Introduction

Thank you for considering participating in this study, which is being sponsored by the National Institute of Standards and Technology. Please read the following information before continuing.

Purpose of the research study: The purpose of the study is to examine how lawyers understand and evaluate forensic evidence.

What you will do in the study: If you participate, you will be asked some questions about your background and then be given a description of a hypothetical criminal case. After reading about the case, you will be asked to evaluate the evidence in the case and the likelihood that the defendant committed the alleged crime in light of this evidence. You may skip any questions that make you uncomfortable.

Time required: The study will require about 10 to 15 minutes of your time.

Risks: There are no anticipated risks in this study.

Benefits: There are no benefits to participation. If you wish, you can send an email message to pgm6u@virginia.edu, and we will send you a copy of any manuscripts based on the research (or summaries of our results).

Confidentiality: All data you provide will remain anonymous and will not be connected to your email, IP address, or other personal information. Data with no information that could be used to identify individual participants will be posted on a public website so that the data will be available to other researchers.

Participation and withdrawal: Your participation in this study is completely voluntary, you may skip any question, and you may quit at any time by

simply closing your web browser. You may not withdraw after you submit your data because all responses are anonymous.

Compensation: You will receive payment for participation.

If you have questions about the study, contact:
Gregory Mitchell, University of Virginia School of Law, 580 Massie Road, Charlottesville, Virginia 22903-1738
434-243-4088, pgm6u@virginia.edu

If you have questions about your rights in this study (refer to SBS Protocol #2017-0174), contact:
Tonya R. Moon, Ph.D., Chair, Institutional Review Board for the Social and Behavioral Sciences
One Morton Dr., Suite 500, University of Virginia, P.O. Box 800392, Charlottesville, VA 22908-0392
(434) 924-5999, irbsbshelp@virginia.edu, www.virginia.edu/vpr/irb/sbs

You may want to print a copy of this consent form to keep.

By continuing on in this study, you are acknowledging that you have read the above information, that you are 18 years of age or older and give your consent to participate in this internet-based study and consent to analyze the resulting data. **If you would like to continue your participation, please click on the arrow below to go to the next page.**

Background Questions

Please complete the following questions about yourself.

All responses are anonymous. Please answer honestly.

We care about the quality of our survey data and hope to receive the most accurate measures of your opinions, so it is important to us that you read the

questions fully and provide your best answer to each question in the survey.

Do you commit to reading the questions and providing thoughtful answers to the questions in this survey?

I commit to reading the questions and giving my best answers.
I cannot make this commitment.

Have you ever served on a jury before?

Yes
No

Did the jury trial involve criminal charges against the defendant?

Yes
No

Please specify your sex:

Male
Female

Please specify your race or ethnicity:

White
Black or African American
American Indian or Alaska Native
Asian
Native Hawaiian or Pacific Islander
Hispanic
Other

Please use the slider below to specify your age:

	0	17	33	50	67	83	100

Age in Years

Please specify your total family income before taxes:

Less than $10,000

$10,000 - $19,999

$20,000 - $29,999

$30,000 - $39,999

$40,000 - $49,999

$50,000 - $59,999

$60,000 - $69,999

$70,000 - $79,999

$80,000 - $89,999

$90,000 - $99,999

$100,000 - $149,999

More than $150,000

Please specify your education:

Less than high school

High school graduate

Some college

2 year degree

4 year degree

Professional degree

Doctorate

I tend to vote:

No consistent preference

Republican

Democratic

My political views tend to be:

