

1 THE COURT: Everyone be seated, please.
2 THE COURT: Ready for your next witness.
3 MR. O'CONNELL: Yes. He's gone to get
4 him, Your Honor.

5 THE COURT: What is his name?

6 MR. O'CONNELL: Charles Linch.

7 THE COURT: Charles Linch.

8 (Witness sworn by the
9 Court.)

10 THE COURT: Have a seat right up here,
11 sir.

12 All right.

13 MR. CLAYTON: Thank you, Your Honor.

14 CHARLES LINCH,
15 called as a witness on behalf of the State of Texas,
16 having been previously duly sworn to testify the truth,
17 the whole truth, and nothing but the truth, testified on
18 his oath as follows:

19 DIRECT EXAMINATION

20 BY MR. CLAYTON.

21 Q Please state your name for the jury.

22 A Good morning. My name is Charles Linch.
L-i-n-c-h.

23 Q Would you tell the jury what you do for a
24 living, sir?

1 A The last three months I've been working as a
2 forensic consultant in Dallas. Prior to that I was
3 employed as a trace evidence analyst at the Southwestern
4 Institute of Forensic Sciences in Dallas.

5 Q Since the time that -- or can you tell the jury
6 a little bit about your training academically and also
7 professionally in regard to your position as far as
8 being a trace evidence analyst?

9 A I've worked at the Institute of Forensic
10 Sciences in Dallas for the last fifteen years off and
11 on. I've worked in trace evidence for the last seven
12 years. Five and a half years of that was in Dallas and
13 a year and a half of that was for the Harris County
14 crime lab in Houston. I have a bachelor of science from
15 the University of Houston. I have attended the FBI hair
16 and fiber school, the FBI forensic serology school, the
17 FBI DNA analysis school. In addition to working in the
18 crime lab in Dallas I've worked part time at UT
19 Southwestern Medical School in Dallas as a research
20 electron microscopist.

21 Q Mr. Linch, at the current time you're working
22 as a consultant. Are you also possibly considering
23 taking some other position with the laboratory?

24 A I've been entertaining various options.

25 Q Now, Mr. Linch, you've testified in the past in

1 cases involving the analysis of hair, fiber, and other
2 trace substances; is that correct?

3 A Yes, sir.

4 Q And can you tell us whether or not you've ever
5 had occasion to testify in Midland, Texas, before in a
6 case called -- entitled State of Texas versus [REDACTED]
7 [REDACTED]?

8 A No, sir. [REDACTED] was a murder victim
9 here, but I did testify in that case here, and I've
10 testified in other Midland cases, but I don't remember
11 the style of the case.

12 Q Okay. [REDACTED] was a victim in a case
13 that you testified here then?

14 A That's right.

15 Q Also, have you had occasion to testify in a
16 series of cases involving Kenneth MacDuff?

17 A I testified in Houston and in Seguin, Texas, in
18 matters related to the trial of Kenneth Allen MacDuff.

19 Q Mr. Linch, obviously you've worked for
20 laboratories that are run essentially by your Dallas
21 County or the State, but have you had occasion as a
22 professional to work or testify having been called by
23 both the Defense and the State?

24 A Yes, sir. I have.

25 Q Can you name a case for the jury that you

1 testified in which you were a defense witness?

2 A I testified for the defense in a case involving
3 the disappearance and murder of three nine year old boys
4 in West Memphis, Arkansas.

5 Q Now, Mr. Linch, back in September of 1993 can
6 you tell the jury where you were working at that time?

7 A I was a trace evidence analyst at the
8 Southwestern Institute of Forensic Sciences in Dallas.

9 Q And that particular institute, is that a part
10 of the Dallas Medical Examiner's office?

11 A The Institute of Forensic Sciences is two
12 departments of Dallas County. One department is the
13 Medical Examiner's office and the other department is
14 the Criminal Investigation Laboratory. I've worked both
15 in the Medical Examiner's office and the Criminal
16 Investigation Laboratory part of the Institute.

17 Q How is it that in your position in Dallas
18 County that Collin County evidence is routed to you or
19 how is it you get involved in a Collin County case?

20 A Collin County has no crime lab, per se. They
21 have access to personnel trained in fingerprint
22 identification and collection, but there is no forensic
23 microscopy service in Collin County and Collin County
24 sits adjacent to Dallas County so we have a working
25 relationship with Collin County.

1 Q Mr. Linch, I'm going to at this time ask you a
2 little bit about whether or not you've had occasion in
3 your professional capacity to make comparisons of hair
4 and had occasions then to testify about those analyses
5 in court?

6 A Yes, sir. I have.

7 Q On many occasions?

8 A Many times.

9 Q Mr. Linch, can you tell the jury exactly what
10 is hair?

11 A Hair is the thread-like structure of protein
12 that grows from the bodies of most all mammals. It --
13 during the embryogenesis, the epithelium, or the skin,
14 vaginates, forms the hair follicle. From that hair
15 follicle is the subsequent hair growth. Hair begins to
16 grow in the uterus. As we mature we grow and replace
17 different types of hairs. Different types of hairs are
18 subject to different types of hormonal influences. So
19 we have distinctive head hair, distinctive pubic hair,
20 and distinctive body hairs.

21 Q When we talk about hair as being a
22 characteristic that all human beings have, is it of any
23 value as far as comparison purposes, identification
24 purposes?

25 A Hair is a very good associative tool in doing a

1 comparison from a found hair and a known source. It is
2 very good associative evidence.

3 Q All right. When we talk about a hair
4 comparison, can we talk a little bit what it is, just
5 generally, that a trace analyst specialist would be
6 looking for to make a comparison with regard to the
7 structure of the hair?

8 A You can think of a single hair as a wooden
9 pencil. The rubber part of the pencil would correspond
10 to the root portion of the hair. The yellow paint of
11 the pencil would correspond to the cuticle of the hair.
12 These are fish-like scales that cover the surface of the
13 hair. The wood portion of the pencil would be like the
14 cortex of the hair. That's where the flattened dead
15 particle cells are found, wood portion of the pencil.
16 The lead of the pencil would correspond to what we call
17 the medulla in hair. Hairs may or may not have medullar
18 structure, but the medulla itself of the hair is an air
19 space, but that's about where the pencil-hair analogy
20 stops.

21 Within a human hair, when you look at it with a
22 microscope, the light transmits through the hair, the
23 examiner is able to see, more importantly, the pigment
24 pattern and distribution within that hair. It is this
25 alignment of the pigment granules, size of the pigment

1 granules, and the way they change from root to tip that
2 allows an examiner to say this person could have been a
3 donor of that hair or this person absolutely was not a
4 donor of a particular found hair.

5 Q All right. When we start talking about hair
6 comparisons -- and I'm speaking generally, of course,
7 right now -- is there any way or has anybody done any
8 work to try to quantify or to try and, I guess, put a
9 number or a -- assign a number, shall we say, to the
10 accuracy of a hair association or comparison?

11 A There are a couple of reports in the literature
12 that address that problem.

13 Q Okay. With regard to those, have any of them
14 ever been accepted to such a point that you would feel
15 comfortable trying to put a number on an association
16 saying an association is accurate within one in some
17 number?

18 A No, sir. That is the limitation of doing a
19 hair comparison. If, sitting on the microscope, you
20 cannot tell the difference between two hairs, you still
21 cannot say absolutely that hair had to have come from
22 that individual and that individual only. The
23 assignment of a probability, one out of 45 hundred, one
24 out of 800, is just not possible to do. In my
25 experience of sitting on the microscope, I have not seen

1 that many instances where the distinctive hairs from an
2 individual cannot be distinguished by the examiner. You
3 just don't see that many times, that one person's hair
4 is exactly the same as another person's hair
5 microscopically. There are, however, within a person's
6 scalp variation, hairs that are what we term
7 featureless. If you're doing a featureless comparison
8 of hair, if the hairs you're examining, if they are
9 featureless, then that association has a lot less weight
10 than if you're comparing hairs that have substantive
11 microstructural internal detail to compare. The more
12 you have to look at within the structure, the better the
13 comparison. So in the common featureless variety, those
14 associations are less strong than if you have a hair,
15 say, that you haven't seen before.

16 In seven years of sitting on the microscope
17 looking at hairs and fibers every day, you gain an
18 appreciation for what kind of hairs occur most
19 frequently in the population. So, no, sir, you cannot
20 put a number on what are the chances.

21 Q Okay. In essence, when you as a professional
22 say, I have made an association between a known hair and
23 a suspected hair or unknown hair, is that association
24 based on your experience and your training and those
25 sorts of things?

1 A That's right.

2 Q All right. It's up to the individual examiner
3 to work with that hair and that association as much as
4 he can with different types of microscopes and at some
5 point he will either make an association or he will not
6 based on his training and experience?

7 A That's right. It is an individual judgment, an
8 individual opinion, but my finding through the years is
9 that experienced examiners don't have that many quarrels
10 when it comes to the microscopic comparison of the fine
11 details within the hair.

12 Q A little bit more on the general background of
13 hair. I believe you had mentioned earlier that we have
14 the opportunity with the microscope to compare head
15 hair, pubic hair, axillary hair. Are there any -- of
16 those groups of hair are there some that are better or
17 make stronger associations than others?

18 A The forensic examiners only compare head hair
19 to head hair and pubic hair to pubic hair. The head
20 hairs show more variation and are more distinctive from
21 person to person than are, say, pubic hairs. In
22 general, there's more information to be gained from
23 looking at a head hair comparison than there is a pubic
24 hair comparison. That's not to say that a pubic hair
25 comparison is not a valid association.

1 Q All right. When you move to axillary hair or
2 chest hair, is that even less distinct than, say, the
3 pubic hair as far as association purposes?

4 A Forensic examiners do not -- credible forensic
5 examiners do not make a judgment about particular source
6 of a body hair. By that I mean an arm hair, chest hair,
7 armpit hair, leg hair. The reason being is that my arm
8 hairs microscopically probably look very much like your
9 arm hairs. There just isn't that much variation there;
10 however, you can use body hairs to make a racial
11 determination, is this hair from a person of black
12 descent, Caucasian. So that's the usefulness of looking
13 at a body hair, but you wouldn't want to compare that to
14 their body hairs because you would give a wrongful
15 impression of the strength of that match.

16 Q Okay. Mr. Linch, just as kind of a break, to
17 let the jury know, you began your day today in Dallas,
18 Texas; is that correct?

19 A That's right.

20 Q And you caught a flight and arrived here in
21 Midland about what time?

22 A About 10:35.

23 Q Okay. So basically you got off the plane. I
24 don't think you even had a chance to check into the
25 hotel yet, have you?

1 A I've been to the bathroom.

2 Q Okay. You're coming in pretty much just
3 walking in and starting up this morning without much of
4 a break since you got up, I guess?

5 A Good morning.

6 Q Good morning. Okay. Mr. Linch, I guess,
7 moving along a little bit further now. We've talked
8 about hair as far as the general structure, the pencil
9 analogy that you gave us, and make sure that I
10 understand, too. If a hair were structured like a
11 pencil, the outer cover, the yellow paint -- if it was a
12 yellow pencil -- is the cuticle?

13 A That's right.

14 Q Inside the cuticle, that particular portion
15 which would correspond to the wooden part of the pencil,
16 is called the cortex?

17 A That's right.

18 Q And finally in the very center of a hair we
19 have what would correspond to the lead in the pencil and
20 that is known as the medulla?

21 A That's right.

22 Q All right. And we've talked about the
23 different types of body hair and a little bit about the
24 types of associations you can make. Head hair is only
25 compared to head hair as far as making associations, or

1 matches, if you want to use that word?

2 A Yes, sir.

3 Q Pubic hair to pubic hair. We don't mix. We
4 don't try to compare a head hair to a pubic hair and
5 make an association?

6 A No, sir.

7 Q Okay. Now, when we start looking at hair --
8 and I'm being inclusive here of axillary, pubic and head
9 hair -- is an examiner who is experienced and trained in
10 this field able to make distinctions as to the racial
11 origin of those particular hairs in these situations?

12 A In most cases you can determine the racial
13 origin of a particular found hair.

14 Q Can you tell the jury essentially what portion
15 of the hair do we look at in order to make that racial
16 association and a little bit about the variances that
17 you look for in order to come to any conclusion about
18 the racial origin of a hair?

19 A There are a combination of factors that are
20 used to determine which racial group. Hair examiners
21 recognize three racial groups, Caucasian or white,
22 Negroid or black, and Mongoloid. Mongoloids include
23 Asians, Eskimos, and American Indian. Now, with regard
24 to Hispanics, they are termed Mongoloid or Mongoloid,
25 slash, Caucasian, depending upon how much European

1 influence they've had. So the predominant factor
2 showing Mongoloid characteristics would be from the
3 American Indian. Amerasians would also show predominant
4 Mongoloid hair characteristics.

5 As far as the process of making that
6 determination, is there a place to draw that I can show
7 the cross section or shapes?

8 Q I've got a small chalkboard we can wheel in
9 here. Take just a moment.

10 THE COURT: Okay.

11 A (By the witness) If I may, I'll attempt to
12 describe what you asked.

13 Q (By Mr. Clayton) Well, just to occupy time,
14 I'll get him to describe it. Then when we get something
15 in here to draw it up, we can.

16 THE COURT: I hear him coming. Looking
17 for something kind of permanent. Let's see if this can
18 be done back up here against the door so the jury can
19 see and the rest of us can see.

20 MR. O'CONNELL: I don't think the folks in
21 the back row can see. The wall comes out.

22 THE COURT: Let's move it this way as much
23 as possible. I don't know if that's going to do the
24 trick or not.

25 MR. CLAYTON: We need to let Mr. Linch

1 get out, I think, first.

2 THE COURT: All right. I don't know
3 whether that's going to really help much. You all can't
4 see. I still can't see. We'll bring it back over here,
5 I guess. At least the jury can see. I guess that's the
6 most important thing. All right.

7 MR. CLAYTON: Okay. May I?

8 THE COURT: Sure.

9 Q (By Mr. Clayton) Mr. Linch, I believe that you
10 were about to show the jury the shapes of hairs that you
11 examine and how you classify them as far as racial
12 characteristics. Can you show the jury here on our
13 board what it is you're looking for in the way of
14 features?

15 A (By the witness) Yes, sir. Backing up a little
16 bit, the basic structures of the hair are the cuticle,
17 or yellow paint of the pencil, the cortex, or wooden
18 portion of the pencil, and the medulla, or the lead
19 portion of the pencil which, in reality, in a hair is
20 the hollow space. With regard to assignment of a
21 particular hair to the Caucasian category the hair on
22 cross section, if you were to cut it, is roughly oval
23 shaped. Internal recognition of pigment granules is
24 that the pigment grains are very fine. They can be
25 clumped somewhat, but pigment grains themselves are very

1 fine and there may or may not be medullation found.

2 With regard to Negroid racial characteristics,
3 the cross sectional shape is relatively flat and within
4 the hair shaft the pigment granules are fairly large and
5 fairly clumped. Again, it is the variations in the
6 distribution and the pattern recognition of these
7 pigment granules that allows the examiner to associate
8 or exclude a found hair from a particular source.

9 With regard to the classification of Mongoloid
10 racial origin, that is, persons of Asian, Eskimo,
11 American Indian and very often Hispanic descent, the
12 pigment again is fairly clumped. Sometimes it has kind
13 of an auburn cast to it. Very often the hairs are
14 medullated. Sometimes they aren't medullated. The
15 cross sectional shape is almost perfectly round. That's
16 what allows the hair to be particularly straight. So --
17 but the significant feature of a hair of Mongoloid
18 racial origin is a thick cuticle, especially in head
19 hairs. The cuticle thickness is fairly large and there
20 is a distinctive gapping at the cuticular layer with the
21 cortex.

22 Now, in Caucasians this cuticle layer may not
23 be as distinct because often in Caucasians you have the
24 pigment grains actually falling into the cuticle itself.
25 So those are three racial groups which are actually

1 anthropological terms for racial identity of human
2 hairs.

3 Q Thank you, sir.

4 When we talk about making a comparison of hair,
5 is a head hair the best comparable type of hair for
6 associative purposes?

7 A Yes, it is. Because, as I said before, you see
8 the most variation in the microscopic appearance of head
9 hair from person to person.

10 Q Okay. Now, when you look at a head hair --
11 I'll kind of focus on those for a minute -- do -- does
12 the length of the hair or the amount of hair aid or
13 assist you in the associative process?

14 A Yes, it does. Absolutely. I think there's a
15 lady in the Guiness book with 23 feet of hair. If you
16 find a 23 foot hair strand, your testimony that that
17 hair had origin with her is a lot stronger than if you
18 just had a small piece of a hair fragment.

19 MR. MCDERMITT: Can we move the
20 chalkboard?

21 MR. CLAYTON: We may be using it from time
22 to time. Why don't you stick it right here?

23 Q (By Mr. Clayton) Mr. Linch, as far as the
24 lengths of hair, if it was an ideal, perfect world, what
25 would a hair examiner want with regard to a head hair?

1 What would he like to have for comparison purposes?

2 A (By the witness) The examiner would like to
3 have a complete hair, that is, a hair shaft with its
4 root and undisturbed tip. The full-length hair would be
5 the ideal comparison.

6 Q In your many years of work in forensics, hair
7 comparisons, how often do you find that perfect hair
8 from root end all the way to tip in an undisturbed state
9 for comparison purposes?

10 A From the collection of a body of a murder
11 victim I've seen it once, and I see it more frequently,
12 but not very frequent, from the collection of hairs from
13 a suspect vehicle. The -- usually if you have an intact
14 hair, it will be a pubic hair because they are less
15 likely to fracture and break during an altercation.

16 Q In reality what do you usually work with as far
17 as things that are found at a murder scene or a vehicle
18 or what have you?

19 A In the real word what you end up with in
20 criminal cases are pieces of hairs. You may have a
21 root, but a break further down. You may have an intact
22 tip, but a break at the root.

23 Q Is there a term y'all use for a piece of hair
24 like that?

25 A Hair fragment.

1 Q Fragment. When you have a hair fragment, does
2 that prevent an experienced examiner from making
3 associations based upon a fragment of hair?

4 A That depends on the examiner's experience. My
5 cutoff for doing an association of a hair to a known
6 source is about a half an inch. And beyond that is --
7 anything beyond that is better, but if I have a hair
8 piece that is less than a half inch, I won't try to make
9 a claim about an association to a particular individual.

10 Q If you have a piece or hair fragment that is
1 under one half inch in length, what is the reason,
2 essentially, that you would not want to use that as an
3 association, as a definite association?

4 A Again, doing the hair comparison you're looking
5 at microscopic changes from the root end to the tip.
6 It's important to know if the hair changes in the same
7 ways. At the root end you start out with a certain
8 density of cortical fusi, little fat inclusions. As you
9 move up the shaft, pigmentation becomes more dense,
20 medullation may start or stop. So you want to look at
21 all these fine microscopic changes from root to tip.

22 Q When you have a fragment as long as, say, over
23 an inch or even as long as two inches, would you
24 consider that a pretty good fragment for comparison
25 purposes?

1 A That, in my experience, is suitable for
2 comparison.

3 Q When you make your comparisons -- and I'm going
4 to move just for a minute to how you make a comparison
5 -- what tools do you use in making these comparisons?

6 A In the initial stages -- depends on what kind
7 of item you're working with -- but, say, you're working
8 with tapings. Tape that has been laid down on a carpet
9 surface or tapings from a body or head hair combings,
10 the first step is to look at that item under a stereo
11 microscope, or the common dissecting microscope like you
12 may have used in high school. Doing that microscopic
13 examination you're picking very small fibers and hairs
14 from the tape surfaces. From there you mount these on a
15 glass microscope slide using something like a medium of
16 Permount because Permount has about the same refractive
17 index as a hair. You get less light scattering when you
18 put it on microscope.

19 The comparison microscope itself consists of
20 two compound microscopes. You have one slide on one
21 side, the other slide on the other, say, a found hair
22 and known hairs from a suspect or a victim. The light
23 is transmitted through this material, comes together by
24 way of a bridge, and the bridge brings the two images
25 together so the examiner is able to look at the items on

1 both sides at the same time. That is absolutely
2 essential in doing a hair comparison. It's not possible
3 to just have the one compound microscope, put one slide
4 up, look, then put the comparison slide up and look.
5 That's just impossible to do. The examiner has to have
6 the simultaneous vision of both items.

7 Q You mentioned the collection of hair from a
8 crime scene a moment ago. I believe you mentioned
9 taping as being one method that you can use to collect
10 tape -- and incidentally have you been to crime scenes
11 where you assisted in the collection of the hair on
12 occasions?

13 A Many times. And at the Institute in Dallas I
14 would routinely recover hairs and fibers from the bodies
15 of murder victims who had been dumped, because that is a
16 situation where hair and fiber evidence is the most
17 important.

18 Q When hair -- and I'm going to stay with hair
19 for just a minute. When hair is collected, either by
20 taping or, I think they've got some vacuum cleaners or
21 something that can be used now as well, I think, but
22 whatever method that you collect it in, is hair a
23 substance that is subject to deterioration in the same
24 way as, maybe, some other substances?

25 A That is one of the real strengths of using hair

1 in forensics is that, its durability. It's a very hard,
2 durable protein. It will last longer than a semen
3 sample or blood sample or a fingerprint at a crime
4 scene. It is very durable, very resistant to
5 destruction. I've looked at mummy hair before and it
6 retains all its internal structures that we talked about
7 before.

8 Q In other words, there's not any special process
9 that needs to be done or anything like that when hair is
10 collected at a crime scene as far as keeping it from
11 breaking down internally or something along those lines,
12 assuming that the comparison is done within a fairly
13 reasonable time?

14 A The answer to that is yes. Except in the
15 instance where you have a large amount of follicular
16 tissue that you may want to subject to biochemical
17 testing, such as DNA typing.

18 Q Follicular tissue, for the jury, is that an
19 amount of tissue -- when you say tissue, I guess you
20 mean, maybe, like -- I guess for my use I would say skin
21 that is attached to the root ends of hair?

