

1 to argue any points or summarize.

2 THE COURT: Let's see what time it is.

3 MR. LAURANS: Yeah.

4 (The proceedings returned to open court.)

5 THE COURT: Okay. We'll resume at 25 after.

6 (A recess was taken.)

7 THE COURT: Okay. I'm sorry. All right.

8 THE WITNESS: I'm waiting on you.

9 THE COURT: That's right.

10 RALPH ROBERT TRESSEL, being sworn by the Court, testified:

11 THE COURT: I'm sorry, I didn't think I'd  
12 been gone so long that I'd forgotten what had happened,  
13 but --

14 DIRECT EXAMINATION by MR. LAURANS:

15 Q Can you please state your name for the record?

16 A My name is Ralph Robert Tressel. I go by the name of  
17 Bob.

18 Q And Mr. Tressel, where are you from?

19 A I'm from a little town called Hiram, Georgia. It's  
20 about 25 miles west of the city of Atlanta, Georgia.

21 Q And could you tell us your education and  
22 qualifications?

23 A Yes, sir. I'm currently self-employed as a forensic  
24 investigator. I was a Cobb County police officer, Cobb  
25 County being the third largest county in the state of

1 Georgia, just north of the city of Atlanta, from 1973  
2 until 1985. While I was with the Cobb County Police  
3 Department, I was promoted from a patrolman to the rank  
4 of detective after 18 months of being employed there.

5 After being in the detective bureau for about  
6 two, two and a half years, I was promoted to the rank  
7 of sergeant and placed in charge of evening watch of  
8 the crimes against persons unit, which is commonly  
9 referred as the robbery-homicide division.

10 I remained in the Cobb County Police  
11 Department until January of 1986, at which time I  
12 resigned my position and took the position with the  
13 Cobb County medical examiner's office as a forensic  
14 investigator. I was with the medical examiner's office  
15 for about two and a half to three years when I was made  
16 operations manager. Operations manager oversees the  
17 daily operation of the medical examiner's office, which  
18 included handling -- primarily, being the chief  
19 investigator for that facility.

20 I'm a high school graduate. I have not  
21 completed college. I've had almost two years of  
22 college. While with the police department and while  
23 with the medical examiner's office, I received training  
24 in death investigations and crime scene investigations  
25 at various universities and schools throughout the

1 United States. I've been trained at the University of  
2 Miami School of Medicine, University of St. Louis --  
3 excuse me, University of St. Louis School of Medicine,  
4 the National Law Enforcement Institute in Santa Rosa,  
5 California, the FBI Academy in Quantico, Virginia, and  
6 various other courses throughout the United States.

7 I've attended three blood spatter  
8 interpretation courses. I've also attended ATF  
9 ballistics and firearms courses during the course of my  
10 training.

11 In all, I have in excess of 700 hours of  
12 events training and death investigation training and  
13 crime scene investigation.

14 Q Have you taught?

15 A I was a certified instructor while with Cobb County  
16 Police Department and with the Cobb County medical  
17 examiner's office. I was certified through the Georgia  
18 police officer's safety and training council as an  
19 instructor in death investigation and in crime scene  
20 analysis.

21 Q Okay. On what topics have you testified as an expert?

22 A I've testified as an expert in areas of blood spatter  
23 interpretation, crime scene analysis, which is the  
24 gathering of forensic evidence at crime scenes,  
25 evaluating that and determining positioning of bodies

1 at crime scenes. I've been qualified as an expert in  
2 the interpretation of crime laboratory reports  
3 pertaining to the forensic evidence that's obtained at  
4 the crime scenes.

5 Q Do you have any expertise in the area of ballistics and  
6 interpreting reports pertaining to ballistics and  
7 bullet paths?

8 A That's one of the things that I was trying to explain  
9 is it's not in ballistics per se as identifying this  
10 weapon fired this bullet, but in determining the  
11 trajectory of the bullets at crime scenes and knowledge  
12 of what different weapons do in their structure, yes, I  
13 have been qualified.

14 Q Can you give us a sampling of the courts around the  
15 United States where you've been qualified as an expert  
16 and testified?

17 A Yes. I've been qualified in various superior courts in  
18 the state of Georgia, the state of Florida, state of  
19 Alabama, state of North Carolina, and in the federal  
20 courts of the northern district of Georgia.

21 MR. LAURANS: Judge, at this time I'd offer  
22 Mr. Tressel as an expert on those topics.

23 MR. KELLY: No objection.

24 THE COURT: Very well.

25 MR. LAURANS: Judge, also, just if it might

1 help later, at this time I'd offer Exhibit 52, which is  
2 not on my list, but it's a summary of Mr. Tressel's  
3 resume and background.