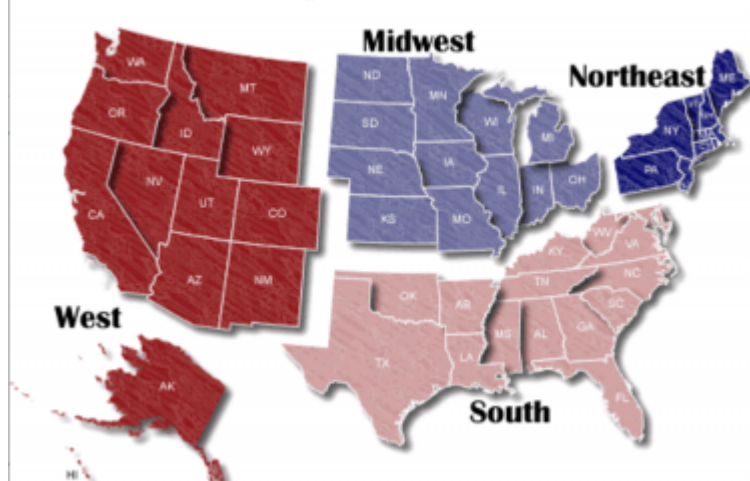Very Liberal   Somewhat Liberal   Middle of the Road   Somewhat Conservative   Very Conservative

Have you or a member of your family ever been arrested by the police?

Yes

No

In what region do you live?

West

Midwest

South

Northeast

In which state do you currently reside?

[▾]

When answering the questions on this page, please do not use a calculator, but feel free to use scratch paper to do the math on your own.

Imagine we are throwing a five-sided die 50 times. On average, out of these 50 throws how many times would this five-sided die show an odd number (1, 3, or 5)?

5 out of 50 throws

25 out of 50 throws

30 out of 50 throws

None of the above

Out of 1,000 people in a small town 500 are members of a choir. Out of these 500 members in the choir 100 are men. Out of the 500 inhabitants that are not in the choir 300 are men. What is the probability that a randomly drawn man is a member of the choir? Please indicate the probability in percent.

10%

25%

40%

None of the above

Imagine we are throwing a loaded die (6 sides). The probability that the die shows a 6 is twice as high as the probability of each of the other numbers. On average, out of these 70 throws, about how many times would the die show the number 6?

20 out of 70 throws

23 out of 70 throws

35 out of 70 throws

None of the above

In a forest, 20% of mushrooms are red, 50% brown and 30% white. A red mushroom is poisonous with a probability of 20%. A mushroom that is not red is poisonous with a probability of 5%. What is the probability that a poisonous mushroom in the forest is red?

4%

20%

50%

None of the above

How good are you with percentages?

Extremely good

Good

Somewhat good

Somewhat bad

Bad

Extremely bad

To ensure the survey is properly working, please select 'strongly agree' from the following options.

Disagree

Agree

Strongly disagree

Strongly agree

Somewhat agree

Neither agree nor disagree

Somewhat disagree

When reading the newspaper, how helpful do you find tables and graphs that are parts of a story?

Extremely helpful

Helpful

Somewhat helpful

Somewhat unhelpful

Unhelpful

Extremely unhelpful

Imagine that we flip a fair coin 1,000 times. What is your best guess about how many times the coin would come up heads in 1,000 flips?

[ ]

In the BIG BUCKS LOTTERY, the chance of winning a $10 prize is 1%. What is your best guess about how many people would win a $10 prize if 1000 people each buy a single ticket to BIG BUCKS?

[ ]

In ACME PUBLISHING SWEEPSTAKES, the chance of winning a car is 1 in 1,000. What percent of tickets to ACME PUBLISHING SWEEPSTAKES win a car?

[ ]

Control Condition

These page timer metrics will not be displayed to the recipient.
First Click: *0 seconds*
Last Click: *0 seconds*
Page Submit: *0 seconds*
Click Count: *0 clicks*

Please read the following description of a criminal case and then answer the questions that follow the case description. Be sure to read all of the information carefully.

A convenience store was robbed. The robber wore a mask and showed a gun but did not fire the gun. When running from the store, the robber's hand caught on the door, causing him to drop the gun. The police arrested a person who was found in the vicinity shortly after the robbery. No proceeds of the crime were found on this person, and the clerk at the convenience

store has not been able to identify this person as the robber because the robber wore a mask.

Simple Match–Scientific Procedure Statement

Please read the following description of a criminal case and then answer the questions that follow the case description. Be sure to read all of the information carefully.

A convenience store was robbed. The robber wore a mask and showed a gun but did not fire the gun. When running from the store, the robber's hand caught on the door, causing him to drop the gun. The police arrested a person who was found in the vicinity shortly after the robbery. No proceeds of the crime were found on this person, and the clerk at the convenience store has not been able to identify this person as the robber because the robber wore a mask.

