



2015 NATIONAL STUDENT TRIAL ADVOCACY COMPETITION (STAC)

OFFICIAL RULES

and

FACT PATTERN

Endowed by Baldwin & Baldwin, LLP

Important Dates:

Requests for fact pattern clarification due: January 21, 2015

Team Participant Registration due (students must be AAJ members): January 30, 2015

Regional Competitions: March 19-22, 2015 National Final Competition: April 16-19, 2015

AAJ's 2015 Fact Pattern is authored by Joel D. Feldman, Esq., M.S., and Larry E. Coben, Esq. of Anapol Schwartz in Philadelphia, PA. AAJ extends its thanks and appreciation to Mr. Feldman and Mr. Coben for developing the 2015 Fact Pattern. The authors gratefully acknowledge the assistance of Paul Atchley, Ph.D., University of Kansas, Director of the Cognitive Psychology Program.

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Please note:

Information regarding the 2015 Student Trial Advocacy Competition is available at www.justice.org/STAC and will be updated frequently.

All questions and correspondence should be addressed to:

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Formerly the Association of Trial Lawyers of America (ATLA®)
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GENERAL INFORMATION

One of AAJ's goals is to inspire excellence in trial advocacy through training and education for both law students and practicing attorneys. One way AAJ accomplishes this goal is by sponsoring a national student mock trial competition. This is an exceptional opportunity for law students to develop and practice their trial advocacy skills before distinguished members of the bar and bench.

Because the purpose of this competition is to give law students the opportunity to develop their trial skills, the actual merits of the plaintiff's case and the defendant's case presented are irrelevant to this purpose. Competition rounds are decided not on the merits of a team's side but on the quality of a team's advocacy.

Requests for Clarification

Requests for clarifications of the rules or fact pattern must be submitted via an online survey no later than 5:30 p.m. (EST) on January 21, 2015. A link to the survey will be posted online at www.justice.org/STAC after the fact pattern is released. Each school is limited to five (5) questions. No school, regardless of the number of teams it has in the competition, may submit more than five questions. Each subpart of a question is counted as a question.

RULE VIOLATION AND FILING OF COMPLAINTS

A competitor or coach violating any of the rules governing the national Student Trial Advocacy Competition may be penalized or disqualified. If a team wants to file a complaint under the rules, the team's coach should immediately notify the regional coordinator at a regional competition or the final round coordinator at the final competition. The coordinator will review the complaint and make a ruling, which shall be binding for that round of competition. The coordinator's rulings will be governed by the rules of the competition and the objectives of the program.

Complaints after a regional competition or after the national competition must be filed in writing with Emmah Schramke at the address on page 2 no later than the seven (7) days following the last day of the regional or final round, as appropriate. The AAJ Law Student Services Committee will promptly consider and rule on any such complaints.

LAW SCHOOL AND STUDENT ELIGIBILITY

The competition is open to all law schools nationwide. A law school may enter up to two teams. Each team shall be comprised of four law students. A school's selection method of its trial team(s) is left for the school to determine. However, for a student to be eligible, he or she must be enrolled for a J.D. degree and be a law student member of AAJ.

Students who graduate in December 2014 are eligible to participate only if the competition counts toward their credits for graduation and they will not be admitted to practice prior to March 2015.

Each student participant must be an AAJ student member by January 30, 2015 in order to participate.

REGISTRATION PROCEDURES

Refund Policy

Requests for a refund of a school's registration fee were due in writing before November 10, 2014. It is inevitable that a few teams drop out of the competition in the months leading up to the regionals. Teams placed on the waiting list because the competition is full will be contacted for participation in the order that their registrations were received. Teams on the waiting list will also be issued a refund check if it is determined that the team will not be competing. Schools that registered two teams but are only able to enter one team because the competition is full will receive a refund of the registration fee for the second team.

AAJ Law Student Membership and Student Team Registration

Student team members must be AAJ members by January 30, 2015 in order to participate. This year, all students must verify their membership and register for their respective team online at www.justice.org/STACParticipantRegistration. AAJ Law Student membership dues are \$15. If you have any questions about AAJ's law student membership, or if you have any trouble becoming a member online, please call AAJ's member hotline at (202) 965-3500, ext. 8611. If you have any questions about registering as a STAC team member, please call Corrine Turke, STAC Coordinator, ext. 9523.

Coach Registration

AAJ must receive the names of the coach for each team. A coach must accompany each team to the regional competitions. A coach may be a law student, but may <u>not</u> be a student who is competing in the competition. Coaches do not need to be members of AAJ, and should not register for the STAC event. Coaches, and other administrators traveling with the team, must complete an online survey listing the team coach that will be travelling with the team by January 30, 2015. This is the information that will be sent to the regional coordinators to communicate logistics onsite.

Student Substitution Policy

Substitution of team members after January 30, 2015 is not permitted except in the case of personal emergencies. Requests for substitution after the January 30 deadline must be made in writing with an explanation of why the substitution is needed and sent to Emmah Schramke at AAJ for consideration.

REGIONAL AND FINAL COMPETITION ASSIGNMENTS

Entering teams will be assigned to one of 14 regional competitions based on geographical convenience *to the extent possible*. Teams from the same law school will be assigned to the same region. If a school's second team is waitlisted, there is no guarantee that second team will be sent to the same region as the first team. Teams will be notified of any date changes when regional assignments are made. Please remember that a school's second team will not be officially registered until one team from each law school has entered the mock trial competition. Then the second teams will be registered on a first-come, first-served basis until all the team slots are filled. If you paid for two teams and only one team is able to participate, you will receive a refund for the second team.

In order to officially compete in the competition, a team **must** receive its regional assignment. If a team is not informed by AAJ that it is able to compete, that team is not registered for the competition.

Coaches

A coach must accompany each team to the regional and the final competitions. The coach for a team that goes to the final competition does not have to be the person who coached the team at the regional competition.

A coach may be a law student, but may not be a student who is competing in the competition.

Only team coaches are permitted to attend the coaches' meeting. If a coach is unable to attend, he or she must notify AAJ and the regional coordinator. Only then can students be permitted to attend in the coach's absence.

Team Expenses

Travel expenses for the regional and final competitions are the responsibility of the participants. Teams competing in past competitions have obtained funds from law school deans and alumni associations, members of the local legal community, state and local trial associations, and AAJ law school chapters.

COMPETITION FORMAT

This is a trial skills competition. There is no motion or trial brief writing component. Each team will consist of four law students. Two students will be advocates and two students will play the witnesses for their side in each round. Advocates and witnesses may change their roles from round to round, but roles must remain consistent throughout each individual trial.

In the regional competitions:

- Each team will compete in three qualifying rounds
- The top four teams from the qualifying rounds will advance to a single elimination semifinal round
- The top two teams from the semifinal round will compete to determine which one team will advance to the National Final Competition

In the final competition:

- Each team will compete in three qualifying rounds
- The top eight teams from the qualifying rounds will advance to a single elimination quarter-final round
- The top four teams from the quarter-final round will advance to a single elimination semifinal round
- The top two teams from the semifinal round will advance to a single elimination final round

Regional Team Pairings in Qualifying Rounds

Pairing of teams in the qualifying rounds will be at random and conducted during the coaches' meeting prior to each competition. Teams may also be pre-assigned by the regional coordinator prior to the coaches' meeting; this practice is at the discretion of the regional coordinator. Each team will represent both plaintiff and defendant in the first two rounds. No two teams shall compete against each other more than once in the qualifying rounds. Teams from the same school will not compete against each other during any of the rounds of the regional competition or in the qualifying rounds of the national final competitions.

Team Rankings in All Other Rounds

In the semifinal round, the first-ranked team will meet the fourth-ranked team, and the second-ranked team will meet the third-ranked team.

Regional semifinal round (Normal pairings: 1 v. 4; 2 v. 3)

Situation 1: Teams ranked 1 and 4 are from the same school

New pairings: 1 v. 3; 2 v. 4

Situation 2: Teams ranked 2 and 3 are from the same school

New pairings: 1 v. 3; 2 v. 4

The ranking of teams to determine the semifinalists and finalists will be determined by the following factors (in this order):

- 1. Win/loss record
- 2. Number of winning votes
- 3. Number of total points awarded to the team

Each succeeding criterion above will be used only if the prior criterion does not fully rank the teams, and will be used only to break ties created by the use of the prior criterion. In the event that all three of these criterion are tied, the regional coordinator will announce a tie-breaker.

If paired regional semifinal teams have met in the qualifying rounds, they will each represent different sides than in the previous meeting. If they have not yet met, each team will take the side they represented only once in qualifying rounds. If matched teams represented the same side only once, the winner of a coin toss will choose sides.

In the regional finals, the teams will represent a different side than in the semifinal round. If two opposing teams each represented the same side in the semifinal round, the winner of a coin toss will choose sides. The two regional finals teams will represent a different side than in the semifinal round. If matched teams in the final round represented the same side in the semifinal round, the winner of a coin toss will choose sides.

When an odd number of teams compete at a regional competition, one randomly chosen team will receive a "bye" in each qualifying round. For ranking purposes, a bye will count as a win and the team with the bye will be deemed to have had three votes and the points equal to the average of the team's points from the two other qualifying rounds.

NATIONAL FINALS

Quarter-final round (Normal pairings: 1 v. 8; 2 v. 7; 3 v. 6; 4 v. 5)

Situation 1: Teams ranked 1 and 8 are from the same school

New pairings: 1 v. 7; 2 v. 8; 3 v. 6; 4 v. 5

Situation 2: Teams ranked 2 and 7 are from the same school

New pairings: 1 v. 7; 2 v. 8; 3 v. 6; 4 v. 5

Situation 3: Teams ranked 3 and 6 are from the same school

New pairings: 1 v. 8; 2 v. 7; 3 v. 5; 4 v. 6

Situation 4: Teams ranked 4 and 5 are from the same school

New pairings: 1 v. 8; 2 v. 7; 3 v. 5; 4 v. 6

Semifinal round (Normal pairings: 1 v. 4; 2 v. 3)

Situation 1: Teams ranked 1 and 4 are from the same school

New pairings: 1 v. 3; 2 v. 4

Situation 2: Teams ranked 2 and 3 are from the same school

New pairings: 1 v. 3; 2 v. 4

If teams from the same school are matched to compete based on rank in the semifinal and final rounds of a regional competition, regional hosts will re-pair teams according to the following scenarios:

Determination of Team Representation

If the four national and regional semifinal teams have already met in the qualifying rounds, they will represent different sides from the previous confrontation. If they have not yet met, each team will take the side they represented only once in qualifying rounds. If matched teams represented the same side only once, the winner of a coin toss will choose sides.

The national finals semifinal teams will represent a different side than in the quarter-final round. If matched teams represented the same side in the quarter-final round, the winner of a coin toss will choose sides. The two national final teams will represent a different side than in the semifinal round. If matched teams represented the same side in the semifinal round, the winner of a coin toss will choose sides.

THE TRIAL

The competition this year involves the trial of a civil lawsuit. The same fact pattern will be used in the regional and final competitions. The trial judge previously ruled that the case would be bifurcated, and the case being tried in the competition is the first phase of the case—the liability phase. Only evidence relevant to the liability issue will be received. There are no pending third-party claims.

The Federal Rules of Evidence (FRE) and Federal Rules of Civil Procedure (FRCP) are the applicable rules of evidence and civil procedure. Only these rules, and the law provided in the fact pattern, shall be used in argument. Specifically, no statutory, regulatory, or case law shall be cited unless such law is provided in the fact pattern.

Students may argue based upon the comments or advisory notes to the Federal Rules of Evidence but may not cite the cases contained therein. No written briefs or motions, trial notebooks, or other written materials may be presented to the judge hearing a case.

No pretrial motions of any kind are allowed.

Motions for a judgment as a matter of law and evidentiary objections are permitted.

The trial will consist of the following phases by each team in this order:

- Opening statements for plaintiff followed by defendant
- Plaintiff's case-in-chief
 - Plaintiff's direct of plaintiff's witness #1
 - Defendant's cross of witness
 - Plaintiff's redirect of witness
 - Similar for plaintiff's witness #2
- Defendant's case-in-chief
 - Defendant's direct of defendant's witness #1
 - Plaintiff's cross of witness

- Plaintiff's redirect of witness
- Similar for defendant's witness #2
- Closing argument
 - Plaintiff's closing
 - Defendant's closing
 - Plaintiff's rebuttal closing

Each side is limited to two live witnesses whom they may call in any order.

- Plaintiff must call Jamie Walker and Dr. Francis Tuckerton.
- Defendant must call Alex Watcher and Dr. Joey Travis

The trial has six (6) major advocacy opportunities for each team: opening statement; direct/redirect examinations (2); cross-examinations (2); and closing argument. Each member of a team must handle three of the six opportunities. Opening statement and closing argument may not be done by the same person, and may not be split between team members. Each team member must do a direct and cross.

During the competition, each team will represent both parties. Pairing in the qualifying rounds will be at random, with each team representing both plaintiff and defendant at least once in the three rounds.

Except in the final round, the courtrooms will be off-limits to all team members, coaches, friends, and family members who are not associated with either team competing, unless their team has already been eliminated from the competition.

No team may receive any coaching from anyone in any form during a round, including any recesses or breaks. The regional or national coordinator, as applicable, has the authority to punish any violation of this rule by disqualifying the team from the remainder of the competition.

A team may record its trial if: (1) no additional lighting is required; (2) recording of the trial does not interfere with or delay its conduct; and, (3) all participants of the round, including the presiding and scoring judges and the regional or national coordinator, as applicable, agree. All recordings are subject to the local courthouse policy and discretion.

Timing of the Trial

- Each team will have 80 minutes to complete its argument; time will be stopped during objections.
- The time limit will be strictly enforced, although it is not necessary that all time allotted be used.
- There will be no time limits for specific aspects of the trial.
- Time on cross-examination is charged against the team conducting the cross-examination.
- Time will be stopped for objections and responses to objections.
- Performance at trial will be evaluated by a panel of judges and/or attorneys, one of whom will preside over the trial as Judge, making rulings as necessary, and the remainder (up to three) of whom will act as the jury.

Facts Outside the Record

Advocates must confine the questions, and witnesses must confine their answers, to the facts given in the fact pattern and inferences which may reasonably be drawn therefrom, with the following qualifications:

- (1) A reasonable inference is not any fact that a party might wish to be true; rather, it is a fact that is <u>likely</u> to be true, given <u>all</u> the facts in the case; and
- (2) No inferred fact may be <u>material</u>, which is defined (a) as a fact that changes the merits of either side of the case or (b) that bears on the credibility of any witness or litigant. The latter is defined to include <u>any</u> background information about a witness or litigant.

Except during closing argument, no party may make an objection that the opposing team is going outside the record. Instead, a party may address instances of testimony outside the record by means of impeachment of the offending witness or by contradiction using another witness or document.

When true and if asked, witnesses must admit that the "facts" they have testified to are not in their deposition or otherwise in the record: "yes, I did not say that in my deposition." Witnesses may not qualify this response; for example, a witness may not say he or she was not asked about the issue at deposition or that the facts were contained in some portion of the deposition omitted from the record.

Like all officers of the court, coaches and team members must play fairly and ethically. This is a competition about trial advocacy skills – doing what you can with the facts provided and the witnesses in the courtroom. The coordinators will instruct the judges on the significance of impeachment efforts and that they may take unfair additions or changes to the record into account in their scoring of the witness's team.

Witnesses

Any witness may be played by a person of either gender. Before the opening statement, each team should notify the other team of the gender of each witness they intend to call and any witness they could call but are choosing not to call.

Assume that all witnesses have seen the exhibits and depositions. Witnesses know only the facts contained in the background information, exhibits, and depositions.

All depositions are signed and sworn. The same attorney conducting direct examination of a witness shall also conduct any redirect examination.

The only lawyer who may object during witness testimony is the lawyer who will be examining that witness.

Witnesses may not be recalled. Witnesses will not be sequestered.

JURY INSTRUCTIONS

The instructions provided in the fact pattern are the only instructions that will be given. The instructions are the only statements of the applicable substantive law. Instructions will not be eliminated or modified. No additional instructions may be tendered or will be given.

EXHIBITS

The use of demonstrative evidence is limited to that which is provided in the fact pattern, but participants are free to enlarge any diagram, statement, exhibit, or portion of the fact pattern if it is identical to the item enlarged, or if any changes provide no advantage to the party intending to use it.

Subject to rulings of the court, counsel and witnesses may draw or make simple charts or drawings in court for the purpose of illustrating testimony or argument. These materials may not be written or drawn in advance of the segment during which they are being used.

No demonstrative evidence, including charts or drawings, may reflect facts outside the record. Participants must clear all demonstrative evidence with the regional or national coordinator, as applicable, at the coaches' meeting preceding the competition.

All exhibits are stipulated as authentic and genuine for purposes of trial.

SCORING CRITERIA

Performances at trial will be evaluated by a panel of three judges and/or attorneys, one of whom will preside as the trial judge, with the others sitting as jurors. The trial judge will rule on any objections or motions for judgment as a matter of law.

Each member of the jury may award up to ten points in each phase of trial for each party. A sample score sheet is attached.

If at the end of the trial, an evaluator awards the same number of points to both the plaintiff and the defendant, the evaluator will award one additional point to either the plaintiff or the defendant for effectiveness of objections and/or overall case presentation in order to break the tie.

Evaluators have been instructed not to score teams on the merits of the case.

The following criteria for scoring trial performances are set forth to assist both judges and student advocates. Evaluators are not limited to these criteria and may consider other aspects of strategy, technique, and so forth, which they view as important.

Evaluator Shortage

For each match, there must be three votes from evaluators. In the event that, due to circumstances beyond AAJ's control, there are not three evaluators in a particular match, "ghost" evaluator(s) will be used to score the round. The vote of a ghost evaluator is determined by calculating the average of all other evaluators in the session.

Suggested Evaluation Criteria

OPENING STATEMENT

Did Counsel:

- 1. Generally confine statement to an outline of the evidence that would be presented?
- 2. Clearly present counsel's theory of the case?
- 3. Persuasively present counsel's theory of the case?
- 4. Personalize self and client?
- 5. Allow opposing attorney to make argument during opening statement?
- 6. Make unnecessary objections?

EXAMINATION OF WITNESSES

Did Counsel:

- 1. Ask questions that generated minimal valid objections?
- 2. Make/fail to make objections with tactical or substantial merit?
- 3. Respond appropriately to objections?
- 4. Know the rules of evidence and express that knowledge clearly?
- 5. Develop rapport with the witness?
- 6. Maintain appropriate general attitude and demeanor?
- 7. Address the court and others appropriately?
- 8. Demonstrate awareness of ethical considerations?

Did Direct-Examiner:

- 9. Use leading questions unnecessarily?
- 10. Develop testimony in an interesting and coherent fashion?
- 11. Follow up on witness' answers?
- 12. Present the witness in the most favorable light?

Did Cross-Examiner:

- 13. Appropriately use leading questions?
- 14. Control witness?
- 15. Follow up on answers and elicit helpful testimony?
- 16. Use impeachment opportunities?