4 THE COURT: His CV? Okay. Is there any  
5 objection to the CV?

6 MR. KELLY: No objection.

7 THE COURT: Very well. The exhibit is  
8 received.

9 Q (By MR. LAURANS) Mr. Tressel, can you tell us how it  
10 is that you came to be involved in this postconviction  
11 proceeding?

12 A Yes. I was contacted or I should say the office that I  
13 work for at Burdon (ph) and Associates was contacted by  
14 North Wind Investigations out of Arkansas, by  
15 Mr. Charles Gay, pertaining to our involvement in  
16 looking at the crime scene of this case and providing  
17 some insight and some analysis of what the crime scene  
18 actually depicts. That was in January of this year,  
19 I'm sorry.

20 Q Can you tell me what materials that you've evaluated?

21 A There's certainly a litany of materials that I have,  
22 but primarily I have various affidavits; I have crime  
23 scene diagrams from the Blue Springs Police Department;  
24 I have some of their investigative reports from the  
25 crime scene from the Blue Springs Police Department. I

1 have the autopsy report on Mrs. Middleton and I have  
2 the crime laboratory reports pertaining to the gunshot  
3 residue and the testing of the shoes that were seized.

4 Q Did you evaluate the trial transcripts?

5 A I did read the trial transcripts of what was provided  
6 to me, primarily dealing with the investigators and the  
7 medical examiner.

8 Q Were you provided a book of some 46 or 48 exhibits?

9 A Yes, I was.

10 Q Okay. Did you evaluate those exhibits?

11 A I did look at those, yes, sir. Not all of them in  
12 depth, but the majority of them, yes.

13 Q And did you evaluate a book of transcripts, deposition  
14 testimonies, and pleadings related to this case?

15 A Yes, sir, I did.

16 Q And let me just hand these to you and ask you if these  
17 look like the books that you evaluated.

18 A Yes, sir. These are identical to what I've seen.

19 MR. LAURANS: Judge, I'll just represent for  
20 the record what he's looked at, we sent him an  
21 identical copy of the two volumes that accompanied the  
22 motion.

23 THE COURT: And I think you should identify  
24 them by the way they're styled.

25 MR. LAURANS: I think this -- the one of

1 withdraw this one that he's looked at, because I don't  
2 really need this in.

3 MR. KELLY: I would like for it to be called  
4 Exhibit 56. It's just easier to handle it that way and  
5 that it's never been offered except to the extent that  
6 the --

7 MR. LAURANS: The individual exhibits have  
8 been offered and received out of it.

9 THE COURT: Exactly.

10 MR. LAURANS: Okay.

11 THE COURT: All right.

12 Q (By MR. LAURANS) Mr. Tressel?

13 THE COURT: Only lawyers would get in that  
14 discussion. I don't think anybody else would. Okay.

15 Q (By MR. LAURANS) Can you identify the book I've just  
16 handed to you?

17 A Yes. This is a book contains the exhibits that were  
18 attached for the motion to reopen 29.15 hearing.

19 Q And what exhibit is that?

20 A It's marked as Exhibit 56.

21 Q And did you review a book -- a copy of this book?

22 A Yes, I have.

23 Q Okay. And this other book, I'll represent to you, is  
24 Exhibit 55. Did you review a copy of that?

25 A Yes, sir, I have.

1 Q Do you need these up here right now?

2 A No, I don't think I do.

3 Q Anything else that you've evaluated in any treatises or

4 books or documents?

5 A I've referred to some books, primarily a book on

6 gunshot wounds by Vince Dimaio, just to review some

7 literature in that.

8 Q Is Mr. Dimaio?

9 A Dimaio.

10 Q Dimaio. Do you happen --

11 A He's a forensic pathologist who is currently chief

12 medical examiner in San Antonio, Texas. He's written

13 several books on gunshot wounds and pertaining to death

14 investigations.

15 Q In the community of those people who study that

16 science, is he widely accepted -- is that book widely

17 accepted?

18 A Yes. It's highly accepted in the forensic community as

19 being accurate, yes.

20 Q Relied upon?

21 A Yes.

22 Q With respect to Mrs. Middleton, can you tell the Court

23 your specific factual findings?

24 A Well, Mrs. Middleton received a close-range gunshot

25 wound to the left side of her face, just to the left of



1 the midline at about the left eye. It's described as  
2 being approximately one to one and a half inches, if I  
3 can remember correctly from the autopsy report, to the  
4 left of the midline and approximately three and a half  
5 inches down below the top of the head. So that's  
6 somewhere in this general vicinity right here  
7 (indicated).

8 The bullet penetrated through and pitted the  
9 right side of the head approximately two and a half  
10 inches below the top of the head. And if I remember  
11 correctly, the measurement's about three and a half  
12 inches from the midline back to it.

13 The entry wound displayed a four by four and  
14 a half inch area of powder stippling, gunpowder  
15 stippling, which the laboratory determined that they  
16 got a five by five inch stippling pattern at 12 inches  
17 in test firing.