A fingerprint examiner compared fingerprints taken from the handle of the gun dropped at the crime scene to the known fingerprints taken from the Defendant on an inked card. The fingerprint examiner issued a report stating:

"I formed the following opinion and interpretation using accepted scientific and professional practices:

1. Processing and analysis of the gun recovered from the crime scene revealed one fingerprint suitable for comparison.

2. I compared this fingerprint to the known fingerprints taken from the defendant on an inked card.

3. The fingerprint found on the gun was individualized as the right thumb of the defendant."

Strong Match-Scientific Procedure Statement

Please read the following description of a criminal case and then answer the questions that follow the case description. Be sure to read all of the information carefully.

A convenience store was robbed. The robber wore a mask and showed a gun but did not fire the gun. When running from the store, the robber's hand caught on the door, causing him to drop the gun. The police arrested a person who was found in the vicinity shortly after the robbery. No proceeds of the crime were found on this person, and the clerk at the convenience store has not been able to identify this person as the robber because the robber wore a mask.

A fingerprint examiner compared fingerprints taken from the handle of the gun dropped at the crime scene to the known fingerprints taken from the Defendant on an inked card. The fingerprint examiner issued a report stating:

"I formed the following opinion and interpretation using accepted scientific and professional practices:

1. Processing and analysis of the gun recovered from the crime scene revealed one fingerprint suitable for comparison.

2. I compared this fingerprint to the known fingerprints taken from the defendant on an inked card.

3. The fingerprint found on the gun was individualized as the right thumb of the defendant. The likelihood the impressions were made by a different source is so remote that it is considered to be a practical impossibility."

1,000,000

Please read the following description of a criminal case and then answer the questions that follow the case description. Be sure to read all of the information carefully.

A convenience store was robbed. The robber wore a mask and showed a gun but did not fire the gun. When running from the store, the robber's hand caught on the door, causing him to drop the gun. The police arrested a person who was found in the vicinity shortly after the robbery. No proceeds of the crime were found on this person, and the clerk at the convenience store has not been able to identify this person as the robber because the robber wore a mask.

A fingerprint examiner compared fingerprints taken from the handle of the gun dropped at the crime scene to the known fingerprints taken from the Defendant on an inked card. The fingerprint examiner issued a report stating:

"I formed the following opinion and interpretation using accepted scientific and professional practices:

1. Processing and analysis of the gun recovered from the crime scene revealed one fingerprint suitable for comparison.

2. I compared this fingerprint to the known fingerprints taken from the defendant on an inked card.

3. The fingerprint found on the gun and the defendant's fingerprints have corresponding ridge detail. **The probability of observing this amount of correspondence is approximately 1,000,000 times greater when impressions are made by the same source rather than by different sources.** This conclusion was reached using software that measures the degree of similarity between fingerprint impressions. Results equal to or greater than 10 indicate a positive association between two fingerprint impressions."

100,000

These page timer metrics will not be displayed to the recipient.
First Click: *0 seconds*
Last Click: *0 seconds*
Page Submit: *0 seconds*
Click Count: *0 clicks*

Please read the following description of a criminal case and then answer the questions that follow the case description. Be sure to read all of the information carefully.

A convenience store was robbed. The robber wore a mask and showed a gun but did not fire the gun. When running from the store, the robber's hand caught on the door, causing him to drop the gun. The police arrested a person who was found in the vicinity shortly after the robbery. No proceeds

of the crime were found on this person, and the clerk at the convenience store has not been able to identify this person as the robber because the robber wore a mask.

A fingerprint examiner compared fingerprints taken from the handle of the gun dropped at the crime scene to the known fingerprints taken from the Defendant on an inked card. The fingerprint examiner issued a report stating:

"I formed the following opinion and interpretation using accepted scientific and professional practices:

1. Processing and analysis of the gun recovered from the crime scene revealed one fingerprint suitable for comparison.

2. I compared this fingerprint to the known fingerprints taken from the defendant on an inked card.

3. The fingerprint found on the gun and the defendant's fingerprints have corresponding ridge detail. **The probability of observing this amount of correspondence is approximately 100,000 times greater when impressions are made by the same source rather than by different sources.** This conclusion was reached using software that measures the degree of similarity between fingerprint impressions. Results equal to or greater than 10 indicate a positive association between two fingerprint impressions."