CLOSING ARGUMENT

Did Counsel:

- 1. Present a cohesive theory of the case, pulling all the positive arguments together?
- 2. Deal effectively with the weakness(es) in his or her own case?
- 3. Make an argument that was persuasive?
- 4. Have an effective style of presentation?
- 5. Utilize the law effectively in the argument?
- 6. Inappropriately interrupt the argument of the opposing counsel?
- 7. Properly confine rebuttal to rebuttal matters?
- 8. Effectively counter the opponent's speech in rebuttal

Discrepancies in Remaining Match Time

Often, bailiffs are unavailable to keep time for rounds. In such cases, one or more judges in each match should be instructed to keep time according to the timekeeping rules.

Additionally, judges may ask the respective teams to assist with this process. Teams may also keep track of time used for their own purposes. They may not, however, report their time used or that of an opposing team to the bailiff or judge for any purpose, unless they were instructed to do so. Moreover, time use improperly reported by any team may not be considered or used by a bailiff or judge for any purpose.

Notwithstanding this limitation, in the event that the match judge or judges declare the time remaining as less than the team requires for closing or other parts of the trial, the coach or team member (whoever records the time discrepancy¹) should immediately consult with the Regional Coordinator during the break, who should then evaluate the circumstances and decide the amount of time remaining. Neither the team coach nor the team member should discuss the discrepancy with the match judge. Should the team be unable to consult with the Regional Coordinator before completion of the trial and the team requires additional time to complete the trial, the team may elect to complete the trial beyond the time allotted. When the trial is complete, the time will be evaluated by the Regional Coordinator. The team will lose two points from the number of total overall points for that round (as tallied on the 'Trial Score Sheet') for every five minutes—or fraction thereof—of time in excess of its allotment.

Viewing of Score Sheets by Teams

Viewing of the score sheets is done at the discretion of the Regional Coordinator. Each team will have the right to view their score sheets for each round. Team coaches may only view score sheets once the third round has commenced. This should be done one team at a time. Participating students should be unaware of how they were scored until the qualifying rounds are completed, and the semi-final teams are announced. Teams are not allowed to take score sheets with them or make any markings to the score sheets. Teams may view score sheets only in the presence of the Regional Coordinator. If team coaches require a copy of their score sheets, they should notify the Regional Coordinator and email AAJ staff.

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¹ Note that coaches and team members may not communicate during rounds



2015 STUDENT TRIAL ADVOCACY COMPETITION (STAC) JUDGE'S SCORE SHEET

Teams are to be scored on their trial skills only, NOT on the merits of the case.

Do not give half-points. Do not tie teams. There must be a winner.

Do not write your name on this score sheet, and do not share your score with the participating students or coaches.

REGIONAL LOCATION:

ROUND:

TEAM PLAINTIFF										
·	Good			Average			Poor			
Opening Statement	10	9	8	7	6	5	4	3	2	1
Direct Exam of Plaintiff's Lay Witness	10	9	8	7	6	5	4	3	2	1
Direct Exam of Plaintiff's Expert Witness	10	9	8	7	6	5	4	3	2	1
Cross Exam of	10	9	8	7	6	5	4	3	2	1

Total points awarded to PLAINTIFF ______

Defendant's Lay Witness

Defendant's Expert Witness

Cross Exam of

Summation

TEAM DEFENDANT	Go	od			Average			Poor		
Opening Statement	10	9	8	7	6	5	4	3	2	1
Cross Exam of Plaintiff's Lay Witness	10	9	8	7	6	5	4	3	2	1
Cross Exam of Plaintiff's Expert Witness	10	9	8	7	6	5	4	3	2	1
Direct Exam of Defendant's Lay Witness	10	9	8	7	6	5	4	3	2	1
Direct Exam of Defendant's Expert Witness	10	9	8	7	6	5	4	3	2	1
Summation	10	9	8	7	6	5	4	3	2	1

ı	otal points awa	arded to DEFENDAN	I



AMERICAN ASSOCIATION FOR JUSTICE

MISSION

The Mission of the American Association for Justice is to promote a fair and effective justice system—and to support the work of attorneys in their efforts to ensure that any person who is injured by the misconduct or negligence of others can obtain justice in America's courtrooms, even when taking on the most powerful interests.

ABOUT TRIAL LAWYERS

Trial lawyers ensure access to the civil justice system for the powerless in America: working families, individual workers, and consumers who often lack the resources to take their grievances to court.

Trial lawyers play a valuable role in protecting the rights of American families. They champion the cause of those who deserve redress for injury to person or property; they promote the public good through their efforts to secure safer products, a safe workplace, a clean environment and quality health care; they uphold the rule of law and protect the rights of the accused; and they preserve the constitutional right to trial by jury and seek justice for all.

Some of the types of cases our attorneys handle include:

- A child paralyzed after being struck by a drunk driver;
- A young woman unable to have children because of a medical mistake;
- A person denied a promotion due to racial discrimination;
- An elderly man injured in a nursing home; and,
- A community whose water was made toxic by a local manufacturer.

ABOUT AAJ

As one of the world's largest trial bars, AAJ promotes justice and fairness for injured persons, safeguards victims' rights—particularly the right to trial by jury—and strengthens the civil justice system through education and disclosure of information critical to public health and safety. With members worldwide, and a network of U.S. and Canadian affiliates involved in diverse areas of trial advocacy, AAJ provides lawyers with the information and professional assistance needed to serve clients successfully and protect the democratic values inherent in the civil justice system.

Six Benefits

to American Association for Justice Law Student Membership You Can Put to Work Today!

1.

Network with America's premier trial lawyers through **AAJ's Membership Directory**.

2.

Trial magazine's digital version gives you the latest developments in civil litigation, current tort and consumer law verdicts, and other career-enhancing information.

3.

AAJ's annual Student Trial Advocacy Competition (STAC) gives you the opportunity to participate in the nation's premier mock trial before sitting judges and practicing trial lawyers.

4.

AAJ Annual and Winter
Conventions allow you to attend information-packed workshops and Continuing Legal Education (CLE)—approved education sessions on all aspects of trial law from those at the top of their field. You will have the opportunity to attend social events and meet attorneys in all stages of their professional careers. Visit www.justice.org/convention to learn more.

5.

Attend select **AAJ Continuing Legal Education**courses for only the price
of the reference materials.
AAJ Education seminars and
teleseminars will give you
insight into different practice
areas, how to be an effective
advocate, and prepare you
for life after law school.

6.

AAJ Law Student Member scholarships and awards help you pay down student loans. Start laying the groundwork today for the successful career you look forward to tomorrow. Visit www.justice.org/lawstudents for information on law school scholarships and networking opportunities.

For just **\$15** a year, you can invest in an American Association for Justice, formerly the Association of Trial Lawyers of America (ATLA®), Law Student Membership. That's a small price to pay for the kind of trial lawyer contacts, educational opportunities, and access to information you'll enjoy as a member of the world's largest trial lawyer bar.





American Association for Justice Law Student Member Scholarships and Awards

The Richard D. Hailey Law Student Scholarship

AAJ's Minority Caucus awards \$5,000 scholarships to first-, second-, and third-year African American, Hispanic, Asian American, Native American, and Biracial Law Student Members.

Trial Advocacy Scholarship

Open to all second- and third-year AAJ Law Student Members, this \$3,000 scholarship is awarded to the applicant who best demonstrates the following: commitment to AAJ and its mission; a desire to represent victims; interest and skill in trial advocacy; and financial need.

Leesfield Scholarship

Sponsored by AAJ and AAJ member Ira Leesfield, this scholarship awards \$2,500 to a Law Student Member to subsidize attendance at AAJ's Annual Convention. Available to first- and second-year AAJ Law Student Members.

Mike Eidson Scholarship

The Mike Eidson Scholarship Fund was established by the AAJ Women for Justice Education Fund in 2008, in honor of AAJ Past President Mike Eidson, whose vision and generosity inspired it. The Scholarship awards \$5,000 annually to a female student entering their third year of law school (the student can be enrolled in a three-year day program or four-year night program) who has demonstrated a commitment to a career as a trial lawyer, along with dedication to upholding and defending the principles of the Constitution, and to the concept of a fair trial, the adversary system, and a just result for the injured, the accused, and those whose rights are jeopardized.

Visit www.justice.org/lawstudents for more information on law school scholarships.







Dear 2015 STAC Participants,

We all know that distracted driving is a problem not only in this country, but worldwide. In many communities, distracted driving is now causing more crashes, injuries, and deaths for our youth than drunk driving. As trial lawyers we see first-hand the devastation that is caused by distracted driving. That is why I am particularly gratified that this year's problem involves distracted driving. We want law student participants in this year's STAC to have a challenging problem but also to learn about distracted driving—an issue that is immediately germane to them and those who they care about. It is our hope that in learning about distracted driving through this year's fact pattern, we will all reflect on how we drive, whether we take risks doing so, and whether we need to change our driving behaviors.

In July of 2009, Joel Feldman's daughter, Casey, was killed by a distracted driver. She was just 21 and an aspiring journalist at Fordham University. Joel Feldman is a trial lawyer from Philadelphia and created the organization EndDD.org (End Distracted Driving), whose purpose is to educate high school and college students about the dangers of distracted driving. In 2012, Joel reached out to AAJ and asked our organization to support his campaign. Within two weeks more than 500 trial lawyers volunteered for the project and since then more than 225,000 high school and college students across the country and in Canada have seen an EndDD.org distracted driving presentation given by a trial lawyer. AAJ's Trial Lawyers Care Committee is actively part of the on-going campaign to end distracted driving.

But more needs to be done and we can all do our part by driving safer and modeling safe driving for our families, friends, and co-workers. Law students are invited to join trial lawyers in speaking to high school and college students using the EndDD.org presentation. The presentation is science-based, scripted, and easy to give. Many law firms have adopted safe driving policies for their law firms, thereby leading by example in their communities. To learn about becoming a speaker or hosting a presentation in your community, and to download a sample Safe Driving Policy, go to EndDD.org.

In addition to representing our clients who have been affected by distracted driving, as trial lawyers, we also are committed to working to reduce distracted driving crashes. I am so proud to lead an organization whose members have volunteered thousands of hours of time to this campaign and have pledged to do so in the future.

Together we can save lives.

Lisa Blue Baron President

American Association for Justice

AMERICAN ASSOCIATION for JUSTICE

DISTRACTED DRIVING



Casey Feldman 1988-2009

After Casey's death, Joel Feldman, a trial lawyer with the Philadelphia firm of Anapol Schwartz, created EndDD.org.

More than 250,000 teens and adults in 42 states and Canada have seen an EndDD.org distracted driving presentation and 24 state/provincial trial lawyers' associations are supporting their members' efforts to reach teens and adults in their communities. Community groups are asking for trial lawyers to speak with teens and adults.

A turnkey and tested program

- ✓ "This power point is the best yet—it could not be improved upon." (MN)
- ✓ "This presentation is so easy to give...
 and so compelling."(FL)

EACH YEAR THOUSANDS ARE KILLED AND HUNDREDS OF THOUSANDS INJURED

Join Trial Lawyers and State TLA's Across the U.S. and Canada Reaching Out In Their Communities to Save Lives

Trial lawyers feel great about giving presentations

- ✓ "Today is one of those days where you feel good... knowing that you might just have saved a life." (CT)
- ✓ "I am a habitual car texter and emailer while driving... Tonight changed that... I CHOSE to place my phone in the trunk when I got in the car. And you know what? I didn't miss it at all. And my daughter for the first time did not have to beg me to put it away either." (OH)
- ✓ "The kids loved the message and the faculty couldn't have been more appreciative." (NY)
- ✓ "I am building a relationship and opening the opportunity for future communication."(HI)

Communities recognizing and thanking trial lawyers

- "This program is certain to change behaviors and the way we look at distracted driving." (ND)
- √ "Your compassionate and thoughtful message has changed behaviors." (PA)
- √ "This was a powerful assembly." (NJ)
- "I'm really glad you had the opportunity to come in it made me really think about what I was doing and begin to change my ways. I found out that my phone has a drive mode also and when I start to drive I try to remember to put it in the drive mode. Without me knowing my dad called me and he got an automatic message saying that I can't talk because I was driving. He and my mom were really proud..." (NJ student)

It's easy for trial lawyers and state TLAs to join

EndDD.org and its partner 60forSafety provide everything needed to simplify and expedite your participation. We have worked with hundreds of trial lawyers and a number of state TLAs to facilitate scheduling presentations, training presenters, customizing materials for specific TLAs, providing sample press releases and outreach materials to garner media attention.





For more information on how to join the 2014-15 campaign email Joel Feldman at jfeldman@anapolschwartz.com or call (215) 735-3716.

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2015 AAJ Fact Pattern

JAMIE WALKER

V.

NEW AGE AUTO COMPANY, INC.

Prepared by Joel D. Feldman, Esq., M.S., and Larry E. Coben, Esq. of Anapol Schwartz

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In The United States District Court for the Southern District Court of Gardenia

Jamie Walker

Plaintiff

vs.

New Age Auto Company, Inc.

Jury Trial Demanded

Defendant Case Number 14-952

Civil Action Complaint

- 1. Plaintiff, Jamie Walker, was at all times relevant to this action, a resident of Lyons County, in the state of Gardenia.
- 2. Defendant, New Age Auto Company ("New Age") is a business entity incorporated or established in accordance with the law of the State of Petunia and which maintains a principal place of business in Garden City, Azalea.
- 3. Defendant New Age has, at all relevant times, conducted substantial and continuous business in the state of Gardenia and in Lyons County.
- 4. The jurisdictional minimum for this Court has been satisfied and accordingly jurisdiction and venue against the defendant in this Court is proper.
- 5. At all relevant times defendant New Age has been engaged in the business of designing, testing, manufacturing, supplying, marketing and selling motor vehicles, including a 2014 New Age Roadster, which is the subject of this lawsuit.

- 6. On March 14, 2014, at approximately 3:45 p.m., plaintiff, Jamie Walker, was walking across Magnolia Road, at its intersection with Lazy Z Road, in Arapahoe, Lyons County, when, suddenly and without warning, was struck by a motor vehicle being operated by Casey Driver and which was designed, manufactured and sold by Defendant New Age.
- 7. At the time of the accident Casey Driver was operating the New Age Roadster, using its factory-installed voice-to text system, "Always Connected," to listen to and compose text messages.
- 8. "Always Connected," as designed and installed, rendered the New Age Roadster defective and not reasonably safe and, accordingly, defendant New Age is liable for all damages stated herein.
- 9. As a result of the accident plaintiff suffered permanent and serious injuries, including multiple fractures to the legs, hip, ribs and neck, internal injuries, including a lacerated spleen and injury to kidneys, was hospitalized, underwent multiple surgical procedures, required extensive in-patient and out-patient rehabilitation, and other injuries to be set forth as discovery proceeds.
- 10. As a further result of the aforesaid accident, plaintiff was required to seek medical treatment and has incurred in the past, and will incur in the future, additional costs for medical treatment for which recovery is sought.
- 11. As a further result of the aforesaid accident, plaintiff has suffered a loss of earnings and earnings capacity, and will suffer same for an indefinite time into the future for which recovery is sought.

12. As a further result of the aforesaid accident, plaintiff has suffered pain, discomfort, anxiety, loss of ability to attend to normal and usual activities, loss of enjoyment of life's pleasures and will suffer same for an indefinite time into the future for which recovery is sought.

COUNT ONE PRODUCTS LIABILITY

- 13. The allegations set forth in paragraphs 1-12 are incorporated by reference herein.
- 14. Defendant New Age is liable to plaintiff for the design, manufacture and sale of its New Age Roadster under principles set forth in the Restatement (Third) of Torts because said product was defective in design in that the foreseeable risks of harm posed could have been reduced or eliminated by adoption of a reasonable alternative design and failure to do so rendered the New Age Roadster not reasonably safe and defective. The product's foreseeable risks of harm which could have been eliminated included the following:
- a) designing and selling the product with a voice-activated texting system, "Always
 Connected," which dangerously added to driver distraction;
- b) designing and selling the product so that drivers were permitted and encouraged to use its voice-activated texting system despite the adverse effect on driver concentration and safety;
- c) designing and selling the product with a voice-activated technology which resulted in diminished lateral scanning and reduced ability for drivers to perceive and react to hazards, causing inattention blindness and other cognitive distractions;

d) advertising and marketing its product as a safer way for drivers to stay connected and to text while driving thereby creating a false and misleading sense of security in use of the product despite the foreseeable risks of harm as designed;

e) failing to incorporate necessary and adequate warnings as to the product's limitations and the danger of using the voice-to-text technology while driving; and

f) failing to incorporate safer alternative designs, including limiting voice-activated functions to those integral for actual operation of the motor vehicle itself, which would have eliminated said dangers and rendered the product reasonably safe.

15. The defective and dangerous condition of the product was a legal cause of the accident described herein and the injuries and damages sustained by plaintiff.

WHEREFORE, Plaintiff Jamie Walker, demands judgment in his favor for all damages legally appropriate.

	Trestigious Law Timi	
By		

Prestigious Law Firm

United States District Court for the Southern District Court of Gardenia

JAMIE WALKER				
Plaintiff,				
v.				
NEW AGE AUTO COMPANY, INC.				
Defendant				

Court File No.

CASE, No. 14-952

ANSWER AND AFFIRMATIVE DEFENSES

AND NOW, comes Defendant, New Age Auto Company, Inc and files the within Answer and Affirmative Defenses to Plaintiff's Complaint, and avers as follows:

- 1-5. Admitted.
- 6. Denied as stated. It is admitted only that the vehicle being driven by Casey Driver did strike plaintiff Jamie Walker and that Casey Driver was operating a vehicle manufactured and designed by defendant New Age Auto Company, Inc. All other allegations are denied and deemed at issue.
- 7. Denied. After reasonable investigation defendant is without sufficient knowledge or information to form a belief as the truth or accuracy of said allegation and accordingly same is deemed denied and at issue.
- 8. Denied.
- 9-12. Denied. After reasonable investigation defendant is without sufficient knowledge or information to form a belief as the truth or accuracy of said allegations and accordingly same are deemed denied and at issue.

COUNT ONE

- 13. No responsive pleading is required.
- 14. Denied. It is specifically denied that the product referred to was defective in any fashion whatsoever. It is specifically denied that the "Always Connected" voice-activated texting system

constituted a dangerous driver distraction, that incorporation of said system reduced or diminished driver scanning, caused inattention blindness or constituted any type of cognitive distraction for operators. It is specifically denied that as designed and manufactured that the product was unreasonably dangerous, that any foreseeable risks of harm were posed by said product and that any alternative designs exist which would have reduced any alleged dangers. It is specifically denied that the product was advertised or marketed in a way that created a false and misleading sense of security as alleged.

15. Denied.

AFFIRMATIVE DEFENSES

- 1. Plaintiff's Complaint fails to set forth a cause of action.
- 2. Plaintiff's conduct was the cause of the accident and alleged injuries.
- 3. Plaintiff's causal fault was greater than 50% and accordingly Plaintiff can not recover.
- 4. Defendant's alleged conduct was not a legal cause of the accident.
- 5. Plaintiff was not an intended user of the product, was a bystander and accordingly is not able to recover under products liability theories against defendant.
- 6. The alleged defects in said product did not constitute foreseeable risks of harm under the circumstances herein.
- 7. The alleged defects in said product were not such that any reasonable alternative design could have eliminated said risks.
- 8. The product as designed and manufactured was safe for its intended use.
- 9. As designed the product was safe and any alleged risks of the product did not outweigh the product's utility.
- 10. The product at the time of the accident alleged herein was not being used in accordance with manufacturer's instructions and warnings.
- 11. Plaintiff has failed to prove that any alternative design would have eliminated or reduced the alleged risks of said product.
- 12. The condition of said product was not a cause of the accident.