18 That the bullet, once it exited  
19 Ms. Middleton, it struck the door framing of the door  
20 in the dining room in which the incident took place,  
21 ricocheted off the door framing and struck the ceiling  
22 approximately four feet out from the door framing, and  
23 then was found across the room on a towel.

24 Q With those measurements, were you able to conduct any  
25 calculations or perform any calculations?

1 A Well, yes. One of the things that I was interested in  
2 is, can we determine approximately what the angle was  
3 of departure? By departure, I mean once this bullet  
4 had penetrated through and struck the wall, what angle  
5 did it ricochet off of the door framing and strike the  
6 ceiling? Well, we knew the distance was measured at  
7 four feet out from the wall and we knew the distance  
8 up. So I did a graph to portray the measurements. And  
9 using the graph, I came up with a departure angle or  
10 ricochet angle of 59 degrees from the door frame.

11 Q Okay. Now let's kind of put this in English. Once  
12 you've got those angles established, how are you able  
13 to use those angles?

14 A Well, the angles establish that we know that the  
15 bullet, because of the ricochet, is upward. In other  
16 words, the bullet didn't hit and bounce downward, that  
17 the bullet was traveling in an upward trajectory when  
18 it came through Mrs. Middleton.

19 We also know, based on the measurements from  
20 the autopsy report, that the bullet was traveling from  
21 what we determined in forensics is traveling from her  
22 left to her right, from the front to the back, and  
23 traveling upward at a slight angle. The bullet, in an  
24 upward trajectory, then struck the door framing,  
25 bounced off, traveled and struck the ceiling. So we

1       know it's going upward.

2                   One of the reasons I looked at Dimaio's book  
3 was it talks about ricochet angles. One of the  
4 problems with that is, is the ricochet angles that it  
5 talked about in all the forensic books and including  
6 he -- Dimaio references a book that was written in the  
7 early 80's by Haag, H-A-A-G, all deal with ricochet  
8 bullets before striking the human body. They're all  
9 different surfaces strikes. What does the impact  
10 happen? And in almost all the testing in the initial  
11 ricochet sequence, bullets that struck at angles, the  
12 departure angle was less than or equal to the impact  
13 angle. In other words, bullet comes in at 30 degrees,  
14 it's going to ricochet off at less than 30 degrees.  
15 Well, that's with a bullet that is undeformed and  
16 travel at normal speed into different surfaces.

17                   Also in the textbooks we learn that a .38  
18 caliber and certain caliber pistols, beginning at about  
19 45 degrees, when striking sand, begin to embed and  
20 don't ricochet. They've reached an angle where  
21 ricochet does not occur.

22                   So what I wanted to do was try and determine,  
23 what was the angle the bullet traveled from the wall to  
24 the ceiling, and then knowing that it either struck at  
25 an angle less than or equal to that, to try to

1 determine where Mrs. Middleton would have been standing  
2 at the time she received the fatal gunshot wound.

3 Q Okay. So now you're getting on exactly where I'm  
4 getting. Once you draw that line from the ceiling back  
5 down to the door back into Ms. Middleton's head,  
6 correct?

7 A That's correct.

8 Q You're also able to draw a line through her head,  
9 correct?

10 A (The witness nodded.)

11 Q Ultimately, through those mathematical calculations of  
12 those angles, what -- where is that going to take you?

13 A Well, that's the thing we want to know, where does the  
14 weapon have to be in order to form these angles?

15 Q Okay. So would it be fair to say what your task was in  
16 this case was to reconstruct where, if Mr. Middleton  
17 was the shooter, where he would have been?

18 A In my sense of feeling, where the weapon had to be when  
19 it was fired to cause the bullet wound that she  
20 received and to also cause the strike on the wall and  
21 then the bounce off, whether he was the --

22 Q And you didn't take any of these measurements yourself,  
23 correct?

24 A These were all from the Blue Springs Police Department  
25 crime scene diagrams.

1 Q They didn't follow through with these calculations,  
2 correct?

3 A I saw nothing in the material that I received that they  
4 ever did a calculation as to where she had to have  
5 been.

6 Q So they did measurements, correct?

7 A They did.

8 Q But they didn't follow it with calculations to kind of  
9 back-calculate where the gun would have been when it  
10 went off?

11 A Well, I saw nothing to indicate that they took the  
12 measurements from the autopsy and the information they  
13 finally got from the laboratory about muzzle-to-target  
14 distance to go back and try to determine where she had  
15 to be.

16 Q But you've done that?

17 A I have done that, yes.

18 Q Now when you're talking about ricochet angles and you  
19 talk about there's an angle of the bullet going up from  
20 her head to the door frame, correct?