22 A Yeah. If a hair is ripped out of your head,
23 there will be tissue attendant on the hair root, and the
24 amount of tissue that you get in a force-removed hair is
25 dependent on which growth phase the hair is in.

1 Q Okay. Assuming a person has a hair that does
2 come out with a root end on it and has some tissue
3 attached to it, follicular tissue, have you had occasion
4 or have you been trained in some form or fashion with
5 regard to DNA testing of that type of tissue?

6 A I have attended the FBI DNA school.

7 Q Okay. Does the possibility of getting a
8 result, just based on what you've learned, in follicular
9 -- some amount of follicular tissue, does it simply come
10 down to, a lot of times, to how much tissue they have to
11 work with?

12 A Absolutely. The other factor is the amount of
13 degradation. DNA will degrade as it's exposed to an
14 environment, and the current typing studies done on hair
15 are of the D2 alpha or D1S80 typing, and that's looking
16 at a specific protein-producing locus, it -- and the
17 numbers you get from that are like one out of 800 or one
18 out of 8. It's very different DNA technology than, say,
19 RFLP technology where you have a large quantity-quality
20 sample. The future of hair comparison most probably
21 will be mitochondrial DNA. Within the mitochondria it
22 has own circular or bacterial-like DNA that -- that
23 folks at the FBI and Armed Forces Institute of
24 Technology in Washington are looking at this method.
25 It's had some initial drawbacks, but ultimately that may

1 be where the future of hair comparison lies.

2 Q With regard to any follicular tissue then, if
3 you don't have enough tissue to work with under our
4 present technology that's in use here, if you don't have
5 a sufficient amount attached to that hair, then you end
6 up being really unable to do anything definite as far as
7 results go with that tissue.

8 A Using present methods of DNA typing you are
9 required to have a fairly substantial amount of root
10 tissue.

11 Q Now, when we talk about hair at a crime scene,
12 be it a vehicle, be it a field, be it in a home,
13 wherever, why is hair important as being something that
14 we could possibly associate with the person that did a
15 crime? How is -- how is it that that comes into play so
16 often?

17 A Hair is probably the most frequently left form
18 of evidence when there is a struggle. In instances of
19 crime where there is a struggle you most often do not
20 have fingerprints and you do not have DNA material,
21 semen or blood, unless there is a bleeding injury or
22 there has been a rape complete with ejaculation and the
23 sample is recovered. So that is very often what a dump
24 body site case comes down to, is a hair and fiber
25 comparison.

1 I think you asked about hairs particularly, if
2 something is jerked out of somebody's head in a
3 struggle, but the other thing is the fibers. A dumped
4 body, you're thinking in terms of, well, was this person
5 transported in the trunk of a car, can I recover any
6 fibers that are consistent with trunk origin or can I
7 maybe associate fibers from that body with another crime
8 scene, a second crime scene. And so it is very often,
9 in the instance of a found body, that hair and fiber
10 evidence is about the only physical evidence that's
11 there.

12 Q When we speak of fiber, that's something that
13 is -- could come from clothing, it could come from
14 carpet in a vehicle, could come from carpet in a house.
15 It could come from just any type of cloth or
16 fibrous-type substance. Would that be a fair statement?

17 A That's right. Synthetic textile fibers include
18 the carpeting of this room, our clothing. Some of us
19 are wearing animal hairs in the form of wool. So
20 anything, any fiber that is non-human, is what we refer
21 to in fiber comparison.

22 Q Now, you made mention of something just then,
23 animal hairs. Is it easy to tell animal hair from human
24 hair under the microscope?

25 A That is probably the easiest thing to do.

1 There is a dramatic difference between animal hair and
2 human hair. Animal hairs have very large medullas in
3 general, maybe occupying a third or more of the entire
4 hair shaft, and prominent cuticles, and a very coarse
5 type pigment pattern that the experienced examiner
6 recognizes right away. The root ends are different.
7 Cats have different type roots than dogs.

8 Q Now, I'm going to move just a little bit
9 further now into not only the basic structure of hair,
10 which you covered with us, I'm going to talk a little
11 bit about when you're getting samples of hair and you're
12 making these comparisons, what are the points of
13 comparison that you actually look for? If you can
14 describe some of those for the jury, then maybe we'll
15 put the board back up and draw them in.

16 A The starting place is the three basic
17 structures. If you're wanting to determine if a found
18 hair could have association with a known hair sample,
19 you start out by looking -- well, it's really not the
20 starting place for an experienced examiner. An
21 experienced examiner, when they have two hairs under the
22 microscope that could be of the same origin, it's almost
23 like a lizard brain reaction. You know it's a match,
24 and then you have to go back to higher thinking and
25 figure out why it is.

1 I've talked to fingerprint examiners. They --
2 they express this same phenomena. They see two prints
3 that are the same, yeah, this is it. Then they have to
4 go back, look at the particular points. Same thing with
5 the experienced hair examiner. Once they see something
6 that is identical on the microscope with all
7 microstructural details the same, then they go back,
8 say, the cuticle is same, pigment description and
9 pattern is the same, density is the same. Yeah, the
10 medulla is the same.

11 Then you start looking for what I described as
12 special features. Are there special characteristics
13 that make this comparison stronger than some other
14 comparisons you may encounter.

15 Q All right. When you talk about special
16 characteristics or special features within a hair
17 sample, what are some that would be very important to
18 any experienced hair examiner?

19 A One that comes to mind is if you have an
20 individual who is of a particular race, upon observation
21 and looking at their known hairs, and microscopics don't
22 fit what you generally associate with that particular
23 race, that would be a special feature. Any residues
24 that may be attached to the hair, that's a special
25 feature. The presence or absence of forced removal,

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1 breaking fracture, particularly medullar structures that
2 you may not have seen before and other inclusions that
3 you just don't typically encounter in case work.
4 There's, like, a range of stuff that you see every day,
5 and once in a while something will come along that you
6 haven't seen before or have seen infrequently.

7 Q Okay. You mentioned residues on hair. When
8 you talk about that, are you talking about something
9 that a person has done to treat their hair to make it
10 comb easier or color it or something along those lines?

11 A Usually what you see in forensic cases as far
12 as a residue on hair is dried blood, dried semen, or
13 clear residues that correspond to hair conditioners.

14 Q Okay.

15 A Or sometimes there's insect activity, crabs,
16 pubic lice.

17 Q You also mentioned that the presence or absence
18 of trauma as seen in the hair could be considered a
19 special feature or characteristic. How is it that you
20 can tell whether or not a head hair has received some
21 trauma or force to it?

22 A If you crush a hair there will be breakage.
23 There will be a splintering of the cortical elements.
24 Cortical elements will be frayed. That is very
25 different from where a hair is cut. You can distinguish

1 a clean cut very easily under the microscope. In the
2 same line of thought, you can look at the tip of hair
3 and make a rough estimate about how long it's been since
4 a person has had a haircut. A very clean cut on the tip
5 means two to three week history of maybe having had a
6 hair cut, and with time that hair tip will round off a
7 little bit and so it's -- crush a hair, you know, it
8 splinters like any other fibrous structure would.

9 Q If we could, Mr. Linch, we're going to go ahead
10 and set our board back up again. We're going to go -- I
11 want to ask you if you can show the jury a little bit of
12 a hair shaft and some of those special features we
13 talked about, illustrate those. We'll talk about them a
14 little more, also show them how we can see the cutting
15 of a hair or the shattering from trauma.

16 THE COURT: Mr. Clayton, why don't -- why
17 don't we hold that off until right after lunch. Let's
18 go ahead and take a lunch break. I'll ask you all to be
19 back at ten minutes after one. I'll remind you not to
20 converse among yourselves or anyone else on any subject
21 connected with the trial or to form or express an
22 opinion thereon until the cause is finally submitted to
23 you.

24 (Recess.)

25 THE COURT: All right.

1 MR. McDERRITT: Your Honor, just a moment.

2 THE COURT: Okay.

3 (Jury returned to the
4 courtroom.)

5 THE COURT: Everyone be seated, please.

6 Mr. Clayton, you may continue.

7 Q (By Mr. Clayton) For the record you are one and
8 the same Charles Linch who was testifying earlier in
9 this cause; is that correct?

10 A (By the witness) Yes, sir.

11 Q Mr. Linch, kind of in wrapping up our
12 discussion about general properties and characteristics
13 of hair and their comparison points, I do want to ask
14 you whether or not you are able as a trace evidence
15 analyst, if you're able to make microscopic photographs
16 of some of the things that you're able to observe in
17 that comparison microscope?

18 A Yes, sir. The examiner can take pictures of
19 what they're seeing through the microscope side by side.

20 Q And in doing so, of course, we can take those
21 photographs, we can blow them up, I guess, in size; is
22 that correct?

23 A That's right.

24 Q Then they can be used for display to a jury or
25 to someone wanting to learn about that comparison?

1 A Yes, sir.

2 Q When you make one of these microscopic
3 photographs, is there anything that we need to caution
4 the jury as far as limitations of what you can see in
5 one of these photographs?

6 A Yes, sir. There are.

7 May I step down again? I draw better than I
8 talk.

9 Q Yes, sir. All right.

10 A When the examiner is doing a hair or fiber
11 comparison with the comparison microscope what they see
12 basically is one hair on one side of the screen and
13 another hair on the other side. The examiner, as
14 they're doing a comparison, is constantly focusing up
15 and down and back and forth. That means that -- say,
16 this is a hair. They're constantly focusing from this
17 plane through the middle and all different stages in
18 between. They're also running back and forth looking at
19 the entire length of the hair. Like, if you start at
20 the root end on a found hair and a known standard, you
21 then traverse up each hair looking for the microscopic
22 changes. There's a big limitation in looking at a
23 photomicrograph. You can never look at a
24 photomicrograph and say, these hairs match.

25 The reason is that the photograph only

1 represents a thin slice of the hair this way and a thin
2 slice of the hair this way and so you don't appreciate
3 what the examiner appreciates in focusing at all
4 different levels. You haven't seen the entire hair back
5 and forth. The only value of a photomicrograph of a
6 hair fiber is to give you a very general idea of what
7 the examiner has seen.

8 Q Now, as I'm kind of -- apologize for jumping
9 back and forth a little bit between hair and fiber, but
10 when you use your comparison microscope to look at
11 fibers, would the same limitations apply to a fiber
12 photograph made with the comparison microscope?

13 A Absolutely.

14 Q All right. Now, Mr. Linch, I had just a couple
15 of other questions I did want to ask you. I know -- I
16 think you pointed it out earlier. I just want to
17 clarify it a little bit if I could for the jury. First
18 of all, just in your experience as long as you've been
19 looking at hair under the microscope and making these
20 comparisons, have you come to a point where you can
21 almost look across a room and tell us whether or not
22 there are folks whose hair has recognizable differences
23 just looking across a room?

24 A Very often you can look at somebody with the
25 naked eye and tell whether or not they would have same

1 or different features under the microscope. I don't see
2 anybody in this courtroom today who has similar
3 appearing hair. The qualification would be to that if
4 some of us with gray -- sometimes gray hairs are
5 indistinguishable from individual to individual, but
6 still sometimes you can make a distinction with the gray
7 hairs. But again, a gray hair has no pigmentation in
8 it. That's why it looks gray, and the follicle has
9 decided to use its energy some place besides producing
10 melamine pigment. But again, the identifying
11 individualizing feature of hair in a forensic hair
12 comparison is the pigment distribution, its size and how
13 it arranges within the hair, but I would expect of those
14 here today that within their distinguishable set of
15 hairs from their head that I could tell the difference.

16 Q In fact, as part of your ongoing training or
17 practice at the Southwestern Institute of Forensic
18 Sciences did y'all have programs where y'all were given
19 ten or twelve or however many hair samples and asked to
20 match them to known samples, just kind of in a pile?

21 A We would do a matching test. Yes, sir.

22 Q Okay. So you've had extensive practice both
23 from training and then the experience as well?

24 A I completed a one year apprenticeship at the
25 Institute prior to becoming a case working examiner, and

1 after I became a case working examiner we would do a
2 test where we'd take ten known samples from ten
3 individuals, say, ten individuals who were blond, or ten
4 individuals who were Hispanic. The other examiner would
5 withdraw a single hair and we would attempt to match it
6 back to which package it came from, and we've always
7 been able to do that.

8 Q Okay. Now, in the last seven years, what
9 percentage of your time or -- I guess I'll preface this
10 question by asking you to define what exactly is a trace
11 evidence analyst.

12 A Trace evidence can be broken up into a
13 chemistry section and a forensic microscopy section. I
14 was in the forensic microscopy section, and in that we
15 identified and compared hairs, fibers, glass, paint, and
16 gunshot residues. That was -- that is what's covered by
17 the forensic microscopy section of trace evidence. In
18 the chemical section you look at things like arson
19 evidence and hand wipings from suspected shooters.

20 Q Over the last seven years or -- can you tell
21 the jury how much of your time has been devoted to
22 looking at, under the microscope, hair and fiber
23 submitted from crime scenes?

24 A 85 to 90 percent of my time was spent on the
25 microscope looking at hair and fibers.

1 Q Mr. Linch, I'm going to move now from some of
2 the general characteristics of hair and the examination
3 tools that you use and just some of this background to
4 whether or not you had occasion to assist the Plano
5 Police Department in its investigation of the killer of
6 [REDACTED] back in September of 1993.

7 A Yes, sir. I did.

8 Q Can you tell the jury how it was you first
9 became involved in the case?

10 A The evidence started coming in from Plano
11 Police Department, and subsequently from the Collin
12 County Medical Examiner's office, for identification and
13 examination. The first time that happened was September
14 6.

15 Q All right. Is that when you received from Mr.
16 Dan Rhodes a package containing fiber collected from the
17 autopsy of [REDACTED]? Let me check my dates here
18 for a minute. Well, let me do it this way.

19 MR. CLAYTON: May I approach, Your Honor?

20 THE COURT: You may.

21 Q (By Mr. Clayton) I'm going to hand you what's
22 been marked for identification as State's Exhibit No.
23 12. I'll ask you to take a look at this paper bag.
24 Tell me if your initials are on it and when it was
25 received by you.

1 A (By the witness) State's No. 12 was received by
2 me on September 6, 1993, and in my handwriting on the
3 outside of the package, panties, head hair standard,
4 head hair combings, and fiber from the victim's perianal
5 area. On the outside is marked number four and number
6 seven through nine that are unique Institute of Forensic
7 Sciences laboratory numbers.

8 Q Did you have occasion to open up State's 12 at
9 the laboratory and examine the contents of State's 12,
10 which would be and have been previously marked as
11 State's 13, State's 14 and 15?

12 A Yes, sir. I did.

13 Q Can you tell the jury at this point in time
14 what those particular exhibits are?

15 A State's 13 are head hair combings of Ashley
16 Estell. State's 14 are the known pulled hairs from the
17 head of [REDACTED]. State's 15 is the fiber removed
18 from the perianal area of [REDACTED].

19 Q Okay.

20 MR. CLAYTON: Your Honor, at this time the
21 State would offer into evidence State's Exhibit 12, 13,
22 14, and 15.

23 MR. McDERRIMITT: Your Honor, we have no
24 objection.

25 THE COURT: 12, 13, 14, 15 are admitted.

1 Q (By Mr. Clayton) In addition, on the 13th day
2 of September, 1993, did you have occasion to pick up at
3 the Plano Police Department some hair from Ben
4 Armstrong, and I will steer you toward State's Exhibit
5 77 marked for identification, ask you if recognize it as
6 a package picked up at the Plano Police Department by
7 you?

8 A (By the witness) Yes, sir. State's 77
9 corresponds to my unique item number 87.

10 Q All right. Does State's 77 contain your
11 initials showing that you picked this up and have, in
12 fact, examined the contents?

13 A My initials are on here and it indicates that I
14 received this at Plano Police Department on September
15 13, 1993.

16 Q All right. After you received State's 77, was
17 that logged in at the Southwestern Institute of Forensic
18 Sciences for your examination?

19 A Yes, sir. It was.

20 Q Does it bear the same number from the
21 Southwestern Institute of Forensic Sciences that has
22 been applied to this case?

23 A Yes, sir.

24 MR. CLAYTON: Your Honor, at this time
25 we'd offer into evidence State's 77 and its contents,

1 the flyer wrapped around the hair, State's 78.

2 MR. MCDERMITT: No objection, Your Honor.

3 THE COURT: They are admitted.

4 Q (By Mr. Clayton) Mr. Linch, I'm going hand to
5 you what I marked for identification previously as
6 State's Exhibit No. 49. I will ask you to take a look
7 at State's Exhibit 49 and its contents, State's No. 50,
8 and I'll ask if you recognize these exhibits?

9 A (By the witness) State's 49 is Plano Police
10 Department number 21 and 20 and the Forensic Sciences
11 number 61T, as in Tom, 61U, and I received this
12 September 11, 1993, and these are tapings from the
13 vehicle of Michael Blair.

14 Q You've had a chance to examine the contents of
15 those tapings; is that correct, sir?

16 A That's right.

17 MR. CLAYTON: Your Honor, we would offer
18 into evidence State's Exhibit 49 and 50.

19 MR. MCDERMITT: No objection, Your Honor.

20 THE COURT: They are admitted.

21 Q (By Mr. Clayton) Also going to show you what's
22 been marked for identification as State's Exhibit 62,
23 63, 64. I'll ask you if you can identify these three
24 exhibits.

25 A (By the witness) State's 62, 63, and 64 are

1 hairs that were taken from Michael Blair. State's 62 is
2 a sample of his head hair. State's 63 is a sample of
3 his pubic hair. State's 64 is a sample of hairs from
4 his chest and axillary hairs or hairs from his armpit.
5 They were collected by me on September 10.

6 Q The Michael Blair who is the source of the
7 chest, axillary, pubic, and head hairs contained in
8 State's 62, 63, 64, those were gathered personally by
9 you at the Plano Police Department from suspect Michael
10 Blair; is that correct?

11 A That's correct.

12 Q Is Michael Blair in the courtroom today the
13 same one you gathered these hairs from?

14 A Mr. Blair is standing at the Defense table.

15 MR. CLAYTON: Let the record reflect the
16 witness has identified the Defendant in this cause,
17 Michael Blair.

18 THE COURT: Record will so reflect.

19 Q (By Mr. Clayton) With regard to State's 62, 63,
20 64, are these the standards you used for comparison
21 purposes in this case?

22 A (By the witness) They are the envelopes in
23 which all of the hairs were collected and subsequently I
24 took hairs from the envelopes and placed them on glass
25 microscope slides.

1 Q You've brought those to court as well with you
2 today?

3 A Yes, sir.

4 MR. CLAYTON: Your Honor, we'll offer into
5 evidence State's 62, 63, 64.

6 MR. MCDERMITT: No objection, Your Honor.

7 THE COURT: They're admitted.

8 Q (By Mr. Clayton) Now, you had occasion, did you
9 not, to assist in the search of Defendant Michael
10 Blair's vehicle back on the 10th of September, 1993; is
11 that correct?

12 A (By the witness) That's correct.

13 Q During the course of that search did you have
14 occasion to take with you a stuffed bunny rabbit for
15 examination and comparison to the fiber contained in the
16 evidence from the Medical Examiner's office?

17 A Yes, sir. I did.

18 Q All right. I'm going to show you what's been
19 admitted previously into evidence as State's Exhibit 51
20 and 52. I'll ask you if 51 bears the contents of the
21 rabbit that you found boxed up and then later examined?

22 A State's 51 is the sack that the rabbit was
23 placed in. Yes, sir.

24 Q Bears the time and, I believe, your initials
25 and the date; is that correct? In the corner?

1 A Yes, sir. My initials are present on the sack,
2 the time, 1:30 p.m., and the date, September 10, 1993.

3 Q With regard to State's 52, does it also bear
4 your initials and date and time?

5 A State's 52 is the rabbit I recovered from Mr.
6 Blair's car with my initials and the date, September 10,
7 1993 at 1:30.

8 MR. CLAYTON: For the record, if they have
9 not already been previously admitted, Your Honor, we
10 would offer 51 and 52.

11 THE COURT: I believe they have been
12 admitted.

13 Q (By Mr. Clayton) Mr. Linch, also as part of
14 your search, did you have occasion to take from Mr.
15 Blair's vehicle a plaid blanket for examination at some
16 point, or at least did you find it and initial it as a
17 blanket that you wished to inspect further?

18 A (By the witness) You mean included in the
19 initial recovery of items from the car?

20 Q Yes, sir.

21 A No, sir. I recovered a blanket with deer
22 patterns on it at that time.

23 Q Okay. Day or two later was a plaid blanket
24 submitted to you that you had initialed previously, I
25 believe?

1 A Yes, sir. It was.

2 Q Okay. Let's see. Mr. Linch, I'm going to show
3 you what's been previously marked for identification --
4 let me find the sticker -- State's Exhibit No. 69, white
5 butcher paper. Does it bear, as you see it here on the
6 floor, your initials, date, 9-11-93, and the time that
7 you received it?

8 A Yes, sir. That was State's what?

9 Q Be State's No. 49 -- or, excuse me. I'm sorry.

10 A State's 69 contains -- is butcher paper
11 containing a plaid blanket with my initials, date,
12 September 11, 1993, and the time, 10:38 in the morning.

13 Q All right. Its contents marked as State's
14 Exhibit No. 70, does that appear to be a plaid blanket
15 that you had occasion to examine at the laboratory?

16 A Yes, sir. It is.

17 Q All right.

18 MR. CLAYTON: We offer State's 69 and 70,
19 Your Honor. They have not been previously admitted.

20 MR. MCDERMITT: No objection Your Honor.

21 THE COURT: Okay. They're admitted.

22 Q (By Mr. Clayton) Also, Mr. Linch, I just want
23 to cover this real quickly before we start in with the
24 comparison directly of the photographs. During the
25 course of this investigation did you have occasion to

1 look at many, many hairs and fibers submitted to you
2 from such sources as the [REDACTED] home, other stuffed
3 animals that [REDACTED] had in her home, carpet from
4 her home, carpet from her family's vehicles, carpet from
5 vehicles that had been requested by various Plano
6 officers, did you have occasion to compare many of those
7 fibers to the fiber from [REDACTED]'s autopsy in the course
8 of all this?