	Manufacturer's Law Firm
Ву	

United States District Court for the Southern District Court of Gardenia

JAMIE WALKER
Plaintiff,
v.
NEW AGE AUTO COMPANY, INC.
Defendant

Court File No.

CASE. No. 14-952

STIPULATION

- 1. The District Court for the Southern District of Gardenia follows the Federal Rules of Evidence.
- 2. The depositions are signed and sworn to by each respective deponent as being accurate and authentic.
- 3. Expert reports were timely produced by each party before trial. Expert witnesses have reviewed all documents and depositions contained in the fact pattern and may testify to same but expert testimony is limited to the fair scope of their reports.
- 4. Casey Driver died shortly after being deposed. Casey Driver's death is unrelated to the case. Casey Driver is not a defendant in the case. Excerpts from Casey Driver's deposition may be read into the record by either side, subject to the Federal Rules of Evidence and Civil Procedure. Time will run against teams that elect to read in excerpts.
- 5. Plaintiff must call Francis Tuckerton, PhD as its expert. Plaintiff must also call Plaintiff, Jamie Walker.
- 6. Defendant must call Joey Travis, PhD as its expert. Defendant must also call Alex Watcher.
- 7. Dr. Tuckerton and Dr. Travis are deemed qualified as experts to render opinions in their stated fields of expertise.
- 8. No pre-trial motions or pre-admitting of evidence is allowed.
- 9. The trial judge has ruled that the Restatement (Third) of Torts is the law of the jurisdiction and that Jamie Walker's injuries as a bystander were reasonably foreseeable, that the

defendant may present evidence of plaintiff's alleged comparative negligence in defense of product liability claims, and that modified comparative fault (the 50% rule is applicable).

- 10. This is a bifurcated case where the parties will try the liability phase only.
- 11. The Complaint was filed timely.
- 12. There are no statute of limitations issues.
- 13. In its advertising materials New Age described "Always Connected" as follows:
- "Always Connected" is the ultimate in making your car a smart phone on wheels. At New Age we pride ourselves on being on the cutting edge of technology and being responsive to consumer demand. All of us want to be connected 24/7 and that includes in our cars. Reading and sending texts and e-mails and talking hands-free has never been easier or safer while driving. We have removed the dangers of texting and e-mailing while driving because with "Always Connected" your hands stay on the wheel and your eyes on the road.
- 14. In its Owner's Manual New Age provided the following information for drivers:

Once paired with your smart phone an audible alert sounds when texts or e-mails are received and a portion of the content of the text or e-mail appears on your navigation screen. To have the full message read simply press the "talk" button on the steering wheel and say "read text" or "read e-mail." To reply simply say "reply" and dictate your response. Once you are satisfied with your response simply say "send response" and that is all you need to do. Unlike other car manufacturers' voice-to-text systems with "Always Connected" you are not limited to a handful of preset responses and can customize all of your responses so that you can respond as you would normally when texting while not driving. To initiate sending a text or an e-mail simply press the "talk" button on your steering wheel and say "compose text"" or compose e-mail" and when prompted dictate your text or e-mail and then say "send text" or send e-mail."

15. After the 2014 New Age Roadster is turned on the navigation screen illuminates and the following message appears for 7 seconds:

Obey all traffic laws in your state and only use the navigation system and its features when it is safe to do so.

- 16. Gardenia Consolidated Statutes, 295.1 provides:
 - (a) When traffic control signals are not in place or in operation and there is no signage indicating otherwise, the driver of a vehicle shall yield the right-of-way, slowing down or stopping if need be to so yield, to a pedestrian crossing the roadway within a crosswalk when the pedestrian is upon the half of the roadway

- upon which the vehicle is traveling or when the pedestrian is approaching so closely from the opposite half of the roadway as to be in danger.
- (b) No pedestrian shall suddenly leave a curb or other place of safety and walk or run into the path of a vehicle which is so close that it is impossible for the driver to yield.
- (c) Every pedestrian crossing a roadway at any point other than within a marked crosswalk or within an unmarked crosswalk at an intersection shall yield the right-of-way to all vehicles upon the roadway.

17.	Gardenia	Consolic	lated	Statutes,	315.6	provides

No driver shall use any hand-held electronic device for composing, reading or sending
text messages or e-mails while operating a motor vehicle on the roadways of this state

Attorney for plaintiff Jamie Walker	Attorney for defendant New Age Auto Company, Inc

In The United States District Court for the Southern District Court of Gardenia			
3	Souther	Southern District Court of Gardenia	
4	Jamie Walker	 :	
5		:	
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	Defendant	: Case Number CIV 14-952	
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	Oral I	Deposition of Jamie Walker	
		and among counsel that signing, sealing, filing and certification	
		ot as to the form of questions, be reserved until the time of	
	trial.)		
		and the state of t	
	Jamie Walker, after having been duly swo	orn, was examined and testified as follows:	
	EXAMINATION		
	BY Defendant's Attorney:		
	bi Delendant's Attorney.		
	Q. Would you state your full name, plea	1563	
	A. Jamie Walker		
	Q. My name is Jeremiah Johnson and I represent the defendant in this case, New Age Auto Company,		
	Inc. I will be taking your deposition today. You have your attorney here who is representing you in this		
	case.	,	
	A deposition is simply an opportunity for the attorneys in the case to ask questions of witnesses and to		
	learn what witnesses observed or know about a particular controversy. A deposition is a statement		
	under oath, meaning that you have been sworn to tell the truth and the court reporter who is seated		
	next to you will take down my questions and your answers.		
	Q. Do you understand that?		
	A. Yes.		
	Q. I will do my best to ask questions that are easy to understand and your job today is to do your best		
	to answer those questions, truthfully.		
	Q. Do you understand that?		
	A. Yes.		
	Q. If you do not understand any question, or are not sure what I am asking, please do not answer the		
	question. Simply let me know and I will do my best to rephrase the question and make sure that you		
	understand what is being asked.		
	Q. Do you understand that?		

- 1 A. Yes.
- 2 Q. So with that instruction if you do answer a question we will assume that you heard and understood
- 3 the question, is that fair enough?
- 4 A. Yes.
- 5 Q. As we go through the deposition you may recall something that would have been responsive to an
- 6 earlier question. If that happens simply let me know and we will give you an opportunity to amend an
- 7 earlier answer
- 8 Q. Do you understand that?
- 9 A. Yes.
- 10 Q. Lastly, the court reporter is taking down what we are saying and shortly after the deposition will give
- the parties a booklet or transcript of what was said here today. That will be the only record of what took
- 12 place. Do you understand that?
- 13 A. Yes.
- 14 Q. If this case should go to trial we would have that booklet available and would be able to ask you
- 15 questions about the testimony that you are providing today. Do you understand that?
- 16 A. Yes.
- 17 Q. Do you also understand that if your testimony at trial would differ from that given today we would
- 18 be able to ask you to explain those differences?
- 19 A. Yes
- 20 Q. How old are you today?
- 21 A. 19
- 22 Q. What were you doing back in March of 2014 as far as school?
- 23 A. I was a senior at Arapahoe High School.
- 24 Q. What are you doing now?
- 25 A. I am a freshman at Arapahoe Community College.
- 26 Q. I will be asking you some questions today about an accident that occurred back in March, as I
- 27 understand it, on Magnolia Road in Arapahoe. Do you recall that accident?
- A. Yes, but it was not an accident.
- 29 Q. What do you mean?
- 30 A. Casey Driver chose to text while driving so by making that choice this was not an accident, this was
- 31 not something without plan or design, something that the driver could not predict.
- 32 Q. Are you suggesting that Casey Driver intended to hit you?
- 33 A. No—he did not intend to hit anyone I am sure, or do anything wrong, but made a poor choice, a
- decision to take a chance while driving and that is why we are here today.
- 35 Q. What would you like me to call what happened back in March between you and Casey Driver?
- 36 A. How about a crash?
- 37 Q. O.K. Where were you coming from and where were you going at the time of the crash?
- 38 A. I stayed after school tutoring some middle school kids through the Lyons County Community
- 39 Advantage program and was walking home. We give them some extra help with reading and homework
- 40 and they have a place to stay until a parent gets home. I have been doing that program for 2 years, and
- 41 actually, have now added another component to it so we now have college students participating.
- 42 Q. It sounds like a great program.
- 43 A. I am really proud of it, it is giving these kids a chance to do better, to feel better about themselves
- and I want to be a teacher so it is a great opportunity for me to learn and make a difference in the
- 45 community. And I learn so much from the kids.
- 46 Q. What time did the accident take place?
- 47 A. The crash?
- 48 Q. Yes—the crash as you prefer to call it?

- 1 A. About 3:45 or so.
- 2 Q. About how far from school did it take place?
- 3 A. About 6-7 blocks.
- 4 Q. Tell me the route that you took to get there?
- 5 A. I left school on Canyon Boulevard, and walked until I got to Lazy Z and made a right and then
- 6 continued on to Magnolia. Pretty much going due north.
- 7 Q. Were you with anyone?
- 8 A. No I was alone.
- 9 Q. Tell me what happened?
- 10 A. As I approached Magnolia I saw a school crossing guard that I knew and walked from the sidewalk of
- 11 Lazy Z onto the sidewalk of Magnolia—I made a left turn, basically now going west. I talked for a few
- moments with the crossing guard and then walked back to Lazy Z—retracing my steps if you will and
- 13 after looking for traffic started to cross Magnolia near its intersection with Lazy Z.
- 14 Q. Let me see if I understand—you were walking on the sidewalk for Lazy Z and before you got to the
- 15 crossing with Magnolia you turned to your left and started walking on the sidewalk of Magnolia to speak
- 16 with the crossing guard?
- 17 A. Yes but I actually was between the road and the sidewalk on Magnolia talking to Pete, the crossing
- 18 guard, in the grassy area.
- 19 Q. So you were closer to the road than if you had been on the sidewalk at that point and then you
- 20 turned around and walked back towards Lazy Z and started to cross Magnolia?
- 21 A. Yes, walking on the grass.
- 22 Q. Is there a painted cross walk across Magnolia for pedestrians like you?
- 23 A. Yes.
- Q. When you started to cross Magnolia had you reached the painted crosswalk or were you crossing
- 25 maybe at an angle?
- A. I was really close and by the time I was hit I was in the crosswalk if I wasn't when I started crossing.
- 27 Q. You said you looked before you started across the street-where did you look and what do you recall
- 28 seeing?
- 29 A. I looked both ways on Magnolia and in one direction there was no traffic at all, to my left, and in the
- 30 other direction, to my right, I saw Casey Driver's New Age Roadster.
- 31 Q. Did you start to look before you had actually walked back up to the intersection with Lazy Z?
- 32 A. Yes.
- 33 Q. And immediately after making your observations started to cross Magnolia?
- 34 A. Yes.
- 35 Q. How many lanes of traffic are there at that point on Magnolia Road?
- 36 A. Two lanes—one in each direction. The first lane that I crossed was not the lane in which Casey was
- 37 travelling. I crossed that lane without anything happening and then entered the lane where Casey was
- 38 driving and that is where I was hit.
- 39 Q. So you looked carefully before you left the grassy area and started to cross Magnolia?
- 40 A. Yes
- 41 Q. Why did you cross the street if you saw traffic was coming?
- 42 A. The car was in the other lane, not the first lane I would cross and seemed to be going slowly-it
- 43 seemed like it was slowing for me. As I crossed I looked at the driver and Casey was looking right at me
- so I assumed the car would stop. I did have the right of way.
- 45 Q. Is it your belief that if you were in the painted cross walk that you would have the right of way?
- 46 A. Yes. Once you are in the crosswalk cars have to stop for you.
- 47 Q. What happened next, after you looked at Casey?

- 1 A. I thought I made eye contact with Casey and then turned to make sure no more traffic was coming
- 2 from the other direction, meaning from my left, and then stepped into the second lane of
- 3 traffic—Casey's lane. I was pretty much all the way across when Casey hit me. I still can't believe Casey
- 4 did not stop.
- 5 Q. What happened to you?
- 6 A. I was struck on my right side and went up and onto the hood of the car and then when Casey
- 7 slammed on the brakes I rolled off onto the road.
- 8 Q. Do you remember when your body came to rest on Magnolia if you were in the cross walk?
- 9 A. I think just a few feet past it—maybe one of my legs was still touching the painted line.
- 10 Q. Did you speak to anyone at the scene of the crash?
- 11 A. I remember there was someone there that knew Casey-maybe a teacher or something like that. That
- 12 person tried to comfort me and called 911. I remember that person saying to Casey-"Why didn't you
- stop—you just can't run down pedestrians!" Seemed like the teacher was pretty mad at Casey.
- 14 Q. Did Casey say anything?
- 15 A. Just that Casey never saw me.
- 16 Q. How did Casey look?
- 17 A. Pretty upset—I mean Casey is not a bad person or anything, just made a bad choice that day.
- 18 Q. Headphones were found on the street next to you—were they yours?
- 19 A. Yes—I did have headphones with me but I wasn't wearing them, I was holding them in my hand as I
- 20 crossed the street.
- 21 Q. Do you ever cross the street wearing headphones?
- A. I have from time to time.
- 23 Q. Earlier in the deposition you said that this was not an accident because Casey made a choice—what
- 24 did you mean by that?
- 25 A. I learned that Casey was texting at the time of the crash. So Casey chose to try to do something
- dangerous and distracting while driving and that is why Casey hit me and caused the crash and all of my
- injuries. This was not just something that happened that no one could control.
- 28 Q. What did you do to protect yourself before you started to cross the road?
- 29 A. I looked, thought I made eye contact and carefully walked across the street.
- 30 Q. You said "carefully." But you still were hit?
- 31 A. It was Casey's fault. I had the right of way-pedestrians always have the right of way—that's' what I
- 32 have been told and that's what I know.
- 33 Q. Do you drive?
- 34 A. Yes.
- 35 Q. Do you ever text while driving?
- 36 A. Absolutely not.
- 37 Q. What about doing other things that could be distracting while driving?
- 38 A. I turn the phone on vibrate when I drive and I don't touch it until I am stopped.
- 39 Q. Thank you-I am finished.

40

41 By attorney for plaintiff Jamie Walker

42

43 Q. I have no questions.

44 45

46 (Deposition concluded at 12:10 p.m.)

Curriculum Vitae of Francis Tuckerton, PhD

Education

1980 PhD Experimental Psychology, Midwestern University1977 MS Experimental Psychology, Northern States University

Professional Organizations

American Psychological Society The Human Factors Society International Ergonomics Association

Professional Experience

1996- Present	Professor, Department of Psychology, Bradenburg University Director of the "Hands-Free is Not Risk-Free" Distracted Driving Research Center for the Prevention of Distracted Driving (2009-present), development of high fidelity driving simulators to measure cognitive driving distractions
1994 - 1996	Associate Professor, Department of Psychology, Bradenburg University
1989 - 1994	Assistant Professor, Department of Psychology, Bradenburg University
1982 - 1989	Technical Staff, Federal Aviation Administration (FAA), Pilot cockpit interface, ergonomics and revisions to 1981 "sterile cockpit" standards
1980 - 1982	Post-Doctoral Research Associate, Department of Psychology, Gardenia University
1977 - 1980	Teaching and Research Assistant, Department of Psychology, Midwestern University

Teaching Interests

Cognitive Psychology Applied Cognitive Psychology Human Factors and Engineering Psychology

Research Interests

Inattention blindness Myth of multi-tasking Risk perception

Fees for services: \$275 per hour

Re: Jamie Walker v. New Age Auto Company, Inc

Dear Plaintiff's Attorney:

You have asked me to provide my opinion concerning whether the New Age "Always Connected" voice-activated technology in use at the time of the crash on March 14, 2014 constituted a dangerous cognitive distraction and, if so, whether that distraction was a causal factor in that crash. In providing my opinion I have relied on my education, training and professional experience as outlined in my curriculum vitae.

In reaching my opinion I have relied on the following materials that were supplied to me by your office:

Complaint and Answer in Walker v New Age Auto Company Transcripts of the depositions of Casey Driver, Jamie Walker and Alex Watcher Stipulation of Facts including description of New Age "Always Connected"

Facts

Casey Driver was operating the 2014 New Age Roadster on May 14, 2014 on Magnolia Road in a westerly direction approaching the intersection with Lazy Z Road. Each of the roadways are two lanes—one lane of travel in each direction. Magnolia Road is the through street and has no traffic control devices in the area of the crash. The posted speed limit for Magnolia is 30 mph. Lazy Z Road is the intersecting street and stop signs are located on Lazy Z which control traffic (vehicular and pedestrian) entering onto Magnolia. Weather was not a factor and it was approximately 3:45 p.m. and sunny at the time of the accident. Plaintiff, Jamie Walker, was walking in a northerly direction on Lazy Z intending to cross Magnolia Road. There is a painted crosswalk across Magnolia for pedestrians. Plaintiff, Jamie Walker, was walking in the crosswalk and had successfully crossed the east bound lane for traffic on Magnolia and was part of the way into the west bound lane when struck by Casey Driver. Casey Driver was going markedly less than the posted speed limit of 30 mph at the time of the crash and was looking straight ahead with both hands on the wheel and did not see Jamie Walker at any time before the impact. At the time of the crash Casey Driver was using the factory-provided New Age voiceto-text equipment, believed that it was safe to voice text while driving and was doing so in accord with the operator's manual. A witness, Alex Watcher, a professor at a local law school, was following behind Casey Driver and described how, after travelling for some distance at a speed greater than the posted speed limit, Casey's vehicle slowed for some unknown reason, and that Casey's vehicle was drifting in and out of the lane of travel, so much so that Alex Watcher wondered if Casey was impaired. Alex Watcher described how Jamie Walker crossed from left to right and that Casey Driver did not swerve or even apply the brakes before the impact, and that after the impact Casey Driver kept asking where the pedestrian came from and repeatedly said "I never saw the pedestrian." Alex Watcher confirmed that Casey Driver was not impaired at the scene of the crash.

New Age Company's "Always Connected" Equipment

Casey Driver was operating a new 2014 New Age Roadster. The car was factory equipped with a voice-activated texting feature as part of the "Always Connected" package. This technology permitted and even encouraged drivers to engage in cognitively distracting tasks while driving.

In its advertising materials New Age described "Always Connected" as follows:

"Always Connected" is the ultimate in making your car a smart phone on wheels. At New Age we pride ourselves on being on the cutting edge of technology and being responsive to consumer demand. All of us want to be connected 24/7 and that includes in our cars. Reading and sending texts and e-mails and talking hands-free has never been easier or safer while driving. We have removed the dangers of texting and e-mailing while driving because with "Always Connected" your hands stay on the wheel and your eyes on the road.

By all accounts Casey Driver was using the voice-activated texting feature according to the manufacturer's instructions and specific intentions at the time of the crash and visually focused on the roadway ahead. My research and that of others has consistently revealed that when drivers attempt to multi-task while driving, adding additional cognitively demanding tasks, drivers tend to slow down the speed of their vehicles and often will drift in and out of their travel lane—behaviors that were described by Alex Watcher in the deposition.