21 A That is correct.

22 Q And then when it hits the door and bounces off, that's  
23 the ricochet angle?

24 A That's the ricochet angle.

25 Q And the ricochet angle is going to be less than the

1 angle of the bullet going up, correct?

2 A That's in a pristine condition without going through a  
3 human body. We have a bullet that once it penetrates  
4 through the body has lost a lot of velocity. It's also  
5 been deformed, and we don't know whether it's truly  
6 flying perfectly straight or beginning to tumble.

7 Q Let's take the body out of it for a second.

8 A Uh-huh.

9 Q A bullet goes up at 30-degree angle and it bounces off  
10 something. That angle, the ricochet is going to be  
11 less, correct?

12 A Less than 30 degrees.

13 Q And what physics factor makes it go less?

14 A Because when it impacts a surface, it is absorbing  
15 energy.

16 Q It loses energy to the surface of the door frame?

17 A That's correct. It loses its energy. Once it loses  
18 its energy, it doesn't deflect as much.

19 Q So it only makes sense that when a bullet goes through  
20 a human skull before hitting the door frame, it's not  
21 only going to lose that energy that you'd ordinarily  
22 see in a testing, it's going to probably lose even more  
23 because it went through more material?

24 A Well, it's going to lose about probably close to  
25 50 percent of its energy going through the body.

1 Q And are these things that you were able to factor in,  
2 given the measurements from the Blue Springs police?  
3 A Yes.  
4 Q Any other findings with respect to this aspect?  
5 A Well, findings indicate that if we use the 59-degree  
6 angle and we bring it down to the -- create that to  
7 make the impact angle where it's coming through, taking  
8 the measurements that were provided, the barrel of the  
9 weapon, using the 12-inch muzzle-to-target that the  
10 crime lab gave us on a five by five pattern, the barrel  
11 of the weapon has to be at a 59-degree angle pointed  
12 upward towards that door frame from a height of four  
13 feet one inch off the floor.  
14 Q How do we know that? What -- first of all, let's start  
15 with this. How high off the ground was the bullet when  
16 it hit the door frame?  
17 A Five feet six inches.  
18 Q And it was going up at the time it hit the door frame,  
19 correct?  
20 A That's correct.  
21 Q So that -- how tall was Katherine Middleton?  
22 A Five feet six inches.  
23 Q But the bullet was going up, right?  
24 A That's correct.  
25 Q So she would have had to be below five feet six?

1 A She's got to be below that in order for the bullet to  
2 strike that high.

3 Q And then when you traced the bullet --

4 A When you follow the trajectory line back to -- you  
5 carry the trajectory line --

6 Q -- back to the gun?

7 A -- back to the floor. And then you go back and you try  
8 to determine, What are our distances? Well, we know  
9 from the crime scene that her head was approximately  
10 two inches from the door when -- at the exit point.  
11 The head's about a foot wide, so we add a foot there.  
12 And then we add the 12 inches that the crime lab says  
13 it had to be fired from, the muzzle to target. We then  
14 plot that on this graph, and that comes to four feet  
15 one inch off of the floor the weapon had to be fired  
16 from.

17 Q Now is that the highest the weapon could have been or  
18 lowest?

19 A That's the highest it could have been. It could have  
20 been much lower than that, because if you bring the  
21 angle down and shallow out the angle, then it takes the  
22 weapon closer to the floor.

23 Q So it's possible the weapon couldn't have been higher  
24 than four foot one inch?

25 A Could not have been any higher than that, no, sir.



1 Q But could have been lower?

2 A Could have been much lower.

3 Q Did you bring any exhibits or any things that would  
4 help you demonstrate and explain?

5 A Yes, I did.

6 Q Can you show us what you brought?

7 A Sure. What I did was I took a --

8 Q Hold on a second. Tell me what you brought.

9 A I brought a Styrofoam head.

10 Q Yeah.

11 A It's a wig head. And a dowel rod.

12 Q And this head isn't necessarily perfectly similar in  
13 any fashion to Katherine Middleton's head, it's just a  
14 Styrofoam head from a beauty salon?

15 A That's correct. Styrofoam head from the beauty salon.  
16 I don't have any measurements of Mrs. Middleton's head,  
17 so I can't correlate this being accurate to her head at  
18 all. It's just an idea to give us some idea of what  
19 the trajectory was of this bullet.

20 Q So would that aid you in your explanation of these  
21 angles?

22 A Yes, definitely.

23 Q And what else did you bring?

24 A I brought a dowel rod.

25 Q And what purpose does that serve?

1 A Well, this serves to -- this would be the bullet path.

2 Q And would that aid you in explaining to us what  
3 transpired?

4 A Most definitely.

5 Q Through a demonstration?

6 A Demonstration. That's what this is for.

7 MR. LAURANS: I'd move at this time that he  
8 be allowed to demonstrate with these two props, knowing  
9 that they're not precise.