10,000

Please read the following description of a criminal case and then answer the questions that follow the case description. Be sure to read all of the information carefully.

A convenience store was robbed. The robber wore a mask and showed a gun but did not fire the gun. When running from the store, the robber's hand caught on the door, causing him to drop the gun. The police arrested a person who was found in the vicinity shortly after the robbery. No proceeds of the crime were found on this person, and the clerk at the convenience store has not been able to identify this person as the robber because the robber wore a mask.

A fingerprint examiner compared fingerprints taken from the handle of the gun dropped at the crime scene to the known fingerprints taken from the Defendant on an inked card. The fingerprint examiner issued a report stating:

"I formed the following opinion and interpretation using accepted scientific and professional practices:

1. Processing and analysis of the gun recovered from the crime scene revealed one fingerprint suitable for comparison.

2. I compared this fingerprint to the known fingerprints taken from the defendant on an inked card.

3. The fingerprint found on the gun and the defendant's fingerprints have corresponding ridge detail. **The probability of observing this amount of correspondence is approximately 10,000 times greater when impressions are made by the same source rather than by different sources.** This conclusion was reached using software that measures the degree of similarity between fingerprint impressions. Results equal to or greater than 10 indicate a positive association between two fingerprint impressions."

1,000

Please read the following description of a criminal case and then answer the questions that follow the case description. Be sure to read all of the information carefully.

A convenience store was robbed. The robber wore a mask and showed a gun but did not fire the gun. When running from the store, the robber's hand caught on the door, causing him to drop the gun. The police arrested a person who was found in the vicinity shortly after the robbery. No proceeds of the crime were found on this person, and the clerk at the convenience store has not been able to identify this person as the robber because the robber wore a mask.

A fingerprint examiner compared fingerprints taken from the handle of the gun dropped at the crime scene to the known fingerprints taken from the Defendant on an inked card. The fingerprint examiner issued a report stating:

"I formed the following opinion and interpretation using accepted scientific and professional practices:

1. Processing and analysis of the gun recovered from the crime scene revealed one fingerprint suitable for comparison.

2. I compared this fingerprint to the known fingerprints taken from the defendant on an inked card.

3. The fingerprint found on the gun and the defendant's fingerprints have corresponding ridge detail. **The probability of observing this amount of correspondence is approximately 1,000 times greater when impressions are made by the same source rather than by different sources.** This conclusion was reached using software that measures the degree of similarity between fingerprint impressions. Results equal to or greater than 10 indicate a positive association between two fingerprint impressions."

100

Please read the following description of a criminal case and then answer the questions that follow the case description. Be sure to read all of the information carefully.

A convenience store was robbed. The robber wore a mask and showed a gun but did not fire the gun. When running from the store, the robber's hand caught on the door, causing him to drop the gun. The police arrested a person who was found in the vicinity shortly after the robbery. No proceeds of the crime were found on this person, and the clerk at the convenience store has not been able to identify this person as the robber because the robber wore a mask.

A fingerprint examiner compared fingerprints taken from the handle of the gun dropped at the crime scene to the known fingerprints taken from the Defendant on an inked card. The fingerprint examiner issued a report stating:

"I formed the following opinion and interpretation using accepted scientific and professional practices:

1. Processing and analysis of the gun recovered from the crime scene revealed one fingerprint suitable for comparison.

2. I compared this fingerprint to the known fingerprints taken from the defendant on an inked card.

3. The fingerprint found on the gun and the defendant's fingerprints have corresponding ridge detail. **The probability of observing this amount of correspondence is approximately 100 times greater when impressions are made by the same source rather than by different sources.** This conclusion was reached using software that measures the degree of similarity between fingerprint impressions. Results equal to or greater than 10 indicate a positive association between two fingerprint impressions."