It is my opinion, to a reasonable degree of scientific certainty, that the New Age "Always Connected" voice-activated texting technology in use at the time of the crash constituted a dangerous and unnecessary cognitive distraction and that this distraction was a causal factor in the crash.

I have spent the last 10 years of my professional career investigating driver distraction and much of my focus has been on "cognitive distractions." Drivers can be distracted in a number of ways, manually—not having their hands on the steering wheel, visually—taking their eyes off the road in front of them and cognitively—being mentally engaged in a secondary task unrelated to what is necessary for driving. With respect to cognitive distractions my research and that of others has demonstrated that humans are not good multi-taskers, and when secondary tasks, like having cell phone conversations or reading and composing texts—even hands-free—are attempted by drivers, crash risk increases because of the added cognitive demand. With respect to our inability to safely multi-task when cognitively distracted, research in our laboratory and elsewhere has shown that when drivers engage in hands-free cell phone conversations their brains adjust to the added cognitive demands by allocating resources away from those areas of the brain responsible for vision to areas responsible for cognition, resulting in up to a 37% loss of brain resources previously allocated for safe driving. See Exhibit "A" and Marcel Just, PhD's paper "A decrease in brain activation associated with driving when listening to someone speak" (Attachment I). Additional research has demonstrated what I call "tunnel vision," or a narrowing of our visual field by reduced scanning, when a cognitively demanding cell phone conversation is introduced when driving. See Exhibit "B". Others have described the inability of drivers to process what is clearly in their visual field as "inattention blindness." Inattention blindness is

a psychological lack of attention not associated with any vision defects or deficits. It may be further defined as the event in which an individual fails to recognize an unexpected stimulus that is in plain sight.

The only reasonable explanation for Casey Driver's failure to observe Jamie Walker was because of diminished scanning and inattention blindness, products of and evidence for the cognitive distraction caused by use of "Always Connected" at the time of the crash. The reallocation of brain resources away from the visual parts of the brain and the reduced scanning caused by the added cognitive workload of the voice-to-texting feature caused Casey Driver not to perceive the pedestrian even though the pedestrian was within what otherwise would have been the normal field of view for a driver. Casey Driver's fluctuation in speed and drifting out of the lane of travel are hallmarks of cognitive distraction while driving that we have seen countless times in our studies. New Age's incorporation of this technology into the vehicle evidenced a poor or non-existent appreciation for the ability of cognitive distractions to adversely affect drivers' abilities to perceive and react to dangers. "Hands-free is not risk free" and New Age ignored the science of cognitive distraction in its design of the vehicle and in its inadequate and misleading written materials. While other automobile manufacturers limit voiceactivated features to those integral for operation of the vehicle, i.e., wipers, climate control and navigation, New Age did not and that was a cause of the crash in this case. New Age should not have added this dangerous technology for use by drivers while the vehicle was in motion and should have limited this technology, like other manufacturers, for use only when the vehicle was at rest.

Very truly yours

Francis Tuckerton, PhD



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BRAIN RESEARCH

Research Report

A decrease in brain activation associated with driving when listening to someone speak

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ABSTRACT

Behavioral studies have shown that engaging in a secondary task, such as talking on a cellular telephone, disrupts driving performance. This study used functional magnetic resonance imaging (fMRI) to investigate the impact of concurrent auditory language comprehension on the brain activity associated with a simulated driving task. Participants steered a vehicle along a curving virtual road, either undisturbed or while listening to spoken sentences that they judged as true or false. The dual-task condition produced a significant deterioration in driving accuracy caused by the processing of the auditory sentences. At the same time, the parietal lobe activation associated with spatial processing in the undisturbed driving task decreased by 37% when participants concurrently listened to sentences. The findings show that language comprehension performed concurrently with driving draws mental resources away from the driving and produces deterioration in driving performance, even when it does not require holding or dialing a phone.

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1. Introduction

An enduring question about the human mind concerns the ability to do two things at the same time. As technological and informational capabilities of our environment increase, the number of available information streams increases, and hence the opportunities for complex multitasking increase. In particular, multitasking of driving and conversing on a cell phone is technologically available, but intuitively seems dangerous in some circumstances. Although driving becomes sufficiently cognitively automated (Schneider, 1999) to permit experienced drivers to perform other tasks at the same time, such as carrying on a conversation, a large number of behavioral studies have now shown that performing another cognitive task while driving an actual or virtual car substantially degrades driving performance (Alm and Nilsson, 1994, 1995; Anttila and Luoma, 2005; Beede and Kass, 2006;

Brookhuis et al., 1991; Consiglio et al., 2003; Drory, 1985; Engström et al., 2005; Haigney et al., 2000; Hancock et al., 2003; Horberry et al., 2006; Horrey and Wickens, 2004; Hunton and Rose, 2005; Jamson and Merat, 2005; Kubose et al., 2006; Lamble et al., 1999; Lesch and Hancock, 2004; Liu and Lee, 2005; Matthews et al., 2003; McKnight and McKnight, 1993; Patten et al., 2004; Ranney et al., 2005; Recarte and Nunes, 2000, 2003; Santos et al., 2005; Shinar et al., 2005; Strayer and Drews, 2004, 2007; Strayer et al., 2003, 2006; Strayer and Johnston, 2001; Törnros and Bolling, 2005, 2006; Treffner and Barrett, 2004). Although some of these studies show that some aspects of driving are unaffected by a secondary task (e.g., Haigney et al., 2000) and in some cases certain aspects improve (e.g., Brookhuis et al., 1991; Engström et al., 2005), a recent meta-analysis of the literature suggests a large overall decrement in driving performance when a secondary task is added (Horey and Wickens, 2006).

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Public concern about the effect of distraction on driving has led to legislation in some areas that limits the use of cellular phones while driving. The motivation for such legislation may initially have been concern about interference caused by holding and dialing a cellular phone, and early studies suggested that the manual aspects of cellular phone use were the critical determinant of a decrement in driving performance (Drory, 1985). However, recent behavioral studies have shown that simulated driving performance is also disrupted by conversations using hands-free devices (Alm and Nilsson, 1994, 1995; Anttila and Luoma 2005; Beede and Kass, 2006; Brookhuis et al., 1991; Consiglio et al., 2003; Horberry et al., 2006; Hunton and Rose, 2005; Jamson and Merat 2005; Lamble et al., 1999; Levy et al., 2006; Liu and Lee, 2005; Matthews et al., 2003; Patten et al., 2004; Ranney et al., 2005; Shinar et al., 2005; Strayer and Drews, 2004; Strayer et al., 2003, 2006; Strayer and Johnston, 2001; Törnros and Bolling, 2005, 2006; Treffner and Barrett, 2004), and epidemiological studies of real-world accidents suggest that users of hands-free phones are just as likely to have an accident as users of hand-held devices (Redelmeier and Tibshirani, 1997; McEvoy et al., 2005). In their meta-analysis of recent dual-task driving studies, Horey and Wickens (2006) concluded that the costs to driving performance resulting from a secondary simulated conversation task were equivalent for hand-held and hands-free devices. Such findings suggest that the deterioration in driving performance resulting from cellular phone usage results from competition for mental resources at a central cognitive level rather than at a motor output level, and that legislative measures which simply restrict drivers to the use of hand-free phones fail in their intent to limit an important distraction to driving.

The consequences of multitasking on brain activation have been examined in several previous neuroimaging studies. It is important to distinguish, however, between rapidly switching between two tasks versus the situation on which this paper focuses, namely, performing two tasks concurrently. In the case of task switching, activation in dorsolateral prefrontal cortex increases in the dual-task case relative to the single-task case, presumably due to the increased demand on prefrontal executive processes that coordinate the performance of the two tasks (Braver et al., 2003; D'Esposito et al., 1995; Dreher and Grafman, 2003; Dux et al., 2006; Szameitat et al., 2002). However, the results are different for tasks that involve two concurrent streams of thought. The activation in the regions that are activated by each of the tasks when they are performed alone typically decreases from the single task to the concurrent dual-task situation, presumably because of the competition for the same neural resources (Klingberg and Roland, 1997; Rees et al., 1997; Vandenberghe et al., 1997). Moreover, the rostral anterior cingulate becomes involved in concurrent dual tasks (Dreher and Grafman, 2003).

Of particular interest here is the finding that there seems to be a limit on the overall amount of brain activation in a concurrent dual-task situation, even if the two tasks draw on different cortical networks. In a study of mental rotation and sentence comprehension tasks that were performed in isolation or concurrently, the activation volume in these non-overlapping regions associated with each task was substantially less when the tasks were performed together than the sum of the activation volumes when the two tasks were performed separately (Just et al., 2001). In other words, each component task evoked much less cortical activity when it was performed concurrently with another task than

when performed alone, even though the two tasks drew on different regions. This finding has been replicated in an experiment in which the auditory and visual stimuli were presented in each of the three conditions, and only the participants' attention to one, the other, or both tasks was manipulated (Newman et al., 2007). These results suggest that two concurrently-performed complex tasks draw on some shared, limited resource, and thus the resources available for performing each component task are diminished in the concurrent situation relative to when the task is performed alone. This interpretation is consistent with the notion that there is a fundamental constraint that limits the ability to drive and process language at the same time. We will later offer a suggestion concerning the type of resource constraint that may be limiting such concurrent dual-task performance.

Although no previous study has assessed the neural effect of a second task on driving, a recent study did assess the effect of performing a simple visual detection task on a passive viewing of a realistic video-taped driving scenario (Graydon et al., 2004). This study found decreased activation in the dualtask relative to the single-task passive viewing condition in several frontal areas (left superior frontal gyrus, the left orbital frontal gyrus, and the right inferior frontal gyrus). The frontal decrease in activation in the presence of a secondary visual task suggests a limitation on the resources available for processing driving-related visual information, at least in this case of two visual tasks, a simple visual detection task and the passive viewing of a driving scenario.

Here we report for the first time the findings from a study using brain imaging to investigate the effects of performing an auditory language comprehension task while simultaneously performing a simulated driving task, two tasks known to draw on different cortical networks¹. Several previous neuroimaging studies of driving (in a single-task situation) have indicated the feasibility of measuring brain activity during simulation driving in an MRI scanner (Calhoun et al., 2002; Walter et al., 2001). Participants were scanned at 3 Tesla with a blood-oxygenation level dependent fMRI acquisition sequence while they maneuvered a virtual car in a driving simulator (see Fig. 1). They steered the car using a trackball or mouse in their right hand along a winding virtual road at a fixed speed that made the task moderately difficult. In the dual-task condition, participants not only steered but also listened to general knowledge sentences and verified them as true or false using response buttons held in their left hand. Behavioral performance on the comprehension task was assessed in terms of reaction time and response accuracy; performance in the simulated driving task was assessed in terms of road-maintenance errors (hitting the berm) and measurement of the deviation of the path taken from an ideal

¹ Normal driving itself can be considered a multi-task, requiring the integration of information not only from multiple visual inputs (e.g., the road ahead, the rear-view mirror, the instrument display) and other sensory modalities (e.g., the sound of other vehicles and proprioceptive information about the stability of the vehicle on the road), as well as the coordination of multiple behavioral outputs (e.g., steering, braking, acceleration). In the present study we have simplified the driving task by requiring only some of the key components of driving, namely the maintenance of the heading of a vehicle based on the processing of a visual display of the road ahead.



Fig. 1 – Screen capture of the display for the driving simulation. Participants steered the vehicle with a computer mouse or trackball held in their right hand under two conditions; one in which they focused attention on the driving task alone, and one in which they also judged whether auditorily presented sentences describing world knowledge were true or false. Blocks of the driving alone and driving while listening conditions were 60-s in duration and were alternated with 24-s fixation baseline intervals.

path (lane maintenance). The analyses mapped the areas that showed reliable activation at the group level for each of the conditions relative to a baseline fixation task, and the areas that showed reliable differences in activation between the two conditions. In addition, the amount of activation in the single task and dual-task conditions (assessed as the mean percentage change in signal intensity in pre-defined anatomical areas for each participant) was directly compared. If the auditory comprehension task draws attentional resources away from the task

of driving, then one should expect increased errors in driving and less driving-related activation in the presence of a concurrent comprehension task.

2. Results

The central findings were that the sentence listening task reliably degraded driving performance, and in addition, it resulted in decreases in activation in key regions that underpin the driving task, as further quantified below.

2.1. Behavioral measures

Participants performed the sentence comprehension task at a 92% accuracy level (SD=0.06%), confirming that they were attending to the auditory stimuli in the driving with listening condition. The behavioral measures indicated reliably more road-maintenance errors and larger root mean squared (RMS) deviation from an ideal path in the driving with listening condition. Mean road-maintenance errors (hitting the berm) increased from 8.7 (SD=9.7) in the driving-alone condition to 12.8 (SD=11.6) in the driving while listening condition (t(28)= 2.22, p < .05). The mean RMS deviation from the ideal path increased from 2.48 to (SD=0.51) in the driving-alone condition to 2.64 (SD = 0.56) in the driving while listening condition (t(28) = 2.79, p < .01). Both of the measures of driving accuracy are essentially continuous visuo-spatial tracking measures rather than reaction time measures of hazard avoidance. A metaanalysis (Horey and Wickens, 2006) of 16 behavioral studies of

A. Driving Alone



B. Driving with Listening



Fig. 2 – Whole-brain voxel-wise random-effects statistical parameter maps of each condition contrasted with the fixation baseline thresholded at p<.0001 with an 81-voxel extent threshold (resulting in a cluster-level threshold of p<.05 after correction for multiple comparisons). Similar areas of activation are present in both conditions but with additional language-related activity in temporal and inferior frontal areas (yellow ovals).

dual-task driving concluded that the costs associated with cell phone conversations are even larger for reaction time tasks than for tracking tasks, so our study may be underestimating the behavioral impact of a secondary task on driving.

2.2. Functional imaging measures

Group-level random-effects analysis indicated that the driving task when performed alone produced large areas of activation (compared to fixation) in bilateral parietal and occipital cortex, motor cortex, and the cerebellum, as shown in Fig. 2A. Three clusters of activation survived correction for multiple comparisons (p<.05). The largest cluster (39,504 voxels) had its peak activation in the left supplementary motor area (t(28) = 12.00, at Montreal Neurological Institute (MNI) coordinates -6, -18, 64), but the activation extended to left and right primary motor areas, the left and right parietal lobe, the left and right occipital lobe, and into bilateral regions of the cerebellum. A second cluster (1791 voxels) had a peak in the left thalamus (t(28) = 8.72 at MNI coordinates -14, -22, 2) but extended into other left subcortical structures including the putamen, pallidum, caudate, and hippocampus, and also left cortical areas of the insula, inferior frontal gyrus, and middle frontal gyrus. The final cluster (429 voxels) had its peak in the right hippocampus (t(28)=7.71 at MNI coordinates 22, -30, -8) and extended into the right thalamus, and right cortical areas of the parahippocampal and lingual gyri.

When sentence listening was combined with the driving task, the same network of driving-related areas were acti-

vated, as shown in Fig. 2B. For the contrast between driving with listening and the fixation baseline, the largest cluster of activation (47,911 voxels) had a peak in the right middle occipital gyrus (t(28=12.43 at MNI coordinates 28, -96, 4) but extended to the same areas found in the contrast of driving alone with fixation; left and right supplementary and primary motor areas, left and right parietal lobes, left and right occipital lobes, and bilateral areas of the cerebellum. As expected, the addition of the listening task gave rise to activation in additional areas that underpin the sentence processing task, namely bilateral temporal and left inferior frontal regions. The largest cluster of activation extended into the left inferior frontal gyrus, and also into the left temporal language area (see the left panel of Fig. 2B). In addition, a cluster of 3022 voxels was reliably active in the homologous region of the right temporal lobe (peak t(28)=10.99 at MNI coordinates 50, -24, -6). A final small cluster of activation (185 voxels) was found in the right frontal lobe with a peak in the middle frontal gyrus (t(28) = 6.14 at MNI coordinates 24, 52, 6).

If processing spoken language draws attentional/brain resources away from the task of driving, one would expect a decrease in activation in the brain areas that underpin the driving task. The findings clearly supported this prediction. Informal comparison of Fig. 2A and B suggests that the driving-related activation in bilateral parietal cortex decreased with the addition of the sentence listening task. Direct random-effects statistical comparison of the driving-alone condition with the driving with listening condition confirms this suggestion (see Fig. 3 and Table 1). A number of bilateral occipital

A. Driving Alone minus Driving with Listening



B. Driving with Listening minus Driving Alone

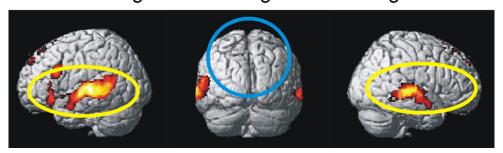


Fig. 3 – Whole-brain voxel-wise random-effects statistical parameter maps of direct contrasts between the two conditions thresholded at p < .0001 with an 81-voxel extent threshold (resulting in a cluster-level threshold of p < .05 after correction for multiple comparisons). The top panel indicates that parietal and superior extrastriate activation decreases with the addition of a sentence listening task (blue circle). The bottom panel shows that the addition of a sentence listening task results in activation in temporal and prefrontal language areas (yellow ovals).

Table 1 – Areas of greater activation for Driving Alone than Driving with Listening

Location of peak	Cluster	t(28)	MNI coordinates		
activation	size		х	у	Z
L supramarginal gyrus	166	7.13	- 56	-36	36
R superior parietal lobe	2020	6.8	10	-82	52
L superior parietal lobe	139	5.8	-28	- 54	58
L inferior parietal lobe	154	5.55	-34	-42	38
L superior occipital gyrus	182	5.49	-26	-88	26

Note: Cluster size is in $2 \times 2 \times 2$ mm voxels. L = left, R = right.

and parietal areas showed greater activation in the drivingalone condition relative to the same condition performed with the sentence listening task, as shown in Fig. 3A and in Table 1. As expected, driving with listening resulted in more activation than driving alone in bilateral temporal language areas and the left inferior frontal gyrus, as shown in Fig. 3B and in Table 2. There was also greater activation in the right supplementary motor area in this contrast, possibly due to the addition of the requirement to respond to the sentence comprehension task with the left hand.

Anatomical regions of interest (ROIs) defined a priori were used to directly compare the activation levels (percentage change in signal intensity relative to fixation) in the two conditions. There were large, reliable decreases in areas involved in the spatial processing associated with driving. The decrease from single to dual task was 37% for the spatial areas (F(1, 28) = 29.38, p<.0001. Table 3 shows the mean percentage change in signal intensity for each of the anatomically-defined regions of interest examined in the driving alone and driving with listening conditions. Most of the parietal areas associated with spatial processing individually showed a reliable decrease in activation when the sentence comprehension task was added, with the largest decreases found in the right parietal lobe. Table 3 also groups the anatomical areas based on function, and Fig. 4 aggregates the results for each of these groupings. As shown in Fig. 4, the spatial areas show a large decline in activation in driving with listening compared to driving alone; the visual, motor, and executive areas show no reliable decrease; and the language areas show a large increase.