10 THE COURT: Just for the purpose of showing  
11 the trajectory that the witness has talked about, you  
12 may proceed.

13 A Okay. Well, with the entry wound as described in the  
14 autopsy report is about to the left side of the eye  
15 right in here. And then the exit wound was on the  
16 right side of the head. And these are fairly close in  
17 measurement. But what I did was stick the dowel rod  
18 through to show the angle of this -- that this is  
19 going.

20 Now the thing that I did to try to understand  
21 this is this tip on the dowel rod indicates the two  
22 inches from the head to the wall where the head strike  
23 was, based on the blood spatter. You pull that back to  
24 the edge of the head. And on this end we have -- this  
25 is a 12-inch mark, which is where the crime lab got the

1 five by five. And then there's some testimony it could  
2 have been as close as eight inches, which is the  
3 beginning of the red mark. So the barrel is somewhere  
4 in this general area where the shot is fired.

5 Now the thing that we have to remember is  
6 that if she's standing erect, she's five foot six and  
7 the entry point to the wall is five foot six. So she  
8 has to be bent over. So we have to give it an angle of  
9 about 59 degrees.

10 And then we begin to see this is about the  
11 same angle. But the head can be anywhere on this  
12 plane. So if she's standing almost erect and slightly  
13 bent over, we get almost the same indication.

14 So we just have to remember that her head has  
15 to be on the plane of the dowel rod or the trajectory  
16 of the bullet in order to receive the gunshot wound.

17 Then I took this to try to determine what  
18 forensic evidence should we expect to see depending on  
19 how the weapon is fired? The weapon is a .357 Magnum,  
20 a six-shot revolver, and has a cylinder gap and has, I  
21 believe, a four-inch barrel, if my memory serves me  
22 correctly.

23 Well, we know that the stippling gunpowder  
24 comes out the end of the barrel and essentially tattoos  
25 the left side of the face of Ms. Middleton. And there

1 was some contention that Mr. Middleton, when he fired  
2 the weapon, had a hold of her or had his arm up against  
3 her when he fired the weapon. Well, that presented a  
4 little bit of a concern in looking at what forensic  
5 evidence did we have in this case.

6 If he has his hand around her throat or if he  
7 has his arm around her throat, he's got his arm  
8 directly in line with what we call the cylinder gap of  
9 the weapon, the cylinder gap being where you close the  
10 cylinder and the barrel is right here, goes out, and  
11 the weapon's fired.

12 Particles of unburnt gunpowder, just like we  
13 see stippling the face of Ms. Middleton, blow out the  
14 sides. He was wearing a white dress shirt, yet his  
15 shirt had no burn marks on it whatsoever and there was  
16 no gunshot residue found on his shirt. That was the  
17 first thing that was of concern.

18 The second thing is that once this bullet  
19 penetrates through her head, she's immediately going to  
20 want to drop, in less than a tenth of a millisecond, to  
21 the floor. As she begins to fall, she falls to her  
22 left -- left side and that's how she's found by law  
23 enforcement when they get there.

24 The perpetrator is off to her left side. Has  
25 her against the wall, because we know this is

1 two inches from the wall. So she begins to fall this  
2 direction. Yet the perpetrator, or in Mr. Middleton's  
3 case his white shirt, received no gun spatter -- excuse  
4 me, no blood spatter from the rebound off the wall, no  
5 blood spatter from the entry wound, and he had no blood  
6 on his clothing whatsoever.

7 Q In your opinion is that reconcilable? Is it possible  
8 he still could have fired that gun and not had any of  
9 that on him, that close range?

10 A Not with the scenario that was presented by the State  
11 at trial.

12 Q There's one other measurement I want you to talk about  
13 then, all right? How much room was there for all this  
14 to take place in?

15 A There was less than four feet.

16 Q From what to what?

17 A Well, the crime scene drawing shows that Ms. Middleton  
18 was -- body who -- is her head was four feet from the  
19 wall where the door was. And the drawing shows her as  
20 being slightly up under the edge of the dining room  
21 table. So that means there's less than four feet  
22 distance between the dining room table and the wall  
23 where these two people had to be standing for this  
24 shooting to take place, if the State's theory was  
25 correct.

1 Q Based on the calculations that you've explained and  
2 given that four-foot window, have you reached a  
3 mathematically or an empirically verifiable conclusion  
4 as to where a human being would have had to have been  
5 if a second human being, otherwise the alleged  
6 perpetrator, Mr. Middleton, would have had to have been  
7 to fire that gun?

8 A He'd had to have been within a -- less than a two feet  
9 area of the victim at the time the gun was fired. Or  
10 because of the angle of 59 degrees and dropping it  
11 down, he'd have had to be up under the edge of the  
12 table.

13 Q So given -- that's what I'm asking. Given the crime  
14 scene diagram, where would he have had to have been  
15 positioned?