9 A (By the witness) Yes, sir. I did.

10 Q All right. From all of those other sources
11 that I have just mentioned, did you ever make an
12 association microscopically -- and I understand there
13 are instrumental things that we have an FBI technician
14 to talk about -- but microscopically were you ever able
15 to make any association with the white fiber found at
16 [REDACTED]'s autopsy other than the one from the rabbit that
17 we've been discussing here in court?

18 A It was my opinion that the fiber from the
19 perianal area of [REDACTED] was from a source other
20 than her own environment.

21 Q Okay. Now, were you also submitted hair
22 samples from known associates of Michael Blair for your
23 analysis and comparison as possible sources for head
24 hairs found in Michael Blair's vehicle?

25 A Yes, sir.

1 Q Did any of those other sources, including Kenny
2 Lancaster, Kedra Arnold, Scott Lancaster, Brett
3 Lancaster, Sandra Stirewalt, Paula Lancaster, or Terry
4 Freeman, were any of these people the source of the
5 hairs that you later associated with [REDACTED] that
6 came from Jack Carter Park or Mr. Blair's vehicle?

7 A None of the hairs from the mentioned persons
8 looked like the hairs from the Jack Carter Park. With
9 regard to Mr. Blair's vehicle, I was not attempting to
10 make that determination. Certainly there were a large
11 number of hairs from Mr. Blair's vehicle that were
12 microscopically the same as Mr. Blair's known hairs.

13 Q Okay. But with regard to this list of people
14 that I have named, none of their hair matched the hair
15 of [REDACTED], I guess, is what I'm trying to get at.

16 A No, sir. They were all different from Ashley.

17 Q All right. Insofar as the fiber that you
18 examined from the autopsy performed by Dr. Rohr, the
19 white fiber found on [REDACTED]'s buttocks, did you have
20 occasion to compare a sleep diaper from the [REDACTED] home
21 as any possible source of that white fiber?

22 A Yes, sir. I did.

23 Q And did you come to an opinion as to whether or
24 not that sleep diaper could have been the source of that
25 white fiber found on [REDACTED]'s body?

1 A The sleep diaper was not the source of the
2 fiber from [REDACTED].

3 Q All right. Mr. Linch, have you had an
4 occasion to prepare a series of photographs that we can
5 look at and you can point out some of the associations
6 made with some of the evidence that has been admitted
7 here before the Court?

8 A Yes, sir. I have.

9 Q Okay. Mr. Linch, I'll show you what we'll now
10 be marking for identification State's Exhibit No. 82.
11 I'll ask you if you've had occasion to prepare and
12 recognize State's Exhibit No. 82 as comparison
13 microscope photographs of the head hair found in the
14 front passenger side of the suspect vehicle, that would
15 be Mr. Blair's vehicle?

16 A State's 82 is an exhibit I prepared
17 demonstrating the microscopic appearance of the
18 comparison of a head hair fragment from the passenger
19 side floor of Mr. Blair's vehicle compared to the head
20 hair of [REDACTED].

21 Q That head hair that is the subject of the
22 photographs in State's 82, is it the one that came from
23 the floor tapings contained in State's Exhibits -- would
24 be 49 and 50 that were submitted to the laboratory?

25 A Yes, sir. They are.

1 Q All right.

2 MR. CLAYTON: Your Honor, I'm going to
3 offer at this time State's 82 for demonstrative purposes
4 for the jury.

5 MR. MCDERMITT: No objection for that
6 purpose, Your Honor.

7 THE COURT: All right. Admitted for
8 demonstrative purposes.

9 Q (By Mr. Clayton) Yes, sir. If you would, come
10 on and step around and we'll move this tripod up a
11 little bit.

12 Okay. Mr. Linch, if you would step on around.
13 First of all, can you tell us what photograph -- or how
14 these photographs are laid out, I guess, would be the
15 place to start as far as the ones down the center of the
16 exhibit.

17 A (By the witness) The right side of State's 82
18 is a photograph of [REDACTED]. In the center of
19 State's 82 are four photomicrographs that represent, on
20 the right side, the appearance of [REDACTED]'s head hair on
21 the right side. On the left side is the hair fragment
22 that was recovered from the passenger side floor of Mr.
23 Blair's vehicle.

24 Q Can you point out for the jury some of the
25 points of comparison that convince you that the fragment

1 of hair found on the passenger side of Mr. Blair's
2 vehicle make it a match with the known head hair sample
3 from Dr. Rohr's office of Ashley Estell's?

4 MR. MCDERMITT: Your Honor, I'm going to
5 object to the use of the word match. I don't believe
6 that's the definition. I don't believe that's what Mr.
7 Linch is testifying to.

8 THE COURT: Well, why don't you rephrase?

9 MR. CLAYTON: Sure.

10 Q (By Mr. Clayton) Mr. Linch, would you
11 characterize this as a strong, very strong, association
12 for several reasons?

13 MR. MCDERMITT: Well, now I object to him
14 as leading, Your Honor.

15 THE COURT: Sustained.

16 Q (By Mr. Clayton) Would you characterize this as
17 a strong association?

18 MR. MCDERMITT: Again, objection.
19 Leading.

20 THE COURT: Objection sustained.

21 Q (By Mr. Clayton) Would you characterize this as
22 stronger association than most for several reasons?

23 MR. MCDERMITT: Objection. Leading.

24 MR. MIEARS: Objection. Leading.

25 MR. CLAYTON: Well, what's the problem?

1 THE COURT: I'll sustain the objection.

2 Q (By Mr. Clayton) All right. Is this an
3 association?

4 A (By the witness) The microscopic appearance of
5 [REDACTED]'s head hairs, the internal structures, are
6 the same in all microscopic characteristics as the head
7 hair fragment found in the passenger front floor of Mr.
8 Blair's vehicle. Specifically, points of comparison?

9 Q Well, first I'm going to ask you this. Are
10 there some points of comparison that make this a
11 particularly strong association in your mind as a trace
12 evidence analyst?

13 MR. MCDERMITT: Objection. Leading, Your
14 Honor.

15 MR. CLAYTON: I'm asking him to point them
16 out, Judge.

17 THE COURT: In that particular instance
18 overruled.

19 A (By the witness) In addition to cuticle,
20 general cortex, and medulla of [REDACTED]'s hair being in
21 agreement, or the same microscopically, as the hair
22 fragment from the floor board, [REDACTED]'s hair has what is
23 termed bilateral pigment distribution. There are very
24 fine grained pigment particles that are centered on the
25 sides mostly. This pigment pattern is in agreement with

1 pigment pattern in the hair from the floor board.

2 Additionally, most of [REDACTED]'s head hairs are
3 medullated with fragmentary medullation. You can see
4 the little whirls. To me the whirls within this
5 medullary structure are a significant comparison factor.
6 Additionally, you can see the small cortical fusi up in
7 this area of the shaft, and the hair from the Mr.
8 Blair's vehicle have very similar cortical fusi.

9 Now, the interesting thing about [REDACTED]'s hair,
10 when you look at her standard, is that she has
11 microovoid bodies. These are very small air inclusions
12 that are smaller than a true ovoid body. Ovoid bodies
13 are mostly found in cattle hair and they're much larger,
14 but [REDACTED], throughout her standard or known head hairs,
15 has these microstructures. Sometimes you see them in
16 human hair where they're randomly distributed through
17 the hair shaft. In this instance [REDACTED]'s sit just
18 right below the cuticle.

19 Another significant point of comparison for me
20 is that these microovoid bodies are sitting right under
21 the cuticle and you don't find them any place else in
22 [REDACTED]'s hair. The comparison hair fragment from Mr.
23 Blair's vehicle is a hair that is the same in pigment
24 distribution, medullary structure, especially the fine
25 structure of the medulla, and in particular these little

1 ovoid bodies that are sitting only right under the
2 cuticle. So the hair from the passenger front floor
3 board has the same microscopic characteristics as known
4 head hairs of [REDACTED]

5 Q Just one follow-up question. Did [REDACTED]'s hair
6 in the known standard have in its racial characteristic
7 features, did it have anything that was -- particularly
8 stood out in your mind to make it a particularly
9 interesting, I guess you might say, standard?

10 A Well, again, the presence of this
11 microstructure sitting below the cuticle --

12 Q Uh-huh.

13 A -- and the fine -- the higher magnification,
14 you can appreciate the medullary detail better. Those
15 are the two significant comparison characteristics.

16 Q What was the length, if you recall, of the hair
17 that is portrayed here as the suspect hair from Michael
18 Blair's vehicle that you have associated with [REDACTED]
19 [REDACTED]?

20 A It was a piece of a head hair that was a little
21 less than two inches.

22 Q Okay. All right. Thank you, sir.

23 Mr. Linch, as part of your examination of the
24 plaid blanket, which has been previously introduced into
25 evidence as State's Exhibit No. 69 and 70, did you have

1 occasion to take that to the laboratory and look for any
2 head hairs on it?

3 A Yes, sir. I did.

4 Q And did you or were you able to find at least
5 two head hairs that you were able to associate with
6 [REDACTED]?

7 A Of the many, many hairs that were recovered
8 from the plaid blanket there were two that had suitable
9 comparison to the head hair of [REDACTED].

10 Q I'm going to ask you to take a look at what I
11 marked for identification as State's Exhibit No. 83.
12 I'll ask you if you have had an occasion to review and
13 prepare the photographs and the associations from the
14 microscope that are portrayed here?

15 A Yes, sir. I have.

16 Q All right.

17 MR. CLAYTON: Your Honor, for the purposes
18 of demonstrative purposes we would offer State's Exhibit
19 83.

20 MR. MCDERMITT: No objection for
21 demonstrative purposes, Your Honor.

22 THE COURT: Admitted for that purpose.

23 Q (By Mr. Clayton) All right. Mr. Linch, were
24 you able to make an association between the two hairs
25 you just mentioned from the plaid blanket, State's

1 Exhibit No. 70, with [REDACTED]?

2 A (By the witness) The two hairs represented on
3 State's 83 had the same fine microscopic characteristics
4 as the known head hair of [REDACTED].

5 Q All right. If you wouldn't mind, would you
6 step around and show the jury some of the points of
7 comparison in these two hairs that convince you that
8 these are [REDACTED]'s hairs?

9 MR. MCDERMITT: Objection, Your Honor.
10 It's a misstatement. Convincing Mr. Linch that these
11 are the hairs of [REDACTED]. I'll object to the
12 leading question in that form.

13 THE COURT: Sustained.

14 Q (By Mr. Clayton) Well, are there -- do these
15 two photographs of the hairs that were found on the
16 plaid blanket in the back of Mr. Blair's car, do you
17 find these to be associations that can be made with
18 [REDACTED]?

19 A (By the witness) [REDACTED] cannot be
20 excluded as the donor of the Caucasian hairs recovered
21 from the blanket in Mr. Blair's car.

22 Q Are there any features that stood out in your
23 mind as -- that you can see here in these photographs,
24 recognizing the limitation of these photographs?

25 A These two hairs were wrapped around each other

1 upon my recovery from the blanket and they both had root
2 end with a small amount of tissue indicating that they'd
3 been forcibly removed, and as you can see on the right
4 side of State's 83, these hairs from the blanket have
5 what I call bilateral pigment distribution. Pigment is
6 concentrated on either of the two sides. There is no
7 medulla. These hairs have no medulla. In comparing
8 these to the known head hairs of [REDACTED], which
9 also had no medulla, I found that they were
10 microscopically the same.

11 Q Mr. Linch, you mentioned in your earlier
12 testimony that the hairs that were recovered from the
13 plaid blanket exhibited some signs of trauma. And is
14 that something that can be shown in several different
15 ways, be it by twisting or some other evidence to the
16 hair itself?

17 A I -- my testimony was such that the hairs from
18 the plaid blanket, the two that were twisted around each
19 other, had been forcibly removed. I don't know about
20 trauma to the hair shaft itself. I didn't see that.

21 Q With regard to the hair that was removed from
22 the front passenger seat that we talked about in the
23 previous poster, did it show signs of trauma to the
24 hair?

25 A Yes, sir. That hair had been crushed on each

1 end.

2 Q As such can you see that crushing under a
3 microscope as well?

4 A Yes, sir.

5 Q I'm going to show you what I marked for
6 identification as State's Exhibit 84. I'll ask you if
7 State's 84 in the photograph shows the evidence of the
8 trauma that you had mentioned?

9 A State's 84 is four microphotographs that were
10 taken by me. They are a series of photomicrographs of
11 the hair fragment from the passenger floor of Mr.
12 Blair's vehicle.

13 Q All right.

14 MR. CLAYTON: We'd offer --

15 Q (By Mr. Clayton) First of all, there are three
16 other photographs here. Can you tell me what those
17 portray in State's 84?

18 A (By the witness) All four are photographs, on
19 State's 84, are pictures of the same hair piece from Mr.
20 Blair's front floorboard. They are all photographs of
21 the one piece, just at different places in the hair.

22 Q All right.

23 MR. CLAYTON: We'd offer 84 for
24 demonstrative purposes, Your Honor.

25 MR. MCDERMITT: No objection, Your Honor.

1 For that purpose, Your Honor.

2 THE COURT: Admitted for that purpose.

3 Q (By Mr. Clayton) I hate to keep doing this to
4 you, but could you just step around and show us a little
5 about some of these terms we've been talking about.
6 First of all, at the top this is, first of all, again,
7 the hair from the front passenger side; is that correct?

8 A (By the witness) That's right. All of these
9 photographs represent that hair, that single hair.

10 Q A moment ago -- well, let's start with the top
11 photo. Essentially this gives us some of the
12 characteristics that you found to be special
13 characteristics for [REDACTED]'s hair; is that correct?

14 A That's right.

15 Q All right. And the second photograph, can you
16 tell us what you portrayed here along with the suspect
17 hair fragment from Mr. Blair's vehicle?

18 A Do you want me to talk about the first or go to
19 the second one?

20 Q Okay. We'll just let you move from the first
21 one then as it applies to the second.

22 A The first photograph represents bilateral
23 pigment distribution, fine grain pigmentation of the
24 found hair in Mr. Blair's car. It also represents the
25 fragmented medulla, and fine structure swirling on that

1 medulla on higher power becomes more apparent. The
2 second photograph from the top is a lower power
3 photomicrograph of the same hair. In this photograph
4 you can start to see the clear residue that is on the
5 hair, and also in number two there's a carpet fiber,
6 consistent with origin from Mr. Blair's vehicle. The
7 hair came from the floor of his carpeting. There's a
8 darker hair with Mongoloid racial characteristics.
9 Underneath all these is another hair that is
10 featureless.

11 Q This one with the Mongoloid hair features,
12 you've had a chance to look at Michael Blair's hair as
13 well; is that correct?

14 A Yes, sir. I have.

15 Q This particular hair did come from Michael
16 Blair's vehicle. Is it one that you've been able to
17 make an association with or at least certainly can't
18 exclude Mr. Blair?

19 A Mr. Blair cannot be excluded as being the
20 source of this hair from his car.

21 Q Now, you mentioned some clear residue that
22 shows up in this photograph. I assume here, the third
23 paragraph from the top, shows that more clearly. Would
24 the clear residue that is clinging to the hair from the
25 passenger side of Michael Blair's vehicle that you've

1 associated with [REDACTED], is that residue from some
2 kind of hair treatment product, in your opinion?

3 A The third photograph down on State's 84 --

4 Q Be 84.

5 A 84 represents a synthetic liquid material
6 adherent to the hair shaft. This is microscopically
7 consistent with hair conditioner, some sort of hair
8 treatment. The -- it is inconsistent with a dried
9 biological product.

10 Q Cream rinse, then, be a possible source of this
11 residue?

12 A That's a possible source.

13 Q All right. Finally, down here in the bottom
14 photograph, we were talking about trauma a few moments
15 ago. Do we see the trauma displayed to the hair
16 fragment from the front passenger side of Blair's
17 vehicle you've associated with [REDACTED], do we see
18 that trauma you were talking about?

19 A Yes. The fourth photograph on the bottom of
20 State's 84 represents one end of this hair piece from
21 the floor of Mr. Blair's vehicle. You can see that the
22 hair has been crushed or particle filament or frayed
23 ends. The other end of this hair has a similar
24 appearance indicating that this hair piece has been
25 subjected to some sort of blunt force.

1 Q All right. Thank you, sir.

2 Mr. Linch, you had occasion to examine a clump
3 of hair, did you not, that has been admitted into
4 evidence that -- labeled its location as originally
5 being Jack Carter Park. Did you have a chance to look
6 at that particular hair?

7 A That's right. There were a strand of hairs
8 that became my unique item number 87.

9 Q All right. From that particular item 87 were
10 you able to associate at least two hairs in that clump
11 with that of Michael Blair, the Defendant in this case?

12 A There were two hairs from the strand of hairs
13 that had Mongoloid racial characteristics and they
14 further had internal microscopic structures that were
15 the same as the known head hair of Michael Blair.

16 Q Additionally, within this clump containing the
17 two hairs you associated with Michael Blair, did you
18 find hairs that you were able to associate with
19 [REDACTED], the victim in this case?

20 A The strand itself contained head hairs that had
21 the same microscopic characteristics as the head hair of
22 [REDACTED]

23 Q Was this one or two associations or was it a
24 number of hairs that you were able to associate from
25 that clump?

1 A I compared fifteen to twenty hairs within the
2 strand and they were all the same as [REDACTED]'s
3 head hair.

4 Q All right. Now, this is the first time we've
5 talked about Michael Blair's hair. We've already
6 previously admitted a head hair standard from Michael
7 Blair taken by yourself. I'm going to show you what's
8 been marked now for identification as State's Exhibit
9 No. 85. I'm going to ask you if you'll take a look at
10 State's Exhibit No. 85 and tell me whether or not this
11 is a series of photographs prepared by you with the use
12 of the microscope for comparison of the two hairs
13 associated with Michael Blair from Jack Carter Park that
14 were admixed with some twenty-odd hairs from [REDACTED]
15 [REDACTED]'s association at Jack Carter Park?

16 A This exhibit contains four comparison
17 photomicrographs of known hairs from Michael Blair
18 compared to the microscopic appearance of two separate
19 hairs found within that larger strand. The two top
20 photographs are the same hair compared at different
21 magnifications, different places in the hair, and the
22 two lower photomicrographs are pictures of the same hair
23 compared at different magnifications and at different
24 places in the hair.

25 Q All right. With regard to the far left-hand

1 side of the poster at the bottom -- let me see if I can
2 turn this a little bit for you. At the bottom is that a
3 photograph that you prepared of Jack Carter Park for
4 this poster?

5 A That --

6 Q Not that you took, but that you used for its
7 association.

8 A That photograph was provided to me by the Plano
9 Police Department.

10 Q All right. Above this photo labeled Jack
11 Carter Park -- I believe we have the same photo in
12 evidence -- is there also a photograph made by you of
13 the hair clump that you examined?

14 A Yes, sir. The photograph above that is a
15 representation of the item as it was submitted to the
16 laboratory, that is, the whole hair clump.

17 Q All right. Okay. We have four photographs
18 down the center. On the right-hand side are the strands
19 that were -- well, first, higher power and lower power
20 photograph of one of the strands. Then at the bottom we
21 have two that appear darker. Why do we see part of the
22 head hair standards from Michael Blair appear darker in
23 color, as well as the suspect strands you've associated
24 with Michael Blair from Jack Carter Park? Why do we see
25 that difference?

1 A If I can correct one thing, the top photograph
2 is the lower power, the lower is the higher power.
3 Within everybody's head hair you have variations. The
4 continuing theme within an individual's hair is how is
5 the pigmentation distributed. That's the
6 individualizing characteristic of head hair. Mr.
7 Blair's hair ranges from fairly heavily pigmented to the
8 ultimate extreme of being opaque. There are a couple of
9 hairs in his head hair standard that are completely
10 opaque, that is, the pigmentation is so dense that you
11 cannot see through the hair.

12 Q Would that be the two that are portrayed down
13 here at the bottom, the opaque examples?

14 A The two photographs, but that's one hair.

15 Q Two photographs of the same hair?

16 A That's right.

17 Q Okay. Within the racial group that is
18 classified as Mongoloid hair, is opaque hair something
19 that you find very often?

20 A I've never seen a Caucasian or Mongoloid hair
21 that was opaque like that.

22 Q That's in seven years or more of looking at
23 hair under a microscope about 85 to 90 percent of your
24 day?

25 A That's right.

1 Q As such, Michael Blair then has some very
2 strong special characteristics in his hair because of
3 some of his hair standard having these opaque features;
4 is that correct?

5 A I haven't seen a hair like that before. Not a
6 human hair.

7 Q All right.

8 MR. CLAYTON: For demonstrative purposes,
9 Your Honor, I just want to make sure the record is
10 clear, Exhibit 85 was offered.

11 MR. McDERRITT: We have no objection.

12 THE COURT: Admitted for that purpose.

13 Q (By Mr. Clayton) All right. With regard to the
14 hair clump that we've been talking about from Jack
15 Carter Park, Mr. Linch, did you also have occasion to
16 prepare some comparison microscope photographs that show
17 the association in the hair found at Jack Carter Park
18 with the known head hair standard and combings of [REDACTED]
19 [REDACTED]?

20 A (By the witness) I compared the hair strand
21 found at Jack Carter Park to the known head hairs of
22 [REDACTED].

23 Q All right.

24 A And this exhibit contains four photomicrographs
25 that roughly demonstrate those comparisons.

1 Q All right.

2 MR. CLAYTON: We would offer into evidence
3 for demonstrative purposes State's 86.

4 MR. MCDERMITT: No objection, Your Honor.

5 THE COURT: Admitted.

6 Q (By Mr. Clayton) With regard to State's Exhibit
7 No. 86, as you said, this is simply roughly showing the
8 comparison. We have a lot of hairs portrayed here.
9 Would it be fair to say that the strongest
10 characteristic that you can see in both is the
11 fragmented medulla and the bilateral pigmentation that
12 we see in most of these?