Although the visual areas show a trend toward a decrease in activation between the driving-alone condition and the driving with listening condition, this decrease was not reliable

Table 2 – Areas of greater activation for Driving with Listening than Driving Alone

Location of peak	Cluster	t(28)	MNI coordinates		
activation	size		х	у	Z
L middle temporal gyrus	4552	10.87	-56	-12	-6
R superior temporal gyrus	2523	9.82	50	-20	4
L inferior frontal gyrus	497	9.33	-44	20	26
R supplementary motor	1055	7.00	2	24	62

Note: Cluster size is in $2 \times 2 \times 2$ mm voxels. L = Left, R = right.

Table 3 – Mean percentage change in signal intensity in anatomical regions of interest (ROI)

Region of interest	Driving		Driving with	F(1, 28)		
	alone		listening			
Spatial areas						
L intraparietal sulcus	0.315	>	0.231	8.14*		
R intraparietal sulcus	0.400	>	0.267	14.28**		
L inferior parietal lobe	0.461	>	0.348	5.67*		
R inferior parietal lobe	0.083		0.011	3.64		
L superior parietal lobe	0.239	>	0.158	10.23*		
R superior parietal lobe	0.226	>	0.120	14.01**		
L superior extrastriate	0.337	>	0.234	6.63*		
R superior extrastriate	0.374	>	0.246	9.25*		
All spatial areas	0.258	>	0.163	29.38**		
Visual sensory/perceptual areas	S					
Calcarine sulcus	0.189		0.143	1.56		
L inferior extrastriate	0.267		0.216	1.52		
R inferior extrastriate	0.306		0.244	2.66		
Linferior temporal lobe (pos)	0.138		0.108	0.17		
R inferior temporal lobe (pos)	0.179		0.109	1.20		
L inferior temporal lobe (mid)	0.111		0.140	0.05		
R inferior temporal lobe (mid)	0.149		0.129	0.02		
All visual areas	0.191		0.156	1.39		
Motor/pre-motor areas						
Supplementary motor area	0.212		0.244	1.73		
L precentral gyrus	0.429		0.380	1.68		
R precentral gyrus	0.222		0.196	0.76		
All motor areas	0.288		0.273	0.32		
Executive function areas						
L middle frontal gyrus	0.108		0.092	0.23		
R middle frontal gyrus	0.113		0.076	1.34		
Anterior cingulate	-0.085		-0.096	0.18		
Superior medial frontal	-0.085		-0.096	0.18		
All executive areas	0.035		0.030	0.07		
I anguago aroga						
Language areas Lant. superior temporal gyrus	0.043	<	0.399	42.45**		
R ant. superior temporal gyrus			0.391	21.95**		
	0.076 -0.024	<	0.391	21.95 37.98**		
L pos. superior temporal gyrus		<				
R pos. superior temporal gyrus	-0.012	<	0.077	4.29*		
L pars triangularis	0.114	<	0.256	12.64**		
R pars triangularis	0.081	<	0.161	6.01*		
L pars opercularis	0.136		0.178	1.36		
R pars opercularis	0.180		0.167	0.18		
L insula	0.074		0.090	0.21		
R insula	0.036		0.027	0.07		
All language areas	0.070	<	0.196	64.43**		

Note: inequality signs indicate the direction of a statistically reliable difference between Driving Alone and Driving with Sentence Listening. L = left, R = right. *=p<.05 uncorrected, **=p<.05 Bonferroni corrected for the number of regions of interest examined.

for any of the areas considered individually or for the aggregate measure of visual activation. However, more superior areas of the right and left occipital lobe did show significantly less activation for the driving with listening condition in the voxel-wise whole brain contrasts (see Fig. 3A). These areas have been grouped with the spatial processing areas in Table 3 and Fig. 4, due to their proximity to the parietal lobes and their role in the dorsal visual stream, but this grouping is perhaps somewhat arbitrary. The data indicate that while

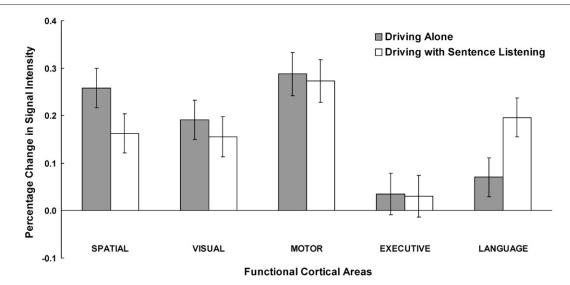


Fig. 4 – The percentage change in signal intensity for five functional groupings (networks) of cortical areas. The component regions of each network are those specified in Table 3. The driving-related activation in spatial processing areas significantly decreases with the addition of the sentence listening task. The addition of the sentence listening task significantly increases language area activation. Error bars show the standard error of the mean.

primary visual areas show no effect of the multitasking in this study, some secondary visual areas do decrease their activation.

In frontal areas associated with executive function, including dorsolateral prefrontal cortex and anterior cingulate, one might expect that the need to coordinate the processing in the two tasks would lead to increased activation, as D'Esposito et al. (1995) reported. However, note the previous distinction between performing two tasks concurrently (such as driving and sentence listening) versus rapidly switching between two tasks (such as the dual tasks studied by D'Esposito et al., 1995). Unlike the findings of increased activation in prefrontal areas for task switching, these prefrontal regions showed an equivalent percentage change in signal intensity for the driving alone and driving concurrently with sentence listening conditions. This finding indicates that not all multitasking requires additional executive functioning.

As expected, there was an overall increase in the percentage change in signal intensity in language areas when the comprehension task was added to the driving task. This increase was prominent in bilateral primary and secondary auditory areas of the temporal lobe and in the pars triangularis region of Broca's area in the left hemisphere and the homologous region of the right hemisphere, as indicated in Table 3. There was a slight trend toward a greater percentage change in signal in left pars opercularis, consistent with the results of the voxel-wise analysis, but not in right pars opercularis.

The finding of decreased parietal activation for the driving with listening condition was also found when the volume of activation rather than the percentage change in signal intensity was considered. For this analysis, the number of voxels reliably activated in the a priori spatial anatomical ROIs was computed for each participant at t>4.90 (corresponding to a within-participant height threshold of p<0.05, corrected for multiple comparisons) for the contrast of each condition

with the fixation baseline. In the spatial areas, as identified in Table 3, the mean total number of activated voxels decreased from 1653 (SE=103) to 1195 (SE=103) from the driving-alone condition to the driving with listening condition, (F(1, 28)= 41.65, p<.0001).

3. Discussion

The new findings clearly establish the striking result that the addition of a sentence listening task decreases the brain activation associated with performing a driving task, despite the fact that the two tasks draw on largely non-overlapping cortical areas (Just et al., 2001; Newman et al., 2007). Activation decreased when the listening comprehension task was added to the driving task in bilateral parietal and superior extrastriate secondary visual areas. These areas have been shown to activate when simulated driving is contrasted with a passive viewing task in previous studies (Calhoun et al., 2002). The parietal areas which show a decrease here have been implicated in not only the types of spatial processing associated with driving, but also in the allocation of visual spatial attention (Rushworth et al., 2001). The decreased parietal activation in the dual-task condition may therefore be a reflection of both a decrease in the spatial computations associated with driving as well as a decrease in spatial attention. Converging evidence comes from an ERP study of simulated driving, in which the amplitude of the P300, which was maximal over the parietal electrodes (likely reflecting stimulus encoding), was reduced by 50% in a dual-task condition as compared to a driving-alone condition (Strayer and Drews, 2007). These brain activation findings provide a biological account for the deterioration in driving performance (in terms of errors and lane maintenance) that occurs when one is also processing language.

We offer the following interpretation of the main findings, expressed in terms of the underlying neural systems. The results are consistent with the hypothesis, derived from previous behavioral studies, that a simulated cellular telephone conversation disrupts driving performance by diverting attention from the driving task. We interpret this diversion of attention as reflecting a capacity limit on the amount of attention or resources that can be distributed across the two tasks. This capacity limit might be thought of as a biological constraint that limits the amount of systematic neural activity that can be distributed across parts of the cortex. The specific biological substrate that imposes the capacity limitation is not currently known; it could be, for example, the biochemical resources underpinning the neural activity, or it could be the communication bandwidth underpinning the inter-region cortical communication. Whatever the biological source of the constraint, the findings suggest that under mentally demanding circumstances, it may be dangerous to mindlessly combine the special human capability of processing spoken language with a more recent skill of controlling a large powerful vehicle that is moving rapidly among other objects.

Besides this critical practical application, the study makes a number of other interesting points that illuminate the nature of multitasking. For example, although one might have thought that multitasking would make special demands on executive processes that coordinate the performance of two tasks simultaneously, there was in fact no increase in activation from the single- to dual-task in the prefrontal areas commonly associated with executive function. This replicates a previous result that was obtained when the comprehension task used here was combined with a mental rotation task (Just et al., 2001; Newman et al., 2007). Other imaging studies have also failed to find additional frontal areas specifically involved in dual-task performance (Adcock et al., 2000; Bunge et al., 2000; Goldberg et al., 1998; Klingberg, 1998), although there is also ample evidence that for some combinations of tasks, prefrontal activation does increase in the dual-task situation (D'Esposito et al., 1995; Szameitat et al., 2002; Dreher and Grafman, 2003; Loose et al., 2003). The main determinant of whether or not multitasking is demanding of executive function may depend on how automatic the two tasks are in the first place and whether they draw on non-overlapping cortical areas. Both tasks examined here, simulated driving and auditory comprehension, are relatively automatic, in that they draw very little on executive functions and evoke little frontal activation when performed alone. When these two tasks are combined as two streams of thought, no additional executive functioning/activation occurs. One might expect central executive processes to eventually become engaged in real-world driving during a cell phone conversation if a driving emergency arises; however, the latency of the executive processes (how soon the executive areas become activated) would be expected to be longer in the dual-task situation.

In primary visual areas (the occipital pole and the calcarine sulcus), there was no reliable change in the amount of activation when the comprehension task was added to driving. The differential effect of a concurrent task on primary versus secondary visual processing areas is consistent with eyemovement data suggesting that a concurrent task decreases foveal attention to visual information in driving without

altering the pattern of fixations that the driver makes (Strayer et al., 2003), an impairment in driving performance caused by a concurrent task referred to as "inattention blindness." The new fMRI results here suggest that although the oculomotor activity may remain similar when a concurrent task is added to driving, preserving the visual input to primary sensory areas, the processing carried out in secondary visual areas is diminished. We note, however, that other studies of divided attention between visual and auditory tasks have shown decreased primary visual activation in the divided attention condition (Loose et al., 2003) and our earlier study combining mental rotation with listening comprehension also found a decrease in activation in primary visual areas for the dual-task condition relative to performing the mental rotation task alone (Just et al., 2001). The effect of a concurrent auditory task on primary visual areas may depend on the automaticity of the visual task, with there being less impact on a more automatic task, such as driving, and more impact on a strategically controlled task, such as mental rotation.

Unlike cell phone conversations, our sentence listening task did not require the participants to speak, and is thus probably less disruptive to driving than a full fledged conversation might be. Recarte and Nunes (2003) found that simply requiring participants to attend to auditory messages did not alter visual search or behavioral performance relative to driving alone, but that tasks involving speech production did affect both eye-movements and behavioral performance. Strayer and Johnston (2001) found that simply listening to speech and even actively shadowing it did not disrupt driving performance, but that a verb generation task did cause disruption. Horey and Wickens (2006) analyzed the combined effect size for 15 experiments involving a real conversation and 22 experiments that used various information processing tasks designed to simulate some of the demands of conversation. The effect of both types of tasks were significant in producing errors in driving performance, although the costs were higher for actual conversation than for other information processing tasks. It is therefore likely that our comprehension task underestimates the decrease in driving-associated activation and the deterioration of driving performance that would result from actual cell phone conversations.

Another limitation of the current study is that participants did not perform the sentence comprehension task in isolation. The inclusion of such a single-task sentence listening condition in future neuroimaging studies of multi-tasking while driving would permit a clearer assessment of whether activation in the dual-task condition is truly under-additive relative to the activation found when performing each of the component tasks in isolation. We note however, that our previous studies in which participants combined the sentence task used here with a mental rotation task (Just et al., 2001; Newman et al., 2007) did include such a single-task sentence listening condition, and found that activation in the dual-task condition was underadditive in both language and spatial processing areas relative to the activation that would be predicted on the basis of that found in each of the two single-task conditions.

The new findings raise the obvious point that if listening to sentences degrades driving performance, then probably a number of other common driver activities also cause such degradation, including activities such as tuning or listening

to a radio, eating and drinking, monitoring children or pets, or even conversing with a passenger. However, it is incorrect to conclude that using a cell phone while driving is no worse than engaging in one of these other activities. First, it is not known exactly how much each of these distractions affects driving, and it may indeed be interesting and important to compare the various effects, and try to find ways to decrease their negative impacts. Second, talking on a cell phone has a special social demand, such that not attending to the cell conversation can be interpreted as rude, insulting behavior. By contrast, a passenger who is a conversation partner is more likely to be aware of the competing demands for a driver's attention and thus sympathetic to inattention to the conversation, and indeed there is recent experimental evidence suggesting that passengers and drivers suppress conversation in response to driving demands (Crundall et al., 2005). Third, the processing of spoken language has a special status by virtue of its automaticity, such that one cannot willfully stop one's processing of a spoken utterance (Newman et al., 2007), whereas one can willfully stop tuning a radio. These various considerations suggest that engaging in conversation while concurrently driving can be a risky choice, not just for commonsense reasons, but because of the compromised performance imposed by cognitive and neural constraints.

4. Experimental procedures

4.1. Participants

Twenty-nine right-handed native English speakers (14 females), ages 18-25, were included in the analysis. Functional imaging data from five other participants were discarded due to excessive head motion or other technical problems. All participants were licensed drivers and all reported at least some previous experience with video driving games. Each participant signed an informed consent that had been approved by the University of Pittsburgh and Carnegie Mellon University Institutional Review Boards. Prior to testing in the scanner, each participant completed at least two 5-min practice runs involving the driving alone and the driving with listening conditions. Participants who made more than 40 road-maintenance errors (see below) in either of these runs received an additional 5-min practice run. If they did not complete the 3rd practice run with less than 40 road-maintenance errors, they were excluded from the study. In addition, participants who experienced motion sickness during the practice were not included in the fMRI study.

4.2. Experimental paradigm

The experiment consisted of two experimental conditions, each containing three 1-min blocks of driving, along with a baseline fixation condition. In the "driving-alone" condition, participants steered the vehicle through the driving simulation without presentation of auditory stimuli. In the "driving with listening" condition, participants steered the vehicle through the driving simulation while simultaneously listening to the general knowledge sentences and verifying them as true or false. Each sentence was presented for 6 s, with a 5-s delay between sen-

tences within the block. A short tone sounded at the end of each sentence to signal the participant to respond, and failure to respond prior to the onset of the next sentence was treated as an error. Five sentences were presented within each block of driving in this dual-task condition. A 24-s block of fixation was presented before and after each block of driving. In this fixation condition, participants fixated on a centred asterisk without performing any task. This fixation condition provided a baseline measure of brain activation with which to compare each experimental condition.

The order of the two experimental conditions was alternated across participants, and two versions of the experiment were created to counter-balance condition order and the particular roads assigned to each condition. Fourteen participants completed one version and fifteen completed the other. Each version contained the same roads in each condition, but with the opposite direction of travel across the two conditions. This counter-balancing was intended to minimize practice effects influencing the quality of driving for each condition. Initial analyses found no reliable differences between the two orders of conditions in either of the behavioral measures of driving accuracy, in sentence comprehension performance, nor in any of the voxel-wise contrasts between conditions conducted on the fMRI data. All analyses reported here were performed after collapsing across the two versions.

Participants were instructed to attempt to maintain the position of the vehicle in the center of the road and to avoid hitting the sides of the road. They were told that in the driving-alone condition they should focus their full attention on the driving task, and in the driving with listening condition, they should attend equally to both tasks. For the sentence task, they were instructed to wait until the tone at the end of the statement, and to respond as quickly as possible without sacrificing accuracy.

4.3. Stimuli and apparatus

The driving simulation was created using WorldToolKit simulation development software (Sense8 Software, Engineering Animation, Inc., Mill Valley, CA) and was integrated with experimental control software specifically written to provide for synchronization with the MRI scanner, presentation of auditory items, and the recording of button press responses and driving performance. The simulation was run on a PC with a NVIDIA Riva TNT2 64 Pro graphics card. The driving simulation was rear projected by an LCD projector onto a semi-translucent plastic screen inserted into the bore of the scanner behind the participant, allowing participants to view the screen through a pair of mirrors attached to the head coil of the scanner. The visual angle of the display subtended approximately 30° in the horizontal dimension. The simulation provided the participant with a view of rural winding roads, occasionally encountering hills and passing by bodies of water (see Fig. 1 for an example). The simulation involved daytime driving with good visibility and road conditions. There were no intersections, hazards, or other vehicles on the road. The apparent speed of the vehicle was fixed at 43 mph (69.2 km/h). The participants' only control over the simulation was the steering of the vehicle to the left or right by use of an MRI-compatible computer mouse (6 participants) or computer trackball (23 participants) with their right hand². A red dot at the bottom of the display indicated steering movements to provide feedback on the position of the virtual steering wheel. No other instruments of the vehicle were displayed. If the participant happened to steer the car into the side edge (berm) of the road, the program prevented the vehicle from leaving the road but recorded each time it made contact with the boundaries of the road as a road-maintenance error. The x, y, and z, coordinates (in virtual "feet") of the position of the vehicle within the virtual environment was sampled at the frame rate of presentation (approximately 10 frames per second), providing a measure of how well the participant tracked an ideal path along the road. Although this simulated driving task obviously differs in significant ways from real driving, Horey and Wickens (2006) found that studies that used simulated driving and those that were conducted in the field with an instrumented automobile produced similar combined effect sizes of distraction on driving performance, suggesting that simulated driving generalizes reasonably well to real-world situations.

The sentences were presented using a high-fidelity MRI-compatible electrostatic headset (Resonance Technology, Inc., Los Angeles, CA) that attenuated scanner noise and allowed the auditory stimuli to be intelligible at a comfortable listening level (approximately 60 dBA). Participants responded regarding whether each sentence was true or false using two optical buttons in their left hand. The left button in the participant's left hand was always used for "false", and the right button was for "true". The sentences were factual statements requiring retrieval of general semantic information expected to be common knowledge among our sample of university students. An example of a true statement is "Botany is a biological science and it deals with the life, structure, and growth of plants." An example of a false statement is "A phobia refers to a person's extreme attraction to some object, situation, or person".

4.4. Behavioral measures

Reaction times and errors were recorded for the sentence comprehension task to ensure that participants were performing the task. Two measures of driving accuracy were derived from the record of the participant's path along the virtual road. The first, which we refer to as road-maintenance errors, was the number of times the participant made contact with the boundaries (berms) of the road. The second was the root mean square deviation from an ideal path down the center of the road. Differences between conditions in these measures were assessed with paired t-tests.