16 A Up under the edge of the table.

17 Q How high was that table?

18 A I don't have a measurement on the table. I can only  
19 assume, based on the standard dining room table.

20 Q Have you seen a picture of that table in the exhibits?

21 A I have seen a picture of it.

22 Q It wasn't a bar stool table?

23 A It's not a bar. It looks like it's about 39 inches off  
24 the ground, give or take.

25 Q Was it much higher or about the same as this table

1 right here in this courtroom?

2 A It's probably about the same height as that table.

3 Q So he'd have to be crouched under that table to fire

4 that gun?

5 A He'd have to be somehow underneath the table to fire it

6 and in the position that his body is not exposed to her

7 falling onto him.

8 Q And to do that, he'd have to fire the gun and get out

9 of there?

10 A He'd -- he's got less than a tenth of a millisecond to

11 clear before she falls to the ground.

12 Q So he's got that time restriction and he's got that

13 being crouched under the table?

14 A He's got a table there.

15 Q Okay. Have you formed an opinion as to whether there

16 is a statistical likelihood that the State's scenario

17 could have happened, given the math that you've carried

18 out?

19 A With the evidence that I've got and the things that

20 I've done on this case, I don't see any way that the

21 State's theory of this case is validated by the

22 forensic evidence that is present and also not present.

23 Q Now, in the police reports described, did you read

24 police reports which ascribed to Mr. Middleton a

25 statement about an accidental shooting?

1 A Yes. Mr. Middleton -- excuse me.

2 Q Go ahead.

3 A Mr. Middleton stated that the first officer on the  
4 scene, that she was walking around the end of the  
5 table, it appeared that she dropped the gun and reached  
6 for it and it went off. And he described her as being  
7 bent over. Well, that perfectly fits the scenario and  
8 the trajectory that she had to be bent over at the time  
9 she received the gunshot wound.

10 Q Have you also evaluated gunshot residue documents?

11 A Yes, I have.

12 Q Are they consistent with the State's theory that  
13 Mr. Middleton was the perpetrator?

14 A Well, his tests were negative.

15 Q Is that consistent with a finding of guilt?

16 A No, it's not.

17 Q What about her gunshot residue documents?

18 A Well, apparently we have some kind of conflict with the  
19 gunshot residue tests on Ms. Middleton. Only the right  
20 hand was submitted for testing. There was no left hand  
21 sample submitted.

22 Q Is it possible, given an ordinary build of a human  
23 being, that she could have, with those mathematical  
24 measurements, shot herself with her right hand?

25 A Highly unlikely. I mean you never want to say



1 anything's totally impossible, but if she had fired  
2 it -- if Mrs. Middleton had fired it with the right  
3 hand, she would have had to bring it across her body  
4 and expose her arm to the cylinder gap.

5 If she'd have fired it with her left hand,  
6 however, and pulled the weapon with the trigger with  
7 her thumb, the gap is out here, she's not going to get  
8 any burns to her arm or anything. She can fire it with  
9 her left hand using the thumb to pull the trigger.

10 Q And those gunshot residue documents do not rule out  
11 that possibility, do they?

12 A There's no test performed on the left hand, apparently.

13 Q So it's not excluded as a theory?

14 A Certainly not. If the test came back positive, then  
15 that would indicate that was the hand the weapon was  
16 held in.

17 Q In your law enforcement background, have you received  
18 training in the procedures for documenting such tests?

19 A Yes, I have.

20 Q Have you examined the copies of those gunshot residue  
21 documents?

22 A I have.

23 Q Are they procedurally written properly or improperly?

24 A Well, they appear to be -- the one pertaining to the  
25 sample that's on Mrs. Middleton appears to be altered,

1 with no indication as to why it was altered.!

2 Q You didn't see a subsequent report explaining it?

3 A Didn't see a subsequent report or didn't see a comment  
4 on the face sheet of that paper documenting why the  
5 change was made.

6 Q Did you make any other findings in connection with this  
7 case?

8 A The only other finding that I had from a crime lab  
9 report was involving the shoe print on the wall, that  
10 one foot ten inches in from the door. The shoe print  
11 is described as being behind some decorative statue and  
12 a potted plant or a plant of some sort. And it's  
13 described as being a heel print of a shoe.

14 According to the reports that I have, the  
15 shoe was checked and matched, supposedly this shoe  
16 print, but yet there was nothing found on the shoe to  
17 match it up to the gypsum board that the wall was made  
18 of.

19 I did some measurements and some testing,  
20 it's only two feet ten inches off the floor, which is  
21 fairly low, and it's a heel print, it's not a toe  
22 print. And it's inboard by one feet ten inches from  
23 the door frame. It's virtually impossible for a person  
24 to get your heel on the wall at that height with enough  
25 force to make an indention of it and still maintain

1 your balance and still be in proximity to the victim  
2 and the shooting in this case.