13 A (By the witness) Obviously you have to consider
14 each hair individually in doing the comparison, but the
15 notable thing about this comparison was that within the
16 range of [REDACTED]'s hairs, that range from featureless to
17 the fragmented medullated with the little bodies sitting
18 below the cuticle, I was able to associate all ranges of
19 her variation with hairs in that strand.

20 Q As you testified earlier, and correct me if I'm
21 wrong, did you say that the more hairs you have at a
22 crime scene for comparison to the standard the stronger
23 the association you can make? Is that a fair statement?

24 A Absolutely.

25 Q And you had a good range then of variation in

1 [REDACTED]'s standard and combings present at the Jack
2 Carter hair?

3 A The complete range of [REDACTED]'s variation in her
4 head hair is represented in that strand from Jack Carter
5 Park.

6 Q Okay. I want -- just in that same idea of the
7 variation in the standards, I want to kind of reverse
8 myself and talk about Mr. Blair's hair for just a
9 minute. You pulled two hairs that you associated with
10 Michael Blair mixed up in this clump from Jack Carter
11 Park along with these that you've associated with [REDACTED]
12 [REDACTED]. Those two hairs that you associated from Jack
13 Carter Park with Michael Blair, did they meet this range
14 of variation in Mr. Blair's hair as well to make these
15 particularly good associations?

16 A The comparison of the two hairs from that
17 strand with Mongoloid racial characteristics represented
18 two extremes of Mr. Blair's known head hair, one being
19 the opaque hair that I haven't seen before and the other
20 being the heavily pigmented type hair.

21 Q I'm going to ask you if you would, Mr. Linch,
22 to kind of change your focus for just a minute again to
23 hair. I mean, to fiber. With regard to fiber, you can
24 make these same types of visual observations under the
25 comparison microscope; is that correct?

1 A The initial steps of the fiber comparison are
2 identical to the steps of a hair comparison; however,
3 the final steps of a fiber comparison are very different
4 from the steps of a hair comparison.

5 Q With regard to the fiber that has been
6 introduced into evidence as State's Exhibit No. 15 from
7 the autopsy performed by Dr. Rohr, did you have a chance
8 to make microscopic comparisons of that fiber from
9 [REDACTED] 's buttocks with fiber taken from the
10 stuffed rabbit that has been introduced into evidence as
11 State's Exhibit No. 52?

12 A Yes, sir. I did.

13 Q Based upon your microscopic comparison -- and
14 I believe you said you used two different microscopes in
15 that comparison or I may be mistaken there.

16 A No. I use two microscopes when there is a
17 needed recovery from a piece of tape or clothing article
18 sometimes, but in this instance I just used the
19 comparison microscope.

20 The fiber from [REDACTED] 's body was affixed on a
21 microscope slide with masking tape from Dr. Rohr, and I
22 removed that fiber from his slide and directly mounted
23 it on a microscope slide. I then did the comparison
24 microscopically.

25 Q Based upon your examination did you come to an

1 opinion as to whether or not the fiber from the rabbit
2 we've just been discussing, State's Exhibit No. 52,
3 matched in fine microscopic characteristics the fiber
4 from Dr. Rohr's office that was found in the perianal
5 region of [REDACTED] ?

6 A I couldn't tell the difference microscopically
7 between the fiber from [REDACTED]'s perianal region and the
8 fibers that comprise that white rabbit from Mr. Blair's
9 vehicle.

10 Q Now, as you alluded, there are further tests
11 that can be done with fiber to strengthen the
12 association that you made at least visually; is that
13 correct?

14 A That's right.

15 Q Did you make preparation then to send this
16 particular fiber that was taken from [REDACTED] and
17 the fiber taken from -- the fiber samples from the
18 stuffed rabbit to the FBI laboratory in Washington,
19 D.C.?

20 A Those fibers were sent to the FBI laboratory
21 for chemical identification.

22 Q All right. John Naylor picked those up from
23 you and sent those on to the FBI, if I'm not mistaken?

24 A That's correct.

25 Q Okay. And as far as what their findings are,

1 that's something that is not within your area of
2 testimony today because you did not perform those tests
3 yourself?

4 A That's right.

5 Q Okay. As far as the microscopic work that you
6 did, did you also have occasion to -- I think I asked
7 this -- look at stuffed animals, toys, and things in
8 [REDACTED] 's environment as potential sources for the
9 fiber found on her body?

10 A Yes, sir. I did.

11 Q In your opinion microscopically you were able
12 to see distinctions, eliminate them as possible sources?

13 A Yes, sir. I was.

14 Q I'm going to show you what I'm marking for
15 identification as State's Exhibit 87. I'll just ask you
16 if State's Exhibit 87 represents the fiber or a
17 comparison of fiber from the rabbit, State's Exhibit 52,
18 the white rabbit found in Michael Blair's vehicle with
19 fibers that belonged to [REDACTED] 's dolls at her
20 home, and some of them are portrayed here in the
21 photograph that's been previously introduced into
22 evidence?

23 A Yes, sir. They do.

24 MR. CLAYTON: We'll offer States 87 for
25 demonstratives purposes.

1 MR. MCDERMITT: No objection, Your Honor.

2 THE COURT: Admitted for that purpose.

3 Q (By Mr. Clayton) If you could step around once
4 again, and I want to go over with the jury real quickly
5 some of the things you look for when you're comparing
6 fibers. If you can, show how [REDACTED]'s dolls just simply
7 did not match those from the suspect doll in Blair's
8 vehicle.

9 A (By the witness) In the center of State's 87
10 there are two photomicrographs. Again, these are
11 comparison photographs taken through the microscope.
12 One side is one sample. On the other side is the other
13 sample. On the left side of the photograph are
14 representations of the fibers that make up this rabbit
15 with glasses that came from Mr. Blair's vehicle. On the
16 right side is a photograph of fibers taken from one of
17 [REDACTED]'s rabbits that I found on the shelf in her
18 bedroom.

19 Now, the closest agreement between -- I did a
20 fiber sampling from all these stuffed animals. I think
21 there were about fifteen all together, and from what was
22 described to me as her sleep bunny, a bunny that she
23 used to sleep with, kind of a floppy thing, the closest
24 agreement was found from the sleep bunny; however, in
25 looking at subtle microscopic differences I was able to

1 exclude her sleep bunny, primarily through the existence
2 in the sleep bunny of these linear inclusions. No
3 matter how far you go out on these fibers on the
4 microscope, you won't find these linear-type inclusions.
5 The closest stuffed animal that [REDACTED] had, State's 87,
6 represents fibers from that rabbit; however, shown in
7 the bottom photograph is the difference in the change.
8 The typical fibers from the rabbit from Mr. Blair's car
9 are what we call ribbon acrylics or modacrylics.
10 Modacrylics are used often in wig manufacture, but these
11 type fibers, again, do not possess this linear
12 inclusion.

13 Additionally, there are specific splits in the
14 fiber. This is a function of manufacturing. All fibers
15 are manufactured a little bit differently. The key
16 thing about this rabbit is that he is mostly this fiber.
17 There are some occasional thinner what we term trash
18 acrylic fibers. There are also in this makeup -- I
19 don't usually look at trash acrylic fibers. This is a
20 fiber seldom encountered in forensic work. The fibers
21 comprising the closet bunny of [REDACTED] was made up not
22 primarily of this, but primarily of this fiber here.
23 The dots that you see in both fibers are delustered
24 titanium dioxide. It's used in paints or fibers to cut
25 down on shine or glare. Obviously the fibers from the

1 bunny are heavily delustered. The fibers from her bunny
2 and this particular type fiber are heavily delustered,
3 all these little grains of titanium dioxide. In this
4 fiber that is the predominant fiber of this sleep bunny
5 there is a very clear difference in the distribution of
6 titanium dioxide particles. That is a significant
7 comparison characteristic used to exclude [REDACTED]'s own
8 bunny.

9 Q Mr. Linch, with regard to the bunny that
10 belonged to [REDACTED], that came from her room -- we can
11 call it [REDACTED]'s sleep bunny -- even though you were
12 able to make microscopic distinctions in it from the
13 rabbit that came from Michael Blair's vehicle and that
14 you have associated as being microscopically, at least,
15 the same in fine microscopic characteristics as the
16 fiber found in [REDACTED]'s body, did you go ahead and send
17 that rabbit doll, [REDACTED]'s sleep rabbit, to the FBI for
18 examination chemically, along with the fiber from
19 [REDACTED]'s body and the fiber from the suspect doll?

20 A Yes, sir. I did.

21 Q All right. Do you have those in the box there
22 before you that contains your microscopic slides?

23 A Yes, sir. I do.

24 Q Okay. And those were sent, as you stated
25 earlier, through Mr. Naylor to the FBI for their

1 analysis; is that correct?

2 A That's right.

3 MR. CLAYTON: May I approach, Your Honor?

4 THE COURT: You may.

5 Q (By Mr. Clayton) If I might, Mr. Linch, I'd
6 like to see the three slides that you pulled, as well as
7 the bag they came from. Thank you.

8 Mr. Linch, I'm going to hand you a bag that you
9 just opened here in open court that I've labeled as
10 State's Exhibit No. 88. I'm going to hand you the
11 contents of that bag that you just pulled out here in
12 open court. They've been labeled as State's 89, 90, 91.
13 I'll ask you if you can identify each of the three
14 cardboard boxes with the microscope slides in them as
15 being the -- being associated with this case?

16 A (By the witness) State's 88 is the packaging
17 that the slides were provided in. State's 91 contains
18 the microscope slides of the single white fiber from the
19 perianal region of [REDACTED]. In that same package
20 are known fibers from the rabbit obtained from Mr.
21 Blair's vehicle. State's 90 contains one microscope
22 slide. These are white fibers that I plucked from a
23 white bear. That would be Mr. Blair's white bear that
24 was in his car. And State's 89 are two glass microscope
25 slides. One is from -- or is a fiber sampling from one

1 of Ashley's dolls. It was a bear with an inscription on
2 it, I Love You, and the second glass microscope slide is
3 a fiber sampling from her sleep bunny. It was
4 identified on her shelf as being from Eden Toys.

5 Q Mr. Linch, you mentioned a moment ago a term,
6 trash fibers, trash acrylic fibers. What does that
7 mean?

8 A There are fibers that occur so commonly in the
9 environment that an experienced forensic microscopist
10 really doesn't pay much attention to them. I've
11 probably got some white cotton fibers in my head hair
12 from putting on a T-shirt this morning. To me they
13 don't mean anything. To me the white cotton in my
14 T-shirt looks like the white cotton in your T-shirts,
15 just like the white cotton in everybody's T-shirt.
16 There are within the acrylic family very thin, very,
17 very common, white acrylic fibers. When I see them in
18 case work, whether collected from a body or suspect
19 environment, I just don't pay any attention to them.
20 They're really not worth reporting because their value
21 is nothing. The polyester group of synthetic fibers is
22 approaching that worthless examination state because
23 they're so common in the environment. I don't know of
24 many head hair combings from victims that I have
25 examined that I haven't found a red polyester fiber in

1 there some place. These are trash fibers. They have no
2 forensic significance.

3 Q In regard to the fiber found and compared by
4 you that came from the buttocks or perianal region of
5 [REDACTED]'s body was -- I believe you mentioned that
6 fiber is not one you see very commonly in the
7 environment. Have you ever seen that particular fiber,
8 the one found on [REDACTED]'s body, alone as that one
9 was in the perianal region?

10 A I've never seen that type of ribbon fiber by
11 itself before.

12 Q Have you seen that type of ribbon fiber before
13 in association with other fibers?

14 A Yes, sir. It is.

15 Q When you usually see that particular type of
16 fiber, what kind of association or where do you
17 generally see it? What kind of situations?

18 A That type of fiber is such a fragile, thin
19 fiber that once it's released from its parent body,
20 possibly the rabbit in this instance, it easily becomes
21 wound up with other fibers. The times before that I've
22 seen this type of class fiber, it's in association with
23 lint material. It's wrapped up with other acrylics and
24 other polyesters, like lint material from maybe the
25 corner of somebody's house, but they are a very fragile

1 type fiber. Once they're released from the structure
2 they came from, they usually get wound up with some
3 other types of fibers.

4 Q Okay. When a fiber moves from its parent
5 source, as you say -- here we'd be talking as a parent
6 source, Mr. Blair's bunny rabbit in his vehicle -- that
7 would be the parent source to make the association with
8 the fiber found on [REDACTED]'s body; is that correct?

9 A That's right.

10 Q Okay. All right. Now, what -- is there a
11 theory of exchange? When you talk about fiber coming
12 from a source, a parent source, to some other location,
13 what is that called?

14 A This is called the Locord exchange principle.
15 In 1923 Edmond Locord was the first microscopist to
16 start looking at fiber-type evidence. He postulated
17 that whenever two objects come in contact, then there's
18 always a transfer of material. It may be too small to
19 be found. It may be lost subsequently, but that's known
20 as the Locord exchange principle.

21 Q When we talk about exchanges of property from
22 the parent material to some other location, is there
23 what we call primary transfers and secondary transfers?
24 Kind of how does that work or play into -- I guess, how
25 is that significant, then, as it relates to the parent

1 body here, the rabbit from Mr. Blair's vehicle, and the
2 fiber you associated with it being on [REDACTED]'s body?

3 A If one of my head hairs is later found on the
4 floor here, that would be a primary transfer. If I had
5 tracked in some airplane carpet into this carpeting,
6 that would be a secondary transfer. Primary transfer
7 would be that carpet to me and then me bringing it in
8 here. This can go on and on and on, tertiary,
9 quaternary. I haven't -- I don't have pets in my
10 environment. I find animal hair on my clothing from
11 time to time.

12 Q With regard to the fiber found on [REDACTED]'s body
13 being in the perianal region and due to the extremely
14 fragile nature of this single fiber that you rarely or
15 have never seen by itself without association with other
16 fibers, do you have an opinion as to whether or not this
17 was a very primary type of transfer from the parent
18 source, the rabbit, to [REDACTED]'s body?

19 A My opinion would be that that would be a very
20 secondary type transfer, with the primary being to a
21 finger and then the finger coming in contact with
22 Ashley's body.

23 Q What is the reason for that opinion?

24 A Well, the -- if you grab the rabbit, you will
25 invariably receive one of its fibers on your finger.

1 And then if that hand comes in contact with the body, I
2 would expect an immediate transfer from that finger.
3 Earlier when I was handling the rabbit, one fiber came
4 loose and I placed it here and it's no longer to be
5 found, but that would be my opinion about theory of
6 transfer in this case.

7 Q Be a fairly recent or rather recent transfer
8 for that fiber to still be alone without association
9 with other fibers, particularly due to the unique and
10 difficult place for that fiber to have reached?

11 A Yes. And the cleanliness of that fiber is a
12 factor.

13 Q That fiber had not picked up other debris or
14 other fibers or anything --

15 A There was just a very scant amount of material.
16 It was microscopically consistent with fecal material.
17 As you travel further along on the fiber under the
18 microscope, it's very clean.

19 Q Hasn't been spattered with mud or out in the
20 rain or anything like that that you could tell?

21 A I don't know about rain, but there's no mud
22 there.

23 Q Okay.

24 Q The last area I need to cover you with you I
25 suppose -- oh, yeah. Back when we talked about the hair

1 that was recovered from Jack Carter Park and that you
2 associated between fifteen and twenty of those hairs
3 with Ashley Estell -- do you recall that?

4 A Yes, I do.

5 Q That particular hair that you associated with
6 Ashley Estell from Jack Carter Park, did you have an
7 opinion as to whether or not that hair had been cut or
8 broken or traumatized in some way?

9 A The hairs that were consistent with origin from
10 [REDACTED], the strands had been cut.

11 Q When we talk about cut hair, can hair be cut by
12 other means other than a knife or scissors or something
13 along those lines?

14 A Yes, sir.

15 Q And appear the same microscopically pretty much
16 as if they'd been cut by scissors?

17 A Yes, sir.

18 Q All right. When a kiddo wears a bow in their
19 hair or one of those little hair band things to hold a
20 ponytail in place, if that is pulled or dragged or
21 smacked up against something, can that also fracture
22 hair or cut, leaving the impression the hair has been
23 cut in your opinion?

24 A Tangential forces applied to the scalp can
25 damage the hair in a way that microscopically it appears

1 to have been cut. I've seen an instance where a close
2 range gun shot of the head produced or released hairs
3 that appeared to have been cut.

4 Q The last thing I'll cover with you has to do
5 with some plant matter. Did you have occasion in
6 association with this case to look at microscopically
7 some plant matter that was recovered from County Road
8 113 by Ben Armstrong?

9 A Yes, sir. I did.

10 Q Mr. Linch, I'm going to show you what's been
11 marked for identification previously as State's Exhibit
12 79. I'll ask you if recognize it as some plant matter
13 that you had occasion to look at microscopically in
14 association with this case?

15 A State's 79 is my unique item number 184. It
16 came into the crime laboratory on October 7, 1993, and
17 this is labeled as being plant material taken from where
18 near where Ashley's body was found.

19 Q Did you have occasion to --

20 MR. CLAYTON: First, let me offer into
21 evidence, Your Honor, State's Exhibit 79.

22 MR. MCDERMITT: No objection, Your Honor.

23 THE COURT: State's 79 is admitted.

24 Q (By Mr. Clayton) Mr. Linch, whenever State's
25 Exhibit No. 52, Mr. Blair's rabbit from his vehicle, was

1 collected and sent to the laboratory, did you detect
2 clinging to the ear of the rabbit a -- an amount of what
3 appeared to be plant material?

4 A (By the witness) There was dried plant
5 material, I believe, on the left ear on the inside.

6 Q All right. Did you have occasion to collect
7 that plant material from the rabbit's ear for some sort
8 of inspection microscopically?

9 A Yes, sir. I did.

10 Q Where is that -- or do you have that material
11 with you today or did you photograph the material for
12 microscopic comparison?

13 A It was photographed with a light microscope.
14 It was also photographed with a scanning electron
15 microscope.

16 Q And after you had made your photographs, were
17 you able to compare those photographs with photographs
18 made from the plant material contained in State's
19 Exhibit 79?

20 A Yes, sir. I did.

21 Q Were you able to make an association based on
22 those photographs of the plant materials microscopically
23 with the plant material that you recovered and
24 photographed from the ear of State's Exhibit No. 52?

25 A In forensic botany in order to try to determine

1 if a leaf found on an item like the rabbit is consistent
2 at the present time with leaves in a crime scene like at
3 [REDACTED] s body site, you really need the entire leaf.
4 You need the borders of the leaf to know if it's smooth
5 or jagged, and it helps to have a fresh leaf, and in
6 this instance the fragment of leaf material from the
7 rabbit's ear was incomplete. It was fractured and very
8 dry and there was no remaining border, and a lot of the
9 substrate material between the veins was gone.

10 So the best you can do in that instance is to
11 look at the hairs on the leaf. Hairs are specific for
12 genus of type plants. We're homo sapiens. Our genus is
13 homo. So you're limited to assigning whether or not
14 plant material in this instance could be from the same
15 genus type plant, and in that instance the plant
16 material from the rabbit's ear, the hairs on that leaf
17 appeared by scanning electron microscopy to be the same
18 as plant material at the crime scene.

19 Q Now, granted, and being perfectly candid with
20 the jury, the plant material around the crime scene is a
21 very common type of plant material we'd see, or
22 vegetation, we'd see in the eastern part of the State of
23 Texas.

24 A It's a common Texas weed. I've seen it in
25 Central Texas, as well as North Texas.

1 Q So -- and being perfectly candid, although
2 there's an association between the plant material on the
3 bunny rabbit's ear and the scene where [REDACTED] was found,
4 it's simply that, just an association as far as the
5 genus goes?

6 A Can't exclude it.

7 Q Can't exclude it. Okay. Mr. Linch, with --
8 sort of in closing, I'd like to ask you if, finally, in
9 your opinion the hairs that you examined that you have
10 associated with [REDACTED] from Jack Carter Park,
11 from the front passenger side of Michael Blair's
12 vehicle, from the plaid blanket in Michael Blair's
13 vehicle, do you feel that those particular hairs were
14 either [REDACTED]'s or someone with hair just exactly like
15 hers?

16 MR. MCDERMITT: Objection, Your Honor.
17 That's a misstatement. The -- Mr. Linch is not going to
18 be able to say exactly like that. He's testified as to
19 that, and we object to it on that basis because it's
20 leading the witness.

21 THE COURT: I'll sustain it as to leading.

22 Q (By Mr. Clayton) How would you characterize the
23 associations you made with [REDACTED]?

24 A (By the witness) If I can rank them, in the
25 strand of hairs from Jack Carter Park there is a strong

1 microscopic indication it came from [REDACTED] because of
2 the number of hairs that are the same and the fact that
3 so much variations represented there that is the same in
4 her variation from her scalp. Second to that, the
5 fragment from the passenger floor is a strong
6 association to [REDACTED]. It has come from somebody
7 who has the exact same microscopic characteristics,
8 including the medullary swirling and the microstructure
9 sitting right under the cuticle and the fact that it
10 shows evidence of trauma. It has come from someone who
11 had, most likely had, head trauma and the -- the latter
12 or less conclusive association would be the two hairs
13 from the plaid blanket. Now, they are in exact
14 microscopic agreement with [REDACTED]'s head hair,
15 but there is less detail in there to evaluate and so --
16 and the length is also a consideration factor. These
17 hairs were -- I think, the longest one was about four
18 inches. So in order for them to have origin from [REDACTED]
19 they would need to be from her bangs area, but certainly
20 I cannot exclude [REDACTED] as being the source of those two
21 hairs.

22 Q Now, with regard to the hair associations made
23 with Michael Blair, those were two hairs that you
24 associated with Michael Blair's head hair standard from
25 Jack Carter Park admixed with the hairs that you

1 characterized as strong associations with [REDACTED];
2 is that correct?