4.5. fMRI parameters

The imaging was carried out at the University of Pittsburgh Magnetic Resonance Research Center on a 3-Tesla GE Signa scanner using a GE quadrature birdcage head coil. For the functional imaging a T2*-weighted single-shot spiral pulse sequence was used with TR=1000 ms, TE=18 ms, and a flip angle of 70°. Sixteen adjacent oblique-axial slices were acquired in an interleaved sequence, with 5-mm slice thickness, 1-mm slice gap, and a 20×20 cm FOV. The spiral k-space data was regridded to a 64×64 matrix, resulting in in-plane resolution of 3.125×3.125 mm.

4.6. fMRI data analysis

The image processing was carried out using FIASCO (Eddy et al., 1996) and SPM99 (Wellcome College Department of Cognitive Neurology, London, UK) software. Pre-processing steps carried out in FIASCO included reconstruction of the k-space data and correction for spikes, linear signal drift, and in-plane head motion. The mean estimated displacement across the x, y, and z dimensions after in-plane motion correction of the 29 participants included in the analysis was less than 0.1 mm, and the maximum estimated displacement in any dimension across participants was 2.2 mm. Each participant's functional data were then corrected for slice acquisition timing, realigned, normalized to the Montreal Neurological Institute EPI template, and spatially smoothed (Gaussian kernel, full-width at half maximum= 8 mm), using standard SPM99 procedures. Activation was assessed on a voxel-by-voxel basis within each participant by modelling the time-course of the signal with a general linear model including regressors for the fixation baseline, the drivingalone condition, and the dual-task condition, each convolved with the canonical SPM99 hemodynamic response function. Because the addition of the secondary language comprehension task might be expected to systematically increase the global signal, no global scaling was applied to the data to avoid biasing the estimates of activation in this condition.

Group activation was assessed with a random-effects model in which differences in the beta-weights from the first-level analysis of each participant were assessed with one-sample t-tests. For these voxel-wise analyses of differences between conditions a threshold of p<.0001 was adopted at the voxel level and p < .05 corrected for multiple comparisons at the cluster level (an extent threshold of 81 voxels). To compare the amount of activation in a given anatomical area across experimental conditions, 32 anatomically-defined ROIs that covered the activation observed in this task were used. The 32 ROI definitions shown in Table 3 were derived from the parcellation scheme developed by Tzourio-Mazoyer et al. (2002). Changes in mean signal intensity relative to the fixation baseline were computed from the averaged time-course data extracted from each of these regions, and these changes were assessed with mixed-effects analyses of variance. No thresholding of the individual participants' activation maps was applied in this secondary analysis, so that the mean percentage change in signal intensity represents the amount of activation in the area in each condition, after adjusting for the size of the anatomical region of interest.

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² A technical problem with the MRI-compatible mouse developed after the sixth participant was scanned, and a more reliable trackball device was used for the remaining participants. Between-subject tests of the effect of input device revealed no reliable differences on either of the behavioral measures of driving, nor on any of the voxel-wise contrasts among conditions conducted on the imaging data.

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REFERENCES

- Adcock, A., Constable, R.T., Gore, J.C., Goldman-Rakic, P.S., 2000. Functional neuroanatomy of executive processes involved in dual-task performance. Proc. Natl. Acad. Sci. U. S. A. 97, 3567–3572.
- Alm, H., Nilsson, L., 1994. Changes in driver behaviour as a function of handsfree mobile phones—A simulator study. Accident Anal. Prev. 26, 441–451.
- Alm, H., Nilsson, L., 1995. The effects of mobile telephone use during simulated driving. Accident Anal. Prev. 27, 707–715.
- Anttila, V., Luoma, J., 2005. Surrogate in-vehicle information systems and driver behaviour in an urban environment: a field study on the effects of visual and cognitive load. Transp. Res., Part F 8, 121–133.
- Beede, K.E., Kass, S.J., 2006. Engrossed in conversation: the impact of cell phones on simulated driving performance. Accident Anal. Prev. 38, 415–421.
- Braver, T.S., Reynolds, J.R., Donaldson, D.I., 2003. Neural mechanisms of transient and sustained cognitive control during task switching. Neuron 39, 713–726.
- Brookhuis, K.A., de Vries, G., Waard, D., 1991. The effects of mobile telephoning on driving performance. Accident Anal. Prev. 23, 309–316.
- Bunge, S.A., Klingberg, T., Jacobsen, R.B., Gabrieli, J.D.E., 2000. A resource model of the neural basis of executive working memory. Proc. Natl. Acad. Sci. U. S. A. 97, 3573–3578.
- Calhoun, V.D., Pekar, J.J., McGinty, V.B., Adali, T., Watson, T.D., Pearlson, G.D., 2002. Different activation dynamics in multiple neural systems during simulated driving. Hum. Brain Mapp. 16, 158–167.
- Consiglio, W., Driscoll, P., Witte, M., Berg, W.P., 2003. Effect of cellular telephone conversations and other potential interference on reaction time in a braking response. Accident Anal. Prev. 35, 495–500.
- Crundall, D., Bains, M., Chapman, P., Underwood, G., 2005. Regulating conversation during driving: a problem for mobile telephones? Transp. Res., Part F 8, 197–211.
- D'Esposito, M., Detre, J.A., Alsop, D.C., Shin, R.K., Atlas, S., Grossman, M., 1995. The neural basis of the central executive system of working memory. Nature 378, 279–281.
- Dreher, J.C., Grafman, J., 2003. Dissociating the roles of the rostral anterior cingulate and the lateral prefrontal cortices in performing two tasks simultaneously or successively. Cereb. Cortex 13, 329–339.
- Drory, A., 1985. Effects of rest and secondary task on simulated truck-driving task performance. Hum. Factors 27, 201–207.
- Dux, P.E., Ivanoff, J., Asplund, C.L., Marois, R., 2006. Isolation of a central bottleneck of information processing with time-resolved fMRI. Neuron 52, 1109–1120.
- Eddy, W., Fitzgerald, M., Genovese, C., Mockus, A., Noll, D., 1996. Functional imaging analysis software—computational olio. In: Prat, A. (Ed.), Proceedings in computational statistics. Physica-Verlag, Heidelberg, pp. 39–49.
- Engström, J., Johansson, E., Östlund, J., 2005. Effects of visual and cognitive load in real and simulated motorway driving. Transp. Res., Part F 8, 97–120.
- Goldberg, T.E., Berman, K.F., Fleming, K., Ostrem, J., Van Horn, J.D., Esposito, G., Mattay, V.S., Gold, J.M., Weinberger, D.R., 1998. Uncoupling cognitive workload and prefrontal cortical physiology: a PET rCBF study. NeuroImage 7, 296–303.
- Graydon, F.X., Young, R., Benton, M.D., Genik, R.J., Posse, S., Hsieh, L., Green, C., 2004. Visual event detection during simulated

- driving: Identifying the neural correlates with functional neuroimaging. Transp. Res., Part F 7, 271–286.
- Haigney, D.E., Taylor, R.G., Westerman, S.J., 2000. Concurrent mobile (cellular) phone use and driving performance: task demand characteristics and compensatory processes. Transp. Res., Part F 3, 113–121.
- Hancock, P.A., Lesch, M., Simmons, L., 2003. The distraction effects of phone use during a crucial driving maneuver. Accident Anal. Prev. 35, 501–514.
- Horberry, T., Anderson, J., Regan, M.A., Triggs, T.J., Brown, J., 2006. Driver distraction: the effects of concurrent in-vehicle tasks, road environment complexity and age on driving performance. Accident Anal. Prev. 38, 185–191.
- Horrey, W.J., Wickens, C.D., 2004. Driving and side task performance: effects of display clutter, separation, and modality. Hum. Factors 46, 611–624.
- Horey, W.J., Wickens, C.D., 2006. Examining the impact of cell phone conversations on driving using meta-analytic techniques. Hum. Factors 48, 195–205.
- Hunton, J., Rose, J.M., 2005. Cellular telephones and driving performance: the effects of attentional demands on motor vehicle crash risk. Risk Anal. 25, 855–866.
- Jamson, A.H., Merat, N., 2005. Surrogate in-vehicle information systems and driver behaviour: effects of visual and cognitive load in simulated rural driving. Transp. Res., Part F 8, 79–96.
- Just, M.A., Carpenter, P.A., Keller, T.A., Emery, L., Zajac, H., Thulborn, K.R., 2001. Interdependence of nonoverlapping cortical systems in dual cognitive tasks. NeuroImage 14, 417–426.
- Klingberg, T., 1998. Concurrent performance of two working memory tasks: potential mechanisms of interference. Cereb. Cortex 8, 593–601.
- Klingberg, T., Roland, P.E., 1997. Interference between two concurrent tasks is associated with activation of overlapping fields in the cortex. Cogn. Brain Res. 6, 1–8.
- Kubose, T.T., Bock, K., Dell, G.S., Garnsey, S.M., Kramer, A.F., Mayhugh, J., 2006. The effects of speech production and speech comprehension on simulated driving performance. Appl. Cogn. Psychol. 20, 43–63.
- Lamble, D., Kauranen, T., Laakso, M., Summala, H., 1999. Cognitive load and detection thresholds in car following situations: safety implications for using mobile (cellular) telephones while driving. Accident Anal. Prev. 31, 617–623.
- Lesch, M.F., Hancock, P.A., 2004. Driving performance during concurrent cell phone use: are drivers aware of their performance decrements? Accident Anal. Prev. 36, 471–480.
- Levy, J., Pashler, H., Boer, E., 2006. Central interference in driving: is there any stopping the psychological refractory period? Psychol. Sci. 17, 228–235.
- Liu, B.S., Lee, Y.H., 2005. Effects of car-phone use and aggressive disposition during critical driving maneuvers. Transp. Res., Part F 8, 369–382.
- Loose, R., Kaufmann, C., Auer, D.P., Lange, K.W., 2003. Human prefrontal and sensory cortical activity during divided attention tasks. Hum. Brain Mapp. 18, 249–259.
- Matthews, R., Legg, S., Charlton, S., 2003. The effect of cell phone type on drivers subjective workload during concurrent driving and conversing. Accident Anal. Prev. 35, 451–457.
- McEvoy, S.P., Stevenson, M.R., McCartt, A.T., Woodward, M., Haworth, C., Palamara, P., Cercarelli, R., 2005. Role of mobile phones in motor vehicle crashes resulting in hospital attendance: a case crossover study. Br. Med. J. 331, 428–433.
- McKnight, A.J., McKnight, A.S., 1993. The effect of cellular phone use upon driver attention. Accident Anal. Prev. 25, 259–265.
- Newman, S.D., Keller, T.A., Just, M.A., 2007. Volitional control of attention and brain activation in dual-task performance. Hum. Brain Mapp. 28, 109–117.
- Patten, C.J.D., Kircher, A., Östlund, J., Nilsson, L., 2004. Using mobile telephones: cognitive workload and attention resource allocation. Accident Anal. Prev. 36, 341–350.

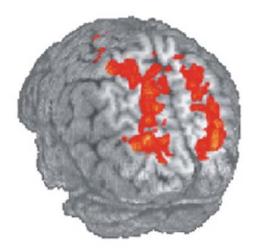
- Ranney, T.A., Harbluk, J.L., Noy, Y.I., 2005. Effects of voice technology on test track driving performance: implications for driver distraction. Hum. Factors 47, 439–454.
- Recarte, M.A., Nunes, L.M., 2000. Effects of verbal and spatial-imagery tasks on eye fixations while driving. J. Exp. Psychol., Appl. 6, 31–43.
- Recarte, M.A., Nunes, L.M., 2003. Mental workload while driving: effects on visual search, discrimination, and decision making. J. Exp. Psychol., Appl. 9, 119–137.
- Redelmeier, D.A., Tibshirani, R.J., 1997. Association between cellular telephone calls and motor vehicle collisions. N. Engl. J. Med. 336, 453–458.
- Rees, G., Frith, C.D., Lavie, N., 1997. Modulating irrelevant motion perception by varying attentional load in an unrelated task. Science 278, 1616–1619.
- Rushworth, M.F.S., Paus, T., Sipila, P.K., 2001. Attention systems and the organization of human parietal cortex. J. Neurosci. 21, 5262–5671.
- Santos, J., Merat, N., Mouta, S., Brookhuis, K., de Waard, D., 2005. The interaction between driving and in-vehicle information systems: comparison of results from laboratory, simulator and real-world studies. Transp. Res., Part F 8, 135–146.
- Schneider, W., 1999. Automaticity. In: Wilson, R.A., Keil, F.C. (Eds.), The MIT encyclopedia of the cognitive sciences. MIT Press, Cambridge, MA, pp. 63–64.
- Shinar, D., Tractinsky, N., Compton, R., 2005. Effects of practice, age, and task demands, on interference from a phone task while driving. Accident Anal. Prev. 37, 315–326.
- Strayer, D.L., Johnston, W.A., 2001. Driven to distraction: dual-task studies of simulated driving and conversing on a cellular phone. Psychol. Sci. 12, 462–466.
- Strayer, D.L., Drews, F.A., 2004. Profiles in driver distraction: effects of cell phone conversations on younger and older drivers. Hum. Factors 46, 640–649.

- Strayer, D.L., Drews, F.A., 2007. Cell phone induced driver distraction. Curr. Dir. Psychol. Sci. 16, 128–131.
- Strayer, D.L., Drews, F.A., Johnston, W.A., 2003. Cell phone-induced failures of visual attention during simulated driving. J. Exp. Psychol., Appl. 9, 23–32.
- Strayer, D.L., Drews, F.A., Crouch, D.J., 2006. A comparison of the cell phone driver and the drunk driver. Hum. Factors 48, 381–391.
- Szameitat, A.J., Schubert, T., Muller, K., von Cramon, D.Y., 2002. Localization of executive functions in dual-task performance with fMRI. J. Cogn. Neurosci. 14, 1184–1199.
- Törnros, J.E.B., Bolling, A.K., 2005. Mobile phone use—effects of handheld and handsfree phones on driving performance. Accident Anal. Prev. 37, 902–909.
- Törnros, J., Bolling, A., 2006. Mobile phone use effects of conversation on mental workload and driving speed in rural and urban environments. Transp. Res., Part F 9, 298–306.
- Treffner, P.J., Barrett, R., 2004. Hands-free mobile phone speech while driving degrades coordination and control. Transp. Res., Part F 7, 229–246.
- Tzourio-Mazoyer, N., Landeau, B., Papathanassiou, D., Crivello, F., Etard, O., Delcroix, N., Mazoyer, B., Joliot, M., 2002. Automated anatomical labeling of activations in SPM using a macroscopic anatomical parcellation of the MNI MRI single-subject brain. NeuroImage 15, 273–289.
- Vandenberghe, R., Duncan, J., Dupont, P., Ward, R., Poline, J.B., Bormans, G., Michiels, J., Mortelmans, L., Orban, G.A., 1997. Attention to one or two features in left or right visual field: a positron emission tomography study. J. Neurosci. 17, 3739–3750.
- Walter, H., Vetter, S.C., Grothe, J., Wunderlich, A.P., Hahn, S., Spitzer, M., 2001. The neural correlates of driving. NeuroReport 12, 1763–1767.

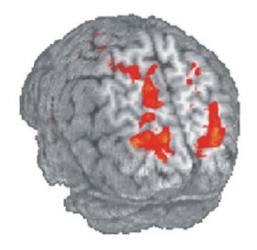
Exhibit A

A Decrease in Brain Activation for Drivers with Concurrent Language Comprehension Task

Brain activity of study participants was measured using functional magnetic resonance imaging (fMRI) while using driving simulators. Brain activity was measured under two conditions: control condition and test condition—responding to true/false general information questions while using the driving simulator. Results indicated that addition of a language comprehension task took mental resources away from brain areas needed for driving and resulted in a deterioration of driving performance (reaction time and response accuracy). The decreased activity in key brain resources for driving was measured to be 37%.



Driving Alone



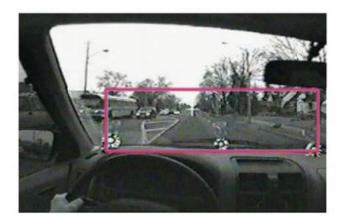
Driving with Sentence Listening

Marcel Just, Ph. D. Carnegie Mellon University

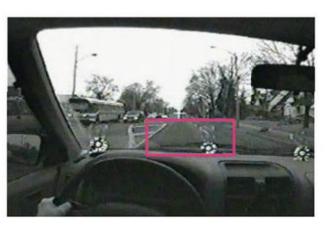
Exhibit B

Reduced visual scanning for drivers when engaged in hands-free cell phone conversation

Study participants drove vehicles with cameras mounted on the dashboard that measured drivers' visual scanning under two conditions: control condition without any added cognitive task and test condition engaged in a hands-free cell phone conversation. Extent of scanning is reflected by pink rectangular areas.







test condition

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Plaintiff	:
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New Age Auto Company, Inc	:
Defendant	: Casa Number CN/14 052
Defendant	: Case Number CIV 14-952 :
	Oral Deposition of Alex Watcher
	eed by and among counsel that signing, sealing, filing and certification s, except as to the form of questions, be reserved until the time of
Alex Watcher, after having bee	n duly sworn, was examined and testified as follows:
EXAMINATION	
BY plaintiff's attorney:	
•	and I represent the plaintiff, Jamie Walker in this case.
Q. Would you state your full name A. Alex Watcher	e, please?
	today. A deposition is simply an opportunity for the attorneys in the
G , ,	and to learn what witnesses observed or know about a particular
•	ement under oath, meaning that you have been sworn to tell the
	s seated next to you will take down my questions and your answers.
Do you understand that?	, 4
A. Yes.	
Q. I will do my best to ask question	ons that are easy to understand and your job is to answer those
questions. Do you understand that	t?
A. Yes.	
	uestion, or are not sure what I am asking, please do not answer the
• •	ask me to rephrase the question for you. OK?
A. Yes.	
	on you may recall something that would have been responsive to an re will give you an opportunity to amend an earlier answer. OK?