3 Q And is it fair to say that it would be even more  
4 difficult to also have a hand or an arm up on their  
5 throat and holding a gun all at the same time?

6 A You'd have no balance. You could easily be pushed  
7 over. I don't see any way that could happen.

8 Q And still be under the table?

9 A And still be under the table and not get any blood or  
10 gunpowder residue on you.

11 Q In February of 1991, do you recall what line of work  
12 you were in?

13 A February of 1991, I was still working for Cobb County  
14 medical examiner's office and working for Dr. Joseph  
15 Burton.!

16 Q Were you doing anything else?

17 A I was doing consulting on the side on homicide and  
18 death investigation cases that were not within the  
19 jurisdictional boundaries of Cobb County.

20 Q Were you testifying outside of Cobb County?

21 A I was testifying outside of Cobb County for defense  
22 attorneys and for district attorneys during that time  
23 frame.

24 Q Were you available to testify at that time?

25 A Yes, I was.

1 Q Are there others around the country who you know to be  
2 similarly qualified as you?

3 A Oh, yes.

4 Q Back in 1991?

5 A Yes.

6 Q You weren't the only guy in the country?

7 A Oh, no, definitely not.

8 Q You're not the needle in the haystack expert?

9 A No.

10 Q We could have found another expert in another region of  
11 the country who could have done the same math, correct?

12 A Oh, yes.

13 Q And these are mathematical, empirical, scientific  
14 calculations?

15 A These are the ways we are taught to try to determine  
16 trajectory angles and to help determine how an incident  
17 takes place.

18 Q Is there any subjectivity within what you've done here?

19 A The only subjectivity is from using the 59-degree angle  
20 of impact, because we have no way of calculating that  
21 at this time, and that's merely giving it an equal to  
22 the departure angle.

23 Q You mean you're giving the State the benefit or the  
24 defendant the benefit?

25 A I'm giving the State the benefit in using that.

1 Q Did -- I'm going to hand you what's been marked as  
2 Movant's Exhibit 53. Did you compile this?

3 A Yes, I did.

4 Q And what is that?

5 A That's my report prepared on this case.

6 Q Your testimony today in any way inconsistent with this  
7 report?

8 A I don't believe so.

9 MR. LAURANS: Judge, just as an aid to the  
10 Court, I've provided this to Mr. Kelly well in advance,  
11 and I would just offer this.

12 THE COURT: Any objection?

13 MR. KELLY: No.

14 THE COURT: Very well. 53 is received.

15 MR. LAURANS: This is your copy, Judge.

16 THE COURT: Thank you very much.

17 MR. LAURANS: I don't have any further  
18 questions.

19 CROSS-EXAMINATION by MR. KELLY:

20 Q Mr. Tressel, your conclusion, given where the shooter  
21 had to be or how the weapon had to be placed, more  
22 accurate, is based on what I would gather from your  
23 testimony is sort of a trajectory-ricochet-science  
24 theory; is that correct?

25 A It's measuring of known trajectory in this case. We do

1           have a known trajectory.

2       Q    And I understand that, but ricochet theory plays a big  
3           part in how you're figuring the path and likely  
4           placement; is that correct?

5       A    Not the departure angle. The incident angle is the one  
6           that can be less than 59 degrees.

7       Q    Okay. But that assumes certain variables, and one of  
8           those variables is, you have a pristine projectile?

9       A    No, sir. It's not assuming there's a pristine  
10          projectile. There's why I'm saying is the angle of  
11          59 degrees is the maximum angle it could have struck  
12          at.

13      Q    And this is based upon simply the entrance and exit?

14      A    Well, the combination of the entry and exit and knowing  
15          that a bullet that ricochets is either equal to or less  
16          than the impact angle, under pristine conditions.

17      Q    Right. And things that might make it not pristine  
18          could be variables such as?

19      A    Oh, striking an intermediate target, such as the body  
20          of Mrs. Middleton.

21      Q    Okay. That adds a whole host of possible problems,  
22          does it not?

23      A    There's no way of fully, 100 percent, determining  
24          exactly the impact angle of that bullet.

25      Q    Okay.

1 A There is a way, but we don't have anything to measure  
2 it with in this case.

3 Q Okay. And certainly movement of the players would make  
4 a difference, correct? If the body was in motion at  
5 the time, if the firearm was in motion at the time,  
6 would that also not play into it as -- I mean you're  
7 talking about stationary objects when you're doing  
8 this.

9 A I'm talking about when the weapon was fired, this is  
10 where it had to be.

11 Q Okay.

12 A Whether it's in motion or not doesn't matter. When it  
13 fired, it had to be in these certain positions in order  
14 to cause this wound and to cause that ricochet angle.