3 A That's right.

4 Q All right. Now, the two associations you made
5 with Michael Blair's hairs at Jack Carter Park, how
6 would you rank those or characterize those in
7 associations?

8 A The opaque head hair from the strand of hairs
9 from Jack Carter Park has strong microscopic indications
10 that they had origin with Mr. Blair. They are -- it is
11 a hair type that I haven't seen in Mongoloids or
12 Caucasians before, and the fine detail agreement under
13 the cuticle before the hair goes completely black is
14 microscopically exact. The second hair from that hair
15 strand is also a strong association to Mr. Blair. It --
16 microscopically I could see no difference between the
17 pigment pattern in that hair and the hairs from Mr.
18 Blair's head.

19 Q In wrapping up, Mr. Linch, I'm going to show
20 you what I'll mark for identification at this time as
21 State's Exhibit No. 92. I'm going to ask you to take a
22 look at State's Exhibit 92, ask you if this essentially,
23 then, summarizes the associations that you've made and
24 testified about here today with regard to State of Texas
25 versus Michael Blair?

1 A Yes, sir. It does.

2 Q Okay. Within State's Exhibit 92 we have
3 photographs, known photographs, of [REDACTED]
4 suspect vehicle, location where the body was found, and
5 some of the vegetation growing, Michael Blair's rabbit
6 from his car, picture of Jack Carter Park previously in
7 evidence, and a known photograph of Michael Blair; is
8 that correct?

9 A That's correct.

10 MR. CLAYTON: Your Honor, we'd offer into
11 evidence for all purposes and a summary for the jury
12 State's Exhibit No. 92 at this time.

13 MR. McDERRIMITT: May I take the witness on
14 voir dire, Your Honor?

15 THE COURT: You may.

16 VOIR DIRE EXAMINATION

17 BY MR. McDERRIMITT:

18 Q Mr. Linch, are you saying by this evidence, by
19 this chart here, that definitively three head hairs from
20 her match this car or came from this car necessarily?

21 A My testimony is such that three head hairs from
22 the car had the same microscopic characteristics as
23 [REDACTED]. I'm not here to tell you that they came
24 from her to the exclusion of all other people in the
25 world.

1 Q Okay. So when you say -- when I have an arrow
2 pointing here that goes to the vehicle, then I have one
3 here by the plant material, are you saying that --
4 you're not saying, then, any plant material could only
5 have come from this location?

6 A No, sir.

7 Q You're not saying that this fiber that was
8 found on the perianal area could only come from this
9 doll?

10 A No, sir.

11 Q Okay. And you're not saying that any hairs
12 that may or may not have been found at Jack Carter Park
13 or of a ponytail or tennis ball size or mass of hair is
14 not hers definitively?

15 A To -- not to the exclusion of all other
16 persons, no, sir.

17 Q The same as regards any hair combings here. So
18 are you telling me that those are more guidelines as to
19 your testimony?

20 A That's a summary of the associations. Yes,
21 sir.

22 MR. MCDERMITT: Pass the witness, Your
23 Honor

24 MR. CLAYTON: We offer the exhibit, Your
25 Honor.

1 MR. MCDERMITT: We don't object to it
2 then, Your Honor.

3 THE COURT: Admitted.

4 DIRECT EXAMINATION (Cont.)

5 BY MR. CLAYTON:

6 Q Mr. Linch, I just had one other question about
7 the Jack Carter Park hair and also about Mr. Blair's
8 vehicle. Did you have occasion to examine the Jack
9 Carter Park hair in the clump fairly closely, and in
10 addition to hair associations made with Michael Blair
11 and [REDACTED], did you find some little C-shaped
12 bodies in that particular clump?

13 A Yes, sir. There were a number of human hair
14 fragments that looked like the letter C. They were
15 darkly pigmented.

16 Q Being so short, you couldn't make an
17 association because they were under half an inch in
18 length and you could not make an association?

19 A I can tell you they didn't come from [REDACTED].

20 Q Okay. Could you exclude Michael Blair as the
21 source of those C-shaped bodies?

22 A No, sir. They were too short and they had
23 darker clump pigmentation.

24 Q And I'm just being perfectly candid. We're
25 not trying to say you made an association or match with

1 Mr. Blair with this -- these C-shaped bodies contained
2 in the clump. We're just saying you could not exclude
3 him as a source for those little C-shaped hairs in the
4 clump?

5 A That's right. I could not really identify
6 whether those were head hairs, facial hair shavings, or
7 from what body site origin they had. So I don't know.

8 Q Did you ever seen those C-shaped bodies in
9 association with other samples that appear in the
10 summary of this case?

11 A There were a number of very short, heavily
12 pigmented hair fragments in the plaid blanket from Mr.
13 Blair's vehicle.

14 Q Once again, those things are too short to make
15 an association or a match as we did with the longer
16 hairs; however, you could not exclude Michael Blair due
17 to some of the characteristics that were visible as Mr.
18 Blair being a source for those C-shaped bodies on that
19 plaid blanket.

20 A No. Could not exclude Mr. Blair, or the other
21 hairs from the blanket. There was a lot of extraneous
22 materials on that blanket that may or may not have had
23 origin with Mr. Blair.

24 Q Those C-shaped bodies were present on the
25 blanket in his car?

1 A Yes, sir.

2 Q And they were present in the clump at Jack
3 Carter Park?

4 A That's right.

5 Q Also admixed in the clump of hair from Jack
6 Carter Park did you see some little pieces of tan or
7 light tan pieces of straw or grass or things of that
8 nature admixed in it?

9 A Strands from the park?

10 Q Yes, sir. In that little clump.

11 A There was some grass in there. Yes, sir.

12 MR. CLAYTON: Your Honor, at this time
13 we'll pass the witness.

14 THE COURT: All right. We'll stand in
15 recess then until 3:15.

16 Ladies and gentlemen, let me remind you
17 not to converse among yourselves or with anyone else on
18 any subject connected with the trial or to form or
19 express an opinion thereon until the cause is finally
20 submitted to you.

21 (Recess. Jury returned to
22 the courtroom.)

23 THE COURT: Everyone be seated, please
24 Mr. McDermit.

25 MR. MCDERMOTT: Thank you, Your Honor.

1 CROSS-EXAMINATION

2 BY MR. MCDERMITT:

3 Q Mr. Linch, early on you talked about that the
4 value of hair comparison is associative evidence; is
5 that correct?

6 A That's right.

7 Q All right. Is it fair for me to interpret that
8 as an exclusion type evidence?

9 A If given proper standards and under proper
10 conditions you can absolutely exclude somebody as being
11 a contributor of a hair.

12 Q Okay. For example, if you had a -- a known
13 hair sample that was Caucasian and then you saw two
14 different hair samples that were Mongoloid or Negroid,
15 then you could exclude them from matching the Caucasian;
16 correct?

17 A Well, that's at the simplest level. Yes, sir.

18 Q But starting at the simplest level?

19 A Right.

20 Q That would be an initial determination that you
21 would make?

22 A You could do that possibly with the naked eye.
23 Yes, sir.

24 Q Okay. And so then we could get -- then you
25 could go on further in your examination as regards

1 different features and special features and such as
2 that; correct?

3 A That's right.

4 Q And is it, then, that you use those
5 determinations or observations by you to further
6 exclude?

7 A At the level of the initial eye exclusion
8 you're looking for curliness, thickness, color. At the
9 microscopic level you're looking for primarily pigment
10 distribution and color, after you've done a racial
11 determination. It's all of those factors added
12 together.

13 Q Right. Okay. But basically trace analysis, is
14 it fair to say it's done for the purpose of -- albeit
15 findings may be similar -- it's also done for the
16 purpose of excluding other possibilities?

17 A That's right.

18 Q Okay. Because there is no such thing or is
19 there such thing as a -- a situation where you can say
20 this hair came from this person?

21 A You can't do that. No, sir.

22 Q It's -- like you can with a fingerprint?

23 A I'm not a fingerprint expert, but I understand
24 a fingerprint from that person is that person. Right.

25 Q So what we're talking about when you're saying

1 could have been a donor or such as that, you're saying
2 -- you're saying it's still in that classification, that
3 it's not excluded?

4 A That's right.

5 Q Okay. Now, you talked about a lot of what you
6 do and the associations that you make between different
7 types of hair and fiber evidence are based on your
8 individual judgment and experience; is that correct?

9 A Yes, sir.

10 Q Okay. You talked about the -- and I'm not sure
11 I can phrase it correctly -- the lizard brain approach?

12 A Yes, sir.

13 Q Okay. Where you -- you know they're the same
14 so --

15 A Something -- yes, sir. Something intuitively
16 tells you it's the same. You then go to a higher
17 thinking and look at the structures that make that true.

18 Q Like you talked about fingerprint experts, they
19 look at them and they -- they have a feeling or
20 something that there's a match. Then, therefore, they
21 go and look for different points?

22 A It's not a feeling. It's a complex system of
23 the senses and the coordination with what you're looking
24 for. It's a search image situation.

25 Q Now, in the scientific trace analyst area, can

1 you tell me what a double blind test is?

2 A That's where the examiner is unsure what is
3 being tested and that's where the person doing the
4 testing isn't sure of the conditions. Should be a third
5 person involved.

6 Q Okay. But it would -- is it fair to say then
7 that you don't necessarily have a known sample?

8 A That's right.

9 Q Okay.

10 A That's right.

11 Q And with -- a lot of what you talked about here
12 today, you have a known sample so you're looking for
13 things as compared to that known sample?

14 A Right.

15 Q Well, when we talk about these double blind
16 tests -- why would they do double blind tests? I
17 believe you mentioned that they did some of that with
18 you.

19 A The testing that we did is a quality control
20 measure. It does not qualify as double blind. A person
21 being tested knew that the one hair he had would fit
22 that category of twenty in doing the comparison.

23 Q So in a double blind you wouldn't even know --

24 A Any of those twenty were the source; right.

25 Q -- if any of those twenty were the source?

1 A Right.

2 Q Well, is there some advantage to doing double
3 blind as opposed to using a known sample when you're
4 talking about this intuition, intuitive thought process?

5 A No. I don't think so. If something is
6 microscopically the same, it's microscopically the same
7 regardless of surrounding circumstances or test
8 conditions.

9 Q Okay. Well, would the double blind then
10 eliminate the subjective aspect of it?

11 A No.

12 Q Okay. So the double blind, you're still going
13 to be using the subjective aspects as regards these
14 examinations?

15 A That's right. You're comparing microscopic
16 appearance of one thing to another. If they're the
17 same, they're the same. If they're different, they're
18 different.

19 Q Okay. Okay. And you talked, about as concerns
20 comparison, head hair is -- is the best hair to have
21 available for comparisons?

22 A In general. Some individuals have a head full
23 of featureless hairs and another person out there may
24 have a few featureless hairs. So if you're dealing with
25 a person with relatively featureless hairs, then that's

1 a less optimal situation than if that same person had
2 pubic hairs that had significant microscopic features,
3 but generally speaking, head hair shows more variation
4 and more distinguishing characteristics than pubic hair.

5 Q Okay. All right. But even using that, then
6 even to that extent pubic and axillary hair can still be
7 used for purposes of this exclusion?

8 A Pubic hairs -- I mean, axillary hairs and pubic
9 hairs can be -- pubic hairs can be used for exclusion.
10 Axillary hairs can be used for racial grouping. Now, if
11 you can exclude on the basis of race, then you've done
12 that job with the axillary hair, but as far as a
13 microscopic comparison, this to this, beyond the racial
14 aspect of that hair, then no.

15 Q Okay. So you can exclude on the basis of this
16 racial characteristic, Negroid, Mongoloid, and
17 Caucasian, with the axillary hairs. Is -- is it as
18 simple to do as with the pubic and head hairs, at least
19 to that level?

20 A Generally speaking, there are some armpit hairs
21 from some people that are very difficult to distinguish
22 from the pubic hairs. A criteria for assignment of a
23 particular hair to the category of pubic hair is what we
24 call buckling. As you go along the hair shaft there's a
25 buckling. Chest hairs and axillary hairs have very

1 minor, if any -- usually none -- of the buckling. And
2 also with the axillary hair you can see a bleached-out
3 tip where it's been exposed to deodorants and things
4 like that

5 Q Okay.

6 A So the general hypothetical -- could you
7 rephrase?

8 Q Okay. My point was or my question was, you can
9 still use axillary hair, at least for the benefit of
10 racial determination.

11 A Yes, sir.

12 Q Okay. And that to use it any further than that
13 is difficult. Or it can be done, but it's difficult to
14 make that as a general statement.

15 A I think it would be irresponsible to sit up
16 here and say, yeah, I matched an armpit hair or you -- I
17 included an armpit hair.

18 Q So like you talked about, looked across the
19 room and talked about head hairs and from looking at all
20 the individuals you could tell, based on your experience
21 and such, that these may not match. You sure couldn't
22 do that as regards axillary hairs?

23 A That's right.

24 Q And I would assume pubic hair fits somewhere in
25 the category in between?

1 A Pubic hair is a lot stronger than axillary
2 hair.

3 Q Okay. But it's -- okay. You say Hispanics or
4 Mexican-Americans come within this Mongoloid, it's been
5 your experience?

6 A Depending on how much European influence they
7 have. The Hispanics are, by history, Spaniard and
8 American Indian. Now, the predominant influence of
9 American Indian would give them predominant Mongoloid
10 characteristics.

11 Q At the first level of, say, interaction between
12 the -- the American Indian and someone from European
13 culture, are they going to be predominantly then a
14 Mongoloid show? Is that going to be that way or is
15 there a rule of thumb or some generalization as regards
16 that?

17 A Genetically they would be, with any -- with
18 some American Indian influence, they would be
19 predominantly American Indian, but with regard to myself
20 there is some very, very remote American Indian
21 influence and the only microscopic indication of that in
22 my head hair is a thick cuticle, but the pigment
23 distribution in my hair appears Caucasian.

24 Q Okay. So for you to examine your own hair
25 prior to the microscopic examination, would you be able

1 to -- would yours be classified as Caucasian?

2 A With the naked eye?

3 Q The naked eye.

4 A I couldn't tell. I'd have to look at it
5 microscopically.

6 Q All right. And then you say Amerasians would
7 be predominantly Mongoloid?

8 A Depending on --

9 Q As a rule.

10 A Depending on the recency of the mixture.

11 Q Okay. One generation?

12 A Right. Right.

13 Q What about as we separate from that, then do
14 they become more Caucasian? Say you're a third
15 generation American.

16 A That's difficult to know, difficult to say. I
17 rarely have that kind of family tree history.

18 Q Okay. Your cutoff as far as the -- your
19 ability to make a -- I guess I should say an educated,
20 qualified evaluation is a half inch?

21 A That's right.

22 Q As concerns hair?

23 A Yes, sir. Depending on -- may I add?

24 Q Please.

25 A Depending on the type of hair. If it's the

1 featureless, blond type hair that I described earlier,
2 then I may not bother with that if it's four inches
3 long, but if there are sufficient microscopic features
4 in that half inch, then yes. I do compare that.

5 Q Well, can we say then it's an absolute cut off
6 below half an inch as regards --

7 A In all cases.

8 Q -- as regards anybody?

9 A In all instances. Yes.

10 Q And as small as one and a half to two inches is
11 satisfactory for your comparisons?

12 A If they have sufficient detail to evaluate.

13 Q Now, you testified that it's been your
14 experience that the best -- or that the hair and fiber
15 from the body site in a dump case and from the body --
16 I'm trying to remember how you phrased it -- that the
17 hair and fiber from the body site was the most important
18 as far as samples or as far as your evaluation; is that
19 correct?

20 A I recall saying that in dump body cases that
21 hair and fiber evidence is often the only evidence that
22 you have. I don't remember talking about a specific
23 area of the body that something was recovered from.

24 Q Well, would you agree with me that hair and
25 fiber samples found on the body at a dump site are

1 obviously something of primary concern to you as far as
2 for evaluation purposes?

3 A They are an indicator of recent contact.

4 Q Okay. And then the more recent contact the
5 better your information or the more valuable may be your
6 evaluation; is that correct?

7 A With one caution. Okay? On the body that is
8 an indication of recent contact. Now, that also
9 includes, if that person had been on a blanket and on
10 that blanket were hairs that were not from the suspect,
11 then that is recent contact with that blanket and that
12 hair, but that does not mean that you're associating
13 that person. I talked about looking at mummy hair
14 earlier. If we've got a mummy hair on a blanket, body
15 goes to the blanket, you're looking for a mummy in 1994.

16 Q All right. Okay. You also talked about the
17 DNA testing, follicle tissue and then mitochondrial?

18 A Yes, sir.

19 Q DNA -- did I pronounce that correctly?

20 A Yes, sir.

21 Q Can you explain that again to me, please, sir?

22 A The -- within all cells of the body there are
23 small inclusions called the mitochondria. They produce
24 adenosine triphosphate. That's an energy chemical for
25 the cell. So these little bodies within the cell are

1 producing ATP. So that powers the cell, drives the
2 cell. Within the mitochondria itself are -- is circular
3 DNA. A theory is that in part of the evolutionary
4 process eukaryotic cells, or cells like we have, out on
5 their own took up bacteria, ate these bacteria,
6 incorporating them, and they became the mitochondria.
7 So they're both benefitting each other. The
8 mitochondria is producing energy for the cell and the
9 mitochondria has a nice place to live.

10 The DNA in the mitochondria is circular. It
11 looks more like a bacterial DNA than it does regular
12 nuclear human DNA. Then another interesting thing about
13 mitochondrial DNA is that you get all your mitochondria
14 from your mother. As the spermatozoa meets the egg and
15 fertilization occurs all the mitochondria that are
16 incorporated there come from the egg. The sperm itself
17 has maybe one or two in the tail piece, but the tail
18 piece breaks off. The sperm just injects its DNA,
19 nuclear DNA. So as the cell or fertilized zygote begins
20 to divide, the mitochondria themselves are dividing.

21 So all of us have our mother's mitochondrial
22 DNA, and you can trace back in a number of evolutionary
23 studies have been done, but it is -- the AFIT and the
24 FBI are looking at the sequence called the D loop in the
25 mitochondria that is a hypervariable sequence. They

1 are actually sequencing this strand and so the sequence
2 of nucleotides in my D loop of my mitochondria would be
3 identical to my mother, would be identical to my
4 brothers and sisters, but it is possible to get around
5 the problem in forensics where you don't have fresh root
6 tissue and actually extract mitochondria from the hair
7 shaft. The hair shaft is made up of cells that have
8 been pushed up and die. That's like extracting the fly
9 encased in amber. So if you can extract this
10 mitochondrial DNA and you can, in fact, amplify it up to
11 where -- a point where you have enough sequence, you get
12 the sequence of yourself, your mother and your brothers
13 and sisters and you go on back to your grandmother.
14 That is -- that is the hope for individualization of
15 hair in forensics.

16 Q Okay. We're not -- is it fair to say we're not
17 at that stage yet?

18 A It's been done on some remains from Viet Nam,
19 but that's a big controversy. AFIT got one result. Lab
20 in California was unhappy with that. It's turning out
21 there's not as much variance as they originally thought.

22 Q Okay. On these matters that you evaluated as
23 regards this particular case, could conceivably that
24 have been done with any of these?

25 A The data base is not in place to do that on

1 forensic case work. That would -- question would be
2 better posed to somebody familiar with what the current
3 status is of the FBI.

4 Q Well, you talked about, when you made the
5 points of comparison -- and please correct me if I
6 misstate anything -- that we start with basically racial
7 background, then we go to the basic features, then we
8 talk about special features. Is that -- is that fair
9 for a layman to put them in that order?

10 A Yes, sir.

11 Q Okay. And these special features you talked
12 about, residue, the absence of tips and roots, or the --
13 or the presence thereof. Okay? Residue, you talked
14 about blood, semen, some hair rinses, some insect
15 activity, such as that. When you talk about hair rinses
16 and such as that, is that common, uncommon for you to be
17 able for you to see it in your work?

18 A Hair rinse in particular?

19 Q Or I guess I should say --

20 A You don't see it that often.

21 Q Well, is it -- are residues on hair, whatever
22 kind, common or uncommon?

23 A Depends on the situation. If somebody is shot
24 in the head, you expect to see blood on the hairs. If
25 there's a sexual assault where there's been drainage

1 into the pubic area, you expect to see dried seminal
2 material on the pubic area. So it's situational
3 dependent.

4 Q Okay. Can you explain for me how the -- the
5 presence or the absence of -- of these, of either tips
6 or roots, may provide a special feature?

7 A With regard to the traumatized or crushed hair,
8 it tells you that that hair did not naturally fall out.
9 Especially where you've got a less than two inch piece
10 that's crushed on both ends. With regard to a tip very
11 fresh cut, if that came from a live person, you could
12 make a judgment, recent hair cut. How recent is
13 debatable. The -- a hair clippers will leave a
14 different appearance than scissors, than a razor.

15 Q Now, Mr. Clayton had asked you about different
16 ways that cuts may appear or that it may appear to be
17 cut when it was not, and you had mentioned a gunshot
18 example that you had seen. Can you tell from examining
19 that this -- what appears to be a cut hair, how it was
20 done?

21 A In this instance, no, sir.

22 Q Well --

23 A In some --

24 Q In general.

25 A Yeah. In some instances, yeah.

1 Q So you're able to tell, like, a razor cut as
2 opposed to scissors or something like that?

3 A Yes, sir.

4 Q Now, you also talked about the limitations of
5 the documentary evidence. Or demonstrative evidence.
6 Excuse me. You talked about a thin slice. For the
7 jury's sake, and for mine, if we took -- I believe it
8 was the -- the one that you testified to as regards
9 being found in the front floorboard. Wasn't that one of
10 the shorter ones you examined?

11 A Uh-huh.

12 Q Okay. If we did that same thing with that
13 whole fiber that you examined, how big would it be? As
14 to what you showed on the charts.