- 1 Q. Lastly, the court reporter is taking down what we are saying and shortly after the deposition will type
- 2 up a transcript and that will be the only record of what took place. Do you understand that?
- 3 A. Yes.
- 4 Q. Are you employed?
- 5 A. Yes
- 6 Q. How are you employed?
- 7 A. I am a professor at Gardenia Law School.
- 8 Q. What courses do you teach?
- 9 A. I teach criminal law.
- 10 Q. Do you recall witnessing an accident that occurred on March 14, 2014?
- 11 A. Yes.
- 12 Q. About what time did it occur?
- 13 A. About 3:30 to 3:45 p.m.
- 14 Q. Where did the accident take place?
- 15 A. On Magnolia Road, near its intersection with Lazy Z Road.
- 16 Q. Are you familiar with the area?
- 17 A. Yes—very familiar—it's not far from my home and I travel that road almost daily and have done so
- 18 for a number of years.
- 19 Q. Please describe the roadway in that area, number of lanes, hills curves, that sort of thing?
- 20 A. It's actually very straight, no curves and where the accident occurred it is level, no hills and it's one
- 21 lane in each direction. It's very residential and quiet.
- 22 Q. What was the weather at the time of the accident?
- 23 A. It was a very nice March day.
- 24 Q. Tell us what you observed.
- 25 A. I had left the law school and was following a car out of the lot. I did not know at that time it was
- being driven by a law student, Casey Driver. I did not find that out until I got out of my car at the
- 27 accident scene. So all told I followed the car being driven by my student Casey Driver for about 5-7
- 28 minutes right until the collision. I do want to say that Casey is a wonderful person, very responsible and
- 29 mature and I got to know Casey in my criminal law class. Casey also did a small research project for me
- 30 for a book I am writing.
- 31 Q. So you followed Casey the entire way from the law school to the accident location?
- 32 A. Yes.
- 33 Q. Did any cars ever come between you and Casey?
- 34 A. No.
- 35 Q. What if anything did you observe about Casey's car before the collision?
- A. At first Casey was driving faster than the speed limit of 30 miles per hour so I fell back about 10-12
- 37 car lengths. Then suddenly I closed the distance—my speed did not vary so Casey had really slowed. I
- 38 remember thinking the driver is going really slowly—less than the 30 mile per hour speed limit. Shortly
- 39 after the car slowed I also saw the car drift over the center line once or twice and also to the side of the
- 40 travelling lane and onto the shoulder-nothing happened but I saw that and I wondered whether the
- 41 driver might be impaired. But that was not the case as I talked with Casey at the scene of the accident
- 42 and Casey appeared fine, and no sign of impairment, but I had wondered if that might be the case.
- 43 Q. So what was the fastest speed Casey was going and then the speed Casey was going at the time of
- 44 the impact?
- 45 A. About 35 miles per hour at the fastest and about 20 miles per hour at the slowest-the time of the
- 46 accident.
- 47 Q. Tell us about the accident...

- 1 A. As I was following Casey I saw a pedestrian walking across the street from my left to right-the
- 2 pedestrian appeared to be about 18-20 years old and had head phones and must have been listening to
- 3 music. The pedestrian was crossing Magnolia near its intersection with Lazy Z. The pedestrian was hit,
- 4 flew up onto the hood of the car and then onto the road—it was pretty horrible. The pedestrian was in a
- 5 lot of pain.
- 6 Q. What about Casey—what did Casey do as the pedestrian was walking across the street?
- 7 A. Well that is a funny thing—well not funny because someone was hurt, but funny-unusual. Casey
- 8 never slowed down, never applied the brakes and did not honk or swerve—not until after the
- 9 pedestrian was hit—it was as if Casey did not see the pedestrian crossing the street.
- 10 Q. You saw the pedestrian from when to when?
- 11 A. From when the pedestrian stepped off the curb until the pedestrian flew up in the air on the hood of
- 12 Casey's car and then was thrown onto the road—I saw the whole thing.
- 13 Q. Where exactly did the pedestrian come to rest in the roadway?
- 14 A. Right in front of Casey's car.
- 15 Q. And where did you stop your car?
- 16 A. Directly behind Casey's car—about 2 car lengths behind, but directly behind Casey.
- 17 Q. About how far behind Casey were you travelling in the moments leading up to the collision?
- 18 A. I would estimate about 3 car lengths.
- 19 Q. After you stopped and before you got out of your car could you see any portion of Jamie's body
- 20 laying on the road from your vantage point?
- 21 A. I don't think so, no. It was blocked by Casey's car in front of me.
- 22 Q. Do you have any idea why Casey did not apply the brakes or try to avoid the collision?
- 23 A. I have no idea—that was what did not make sense. Casey is so responsible. The pedestrian had
- crossed the entire lane of opposing lane traffic and was clearly visible to see. I don't understand why
- 25 the pedestrian just kept coming and crossing the street—it was not a child, you know but someone who
- 26 was 18-20 and should have known better. If the pedestrian had only stopped this never would have
- 27 happened.
- 28 Q. I guess if Casey had stopped this would never have happened either?
- 29 A. Maybe. I remember Casey at the accident scene—really shook up, really upset and kept saying "I
- 30 never saw the pedestrian, I never saw the pedestrian, they must have come out of nowhere." I don't
- 31 understand it, still don't. I felt badly for Casey.
- 32 Q. What is it specifically that you do not understand?
- 33 A. Why the pedestrian kept coming and why Casey did not see the pedestrian. They just did not see
- each other. Casey did not see the pedestrian and slam on the brakes or honk.
- 35 Q. Did it appear to you that Casey was distracted by anything?
- 36 A. I keep wondering about that—I don't really know.
- 37 Q. Do you know if Casey was doing anything other than driving at the time of the crash?
- 38 A. I don't know.
- 39 Q. Did the pedestrian say anything that you can remember?
- 40 A. The pedestrian was in a lot of pain at the time but did say something like "I guess I shouldn't have
- 41 crossed."
- 42 Q. Were you able to see what Casey was doing inside the car as you followed?
- 43 A. I don't recall seeing anything really.
- 44 Q. Do you know where the car hit the pedestrian?
- 45 A. It was the pedestrian's right side—leg and hip I think and it was about in the middle of the front of
- 46 Casey's car perhaps a bit closer to the passenger side but pretty much the middle.
- 47 Q. Thank you.

48

1 By attorney for Defendant New Age Auto Company, Inc.

2

- 3 Q. I am Jeremiah Johnson and I represent New Age Auto Company, the defendant in this case. You said
- 4 earlier that the pedestrian stepped off the curb—was there a cross walk where the pedestrian began to
- 5 cross?
- 6 A. There are no stop signs or traffic lights but there is a painted cross walk and the pedestrian started to
- 7 cross in the middle of the block and not right at the corner and the cross walk, crossing at an angle, sort
- 8 of coming at an angle closer to me and coming closer to the cross walk. After the crash the pedestrian
- 9 was laying in the road maybe about 10-15 feet beyond the cross walk on Magnolia.
- 10 Q. As the pedestrian was crossing and walking at an angle as you described did the pedestrian ever get
- actually into the cross walk before being hit?
- 12 A. No—never was within the cross walk. I am sure of that-if the pedestrian had only crossed in
- 13 crosswalk this would never have happened.
- 14 Q. So the pedestrian chose to cross in the middle of the block at not at the crosswalk?
- 15 A. I guess so—that would explain why the pedestrian was hit and caused the accident.
- 16 Q. You said the pedestrian was wearing headphones? Did you see anything that the pedestrian did that
- 17 would indicate the pedestrian heard Casey's car and your car approaching?
- 18 A. No the pedestrian just kept walking. It's not safe to wear headphones while walking across streets.
- 19 Q. Did it look like the pedestrian ever looked at Casey or Casey's car?
- 20 A. Not that I could see.
- Q. Was there anything interfering with the pedestrian's ability to make eye contact with the driver?
- 22 A. No.
- 23 Q. Should the pedestrian have been able to hear Casey's car and your car approaching?
- 24 A. I think so except for those headphones
- 25 Q. Do you text when you drive?
- A. I must admit that occasionally I do at red lights when I am stopped. Only important texts though. I
- 27 shouldn't I know but I have.
- 28 Q. Why do you say you should not text?
- 29 A. Well since you need to look away from the road it's dangerous—and even doing so at traffic lights is
- 30 illegal in Gardenia.
- 31 Q. Thank you—that's all I have.

32

33 By attorney for Plaintiff, Jamie Walker:

34

- 35 Q. What is your basis for concluding that the pedestrian was not crossing in the crosswalk?
- A. It seemed like the pedestrian was walking at an angle from my perspective and by where the
- 37 pedestrian was laying after the accident—it was at least 15 feet beyond the crosswalk.
- 38 Q. And you made this conclusion from looking at the pedestrian from within your moving car, following
- 39 behind Casey's car which was in front of you and at some distance?
- 40 A. Well...yes.
- 41 Q. And was there some time after you stopped that you lost track of the pedestrian as the pedestrian
- 42 was lying on the road because you were directly behind Casey's car?
- 43 A. Yes but for less than a minute until I got out and ran to see if I could help.
- Q. Did you actually see my client, Jamie Walker, wearing headphones?
- 45 A. Yes and I remember seeing them lying on the road.

46

47 (Deposition concluded at 2:45 P.M.)

Curriculum Vitae of Joey Travis, Ph.D., M.S., P.E.

Education

1993 Ph.D. Civil Engineering, Bamford University 1988 M.S. Engineering, Altoona University

Professional Registrations

Professional Engineer: Gardenia, Poplar and Acacia.

Work History

2002-present. Southern States Transportation Research Institute (SSTRI). I have been the director of SSTRI since 2008 and have been employed by SSTRI since 2002. I oversee a number of projects relating to transportation safety and research. Many of these projects are funded by USDOT/NHTSA as well as state DOTs. For more than 12 years I have concentrated my professional activities in traffic safety research, including the study of driver distraction. I have authored more than 50 scientific articles, including more than 10 about driver distraction and regularly engage in research projects funded by agencies of state and federal governments, automobile manufacturers and cell phone manufacturers. My methodology for studying driver distraction, specifically naturalistic studies with instrumented vehicles (the "Travis methodology"), has become the gold standard for other researchers in the United States and abroad. I have been accepted as an expert witness more than 20 times on behalf of defendants in various state and federal courts. I regularly conduct seminars for professionals, including engineers, researchers and attorneys.

1998-2002. Wiebold Construction Inc-Provide planning, design and construction engineering in areas of roads, street structures, and water, wastewater and sewage treatment facilities.

1993-1998. Thomas Crapper Consulting-Provide technical expertise for water, wastewater and sewage treatment facilities.

Consulting Rates

Industry-\$300 per hour

Litigation-\$375 per hour

November 25, 2014

Re: Walker v. New Age Auto Company, Inc.

Dear Defense Attorney:

You have asked me to review a number of materials pertinent to an accident which occurred on May 14, 2014, in which a pedestrian was struck by a motor vehicle causing serious injuries. Specifically you have asked for my professional opinion concerning whether the New Age "Always Connected" voice-to-text feature, when properly utilized by the driver, increases crash risk and whether any reasonable scientific basis exists for concluding that use of "Always Connected" by the driver was a causal factor in the crash.

The uncontested facts indicate that at the time of the accident, plaintiff, Jamie Walker, was crossing a street wearing headphones. Jamie Walker was also crossing in the middle of the block—choosing not to use the crosswalk which was designed to provide a measure of safety for pedestrians and predictability for drivers. Casey Driver was using the "Always Connected" technology properly, with both hands on the wheel and eyes on the road. It also appears that Casey Driver was highly stressed and having an emotionally charged conversation with Casey's significant other at the time of the accident. Plaintiff's expert has provided a report in which it is claimed that "cognitive distraction," caused by the New Age "Always Connected" technology, caused the accident.

While other researchers, including Plaintiff's expert, use computer or laboratory simulations for their driving studies, our studies have consistently used real cars in real world driving environments. We equip participants' own vehicles with data recording devices, multiple video cameras and electronics, to monitor speed, braking and reaction times so that we can accurately study crashes, near crashes and driver behaviors. In our "naturalistic" driving studies we have observed motorists for thousands of miles to ensure the accuracy of our conclusions. Simply stated, we are able to review video of the moments before actual crashes and near crashes to determine causes. In a recent study we looked at crashes and near crashes and whether any secondary activities, including dialing a cell phone, talking on a cell phone, reaching for objects within the vehicle other than a cell phone and adjusting vehicle controls—radio, CD or climate control—had occurred within a prescribed amount of time prior to the crash or near crash. Our study revealed statistically significant increased crash risks from dialing a cell phone, reaching for objects within the vehicle and adjusting vehicle controls but no increased crash risk for actually talking on a cell phone. In other words, once the task of dialing a cell phone was separated from the act of talking itself, no increased risk of a crash was posed by just talking on a cell phone. We found that it was the act of looking away from the road which increased crash risk and that no increased crash risk resulted from being involved in cell phone conversations so long as the driver was keeping his or her eyes on the road. I have attached a table as Exhibit "C" reflecting the results of our study. Talking on a cell phone itself does not require the driver to take his or her eyes off the road—behaviors that clearly increase crash risk. The act of talking on a cell phone is similar to voice-to-texting if done according to the manufacturer's directions and would also present no cognitive distraction. Our study isolated situations in which the phenomenon of cognitive distraction would likely have occurred-just talking on the phone—and no increased crash risk was observed under that condition. Similar results were recently reported by the National Institutes of Health in "Distracted Driving Raises Crash Risk." See Enclosure I.

Accordingly, my opinion, to a reasonable degree of professional certainty, is that:

- 1) New Age's "Always Connected" voice activated technology does not present any increased crash risk since it is specifically designed so that the driver can keep his or her eyes on the road and is not required to look away from the road to read or compose and send texts:
- 2) New Age's "Always Connected" voice-activated technology is in reality an improvement for driver safety because many drivers dangerously manually text and drive(more than 38% according to recent studies) and this technology allows them to do so in relative safety:
- There is no sound scientific evidence to suggest that any cognitive distraction exists for voice-to-text technologies properly designed like "Always Connected" and properly utilized by the driver;
- 4) There is no sound scientific evidence to suggest that "Always Connected" contributed to or caused the accident involved in this case; and
- 5) The crash involved in this case is best explained by a combination of factors other than cognitive distraction, including an inattentive pedestrian wearing head phones who chose to ignore a painted crosswalk within which to cross and any one of a number of potential driver errors unrelated to using the voice-to-text feature.

Very truly yours

Joey Travis, PhD, M.S., P.E.

Enclosure I



January 13, 2014

Distracted Driving Raises Crash Risk

Researchers used video technology and in-vehicle sensors to show that distracted driving, particularly among new drivers, substantially raises the risk for car crashes and near crashes. They also found that drivers eat, reach for the phone, text, or otherwise take their eyes off the road about 10% of the time.

About 6% of drivers in the United States are 15 to 20 years old. But these young drivers are involved in about 10% of accident fatalities and 13% of police-reported crashes resulting in injury. Past studies suggest that doing something else while driving—such as eating, talking on the phone, or texting—raises the risk of crashes.

Researchers at NIH's Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) and the Virginia Tech Transportation Institute analyzed the driving habits of about 150 drivers for 12-18 months. One group included novice teen drivers in



southwestern Virginia who were recruited within 3 weeks of getting their license. Another group of drivers recruited from the Washington, D.C. area had, on average, 20 years of experience and ranged in age from 18 to 72.

The researchers equipped the vehicles with data-acquisition systems developed at Virginia Tech. Four cameras continuously recorded video footage whenever the cars were in motion, while a suite of sensors recorded acceleration, sudden braking or swerving, drifting from a lane, and other data.

When a crash occurred, or drivers had a near miss, the researchers documented whether the drivers were engaged in a distracting activity. They identified episodes when drivers talked, dialed, or reached for a cell phone; reached for another object in the car; adjusted the car's temperature or radio controls; ate, drank, or looked at a crash or something else outside the car; or adjusted a mirror, seatbelt, or window in the car. The researchers compared the frequency of these activities during a crash or near miss to that during segments of uneventful driving.

In the January 2, 2014, issue of the *New England Journal of Medicine*, the team reported that the risks of distracted driving were great for newly licensed teen drivers when engaging in a number of tasks. Compared to when they weren't involved in distracting tasks, novice teen drivers were 8 times more likely to crash or have a near miss when dialing a phone; 7-8 times more likely when reaching for a phone or other object; almost 4 times more likely when texting; and 3 times more likely when eating.

Experienced adults were more than twice as likely to crash or have a near miss when dialing a cell phone. However, they didn't have an increased risk while engaging in other tasks secondary to driving. The act of talking on a cell phone didn't itself increase risk among the adult or teenage drivers. However, talking on a cell phone is necessarily preceded by reaching for the phone and answering or dialing.

This study shows that distraction is an important contributor to increased crash risk. "Anything that takes a driver's eyes off the road can be dangerous," says study co-author Dr. Bruce Simons-Morton of NICHD. "But our study shows these distracting practices are especially risky for novice drivers, who haven't developed sound safety judgment behind the wheel."

RELATED LINKS:

Safe Driving for Distracted Teens:

STAC 40

http://newsinhealth.nih.gov/issue/sep2012/feature2

- Teen Driving Safety: http://www.nichd.nih.gov/news/profiles/researchers/Pages/simons-morton-teen-driving-safety.aspx
- Driving Risk: www.nichd.nih.gov/health/topics/driving
- Motor Vehicle Occupant Protection: Facts About Young Adults Ages 16 to 20: http://www.nhtsa.gov/people/injury/airbags/occupantprotectionfacts/ young_adults.htm 🗗

Reference: Distracted driving and risk of road crashes among novice and experienced drivers. Klauer SG, Guo F, Simons-Morton BG, Ouimet MC, Lee SE, Dingus TA. *N Engl J Med*. 2014 Jan 2;370(1):54-9. doi: 10.1056/NEJMsa1204142. PMID: 24382065.

Funding: NIH's Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) and the National Highway Traffic Safety Administration.

This page last reviewed on March 31, 2014

National Institutes of Health (NIH), 9000 Rockville Pike, Bethesda, Maryland 20892

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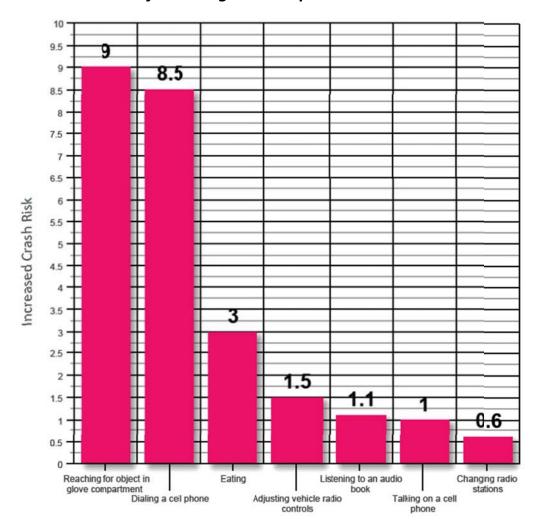
Exhibit C

Naturalistic Car Study:

Demonstrates Increased Crash Risk for a Number of Activities but Not For Talking on Cell Phones

In a recent study, we looked at crashes and near crashes and whether any secondary activities, including dialing a cell phone, talking on a cell phone, reaching for objects within the vehicle other than a cell phone and adjusting vehicle controls, radio, CD or climate control, had occurred within a prescribed amount of time prior to the crash or near crash.

