 entire testimony.

14 THE COURT: Would you like to say why?

15 MS. SCANLAN: Completely beyond the scope of
16 his knowledge, Your Honor.

17 THE COURT: Overruled. All right. Please
18 continue.

19 Q How did that factor into your analysis in this
20 case?

21 A Well, in this case -- and I didn't mention sort of
22 the last set of tests, which is instead of just applying one
23 load until you have failure, instead of -- and for the low
24 back those loads would be on the order of a thousand
25 pounds -- there were different -- in different specimens on

1 the order of thousand pounds. Let's say you apply half that
2 much on a portion of the spine but you do it tens of
3 thousands of times, then Gordon, a researcher in 1991,
4 showed that you can develop herniations and bulges. And
5 that makes sense, or at least that explains how someone can
6 develop a herniation or a bulge due to everyday activities.
7 It may be any one of those individual loads which are a lot
8 bigger than this accident but not big enough to acutely
9 cause severe damage in one load, having tens of thousands of
10 those applications. That is, biomechanically, how bulges
11 and herniations develop.

12 Q From a biomechanical perspective, do you have an
13 opinion whether or not the forces involved in this accident
14 and the change in speed that you described and the forces
15 that were impacted upon the plaintiff caused the disc
16 herniations that he claims to his neck or to his lower back?

17 MS. SCANLAN: Same objection.

18 THE COURT: Overruled.

19 A Yes, I believe that this accident did not cause or
20 contribute appreciably.

21 THE COURT: Excuse me. He said it did not
22 contribute appreciably. I'm always concerned when I
23 hear adverbs like that. Contributed but not
24 appreciably, did not contribute or not appreciable
25 contribution. I don't know what that means.

1 THE WITNESS: Well, what it means is --

2 THE COURT: What I'd like you to do is "did
3 not contribute appreciably," explain what you mean to
4 the jury.

5 A Okay. What I -- what I mean "did not contribute
6 appreciably" -- this is not a perfect analogy. Somebody
7 smoking cigarettes, one puff of a cigarette did not
8 contribute to that lung cancer, yes, because they had
9 millions of puffs to the cigarette, which really, assuming
10 that their cancer was caused by cigarettes, which it is
11 sometimes, you know -- so in the same way here, this
12 accident, I don't believe -- I don't believe you can build a
13 device that could measure a difference between the before
14 and after condition of his spine as a result of this
15 accident.

16 THE COURT: You can't build a device?

17 THE WITNESS: Like a MRI would not have
18 measured any difference before or after this accident,
19 something like that, you know. MRI -- someone can
20 undergo MRI after an accident. His MRI, if they would
21 have taken MRI before the accident and MRI after the
22 accident, there would not have been, you know, any
23 noticeable difference in the herniation or anything like
24 that.

25 MS. SCANLAN: Objection, Your Honor.

1 THE COURT: Yes, I'm striking that. Just
2 completely disregard that. I'm striking it because
3 there was no notice that we'd be hearing this opinion.
4 Please continue.

5 Q Now, did you also do an analysis with respect to
6 Mr. Pariser's claimed injuries to his shoulders?

7 A Yes, I did.

8 Q And what was your understanding of the injuries
9 that Mr. Pariser claimed to his shoulders as a result of the
10 accident?

11 A Relative to the accident, Mr. Pariser underwent
12 surgery of both shoulders -- excuse me. Now, I didn't have
13 details of the second surgery until my supplemental report,
14 but anyway, both of those surgeries are related to tears of
15 the labrum of the shoulder. And the labrum is the
16 cartilaginous tissue that surrounds the socket of the
17 shoulder. And so the glenoid is the curved part and the
18 ball is the head of the humerus. And the humerus
19 articulates. And the -- and so the socket has a ring of
20 cartilage and kind of is analogous to a meniscus in the
21 knee, the labrum around the shoulder.

22 And he had a tear in the superior and the tear
23 of his shoulder. It's called SLAP tear, superior, lateral,
24 anterior, posterior. Superior, if this is my right shoulder
25 and this is the socket, superior means up, lateral means to

1 the side, anterior to posterior means from front to back.
2 And so he, according to diagnosis, tore his shoulder due to
3 a force applied from the front to the back acting in his
4 shoulder. He had a labral tear in his left shoulder. That
5 was not exactly the same but quite similar. And so that,
6 that damage to the labrum is caused by having a force, a
7 significant force. And significant means larger than would
8 be applied to the shoulder in everyday activities that you
9 undergo thousands of times. That type of thing has to be an
10 extraordinarily large force that would have forced the
11 shoulder to move rearward relative to the socket.

12 THE COURT: All right. We're going to break
13 there. We'll need you back tomorrow. Please be back in
14 the jury room at 10 AM. Between now and then, don't
15 discuss the case, keep an open mind, form no judgments
16 about the case. You may follow Officer Sheppard.

17 THE COURT OFFICER: Jury exiting.

18 (Whereupon, the jury exited the court room.)

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It is hereby certified that the
foregoing is a true and accurate excerpt
transcript of the proceedings.

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MIRIAM KAPLAN
Official Court Reporter