15 A Yeah. There are two problems with that in
16 going from one end all the way to the other end and
17 putting them all together. It would be a montage. I
18 don't know. You know, considerable length along the
19 wall, but the secondary problem is it's demonstrating
20 the layers this way that the examiner is able to see.

21 Q Correct.

22 A So there's really no way visually possible to
23 demonstrate that to somebody with photographs.

24 Q Okay. With -- well, if that -- for example,
25 say we -- say I came to you one time and showed you a

1 photograph such as that. Okay? That you've used.
2 Could you or would you, on the basis of that alone, make
3 any comments regarding comparison?

4 A I might attempt to make a racial ID, but I
5 wouldn't go any further than that.

6 Q All right. Why would you limit it to the
7 racial ID?

8 A We didn't specify what magnification. You mean
9 magnification like these?

10 Q Yes, sir. For example.

11 A With regard to Mongoloid, the very pronounced
12 difference between the cuticle and the rest of the hair
13 and the thickness of the cuticle would put it into the
14 Mongoloid group. Very fine pigment grains would put
15 that into the Caucasian group, and a specific clumping
16 appearance would put it into the origin from a black
17 person group.

18 Q Okay. You talked about, as I say, looking out
19 in the room and seeing -- not seeing anyone that might
20 have similar hair. How large a group would you have to
21 have before you thought you might see someone that might
22 have similar hair? Couple hundred?

23 A Depends on the population.

24 Q Okay. Say --

25 A You know, if we were in a courtroom in Los

1 Angeles, that population segment would be very different
2 than what we have here. So it depends.

3 Q Okay.

4 A If everybody in here was blond, it is still
5 possible to see differences microscopically, but I
6 wouldn't know until I looked at them.

7 Q All right. Okay. So if you had a couple
8 hundred people out at a soccer field or such, it would
9 depend, once again, on the makeup and all of that; is
10 that correct?

11 A That's right.

12 Q Okay. As regards the evidence that started
13 coming in on this case, you said you started receiving
14 some on the 6th of September; is that correct?

15 A That was the initial submission. Yes, sir.

16 Q And from -- I believe that's from Dan Rhodes,
17 at least initially, and that was -- or at least a
18 portion of that that you received was as regards from
19 the autopsy from the Medical Examiner's office; is that
20 correct?

21 A The initial submission from Dan Rhodes was
22 items from autopsy and apparently items from some
23 location.

24 Q Somewhere at the scene?

25 A Right.

1 Q Okay. You -- you know, of course, you examined
2 all these items?

3 A Yes, I did.

4 Q Okay. I notice on the -- at least one sock you
5 found synthetic textile fibers. Do you recall what
6 those were?

7 A On each sock there were clear trilobal-type
8 fibers. By trilobal that implies origin from a carpet
9 or a rug. And there were animal hairs on the socks,
10 also.

11 Q Okay. But as far as the -- as far as the
12 fibers, is it because of those fibers that you asked Mr.
13 Ben Armstrong to look in certain kinds of cars and such
14 as that?

15 A It was not those fibers, the clear trilobals or
16 borderline trash category, but it was a trilobal
17 delustered tan, carpet-type fiber from one sock that was
18 being compared to various types of vehicles.

19 Q Did you receive fibers from the carpet of Mr.
20 Blair's vehicle?

21 A Yes, sir. I did.

22 Q And did you compare those with this fiber
23 you're talking about?

24 A Yes, I did.

25 Q And since Mr. Clayton asked you about -- didn't

1 ask you about them, I assume --

2 A The carpeting itself was not a source of that
3 fiber. There were, however, a lot of extraneous fibers
4 in his car not of origin from the carpeting in the car.

5 Q Okay. Also noticed that on the 7th you
6 received some fibers from the T-shirt and another sock.
7 I believe it's on that same page on your report dated
8 the 13th.

9 A Yes, sir. I received the T-shirt, and I
10 examined it for hairs and fibers, and I received a sock
11 and examined that for hairs and fibers.

12 Q All right. And can you recall what those
13 fibers were? Once again, are they this trash category
14 which you discussed?

15 A There were some animal hairs and some of what I
16 characterize as trash fibers, but the -- there were
17 hairs and fibers recovered that were not necessarily
18 associated to anything.

19 Q And they weren't -- they weren't associated
20 with anything, at least as far as what you evaluated.
21 Is that what you're telling me?

22 A That's right.

23 Q As far as the other evidence you evaluated?

24 A That's right. Yes.

25 Q Were you able to identify any of them to the

1 extent, like, being a carpet hair; therefore, it could
2 be a tan carpet or anything like that?

3 A Yeah. The one that I described before was the
4 tan delustered carpet fiber, and the others are fibers
5 that you find on socks. You know, various colored
6 cottons, various colored polyesters.

7 Q Mr. Linch, you talked about seeing a number of
8 different hairs and fibers on the -- on the plaid
9 blanket?

10 A Yes, sir.

11 Q Did that also -- is that consistent with, also,
12 on this other blanket that you talked about, the deer
13 blanket?

14 A There were a lot of hairs and fibers on the
15 deer blanket, also.

16 Q Okay. Now, you had samples from those
17 individuals that Mr. Clayton mentioned; is that correct?

18 A Right.

19 Q Okay. Were all of those samples -- or were all
20 of those that you found on the plaid blanket and deer
21 blanket, other parts of the car, were they -- were you
22 able to match those with each one of those individuals,
23 or match in the sense that they were microscopically
24 similar to them?

25 A There were, again, a large number of hairs from

1 the blanket.

2 Q I understand.

3 A They were compared mostly to [REDACTED]'s
4 head hair and they were compared against stuff from the
5 blankets. There were some certain instances where I
6 could not exclude associates of Mr. Blair as being the
7 sources of those hairs, but those were, in general,
8 featureless-type associations that are -- have less
9 value than a hair with suitable comparison
10 characteristics.

11 Q Well, it would not be uncommon, for example, in
12 my -- for you to find hair similar to mine in my car?

13 A Absolutely not.

14 Q Now, you're aware that Mr. Blair was a carpet
15 cleaner?

16 A Yes, sir.

17 Q Okay. That was done commercially?

18 A Yes, sir.

19 Q Okay. Would you expect to find hair in his car
20 or wherever there had been, the equipment, transferred
21 that would not be associated necessarily with Mr.
22 Blair? I believe you called -- would that be something
23 like a secondary?

24 A Secondary, tertiary. Yes, sir.

25 Q So that wouldn't be uncommon?

1 A No.

2 Q As comparing -- when you're comparing fibers as
3 opposed to the hairs, is there a -- I would assume that
4 some fibers, modacrylics, I -- I think is what you
5 called some of them -- were there more similarities in
6 those type fibers? I mean, in the sense of hair and
7 fibers -- you have natural fibers. Then you have
8 man-made fiber. Okay? When we're looking at man-made
9 fibers, at least from the standpoint of the naked eye
10 and then the comparison microscope, we need to go
11 further as far as being able to distinguish fibers. Is
12 it a fair statement to say that a lot of white fibers --
13 which are, in essence, clear; is that correct?

14 A That's right. Colorless.

15 Q Looking at six stuffed animals that are all
16 white, there are certain tests and things, you can go
17 further, narrow those down to other ones?

18 A They may look exactly the same under the
19 microscope with polarized light microscopically, yet
20 when you do the chemical identification, you may find
21 out they are different polymer types. Two clear
22 trilobal fibers may look perfectly the same under the
23 microscope, but when you do the chemical identification
24 you find out that in manufacture different chemicals
25 were used to produce that specific fiber.

1 Q Okay. Is it your understanding that a lot of
2 companies that manufacture fibers, that they are used in
3 a variety of the -- or may be used in a variety of
4 different products?

5 A There are a variety of different mixtures. You
6 know, like a nylon 6 is a different chemical mixture
7 than, say, a nylon 5, nylon 4.

8 Q Would they necessarily, like nylon 5, be used
9 in different products themselves? I mean, it wouldn't
10 all be necessarily confined only to one product?

11 A That's right. The fiber maker sells his bulk
12 product to somebody who puts it into some kind of form.
13 That person sells it to another person. So the
14 distribution -- some may end up as car carpet, some may
15 end up as a home carpet.

16 Is that what you're asking?

17 Q Yes.

18 A Okay.

19 Q Okay. Now as regards, for example, fibers from
20 a stuffed animal, might those fibers be used in other
21 products other than stuffed animals?

22 A This -- the other -- I don't know. Candidate
23 for that type fiber might be a very furry, soft rug-type
24 item.

25 Q Maybe a bathroom-type, some of those rugs?

1 A That's possible.

2 Q Seat cover or something like that?

3 A That's possible.

4 Q Okay. And you also talked about that this is a

5 -- tell me again. A ribbon you mentioned?

6 A Ribbon acrylic.

7 Q Ribbon acrylic. All right. It's also been

8 used in -- or you've seen ribbon acrylics used in wigs,

9 such as that?

10 A Not the ribbon type, but the chemical, the

11 chemical modacrylics. The chemical composition of the

12 general family of modacrylics is used in wig

13 manufacture, but not this specific fiber shape.

14 Q I understand. I understand, but some

15 modacrylics, then, as far as my notes --

16 A Ribbon can be a modacrylic.

17 Q Okay.

18 A And a circular or triangular fiber can be

19 modacrylic, but you don't find -- you know, this would

20 be a pretty funny looking wig, but you can take the

21 chemical compounds that make up modacrylics and have the

22 fiber thicker and in a different cross section of shape

23 and have something, and add dyes to it, add color to it.

24 You would have a potential wig fiber.

25 Q Okay. You discussed that, as regards the fiber

1 in the perianal area, in your opinion that was probably
2 a secondary transfer; is that correct?

3 A If, indeed, it occurred from this rabbit. Yes,
4 sir.

5 Q Well, it was a secondary transfer from
6 somewhere? Could it have been a primary transfer from
7 something else?

8 A My opinion is that it's a secondary transfer.
9 Yes, sir.

10 Q Okay. You had described that fiber as having
11 some fecal material?

12 A That's right.

13 Q What you perceived to be?

14 A Yes, sir. In one of the narrow ends, and that
15 was illustrated in one of the photographs that was shown
16 to the jury.

17 Q Okay. And my understanding is you didn't find
18 any fecal material or anything on the rabbit or anything
19 else?

20 A No, sir.

21 Q Is that -- is that something, then, that
22 further tells you that in your opinion it was a
23 secondary transfer?

24 A No. No. A lot of people defecate at the time
25 of death, but the primary reason for me thinking that

1 it's secondary is that primary you get more than one and
2 so primary would be this rabbit contacting the body and
3 secondary would be something intermediate contacting and
4 then a certain fiber loss and then contact with the
5 body.

6 Q Did you find secondary transfer -- did you find
7 other fibers similar to that in the rabbit in his car?

8 A I found fibers on the rabbit that were like
9 fibers from other dolls in the car. I didn't find any
10 carpet fibers on the rabbit that matched his car.

11 Q Did you find any of those fibers on the carpet?

12 A These?

13 Q Uh-huh..

14 A No, sir.

15 Q When we are talking about the hair recovered
16 from Jack Carter Park, the -- they don't call it a
17 rubberband any more. Whatever little girls put in their
18 hair, boys. Whatever they tie up their ponytails with.
19 Could that in and of itself be used to cut off the
20 ponytail? Is that something you would be able to notice
21 on the ends of those hairs? Mr. Clayton was talking
22 about how those things may be cut or appear to be cut.

23 A I don't understand the question.

24 Q Okay. Well, these ties, I guess, that -- that
25 they use for ponytails.

1 A Right.

2 Q Okay. Is that -- can you tell from what you
3 examined whether or not it was something like that that
4 was used to separate this hair?

5 A No. I don't know. You know, you grab hair,
6 cut it or if you use that type of thing to collect it
7 and cut.

8 Q Something like that?

9 A No. I don't know.

10 Q You couldn't tell -- could you tell how those
11 were cut?

12 A No, not the Jack Carter Park hair.

13 Q You couldn't tell how those were cut at all.
14 So you can't say that they weren't cut with a razor or
15 not. Did they appear to be cut?

16 A I think I can rule out a razor. Could have
17 been a knife. Could have been having been clasped in
18 something and then jerked with a tangential force.

19 Q Like clasped in one of those ribbon clasps?

20 A Yeah.

21 Q Okay. Is -- going from there, then, to the
22 plant matter, you talked about hairs on this leaf.
23 That's one thing you looked for that was similar?

24 A Yes, sir. The -- the plant hairs, not --

25 Q I understand.

1 A -- human or animal hairs, but plant material
2 has its own hairs. Yes, sir.

3 Q Okay. Could you determine the genus of that
4 that was on the rabbit?

5 A No. Did not.

6 Q So can you tell us even the genus -- can you
7 tell us the genus of what was in the exhibit showed you?

8 A No. Given the limited amount of material on
9 the rabbit ear, it would have been fruitless to go out
10 and do a taxonomic study of what's present at the
11 different sites.

12 Q Did you ever go to the other sites or did you
13 ever evaluate any plant matter or anything else from any
14 other sites?

15 A Yes, sir. I did.

16 Q Okay. Can you exclude those as being from that
17 plant matter?

18 A The plant material from the stuffed animal
19 collection site and the plant material I collected in
20 Dawson, Texas, between Corsicana and Waco, had similar
21 appearing hairs.

22 Q So even that far away there was similar
23 appearing hair?

24 A Yes.

25 Q So would you say then three or four miles away

1 it wouldn't be unusual for you to find plants or plants
2 matter that had similar appearance?

3 A Absolutely not.

4 Q Mr. Linch, as regards these exhibits. Okay?
5 That were proposed for demonstratives purposes like 84
6 -- 84, which was the -- the four photos of the crushed
7 hair, 85, 86, 87, which were all comparisons of head
8 hair with Ms. [REDACTED] and some of the ones you found or
9 some of the ones that were submitted to you, and then
10 Mr. Blair's hair as a known, and then fibers found
11 there, do those, any of those exhibits at all, tell you
12 who the unknown hair belonged to?

13 A With absolute certainty of all persons, no,
14 sir. They do not.

15 Q And that's true of all, basically true, of all
16 hair examinations; is that correct?

17 A That's right. Even with the 23 foot strand of
18 hair.

19 Q Well, if, for example as a hypothetical, it was
20 determined that the hair at the Jack Carter Park was
21 part of a ponytail that had been cut off and then that
22 it was determined that that ponytail was not from Ashley
23 Estell, that wouldn't change your testimony at all,
24 would it?

25 A If the strand that I testified to that was

1 consistent with origin from Ashley Estell was not from
2 Ashley Estell, that wouldn't change my testimony?

3 Q No. No. I'm not talking about the known
4 strands. I'm talking about the strand from Jack Carter
5 Park.

6 A Right.

7 Q If it was shown in my hypothetical that they
8 did not come from her?

9 A Okay. You have the true donor?

10 Q Okay. No. You don't have the true donor. To
11 say we know, by virtue of some reason, that it didn't
12 come from her. Okay? Does that change your evaluation?

13 A No, it doesn't.

14 Q Does that change --

15 A No, it doesn't.

16 Q It doesn't change your testimony as regards
17 your comparisons or anything else, does it?

18 A No, it doesn't. Microscopically the same is
19 microscopically the same.

20 Q Okay. As concerns this fiber that you found on
21 the sock, and you referenced it as what you believed to
22 be a carpet fiber?

23 A That's correct.

24 Q Okay. Did you give any -- any other
25 instructions as to what particular cars to look for or

1 types or anything else?

2 A That's really not possible to do. It happens
3 on TV, but it doesn't happen in the real world.

4 Q Well, I mean, I would assume a lot of the
5 manufacturers use a lot of the same companies to make
6 their cars or the carpets?

7 A They do. But even that manufacturer may not --
8 the ultimate source may be a slight chemical variant and
9 so -- and polymer is of different composition.

10 Q Okay. So as far as you could go that way was
11 to request one that was tan, what you believed to be a
12 tan carpet fiber?

13 A Well, yeah. That's not even accurate. You
14 know, say, that you picked up the little red fibers from
15 this carpet on your shoe. It would be a
16 misunderstanding to think that you had been on a red
17 carpet. This carpet is blue, but there is a red
18 component in it. So, you know, to make a judgment on a
19 color of something on the basis of one fiber is often a
20 mistake.

21 Q Okay. But it's a place to start?

22 A Starting place.

23 Q Well, what is it you told Mr. Armstrong then to
24 look for?

25 A In terms of suspect or in terms of vehicle?

1 Q Well, in going by the vehicle. Since I think
2 we're talking about a tan fiber or what I believe you
3 said was a tan fiber.

4 A Right. It could be possibly a tan carpeted
5 vehicle.

6 Q Now, there were some other items found, other
7 hairs found, during the -- or that were submitted to you
8 from the Medical Examiner's office; is that correct?

9 A That's right.

10 Q All right. My understanding one was a pubic
11 hair that was found on the body transport sheet?

12 A I -- it's a hair with secondary sexual
13 characteristics, and my ultimate determination is that
14 that is more consistent with an axillary or armpit type
15 hair.

16 Q Were you able to determine the race of that
17 hair?

18 A It appears to be of Mongoloid racial origin.

19 Q On the body transport sheet?

20 A Yes, sir.

21 Q Okay. The -- there was also a fiber or a hair
22 found on the -- I guess it was a small hair found in the
23 -- on the panties?

24 A Inside the panties. Inside, just below the
25 waistband of the panties.

1 Q Were you able to determine what kind of fiber
2 that -- or hair that was?

3 A It was dark and heavily pigmented and had a
4 cuticle consistent with Mongoloid racial origin.

5 Q All right. And did you say whether that was
6 axillary?

7 A It's either a body hair or a very thin head
8 hair, but it's too short to completely evaluate. It's
9 not thick enough to be axillary or pubic or chest.

10 MR. McDERRITT: May I have a moment, Your
11 Honor?

12 THE COURT: You may.

13 Q (By Mr. McDermitt) Do you classify pigment
14 according to race, Mr. Linch?

15 A (By the witness) You mean the chemical
16 composition of pigment?

17 Q Right. I mean when you're looking at the
18 pigment makeup in a hair, is that further an indication
19 of race?

20 A Not the chemical composition, but the way that
21 it is distributed in the hair. Clump pigmentation with
22 conditions of proper appearing surround matrix around
23 that clump is an indication that gives you the racial
24 determination. Then again, it's a combination of
25 things. It's the cross sectional shape of the hair plus

1 the pigment distribution. You know, I've seen instances
2 where pigment clumping in Caucasian hair was more
3 clumped than I'd seen in persons of black heritage. So
4 in general the pigment clumping and pigment color --
5 pigment distribution is the key indicator of racial
6 origin.

7 Q Okay. So would you use terms like Caucasian
8 pigmentation?

9 A You could.

10 Q Well, Doctor, from looking at your -- excuse
11 me. Mr. Linch, from looking at some notes that you
12 prepared, I guess, on the seven drawings and such as
13 that, where it says, as regards the panties, it says
14 very thin hair cutting. Then thick cut Caucasian
15 pigment, frayed medulla, or fragmented.

16 A I recall that.

17 Q Okay. Is that a different hair than the one I
18 had asked you about as regards the panties?

19 A No. That's the same panties' hair.

20 Q So that it has a Caucasian pigment but has some
21 Mongoloid characteristics, also. Is that what you're
22 telling me?

23 A I'm telling you that the pigmentation is
24 Caucasian, slash, Mongoloid, and the cuticle on that
25 hair is more Mongoloid on its mixed features, but my

1 overall determination from that is that it may be of a
2 Mongoloid origin.

3 Q Okay. Did you reference -- ever reference any
4 of that Mongoloid determination or phrasing in your
5 report?

6 A About this hair?

7 Q Uh-huh.

8 A I don't recall if I reported that hair or not.

9 Q Do you have your reports with you?

10 A No, sir. I do not. I don't believe I reported
11 that hair. I think that all discussion about that hair
12 was verbal to the investigators.

13 Q Doctor -- excuse me. Mr. Linch, I want to show
14 you what's marked Defendant's Exhibit -- well, I'll let
15 you view that as Defendant's Exhibit 7. Is that a copy
16 of your notes?

17 A Yes, sir. It is.

18 Q Okay. And is this what I had mentioned to you
19 earlier.

20 A The -- these notes that I made on September 6,
21 1993, says Labor Day, has a little diagram of the hair
22 piece from the panties. It says very thin hair cutting,
23 brown. Before it says brown Caucasian pigment. The
24 first two words are thick CUT. C-U-T, CUT, stands for
25 cuticle.

1 Q I understand.

2 A So these are notes of my observations about
3 that fragment.

4 Q Okay.

5 A So the way I prioritize things, thick cuticle
6 is predominant in assigning the predominant racial
7 origin.

8 Q Okay.

9 MR. MCDERMITT: Offer Defense 7.

10 MR. CLAYTON: No objection, Your Honor.

11 THE COURT: It's admitted.

12 MR. MCDERMITT: Thank you very much.

13 Pass the witness, Your Honor.

14 REDIRECT EXAMINATION

15 BY MR. CLAYTON:

16 Q Mr. Linch, just couple of follow ups. Mr.
17 McDermitt just introduced, I believe, as Defense 6 --
18 excuse me -- 7, Defense 7, a page, some just raw notes,
19 I assume, that you put together as you were examining
20 this quarter-inch or so hair fragment found in the
21 panties of [REDACTED]. Is that essentially what that
22 is just some raw notes?

23 A May I see it again?

24 Q Sure.

25 A It is notes, and I just read the bottom part.

1 Raw notes. Yes, sir.

2 Q Okay. Was there a reason that you did not make
3 a report as in one of these nice, typed out, printed
4 ones that they send us after you have analyzed things
5 for purposes?

6 A If I reported all hairs and fibers that I
7 examined and looked at on this case, the typist would
8 still be typing. I did not consider this hair to be, or
9 hair piece, to be of value for comparison.

10 Q And for that reason would part of it be the
11 fact it's under a quarter of an inch in length?

12 A That's right.

13 Q Are there some other reasons as to its -- first
14 of all, it's not a head hair apparently; is that
15 correct?

16 A I can't exclude the possibility that it may be
17 a very, very thin head hair. Our head hairs vary in
18 size as well as pigment distribution. I can't say it's
19 not.