15 Q Okay. And the ricochet angle being that that happened  
16 after it exited the body?

17 A After it exited the body, yes.

18 Q And certainly the body's effect upon that projectile is  
19 somewhat undetermined?

20 A Well, we know it continued on its path. It didn't lose  
21 all its energy, because it had enough energy to dig  
22 into the wall and then rebound off, made a mark in the  
23 ceiling. But it didn't have enough energy, excuse me,  
24 enough energy when it got to the ceiling to embed in  
25 the ceiling.

1 Q Right.

2 A So we know that it still had a significant amount of  
3 energy upon exit.

4 Q And we -- but we don't know whether a deformity that  
5 occasioned upon a projectile either occurred as it  
6 passed through the victim or whether it occurred upon  
7 the ricochet?

8 A Well, I can tell you I'm sure there is some deformation  
9 that occurred passing through the body, and then  
10 there's additional deformation once it impacts the  
11 wall.

12 Q And you've been in business a long time, from what it  
13 sounds like; is that correct?

14 A Seems like forever sometimes, yes.

15 Q You know, I'll submit to you that I had a conversation  
16 not long ago with a medical examiner who is always  
17 quite difficult. And his testimony was, Bullets do  
18 wild things when they're inside of a body. They  
19 sometimes go different directions and it's just hard to  
20 know all the time what happens.

21 A .22's and .280's are notorious for that, but when you  
22 get into a .357 Magnum, velocities are too great. It  
23 doesn't do wild things.

24 Q But it -- a body could have an impact upon a  
25 projectile, we can --



1 A It's going to alter the projectile some, yes.

2 Q And when you talked about it, you said you based part  
3 of your conclusion upon, for lack of a better word, a  
4 learned treatise by a medical examiner; is that  
5 correct?

6 A That's correct.

7 Q And so you're basing your ultimate conclusions upon a  
8 theory of another person; is that correct?

9 A Well, it's not just of him, it's -- he cites other  
10 individuals in his work also that have all done the  
11 same type of testing with similar results.

12 Q Okay. But largely, that's where that comes from?

13 A That's their testing, yes.

14 Q Okay. Jumping over now to the gunshot residue issue,  
15 is it possible for -- would it have been possible for  
16 one to fire the weapon in this case and vigorously wash  
17 and scrub their hands and then be administered the  
18 gunshot test and come up negative?

19 A Yes.

20 MR. KELLY: Okay. That's all I have, Judge.

21 REDIRECT EXAMINATION by MR. LAURANS:

22 Q Mr. Tressel, is it -- is it possible for the bullet to  
23 enter the head and somehow pick up energy on the exit  
24 of the head to create a greater ricochet angle?

25 A No.

1 Q The head's going to absorb some of the energy?

2 A It's going to absorb about 50 percent of a .357 Magnum.

3 Q So your calculations are maximum height?

4 A Maximum height, yes.

5 Q And absolutely best the State could ever hope for is

6 four foot one inch?

7 A There's no way it could go any higher based on the

8 angle that it goes through her body and where it

9 strikes and where it goes afterwards.

10 Q Any unknowns are actually going to lower the four foot

11 one?

12 A It's going to lower the height of the weapon.

13 Q So if a bullet did a crazy thing with respect to

14 Katherine Middleton, we can be assured it's not going

15 to give you a finding of greater than four foot one,

16 but less than four foot one?

17 A No. In my opinion it could not be any greater than

18 four foot one inch.

19 Q And that's pretty much simple physics, the absorption

20 of energy, correct?

21 A That's correct.

22 Q Is there any way that --

23 MR. LAURANS: Could I approach, Judge?

24 Q (By MR. LAURANS) Is there any way that the

25 perpetrator, if there was a perpetrator, could hold a

1 gun at this angle downwards to the head, have the  
2 bullet go in the head, do something crazy and then  
3 shoot out, ricochet off the door, and still give the  
4 same measurements?

5 A Not with a .357 Magnum.

6 Q And not from that close of range?

7 A Not that close of range. Muzzle -- the velocity of the  
8 .357 Magnum is documented, depending on ammunition, to  
9 be anywhere from 1,100 to 1,400 feet per second.

10 Q As you're sitting here today, can you state that your  
11 opinions are within a reasonable degree of scientific  
12 and mathematical certainty?

13 A Yes, sir, I can.

14 Q And to what -- to what degree are you certain?

15 A In my position, I believe it's 100 percent certain.

16 MR. LAURANS: Thank you. I don't have any  
17 further questions, Judge.

18 MR. KELLY: Nothing from the State.

19 THE COURT: Can this witness be excused?

20 MR. LAURANS: Yes.

21 MR. KELLY: Yes, Your Honor.

22 THE COURT: Thank you, sir. You are excused.

23 You may step down.

24 (Witness excused.)

25 MR. LAURANS: Judge, I'm down to my last