Our study revealed statistically significant increased crash risks from dialing a cell phone, reaching for objects within the vehicle and adjusting vehicle controls but **no increased crash risk for talking on a cell phone.**



	In The United States Di	istrict Court for the
	Southern District Co	ourt of Gardenia
Jamie Walker	:	
Plaintiff	:	
Plaintill		
V.	•	
v.	•	
New Age Auto Company, I	nc :	
	:	
Defendant	:	Case Number CIV 14-952
	:	
	Oral Deposition of	f Casey Driver
		counsel that signing, sealing, filing and
	nd that all objections, ex	scept as to the form of questions, be reserved
until the time of trial.)		
Casey Driver, after having	been duly sworn, was e	examined and testified as follows:
EXAMINATION		
LAAMINATION		
BY- Plaintiff's Attorney:		
or riamem statemey.		
Q. My name is Madison (Crawford and I represer	nt plaintiff Jamie Walker in this lawsuit. Would
you state your full name, p	-	
A. Casey Driver		
Q. I will be asking you qu	estions about an incide	nt that occurred back in March of 2014 and in
which you were involved.	The other attorney, Jere	emiah Johnson represents New Age Auto
Insurance Company and m	ay have questions after	I ask questions. What we're doing today is
	•	atement under oath, very common in cases
	•	nswer in response to the questions will be
• •	hat the attorneys will h	ave for the rest of the case. Do you
understand that?		
A. Yes.		_
•	ur deposition taken befo	ore?
A. No	and delay	and the second s
	_	ng answer. There's only a truthful answer,
and that's what we're look	ing tar vali ta give lis ta	day. So if in response to a question you do

- 1 know something or do remember something, please tell us what it is you know and remember.
- 2 But if you don't know or don't remember, you can say that. Do you understand?
- 3 A. Yes.
- 4 Q. If at any point during the deposition you don't understand a question or a word used in a
- 5 question or don't hear a question, just let us know and we'll repeat it or rephrase it so that you
- 6 have the opportunity to answer it fully and truthfully. But we have to rely on you to tell us that.
- 7 Do you agree to do that?
- 8 A. Yes.
- 9 Q. Do you also understand that if I ask a question and you do answer that question we will
- assume that you heard and understood the question?
- 11 A. Yes
- 12 Q. How old are you and what are you currently doing?
- 13 A. I am 23 and am a second year law student at Gardenia Law School.
- 14 Q. Are you from this area?
- 15 A. Yes I grew up in Lakewood and have lived in Lyons County my entire life.
- 16 Q. We are here today asking you questions because of an incident that occurred on March 14,
- 17 2014. Do you recall the incident?
- 18 A. Yes. That's when I hit the high school kid.
- 19 Q. Let's talk about your car. What were you driving?
- 20 A. It was a 2014 New Age Roadster.
- 21 Q. How long did you have it before the crash?
- 22 A. I bought it new in January.
- 23 Q. How often did you drive it?
- 24 A. Pretty much every day.
- 25 Q. So you were familiar with it?
- 26 A. Yes.
- 27 Q. From what I understand the incident occurred about 3:45 p.m., the weather was clear and
- 28 dry and you were travelling on Magnolia Road and Jamie was walking trying to cross Magnolia
- 29 when struck, is that correct?
- 30 A. Yes.
- 31 Q. Had you ever driven that route before?
- 32 A. Yes. All the time.
- 33 Q. Tell me in your own words what happened.
- 34 A. I had like left law school and was going home. I was maybe a half a mile from law school
- 35 when all of a sudden I saw Jamie right in front of my car—there was nothing I could do and we
- 36 hit. Jamie went on the hood of my car and then after I stopped fell off onto the road.
- 37 Q. Did you see Jamie at any time before the crash?
- 38 A. No. Jamie just appeared in front of my car—like came out of nowhere.
- 39 Q. Did you apply your brakes before the impact?
- 40 A. No
- 41 Q. Did you attempt to swerve to avoid hitting Jamie?
- 42 A. No—I did not see Jamie in time.
- 43 Q. What is the posted speed limit in that area?
- 44 A. 30 miles per hour.

- 1 Q. About how fast were you going just before the impact?
- 2 A. About 30 miles per hour.
- 3 Q. After the crash did you learn what Jamie had been doing just before the impact?
- 4 A. I heard walking across Magnolia.
- 5 Q. But you never actually saw Jamie, so you don't know if that is accurate or not?
- 6 A. I never saw Jamie until the impact.
- 7 Q. Where were you looking in the seconds before the impact?
- 8 A. I was looking straight ahead.
- 9 Q. Why didn't you see Jamie?
- 10 A. I don't know.
- 11 Q. Maybe you were looking at your cell phone just before the impact?
- 12 A. I know for sure I was looking straight ahead and I wasn't looking at my cell phone.
- 13 Q. How can you be so sure?
- 14 A. I was texting with my girlfriend and using the voice-to-text feature in my car. It lets you text
- without holding the phone or needing to look away from the road. It's called "Always"
- 16 Connected" and it's great.
- 17 Q. I am not familiar with that technology. Can you explain how it works?
- 18 A. Sure. It's amazing and one of the reasons that I bought this car. It has the latest in technology
- and lets you safely stay connected while driving. Like when a text comes in it makes a sound so
- you know and the text message appears on the navigation screen. With my cell phone paired
- 21 with the car—Blue tooth—you know like all I have to do is push a button on the steering wheel
- and say "read text" and the car reads the message to me. Then I push that button, say
- 23 "compose text" and just say what I want to respond, it reads it back and if its right then I say
- "send text" and that is it. It's really neat how it works.
- 25 Q. So when the text appears on your navigation screen you need to take your eyes off the road
- 26 to read it?
- 27 A. No that's what so cool about the car—all you do is hit the button on the steering wheel and
- ask it to read the text and it does.
- 29 Q. What about finding the button on the steering wheel—do you need to look down to find it?
- 30 A. No. I've done it so many times it's like I know where it is by just feeling for it.
- 31 Q. About how often would you text while driving?
- A. I did not say I texted while driving. That's against the law and not safe. I said I voice-texted.
- 33 They are not the same at all. Texting you have to look at your phone and away from the road
- 34 and take a hand off the wheel.
- 35 Q. How often would you use that voice-to-text technology while driving?
- 36 A. Pretty much every time I drove the car since I bought it.
- 37 Q. If Jamie was walking across the road as you were told can you think of any reason why you
- 38 did not see Jamie before the impact?
- 39 A. No. I can't understand it. I have never hit anyone or even been in a crash before this.
- 40 Q. After you started voice texting that day did you have any close calls, leave your lane of travel,
- 41 anything like that?
- 42 A. No.
- 43 Q. You don't recall drifting out of you lane and onto the shoulder?
- 44 A. No.

- Q. To your knowledge you stayed in your lane, did not cross into opposing lane of travel or go
- 2 onto the right shoulder?
- 3 A. I stayed in my lane the entire time.
- 4 Q. Did you maintain a constant speed of about 30 miles per hour from the time you left the
- 5 law school until the impact?
- 6 A. Yes
- 7 Q. How long had you been texting before the impact?
- 8 A. Voice-texting not texting. I was voice-texting for just a few minutes. I started as soon as
- 9 the text from my girlfriend came in and that was just a few blocks from the law school. I was in
- 10 the process of composing a response when the impact occurred.
- 11 Q. What were you talking, texting about?
- 12 A. I was late again and my girlfriend was annoyed. Really angry at me because I am often
- late—like you lose track of time studying. I was supposed to be there around 3:00 and I was
- 14 trying to explain—but I got nowhere.
- 15 Q. What do you mean?
- 16 A. We kind of broke up—I was told that since I was so late I should not bother coming over and
- that maybe it would be better for us to see other people.
- 18 Q. How were you feeling at that point in time?
- 19 A. That relationship was really important to me—I begged for another chance...but that did not
- 20 happen. I was told never to call or text again and my clothes were left on the porch in a trash
- 21 bag for me to pick up. We never saw each other again and have not talked to this date. I was
- really upset. And then on the way I was in the accident.
- 23 Q. I am sorry to hear that. Before this day had you ever had any close calls, come close to a
- 24 crash while voice-texting in that car?
- 25 A. No, not that I can remember.
- Q. Did you think it was safe to be concentrating on a texting conversation while driving?
- 27 A. Yes. That's what it said in the New Age Owner's Manual—that this was a safe way to text
- because you did not need to hold the phone or look away from the road—all you needed was
- 29 your voice and the button on the steering wheel. Texting is dangerous but this is safe.
- 30 Q. Have you ever heard the term "inattention blindness?"
- 31 A. No.
- 32 Q. Have you ever read or heard the term "cognitive distractions" applied to driving?
- 33 A. No.
- Q. Do you think that at the time of the impact you were using the voice-to-text technology in
- 35 your New Age Roadster according to the manufacturer's directions?
- 36 A. Yes. Absolutely.
- 37 Q. Thank you—that's all I have.
- 39 BY Jeremiah Johnson, attorney for New Age Auto Company, Inc.
- 41 Q. I just have a few questions. Do you listen to music from time to time in your car?
- 42 A. Sure.

38

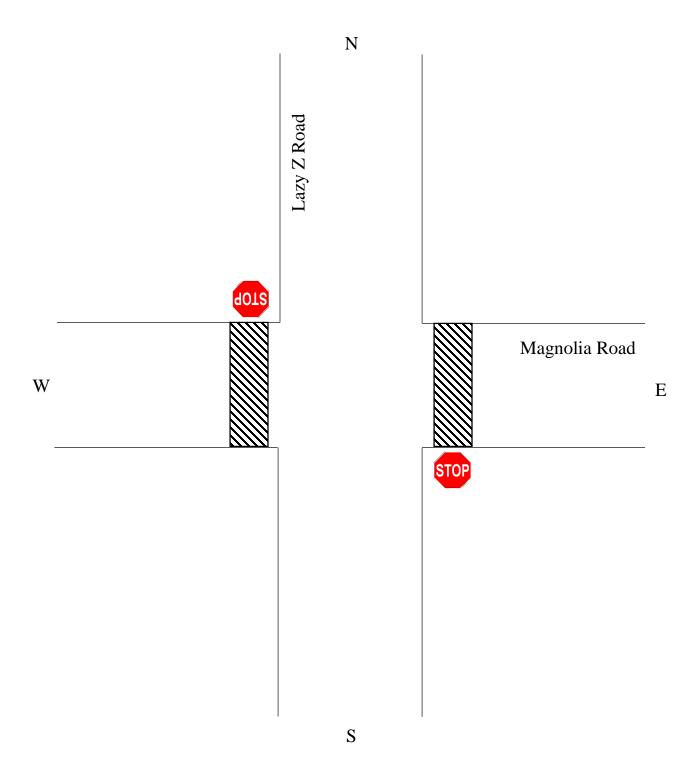
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- 43 Q. How do you do that? Radio or MP3 Player?
- 44 A. Both. Sometimes the radio and sometimes my iPod.

- 1 Q. How do you change the radio station or change music on I Pod?
- 2 A. Radio stations—you can do that right on the steering wheel but sometimes I can't get the
- 3 station I want so I do it manually.
- 4 Q. What do you mean by manually?
- 5 A. Oh just with my fingers I use scan or search or push the buttons.
- 6 Q. To do that you need to look away from the road for a few seconds?
- 7 A. Yes, but I am careful.
- 8 Q. How about with the iPod Player?
- 9 A. I use my fingers to scroll through my music and then I click on the song I want to hear.
- 10 Q. Do you need to look away from the road to do that?
- 11 A. Just for a few seconds—I'm really quick.
- 12 Q. Would you think that changing the music as you described takes you eyes off the road longer
- than using the New Age Voice-to-Text feature?
- 14 A. Absolutely. You don't really even need to look away from the road at all for voice texting.
- 15 Q. Do you think that the New Age voice texting feature is safe when used according to the
- 16 manufacturer's specifications?
- 17 A. I certainly did but I am wondering about that now.
- 18 Q. What do you mean?
- 19 A. Well I hit a kid when I was using it. So I don't know.
- 20 Q. So you were really upset had just been told that your girlfriend wanted never to see you
- again and a few moments later you hit the pedestrian, correct?
- 22 A. I guess so—but it's not like that.
- 23 Q. What do you mean?
- A. Even when you are really upset you can still see out the windshield.
- 25 Q. When you are driving do you occasionally look for items in your car?
- 26 A. Occasionally.
- 27 Q. Give me some examples.
- 28 A. If you drop something, to get something from the glove compartment, from the front seat—
- 29 those sorts of things.
- 30 Q. Now those activities take your eyes off the road, don't they?
- 31 A. Sure. For a few seconds.
- 32 Q. Maybe you did not see Jamie Walker because you took your eyes off the road for a few
- 33 seconds?
- 34 A. I really don't know.
- 35 Q. Thank you.

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37 Deposition concluded at 11:15 a.m.



United States District Court for the Southern District Court of Gardenia

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Court File No.

Plaintiff,

CASE. No. 14-952

v.

NEW AGE AUTO COMPANY, INC. Defendant

JURY INSTRUCTIONS

- 1. The plaintiff claims that defendant, New Age Auto Company, Inc. designed and manufactured its 2014 New Age Roadster in a defective condition and that plaintiff was injured as a result of that alleged defective condition. Plaintiff alleges that the 2014 New Age Roadster which struck plaintiff was defective in that at the time of the accident it was equipped with a factory-installed voice-to text system, "Always Connected," which permitted the driver of the vehicle to listen to and compose text messages while driving, and that the instructions and warnings about "Always Connected" were inadequate. Plaintiff alleges that theses defects were a substantial factual cause of plaintiff's injuries.
- 2. Defendant denies that its product, the New Age Roadster equipped with "Always Connected," was defective in any fashion and denies that any alleged defects in the vehicle were substantial factual causes of plaintiff's injuries. Defendant further alleges that the plaintiff was negligent and that plaintiff's own negligence was a substantial factual cause of plaintiff's injuries.
- 3. In civil cases such as this each party has the burden of proving his or her claims. The

legal standard is called "a preponderance of the evidence." Preponderance of the evidence means the claim is more likely true than not. If, after considering all the evidence, you find the plaintiff's claims are more likely true than not, you must find for the plaintiff.

- 4. Plaintiff contends that the vehicle was defective in two respects:
 - 1. Defective design.
 - 2. Defective because of inadequate instructions or warnings.

With respect to the allegation that the vehicle was defectively designed plaintiff must prove by a preponderance of the evidence that the foreseeable risks of the product could have been reduced or avoided by the adoption of a reasonable alternative design by New Age, and that the omission of the alternative design renders the product not reasonably safe. With respect to the allegation that the vehicle was defective because of inadequate instructions or warnings the plaintiff must prove that the foreseeable risks of harm posed by the vehicle could have been reduced or avoided by the provision of reasonable instructions or warnings by New Age and that the omission of the instructions or warnings renders the product not reasonably safe. For the purposes of your deliberation you should assume that if warnings and /or instructions that Plaintiff contends should have been provided, were in fact provided that the user of the product, in this case Casey Driver, would have followed those warnings or instructions. Plaintiff contends that it was foreseeable that equipping a vehicle with voice-to-text equipment would lead to drivers using that equipment when driving.

5. The defendant claims that the plaintiff was negligent with respect to the manner in which plaintiff crossed the street. The defendant has the burden of proving by a fair preponderance of the evidence that the plaintiff was negligent. The legal term "negligence," otherwise known as carelessness, is the absence of ordinary care that a reasonably prudent person would use in the circumstances presented here. Negligent conduct may consist either of an act or a failure to act when there is a duty to do so. In other words, negligence is the failure to do something that a reasonably careful person would do, or doing something that a reasonably careful person would not do, in light of all the surrounding circumstances established by the evidence in this case. It is for you to determine how a reasonably careful person would act in those circumstances. You

must determine whether the defendant has proven that the plaintiff, under all the circumstances, failed to use reasonable care for his own protection.

- 6. If you find that the product was defective then you must also determine if the defective condition of the product was a substantial factual cause of the accident. In order to prevail plaintiff must prove by a preponderance of the evidence both that the product was defective and the defective condition of the product was a substantial factual cause of the accident.
- 7. Similarly, if you find that the plaintiff was negligent you must also determine if the plaintiff's negligence was a substantial factual cause of the accident. In order to prevail on its allegation that plaintiff was negligent the defendant must prove by a preponderance of the evidence both that the plaintiff was negligent and that the plaintiff's negligence was a substantial factual cause of the accident.
- 8. A substantial factual cause is an actual, real factor in causing the harm, even if the result is unusual or unexpected. A substantial factual cause cannot be an imaginary or fanciful factor having no connection or only an insignificant connection with the harm. A substantial factual cause need not be the only factual cause. The fact that some other causes concur with the alleged defective condition of the product or plaintiff's alleged negligence will not relieve parties from liability as long as each party's conduct is determined to be a substantial factual cause of the injury.
- 9. You are the sole judges of whether testimony should be believed. In making this decision, you may apply your own common sense and everyday experiences. In determining whether a witness should be believed, you should carefully judge all the testimony and evidence and the circumstances under which each witness has testified. Among the factors that you should consider are the following:
- a. the witness's behavior on the stand and way of testifying;
- b. the witness's opportunity to see or hear things about which testimony was given;
- c. the accuracy of the witness's memory;
- d. did the witness have a motive not to tell the truth?;

- e. does the witness have an interest in the outcome of the case?;
- f. was the witness's testimony consistent?;
- g. was the witness's testimony supported or contradicted by other evidence?; and
- h. whether and the extent to which the witness's testimony in the court differed from the statements made by the witness on any previous occasion.
- 10. You need not believe any witness even though the testimony is uncontradicted. You may believe all, part, or none of the testimony of any witness.
- 11. A witness who has special knowledge, skill, experience, training, or education in a particular science, profession, or occupation may give an opinion as an expert as to any matter in which he or she is skilled. In determining the weight to be given to the expert's opinion, you should consider the qualifications and reliability of the expert and the reasons and facts given for the opinion. You are not bound by an expert's opinion merely because he or she is an expert; you may accept or reject it, as in the case of other witnesses. Give it the weight, if any, to which you deem it entitled.
- 12. In general, the opinion of an expert has value only when you accept the facts upon which it is based. This is true whether the facts are assumed hypothetically by the expert, or they come from the expert's personal knowledge, from some other proper source, or from some combination of these.
- 13. In resolving any conflict that may exist in the testimony of expert witnesses, you are entitled to weigh the opinion of one expert against that of another. In doing this, you should consider the relative qualifications and reliability of the expert witnesses, as well as the reasons for each opinion and the facts and other matters upon which it was based.

14. The issues for you to decide, in a	ccordance with t	he law as I give it to you a	are:
1. Was the product defective?	Yes	No	
If you answer question 1 "yes" proce	eed to question 2	. If you answer question 1	"no"
your deliberations are finished and y	ou have found in	n favor of New Age Auto	

2. Was the defective condition of the product a substantial factual cause of the accident? Yes No
If you answer question 2 "yes" proceed to question 3. If you answer question 2 "no" your deliberations are finished.
3. Was the plaintiff negligent? Yes No If you answer question 3 "yes" proceed to question 4. If you answer question 3 "no" proceed to question 5.
4. Was the plaintiff's negligence a substantial factual cause of the accident? Yes No
Irrespective of your answer to question 4 proceed to question 5.
5. Was Casey Driver negligent? Yes No If you answer question 5 "yes" proceed to question 6. If you answer question 5 "no" proceed to question 7.
6. Was the negligence of Casey Driver a substantial factual cause of the accident? Yes No If you answered "no" for either question 5 or 6 proceed to question 7. If you answered "yes" for both questions 5 and 6 proceed to question 8.
7. If you have answered questions 1 and 2 "yes" then answer this question only as to the parties you have found at fault (to have found plaintiff "at fault" you would have answered both questions 3 and 4 "yes" for Plaintiff and to find Casey Driver "at fault both questions 5 and 6 "yes") With the combined fault of the parties equaling 100 % in what % do you allocate fault in this case? Your allocations must total 100% and can only include those determined to be at fault
Fault allocated to plaintiff, Jamie Walker Fault allocated to defendant, New Age Auto Fault allocated to Casey Driver Total 100%

15. With respect to your allocation of causal negligence and determination of those "at fault" the effect of your allocation is that Plaintiff will only be able to recover an amount equal to the percentage of fault allocated to Defendant New Age Auto.