20 Q Okay. With regard to a hair found on the body
21 transport sheet, do you recall Mr. McDermitt asking you
22 that question?

23 A Yes, sir. I do.

24 Q Now, did you make a comparison of a hair found
25 on the body transport sheet that you felt was possibly

1 either an axillary or maybe even a pubic hair that came
2 off that sheet?

3 A Yes, sir.

4 Q I believe you said you that you felt its
5 predominant racial characteristic was Mongoloid; is that
6 correct?

7 A That's right.

8 Q As far as making an association with that hair,
9 were there things about it that would prevent you from
10 making an association that would cause it to be fit to
11 be generated into an official report that you would
12 carry into court and try to make an association with?

13 A Could you rephrase?

14 Q Okay. I guess what I'm asking is what, if
15 anything, would prevent that particular hair to have
16 been one of sufficient quality for an association to be
17 made or not made?

18 A It, in my opinion, is a body hair, and
19 comparison of body hairs is of extremely limited value.
20 Again, the best you can do is attempt racial
21 determination.

22 Q Okay. And in your opinion that body hair, as
23 you, I believe, pretty well concluded, it's a body hair,
24 had Mongoloid features primarily?

25 A That's right.

1 Q Although it did have some Caucasian features in
2 its pigmentation?

3 A No. We've gotten the hairs mixed up.

4 Q I'm sorry.

5 A The axillary hair had Mongoloid type
6 pigmentation with shallow cuticle.

7 Q Okay.

8 A The head hair, quarter-inch head hair, fragment
9 had dense Caucasian type pigment with Mongoloid type
10 cuticle.

11 Q Okay.

12 A So we've got a mixture in both instances.

13 Q In your capacity as an experienced hair
14 examiner, you wouldn't feel comfortable coming into
15 court and trying to tell a jury that that was something
16 that would associate any individual for purposes of
17 going to court and trying to say an association with the
18 defendant?

19 A Absolutely not.

20 Q However, you could -- you could use those
21 hairs, the transport sheet hair and that found in
22 Ashley's panties, possibly as something of sufficient
23 quality to exclude certain individuals, and I'm assuming
24 that's true. I'm not sure.

25 A No. It goes both ways.

1 Q Goes both ways. Okay.

2 A You can exclude with regard to race.

3 Q Okay.

4 A But not doing the microscopic comparison.

5 Q Did you do a microscopic comparison of these

6 for not only race, but just to see if you saw any other

7 features as well?

8 A I compared these hairs to known hairs of Mr.

9 Blair.

10 Q Okay. And although they're not necessarily an

11 association that Defense asked you about, these hairs,

12 have you prepared a demonstrative exhibit to show the

13 jury what features we can see in the known head hair

14 standard of Michael Blair?

15 A Yes, sir. I have.

16 Q Did you prepare that exhibit shortly after

17 discussing with us that transport sheet hair and the

18 hair from [REDACTED]'s panties in the last week or ten days?

19 A Yes, sir. I did.

20 Q I'm going to show you what's been marked for

21 identification as State's Exhibit 93. I'll ask you if

22 93 is, in fact, a comparison microscope series of

23 blow-up photographs of the known pubic hair of Michael

24 Blair and the pubic hair in the panties of [REDACTED]

25 as they appear on the microscope?

1 A No, sir. State's 93 is totally unrelated.

2 Dallas Police Department sexual assault case.

3 Q I'm sorry. My mistake. I have been known to
4 make them. Let's try that again. I do carry off
5 pencils, too. Okay.

6 Let me show you what we'll mark as State's
7 Exhibit 94, and once again, I'll ask you to take a look
8 at State's Exhibit 94. Tell me if I've got the right
9 exhibit this time with regard to comparison microscope
10 photographs of the hair from the body transport sheet
11 and comparison with a head hair standard from Michael
12 Blair, as well as axillary hair from the body transport
13 sheet and Michael Blair's pubic hairs compared in
14 another photograph. Finally, we have on the other side,
15 I believe, we have hair fragment from panties compared
16 to a known head hair from Michael Blair, as well in this
17 series of photographs?

18 A State's 94 is, indeed, related to this matter.

19 It contains five photomicrographs of comparison
20 photomicroscopy of Michael Blair's hair compared to hair
21 fragments, a hair fragment recovered from the panties of
22 Ashley Estell and compared to what I determined to be an
23 axillary hair from the body transport sheet.

24 Q All right.

25 MR. CLAYTON: Your Honor, just for

1 demonstratives purposes, we'd offer State's Exhibit No.
2 94.

3 MR. MCDERMITT: No objection, Your Honor.

4 THE COURT: All right. It's admitted for
5 that purpose.

6 Q (By Mr. Clayton) Mr. Linch, I recognize, and I
7 want the jury to be sure that you understand that you
8 have not claimed that these are associations with
9 Michael Blair at all, have you? Any of the photographs
10 here?

11 A (By the witness) Those are a claim of
12 non-inclusion. They are not a claim of strong
13 inclusion.

14 Q In other words, you can't determine
15 quarter-inch hair from [REDACTED]'s panties or the body hair
16 that was found on the transport sheet?

17 A That's right.

18 Q If you would, step around, maybe, and point
19 just for the jury just to show them how you got your
20 racial classifications that you were able to give us an
21 opinion on with regard to, first, to the body transport
22 sheet and hair.

23 A On the right side of the photographs on the
24 right side of State's 94 at the top is a photograph of
25 Michael Blair's head hair. Below that is a photograph

1 of pubic hair. Below that is a photograph of the -- the
2 Michael Blair pubic hair.

3 In each of these three photographs the known
4 hairs have been compared to the single axillary-type
5 hair from the body transport sheet. Again, remembering
6 the limitation of viewing a photomicrograph, the pigment
7 distribution is roughly the same, the color is roughly
8 the same. The cuticle in both instances is very well
9 demarcated at the junction of the cortex and cuticle.

10 On the left side of State's 94 there are two
11 photographs. On the right side of these two photographs
12 the top one has the known head hair of Michael Blair.

13 Q Would you stand around on the other side?

14 A Below that -- changed my orientation. Left
15 side of State's 94 there are two photographs on the
16 right side of the top photograph is the known head hair
17 of Michael Blair. Below that is the known head hair of
18 Michael Blair. On the left side of each of these
19 photographs is a microscope picture of the thin hair
20 fragment from [REDACTED]'s panties. This hair is
21 being compared to one of Michael Blair's thinner head
22 hairs.

23 You have to look carefully. I know you can't
24 see it from where you are, but the cuticle in Michael
25 Blair's thin head hairs is the same size as the cuticle

1 in the hair fragment from Ashley's panties. The bottom
2 photograph shows a greater difference in the pigment
3 distribution. If -- you know, in Michael Blair's head
4 hair we go from clumped, classic Mongoloid pigmentation,
5 as you go along this turns into classically Caucasian
6 pigmentation. If I only had this piece of hair to look
7 at, I would call this a Caucasian. And that's compared
8 to the region of the hair from the panties that has
9 Caucasian appearing pigmentation, but again, the more
10 important racial determination factor for this piece of
11 a hair is the cuticle thickness.

12 Q Thank you, sir.

13 Mr. Linch, I do want to be very, very sure that
14 we're not trying to tell this jury that you've made an
15 association with Michael Blair based on that transport
16 sheet or on that piece of hair from the panties. You
17 did see similarity. You can't exclude him as a source.
18 You're not saying that's the kind of match like you made
19 from the car with [REDACTED] s hair or from Jack Carter Park
20 with Michael Blair's hair?

21 A He, indeed, cannot be excluded as being the
22 source of those hairs. It would be irresponsible for a
23 hair examiner to make that type of comparison.

24 Q I'm going to shift your attention just for a --
25 a minute back -- you don't have a copy of your report,

1 but I believe I have one here. I will show you.

2 MR. CLAYTON: May I approach, Your Honor?

3 THE COURT: You may.

4 Q (By Mr. Clayton) I want to show you a copy of a
5 report dated September 27, 1993, which was returned to
6 regular -- or Ken Presley of the Plano Police
7 Department. I'll ask you to take a look at this report,
8 and I will mark it at this time as State's Exhibit No.
9 95 for identification.

10 A (By the witness) This is a true and accurate
11 copy of my report of September 27. I just have a
12 quarrel with some of the editorializing on page three.

13 Q I understand. I've marked up my copy a little
14 bit, but the main thing I want to call your attention to
15 -- and I'm not going to be offering it for evidence. I
16 just want to identify it -- that you referred to it as
17 part of your review of some of the evidence in this
18 case. With regard to State's Exhibit No. 95 do you see
19 and recall preparing a section beginning with item 105
20 entitled Items from Joshua Foster?

21 A Yes, sir.

22 Q All right. If you would, I'm going to ask you
23 about several of those items that were submitted under
24 the heading Joshua Foster. I guess the best thing to do
25 is, if you would, just go item by item beginning with

1 item number 105. Beginning in the report, first of all,
2 tell me what is item 105?

3 A Item 105 is fibers taken from a blanket found
4 in the vehicle of Joshua Foster.

5 Q And with regard to that blanket can you tell
6 the jury if you did any type of particular examinations
7 for hair and/or fibers that you could association -- or
8 associate with either [REDACTED] or the fiber that
9 was taken from the buttocks or anal region of her body
10 during her autopsy?

11 A I compared those fibers with the fiber found on
12 [REDACTED]'s body, and they were very different.

13 Q All right. And those -- well, what's number
14 item 106 then?

15 A Number 106 is fibers from the seat of the
16 vehicle.

17 Q That would be again Mr. Joshua Crowley Foster,
18 whatever his name is this week, from the vehicle he was
19 driving at that time?

20 A That's right.

21 Q Did you have an occasion to compare those items
22 with the fiber that was recovered from the anal area of
23 [REDACTED] during her autopsy that's been previously
24 introduced into evidence?

25 A Yes, I did.

1 Q Were you able to see any type of a match
2 microscopically to that particular fiber found on [REDACTED]
3 [REDACTED]?

4 A That was not the source of the fiber on her
5 body.

6 Q What's the next item there?

7 A 107 is fibers from carpet vehicle. This is a
8 sampling of the actual carpet in the truck.

9 Q All right. Was it the source of the fiber on
10 [REDACTED] that we've been talking about?

11 A These were nylon, yellow, clear type trilobal
12 fibers. They were different.

13 Q All right. Do we have any other items from
14 Josh Crowley?

15 A Two gray socks, two gray, slash, red socks,
16 small white towel fibers, and hairs from the seat
17 recovered with a vacuum cleaner, fibers and hairs from
18 the floor of the vehicle recovered with vacuum cleaner.
19 Fiber from the hood of the vehicle and a fiber from a
20 cap recovered from the driver's side of the vehicle.

21 Q Any of those particular items that you just
22 read off, any of them associate back to the fiber on
23 [REDACTED]'s body or any of the hairs that were picked up by
24 the vacuum cleaner anywhere? Did any of them come back
25 and match [REDACTED]?

1 A No, sir. They were all different. The -- the
2 white cat hair from the hood of the vehicle, but you
3 bring me two white cats, they'd look about the same.

4 Q If I could tell you that Patrick Foster, Josh
5 Foster, whatever his name is this week, is an individual
6 of Causcasian background, would that make any difference
7 as far as any of the hairs that you found in the
8 floorboard of his vehicle as being associated with

9 [REDACTED] ?

10 Let me back up and rephrase that. I think I
11 got my locations mixed up here. If I tell you that
12 Joshua Crowley Foster is a Causcasian, would that change
13 your racial associations from the fragment found in
14 [REDACTED]'s panties or on the body transport sheet as
15 having primarily Mongoloid racial characteristics?

16 A No. It wouldn't, but, of course, you know, how
17 much Caucasian?

18 Q Okay. All right. Thank you, sir.

19 MR. CLAYTON: I think I'll pass the
20 witness at this time.

21 THE COURT: All right.

22 RECROSS-EXAMINATION

23 BY MR. MCDERMITT:

24 Q Mr. Linch, did you ever review or was ever
25 submitted to you known head, pubic, or axillary hairs of

1 a Josh Foster or Josh Crowley?

2 A No, sir. They were not.

3 Q Do you know how many vehicles' fibers were
4 taken from -- as concerns Mr. Crowley?

5 A The total count of fibers taken?

6 Q No. The total count of vehicles.

7 A Vehicles. I think there was just one truck.

8 Q So if there were other vehicles --

9 A I wouldn't know about them.

10 Q You don't know about that?

11 A No, sir.

12 MR. MCDERMITT: That's all I have at this
13 time, Your Honor.

14 THE COURT: Anything further.

15 MR. CLAYTON: Just one other item.

16 REDIRECT EXAMINATION

17 BY MR. CLAYTON:

18 Q Mr. Linch, with regard to the comparisons that
19 you have been made under the microscope, did you have
20 occasion to bring the slides that have been associated
21 with [REDACTED] and Michael Blair at Jack Carter Park
22 and Blair's vehicle, as well as the fiber? Have you
23 brought all of those to court today?

24 A No, I didn't, but they were brought by the
25 Plano Police Department.

1 Q Okay. They're here in court in a red box
2 before you; is that correct?

3 A Yes, sir.

4 Q And within that red box I'm assuming that you
5 also have hairs and fibers from a number of other
6 sources that have appeared in your reports prepared
7 periodically through this investigation?

8 A That's right.

9 Q Now, we've introduced into evidence all the
10 packaging and items that they ultimately reached you
11 with. Would it be possible, if we take a few minutes --
12 I might even ask the Judge to take ten -- for you to
13 pull those particular slides that you associated with
14 Michael Blair's vehicle and the three hairs from Ashley
15 Estell's head hairs, as well as the fiber from the anal
16 region of [REDACTED] that associates back with the
17 rabbit doll, and, finally, the Jack Carter hairs, too,
18 that belong in your association with Michael Blair, and
19 the others that are associated with Michael Blair? I'm
20 not going to ask you to do that in front of the jury.

21 MR. CLAYTON: I'm going to ask to admit
22 all of those in evidence at this time since you used
23 them for your opinions here in court.

24 MR. MCDERMITT: We have no objection to
25 that, Your Honor.

1 MR. CLAYTON: If the Court approves, I'd
2 like to number those and simply admit those for record
3 purposes outside the jury's presence.

4 With that I have no further questions,
5 Your Honor.

6 MR. MCDERMITT: I have no further
7 questions, Your Honor.

8 THE COURT: Is this witness excused now?

9 MR. CLAYTON: I'd like him reserved, Your
10 Honor, but if he feels he needs to leave town or
11 something in the meantime we can bring him back.

12 MR. MCDERMITT: That's agreeable, Your
13 Honor.

14 THE COURT: Okay. Well, with that then,
15 ladies and gentlemen, we'll take -- we'll recess until
16 tomorrow at nine o'clock. And let me remind you, it is
17 your duty not to converse among yourselves or with
18 anyone else connected with the trial or to form or
19 express an opinion thereon until the cause is finally
20 submitted to you.

21 (Jury excused until
22 September 16, 1994.)

23 THE COURT: Now, off the record.

24 (Discussion off the
25 record.

1 MR. CLAYTON: For the record, the parties
2 have received and reviewed State's Exhibit 96A and 96B.
3 The contents of each of those two exhibits are the
4 microscopic slides whereupon hair has been mounted for
5 examination by Mr. Charles Linch, the hair examiner who
6 has testified in this cause during the day of September
7 15, 1993.

8 THE COURT: '94.

9 MR. CLAYTON: '94. And made associations
10 with regard to this case. Being as to the fact that
11 these slides are fragile, we have committed them in bulk
12 following Mr. Linch's testimony about his findings
13 regarding the hair that is contained therein.

14 MR. MCDERMITT: No objection.

15 THE COURT: All right. They're admitted.

16 (Proceedings recessed until
17 9-16-94.)

18

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NO. CRB 21,1152

STATE OF TEXAS) IN THE DISTRICT COURT
) MIDLAND COUNTY, TEXAS
 EL NAWEE BLAIR) 238TH JUDICIAL DISTRICT

Statement of Facts

Volume XXIV of XL
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7 APPEARANCES:

8 HON. TOM O'CONNELL
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Mr. Randal Blake

12 For the State of Texas

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18 By: Mr. Steven R. Miears

19 For the Defendant

20 On the 16th day of September, 1994, the above entitled
21 and numbered cause came on to be heard said Honorable
22 Court, Nathan E. White, Jr., Judge presiding, sitting in
23 and for the 238th Judicial District Court, and the
24 following proceedings were had:
25

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21 CLARA COCHRAN

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1

(September 16, 1994.)

2

3 MR. CLAYTON: Your Honor, before we start,
4 just as a housekeeping matter, Mr. Linch left behind a
5 few other slides that related to this Josh Crowley
6 examination. I didn't know if the Defense wanted to go
7 ahead and mark those as part of Mr. Linch -- if they
8 want to use them as part of their case. I'm going to go
ahead and mark those as 96C.

9

MR. MCDERMITT: No objection, Your Honor.

10

THE COURT: It'd be State's C.

11

12 MR. MIEARS: And also, Your Honor, since
we're on the subject of Mr. Crowley, could we maybe get
13 from the Court today some sort of ruling on our petition
14 to secure his appearance? Also, another thing, I didn't
15 know if the Court had had an opportunity to review the
16 Internal Affairs file or not.

17

18 THE COURT: I do have it. I've not --
I've really not reviewed it. Do you all have -- we'll
19 take time here somehow today to take up this matter of
20 securing out-of-state witness. Do you have the
21 videotape?

22

MR. MIEARS: Off the record.

23

(Discussion off the
record.)

24

MR. CLAYTON: Judge, just a correction,

1 too, for the record. State's 96A, B, C, although we've
2 gone ahead, formally admitted them outside the jury's
3 presence are admitted for all purposes at this time.

4 THE COURT: I show them admitted. Okay.

5 MR. MCDERMITT: B --

6 THE COURT: A and B were the slides in
7 those two cases.

8 (Jury returned to the
9 courtroom.)

10 THE COURT: Everyone be seated, please.

11 Good morning ladies, and gentlemen. For
12 planning purposes we plan to recess this afternoon
13 approximately four o'clock. That may mean we have a
14 little bit shorter lunch or breaks. I don't know. It's
15 just we'll see where we are, but plan to break about
16 four o'clock this afternoon.

17 Okay. Mr. Clayton, call your next
18 witness.

19 MR. CLAYTON: Your Honor, the State would
20 call Robert Fram.

21 THE COURT: Last name is --

22 MR. CLAYTON: F-r-a-m.

23 (Witness sworn by the
24 Court.)

25 THE COURT: All right. Just have a seat

1 right over here, sir.

2 All right.

3 MR. CLAYTON: Thank you, Your Honor.

4 ROBERT B. FRAM,

5 called as a witness on behalf of the State of Texas,
6 having been previously duly sworn to testify the truth,
7 the whole truth, and nothing but the truth, testified on
8 his oath as follows:

9 DIRECT EXAMINATION

10 BY MR. CLAYTON:

11 Q Would you please state your name for the jury?

12 A Yes. It's Robert B. Fram. That's F-r-a-m.

13 Q Would you tell the jury what you do for a
14 living, sir?

15 A I'm a special agent with the Federal Bureau of
16 Investigation.

17 Q Can you tell the jury a little bit about, first
18 of all, how long you've been with the FBI? Also can you
19 tell them a little bit about your education in
20 preparation for your position? --

21 A Yes. I've been with the FBI approximately
22 fourteen years. I have a bachelor's degree in
23 anthropology from City University in New York City. I
24 have a master's degree in physical anthropology from
25 Pennsylvania State University. In the FBI I've done a

1 variety of jobs. Was finally transferred into the FBI
2 laboratory in Washington, D.C., where I went through
3 approximately one year training program under the direct
4 supervision of my unit chief and other qualified hair
5 and fiber examiners. I looked at about -- thousands of
6 samples of hairs and fibers, read available literature,
7 discussed cases with the qualified examiners in the
8 unit, and took a series of courses taught by the FBI, as
9 well as some outside organizations. Finally went
10 through a series of oral board certifications.

11 Q Mr. Fram, I'm going to call your attention at
12 this point to a case that came out of Collin County,
13 Texas, specifically the Plano Police Department, and
14 also the assistance of one, Charles Linch, at the
15 Institute of Forensic Sciences in Dallas, Texas. Do you
16 recall having contact with those individuals regarding a
17 case called State of Texas versus Michael Blair?

18 A Yes, I do.

19 Q Did you have occasion to receive from Charles
20 Linch of the Institute of Forensic Sciences certain
21 slides of some fibers for further testing and analyses
22 examination by the FBI?

23 A Yes, I did.

24 MR. CLAYTON: May I approach, Your Honor?

25 THE COURT: You may.

1 Q (By Mr. Clayton) Mr. Fram, I'm going to hand
2 you what's been marked for identification as State's
3 Exhibit No. 88. I'm going to ask you to look in and
4 examine the contents of State's 88. Specifically, I
5 want to look at State's Exhibit Nos. 89, 90, 91. I'll
6 ask you if you recognize these exhibits as being the
7 material sent to you by Charles Linch of the Institute
8 of Forensic Sciences in Dallas, Texas, with regard to
9 the State of Texas versus Michael Blair?

10 A (By the witness) Yes. I do recognize them.

11 Q Can you tell the jury how it is that you
12 recognize these exhibits?

13 A Each of these cardboard slide holders have my
14 laboratory numbers, my symbols, and my initials on them.

15 Q That laboratory number for the FBI purposes,
16 can you read that into the record for us?

17 A Yes. It's 30924030.

18 Q That particular number follows anything that
19 was submitted to the laboratory with regard to State of
20 Texas versus Michael Blair?

21 A That's correct.

22 Q Contained in each of these small boxes, State's
23 89, 90, 91, are there slides containing fibers for
24 examination?

25 A Yes, there are.

1 Q You've initialed those as well?

2 A That's correct.

3 MR. CLAYTON: At this time, Your Honor, we
4 would offer into evidence State's Exhibits No. 88, 89,
5 90, 91.

6 MR. MCDERMITT: No objection, Your Honor.

7 THE COURT: All right. They're admitted.

8 Q (By Mr. Clayton) Now, Mr. Fram, I will call
9 your attention at this point to whether or not you had
10 occasion to discuss with Charles Linch of the Institute
11 of Forensic Sciences in Dallas a little bit of the
12 background and history on this case with regard to the
13 fibers that have been introduced into evidence and a
14 little bit about where they came from and a little bit
15 about their background?

16 A (By the witness) Yes, I did.

17 Q And is it to your understanding Mr. Linch had a
18 chance to look at those fibers through a technique using
19 polarized light and a comparison microscope?

20 A Yes.

21 Q All right. Now, when you got those fibers at
22 the FBI, did you have occasion to use some other
23 microscopic techniques for examination on those fibers?

24 A Yes, I did.

25 Q Tell the jury what type of microscopic

1 techniques you had occasion to apply to the fibers in
2 State's Exhibit 89, 90, 91 and how that type of
3 microscopic technique differs, if you could, from the
4 one that Charles Linch used, simple polarized light.

5 A The two techniques I used, one was called a
6 microspectrophotometer. This is a piece of equipment
7 that really compares color of these fibers. Now, these
8 fibers were not dyed. They were white or clear fibers;
9 however, these fibers were very heavily delustered.
10 Delustrants are additives put in the fibers to take away
11 the shine of the fiber. Since they were so dense I
12 decided to try the microspectrophotometer just to see if
13 it would pick up any subtle differences.

14 What the microspectrophotometer does very
15 simply is passes light through the fibers and has a
16 color meter above it which is reading the way the light
17 is coming through the fiber and just simply compares the
18 effect of the light on these fibers. Basically is just
19 comparing the color. It's very discriminating, so that
20 if I have two blue sweaters that you buy at the store
21 that look like they're the same color, it'll pick up
22 just a slight difference in those colors. If they're
23 made by manufacturers. Manufacturers use different dyes
24 to come to the same color. They can distinguish that.

25 Through this technique I didn't come up with

1 any differences, which you really wouldn't expect since
2 it was really clear. I wanted to try it anyway.

3 The second technique I used was fluorescence
4 microscopy. That simply is just a type of different
5 type of light using light of different wave lengths.
6 Again, just passing through the fiber comparing how that
7 light reacts to the fiber. Again, it did not pick up
8 any differences between those fibers.

9 Q Now, I just want to make it real clear for the
10 jury that the microscopic techniques that you used were
11 more specific for certain characteristics. They were
12 not an overall examination of the appearance of those
13 fibers under regular polarized light?

14 A That's right.

15 Q Yours was more geared toward if you could tell
16 a difference in the color.

17 A That's right.

18 Q And also -- well, actually both for the color?

19 A Color in the way that if they would fluoresce
20 under certain lights.

21 Q If Mr. Linch told us yesterday that he could
22 see some slight differences in the fiber from the body
23 of Ashley Estell, which I believe you call Q1, and the
24 fiber from Ashley Estell's sleep doll, you could see
25 that they were different. Under polarized light that

1 finding would not conflict with your findings that had
2 to do with simple color analysis or attempts?

3 A That's right. It wouldn't necessarily matter.
4 One could show a difference and one wouldn't.

5 Q So, in essence, the testing that you did really
6 doesn't, with regard to discriminating between the
7 Defendant's rabbit doll, [REDACTED] sleep rabbit, and the
8 fiber found in [REDACTED] s autopsy, really distinguish them
9 any further than what Mr. Linch had already done?

10 A That's correct.

11 Q After you had performed your testing on the
12 questioned fiber and the fiber from the suspect rabbit
13 doll and the [REDACTED] sleep rabbit, did you have occasion
14 to pull in one of your colleagues, a Mr. Rich Buechele,
15 to do a chemical analysis on these fibers to see if he
16 could find some distinctions from a chemical aspect?

17 A Yes. He did more of an elemental type. In
18 other words, what composed these fibers, and he did two
19 further examinations.

20 Q All right. As far as any personal knowledge of
21 any of the facts of this case or any of those things,
22 you do not have that kind of background?

23 A No.

24 Q Just basically you told -- you were told this
25 came from a suspect, this came from the victim's rabbit,

1 this fiber came from the autopsy?

2 A That's correct.

3 Q All right.

4 MR. CLAYTON: I'll pass the witness, Your
5 Honor.

6 MR. MCDERMITT: Thank you, Your Honor.

7 CROSS-EXAMINATION

8 BY MR. MCDERMITT:

9 Q Mr. Fram, do you recall what items were sent to
10 you by Mr. Linch?

11 A There were four glass microscope slides
12 containing fibers from four different stuffed animals as
13 known samples. There was one glass microscope slide
14 containing fibers from the victim and then there were
15 several items from the Defendant's automobile which were
16 also sent for serological examinations.

17 Q Were there any other fibers submitted to you at
18 the FBI lab from -- fibers off the body, other than the
19 one you already testified to?

20 A No.

21 Q So there weren't -- you didn't receive anything
22 as regards any carpeting or suspected pieces of
23 carpeting or anything found on the body?

24 A On the body, no.

25 Q Or on the clothes on the body?

1 A No.

2 Q When did you do your examinations?

3 A It would have been in -- sometime in October of
4 1993.

5 Q Okay. When did you call in Mr. Buechele?

6 A Mid October.

7 Q Thank you very much.

8 MR. MCDERMITT: I have no further
9 questions

10 MR. CLAYTON: No further questions of this
11 witness, Your Honor.

12 THE COURT: All right. Mr. Fram excused?

13 MR. CLAYTON: Yes, he is, Your Honor.

14 THE COURT: Call your next witness.

15 MR. CLAYTON: We call Rich Buechele.

16 THE COURT: Spell his name, please.

17 MR. CLAYTON: I'll try. I believe it's
18 B-u-e-c-h-e-l-e.

19 (Witness sworn by the
20 Court.)

21 THE COURT: All right. Have a seat right
22 over here, sir.

23 All right.

24 RICH BUECEHLE,

25 called as a witness on behalf of the State of Texas,

1 having been previously duly sworn to testify the truth,
2 the whole truth, and nothing but the truth, testified on
3 his oath as follows:

4 DIRECT EXAMINATION

5 BY MR. CLAYTON:

6 Q Would you please state your name for the jury?

7 A My name is Rich Buechele. Last name is spelled
8 B-u-e-c-h-e-l-e.

9 Q Mr. Buechele, would you tell the jury what you
10 do for a living?

11 A I'm employed as a special agent for the Federal
12 Bureau of Investigation. My current assignment is as a
13 supervisor in the laboratory division which is located
14 in Washington, D.C. Specifically I'm assigned to the
15 materials analysis unit where my duties include the
16 analysis of paint, tape, cosmetics, adhesives, plastics,
17 and other synthetic materials as submitted to our
18 laboratory from state, federal, and local law
19 enforcement agencies across the country.

20 Q Mr. Buechele, would you tell the jury how long
21 you've been with the FBI laboratory?

22 A I've been employed by the FBI approximately
23 fifteen years, eight of those years with the FBI
24 laboratory.

25 Q Mr. Buechele, I'm going to ask you if you had

1 occasion to assist one of your colleagues, Mr. Bob Fram,
2 who testified here earlier, on a case out of Collin
3 County, Texas, styled State of Texas versus Michael
4 Blair, with regard to some instrumental analyses of some
5 fibers?

6 A Yes, sir. I was involved in that
7 investigation.

8 Q All right. Can you tell the jury exactly what
9 it was that you were asked to do with regard to that
10 case by Mr. Fram?

11 A Special Agent Fram presented me with glass
12 microscope slides each containing fibers for comparison.
13 His request of me was to use scientific instruments
14 which I am trained on in our unit to compare these
15 fibers to see if and which ones matched in their
16 chemical composition.

17 Q All right. Were there two specific tests that
18 you employed in trying to make that determination?

19 A Yes, sir. There were. I used two scientific
20 instruments. One is called for fourier transform
21 infrared spectrophotometry, abbreviated in the
22 scientific industry as FTIR. The second test I used is
23 pyrolysis gas chromatography mass spectrometry,
24 abbreviated in the scientific industry as Py GCMS.

25 Q All right. In each of those tests what is it

1 that -- well, let's start first with the FTIR test, the
2 one using the light. What is it that is exactly the
3 goal -- or let me back up and maybe ask this a better
4 way. What is the scientific principle behind the FTIR
5 test? How does it work?

6 A FTIR uses a thin beam of infrared light.
7 Shining this beam through a sample the chemicals that
8 are present within that sample will absorb certain
9 portions of that infrared light. Which portions of that
10 have light are absorbed is dependent upon what chemicals
11 are present in the sample. When we shine this light
12 through, we collect what we call spectra, which is
13 typical of what chemicals are found in that sample. We
14 do that from one sample to another and see if the
15 spectra are, in fact, identical. In other words, are
16 these two samples composed of the same chemicals.
17 That's the type of examination I did on these fibers.

18 Q And with regard to the second test, the gas
19 chromatography test that you mentioned, would you tell
20 the jury a little bit about the scientific principle
21 behind that test and what it hopes to achieve?

22 A The pyro GCMS examination takes samples,
23 whether it's fibers, plastics, paints, and vaporizes
24 them using an intense amount of heat applied in a very
25 short period. Once the sample is vaporized, it travels

1 through a chromatographic column which separates this
2 sample into its individual chemical components. Once
3 they're separated into their individual chemical
4 components, they enter into the mass spectrometer
5 portion of the instrument which further breaks down each
6 chemical compound into smaller sections which identifies
7 what chemicals are present in that sample.

8 Again, I ran samples of fibers to compare them
9 to see if, in fact, they were composed of the same
10 chemical composition. These are two independent tests
11 to confirm whether or not fibers match or did not match.

12 Q And when you say whether or not fibers match or
13 do not match, you're speaking strictly from a chemical
14 analysis standpoint; is that correct?

15 A That is correct. Are they made out of the same
16 chemicals.

17 Q You're not trying to tell the jury that these
18 particular tests are ones that can distinguish the
19 structure, physical structure at least, of a fiber. In
20 other words, whether there are, I guess, air spaces
21 between some of the particles in the fiber, how they
22 might look physically. You're strictly talking from a
23 chemical basis?

24 A That is correct. These type of examinations
25 will not distinguish physical characteristics; however,

1 they will distinguish differences in chemical
2 composition.

3 Q That's kind of where your role as a chemist
4 differs from that of a microscopist who is looking at
5 things for differences in appearance and structure?

6 A That is correct.

7 Q All right. Now, I'm going to ask you to turn
8 your attention --

9 MR. Clayton: May I approach, Your Honor?

10 THE COURT: You may.

11 Q (By Mr. Clayton) I'm going to ask you to turn
12 your attention to the exhibits that were submitted to
13 you from Mr. Fram by FBI 30924030, and I'll ask you if
14 you had occasion to examine in the two techniques you
15 just described a fiber described as the Q1 fiber, the
16 questioned fiber that came from the autopsy of [REDACTED]
17 [REDACTED], and what is known as the known number one fiber,
18 a fiber from a rabbit doll that belonged to suspect
19 Michael Blair, and finally a fiber that is known as the
20 K3 fiber, which is one that came from the victim's sleep
21 bunny rabbit? Did you have occasion to run those tests?

22 A (By the witness) Yes, sir. I recognize these
23 because they bear the laboratory markings and other
24 markings that I'm familiar with. I did perform the
25 tests I previously described on these fibers.

1 Q All right. Now -- and I recognize you
2 identified these for purposes of your testimony as Q1,
3 K1, and K3. I will try to talk about it in those terms
4 as much as I can. Would that be best for you?

5 A Yes, sir. That would be fine.

6 Q Q1 was a fiber that you had occasion to run
7 through both the FTIR test checking its chemical
8 composition and also through the gas chromatography test
9 checking its chemical composition there. Did you get
10 readouts and results from both of those tests for the Q1
11 questioned fiber from [REDACTED] ?

12 A Yes, sir. I did.

13 Q Now, did you have occasion then to run the same
14 tests on, or testing procedures, on the K1 fiber, the
15 known fiber, from the rabbit doll from suspect Michael
16 Blair's vehicle?

17 A Again, yes, sir. I did.

18 Q All right. And finally when you ran -- did you
19 have occasion to run these same two tests on the K3
20 fiber from the victim's sleep bunny doll?

21 A Yes, I did.

22 Q After having performed these two tests on all
23 three of the fibers, what can you tell me about which of
24 the bunny rabbits, the K3 belonging to the victim, or K1
25 belonging to suspect Michael Blair, which one of those

1 in your opinion most closely matched in a chemical
2 fashion the questioned fiber, Q1, from [REDACTED]'s
3 body?

4 A The Q1 questioned fiber from the victim's body
5 most closely resembled in chemical composition the K1
6 fiber recovered from the suspect.

7 Q Now, the differences, when you say it most
8 resembled, the differences that you saw between the
9 known fiber from the suspect Michael Blair's rabbit doll
10 and that of the K3 fiber, the victim's sleep bunny, the
11 differences, are they great differences or are they
12 pretty subtle?

13 A They're very subtle differences, sir.

14 Q I'm not going to try to ask you to give a
15 lengthy chemical distinction in this, but can you tell
16 the jury where these differences kind of showed up and
17 some of your charting that you use as part of the
18 instruments or readout? Is that where you were able to
19 detect the differences?

20 A Yes, sir. That is correct. Using the FTIR
21 instrumental technique I produced a spectra which showed
22 all the absorbences of the chemicals that were present
23 in that fiber, the Q1, the K1, and the K3 fiber. As a
24 crude approximation, the spectra of the Q1 fiber from
25 the victim, the K1 fiber, and the K3 fiber all overlay

1 each other like my hands are, approximately. The
2 difference being the Q1 fiber from the victim and the K1
3 fiber from the suspect showed one additional absorbence
4 of the infrared radiation which appeared as a small
5 shoulder on one of the peaks. The reason for this
6 absorbence I cannot explain; however, it is present in
7 both the Q1 fiber from the victim and the K1 fiber from
8 the stuffed animal from the suspect. That small minute
9 absorbence is not present in the K3 fiber from the
10 victim's residence.

11 Q Okay. Now, in your opinion as a chemist
12 working with these two particular instruments, is it
13 your opinion that that shoulder, as you described, that
14 appears on the graph that shows the spectra resulting
15 from your test procedures, is that enough in your mind
16 to show a difference in these fibers?

17 A Again, I can't account for why the shoulder is
18 present in these spectra, but yes. It is a difference
19 that led me to conclude that the Q1 fiber most matches
20 the K1 rabbit as opposed to the K3 rabbit.

21 Q And again, this is -- this is in a chemical
22 composition context. We're not talking about the
23 appearance, physical appearance, of the fibers under a
24 microscope. We're talking strictly from a chemical
25 analysis standpoint.

1 A That is correct. Based entirely upon the
2 chemical composition.

3 Q All right. Mr. Buechele, I apologize. A
4 moment ago I forgot to ask you to give the jury a little
5 bit of your academic background, as well as your
6 training from the FBI. Would you mind recounting that
7 for the jury as far as where you studied?

8 A In 1979 I received a bachelor of science degree
9 from Clarion University of Pennsylvania. In 1980 I was
10 hired by the FBI laboratory to work in their chemistry
11 toxicology lab as a chemist. I served for approximately
12 one year in that capacity, was transferred to the
13 chemistry research laboratory at Quantico, Virginia,
14 where I worked for approximately two and one half years
15 developing techniques for use in the forensic
16 laboratory.

17 After this time period I applied for and
18 received an appointment as a special agent. After my
19 training I served in two field offices, Jackson,
20 Mississippi, and New York City. I was then reassigned
21 back to the laboratory to work as a supervisory special
22 agent with the responsibility of examining evidence as
23 submitted. I have held this capacity for five and one
24 half years.

25 My training included one year of on-the-job

1 training at the hands of the senior examiners that were
2 present in the unit at that time. This included
3 training from the manufacturers of the scientific
4 instruments that I use in my examination of evidence.
5 It included training at the University of Missouri, the
6 Raleigh campus. I attend trade shows and symposiums as
7 they relate to collection, preservation, analysis of
8 trace evidence.

9 Q I believe that's all I have, Mr. Buechele.

10 MR. CLAYTON: I pass the witness, Your
11 Honor.

12 MR. MCDERMITT: Thank you, Your Honor.

13 CROSS-EXAMINATION

14 BY MR. MCDERMITT:

15 Q Mr. Buechele, you talk about differences. Can
16 you -- excuse me. You talk about differences that are
17 unexplained in the absorption rate; is that correct?

18 A That is correct.

19 Q Is that common or uncommon in your business, to
20 see such differences?

21 A It is very common to see differences in
22 absorptions between specimens. Yes, sir.

23 Q When you performed both the FTIR and then the
24 gas chromatography, did you notice any other differences
25 that you haven't related to us?

1 A No, sir. I did not.

2 Q Okay. And you used terms like most closely
3 matched or most closely -- most consistent with. Are
4 those terms of art or are those terms of comparison?

5 A I'm sorry. I don't believe I understand your
6 question.

7 Q Okay. I mean, when you say that, are you
8 limiting the comparison factors in that as to
9 identification? I mean, can you say beyond a doubt or
10 can you say with certainty as regards anything as
11 regards these factors?

12 A I cannot say with one hundred percent certainty
13 that one fiber came from one source to the exclusion of
14 every other source. Again, in my report and in my
15 testimony I'm stating that the Q1 fiber most closely
16 resembled the K1 fiber based upon my chemical analysis
17 of the composition of those fibers.

18 Q All right. Can you tell us what other sources
19 these fibers may have been used in that you examined?

20 A No, sir. I cannot.

21 Q Did you make any effort as far as determining
22 the source of these fibers?

23 A No, sir. I did not.

24 Q Okay. So you only examined and then tested,
25 both through the FTIR and gas chromatography, those

1 samples that were sent you; is that correct?

2 A That is correct. Yes, sir.

3 Q Does your analysis and the tests that you run,
4 do they -- would they have -- would they be able to show
5 any characteristics, say, such as feces that were on a
6 fiber?

7 A Again, that is not a particular type of
8 examination that I would conduct; however, the majority
9 of the fibers that I receive for chemical composition
10 analysis have been cleaned.

11 Q They have been cleaned before you received
12 them?

13 A Yes, sir. That is correct.

14 Q So if there were feces or some other property
15 on a fiber taken at one point in time, then by the time
16 you conducted your examinations it would have been
17 cleaned off; is that correct?

18 A That is correct. Yes, sir.

19 Q How are these fibers cleaned?

20 A There's a variety of methods for cleaning
21 fibers, based upon how dirty or contaminated they appear
22 to be. The most simple method is to place some water
23 and/or methanol on it and swirl it in a little agitated
24 bath.

25 Q Well, when you use methanol, would that

1 introduce any other chemicals into the fiber?

2 A No, sir.

3 Q Okay. So then how is the methanol eliminated
4 from the -- from your examination?

5 A By simple evaporation from the sample.

6 Q Okay. So there'd be no residue or anything
7 else on this fiber. Is that what you're telling me?

8 A That's correct, sir.

9 Q So you couldn't tell if it had been cleaned or
10 not?

11 A Well, if it had not been cleaned, there would
12 have been certain interferences -- assuming, of course,
13 that the fiber was dirty or contaminated in the first
14 place -- there would have been certain chemical
15 interferences that would have precluded the examinations
16 I have done on these fibers that would have been
17 present. Looking through the microscope at these fibers
18 using infrared IR to examine them, the fibers would have
19 showed contamination; therefore, I'm quite confident
20 that they either were not contaminated or dirty or, if
21 they had been, they were cleaned prior to me receiving
22 them from Mr. Fram.

23 Q Did you conduct any -- any of these tests as
24 regards any other fibers associated with this case?

25 A Yes. There were other fibers submitted that I

1 examined using the instrumental techniques I described
2 in this case. Yes, sir.

3 Q All right. Can you tell me what those fibers
4 were?

5 A They were fibers from other stuffed animals
6 represented to me as having originated from the victim's
7 home.

8 Q Okay. And how many of those?

9 A I believe --

10 Q Do you recall?

11 A I believe there were two, sir.

12 Q So you were submitted basically three fibers
13 from the victim's home; is that correct?

14 A Yes, sir. That is correct.

15 Q Thank you very much.

16 MR. MCDERMITT: Pass the witness, Your
17 Honor.

18 REDIRECT EXAMINATION

19 BY MR. CLAYTON:

20 Q Just for perfect clarity in the record, Mr.
21 Buechle, the other fibers that were submitted to you
22 Mr. McDermitt just mentioned, not only were they
23 different from these rabbit dolls belonging to the
24 suspect and the fiber found on [REDACTED] 's body, but they
25 were -- they were very, very different chemically?

1 A Yes, sir. They were composed of an entirely
2 different chemical composition than the fiber recovered
3 from the victim's body.

4 Q Okay. Thank you.

5 MR. MCDERMITT: I have no further
6 questions, Your Honor.

7 THE COURT: This witness excused?

8 MR. CLAYTON: Yes, he is, Your Honor.

9 MR. MCDERMITT: Yes, Your Honor.

10 THE COURT: Thank you.

11 Call your next witness.

12 MR. CLAYTON: Your Honor, the State would
13 call Tom Gramm.

14 THE COURT: Is that G-r-a-h-a-m or --

15 MR. O'CONNELL: I believe it's G-r-a-m-m,
16 Your Honor.

17 THE COURT: No normal spellings.

18 Morning. Would you raise your right hand?

19 (Witness sworn by the
20 Court.)

21 THE COURT: All right.

22 MR. CLAYTON: Thank you, Your Honor

23 THOMAS GRAMM,
24 called as a witness on behalf of the State of Texas,
25 having been previously duly sworn to testify the truth,