10

Please read the following description of a criminal case and then answer the questions that follow the case description. Be sure to read all of the information carefully.

A convenience store was robbed. The robber wore a mask and showed a gun but did not fire the gun. When running from the store, the robber's hand caught on the door, causing him to drop the gun. The police arrested a person who was found in the vicinity shortly after the robbery. No proceeds of the crime were found on this person, and the clerk at the convenience

store has not been able to identify this person as the robber because the robber wore a mask.

A fingerprint examiner compared fingerprints taken from the handle of the gun dropped at the crime scene to the known fingerprints taken from the Defendant on an inked card. The fingerprint examiner issued a report stating:

"I formed the following opinion and interpretation using accepted scientific and professional practices:

1. Processing and analysis of the gun recovered from the crime scene revealed one fingerprint suitable for comparison.

2. I compared this fingerprint to the known fingerprints taken from the defendant on an inked card.

3. The fingerprint found on the gun and the defendant's fingerprints have corresponding ridge detail. **The probability of observing this amount of correspondence is approximately 10 times greater when impressions are made by the same source rather than by different sources.** This conclusion was reached using software that measures the degree of similarity between fingerprint impressions. Results equal to or greater than 10 indicate a positive association between two fingerprint impressions."

Dependent variables

What is the likelihood that the defendant left his fingerprints on the gun used in the robbery?
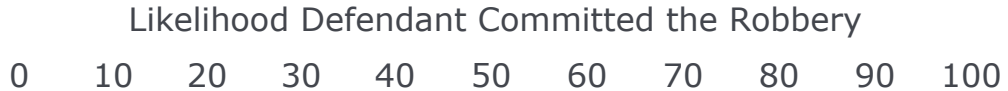
(Use the slider below to indicate how likely you think that is. Numbers below 50 indicate that you think it is more likely that the defendant did *not* hold the gun used in the robbery (the smaller the number, the less likely). Numbers above 50 indicate that you think it is likely the defendant *did* hold the gun used in the robbery (the bigger the number, the more likely). 0 represents

certainty he did *not* hold the gun. 100 represents certainty that he *did* hold the gun. 50 indicates complete uncertainty as to whether the defendant did or did not hold the gun used in the robbery.)

Likelihood Defendant Held the Gun

0   10   20   30   40   50   60   70   80   90   100

What is the likelihood that someone other than the defendant left the fingerprints found on the gun?

(Use the slider below to indicate how likely you think that is. Higher numbers reflect a greater likelihood that someone other than the defendant left those fingerprints. 50 indicates that is is just as likely that someone other than the defendant left the fingerprints as it is likely that the defendant left the fingerprints.)

Likelihood Defendant Committed the Robbery

0   10   20   30   40   50   60   70   80   90   100

What is the likelihood that the defendant committed the robbery?

(Use the slider below to indicate how likely you think that is. Numbers below 50 indicate that you think it is more likely that the defendant did *not* commit the robbery (the smaller the number, the less likely). Numbers above 50 indicate that you think it is more likely the defendant *did* commit the robbery (the bigger the number, the more likely). 0 represents certainty that the defendant did *not* commit the robbery. 100 represents certainty that the defendant *did* commit the robbery. 50 indicates uncertainty as to whether the defendant did or did not commit the robbery.)

Likelihood Defendant Committed the Robbery

0   10   20   30   40   50   60   70   80   90   100

Based on the evidence in this case, would you convict the defendant?

No, I would not convict him.

Yes, I would convict him.

How would you rate the prosecution's case is here?

Extremely Weak

Weak

Strong

Extremely Strong

Final questions

We would like to ask you just a few more questions. These questions are general and do not refer to the case you just read.

Which of the following errors at trial do you believe causes more harm to society?

Failing to Convict a Guilty Person

Erroneously Convicting an Innocent Person

The errors are equally bad

What is the sum of one and three?

0

1

2

3

4

5

6

There are presently over 7 billion people in the world. Considering all of the people in the world, how many people do you estimate have fingerprints identical to your own?

```
[                                                                    ]
```

There are presently over 7 billion people in the world. Considering all of the people in the world, how many people do you estimate have DNA identical to your own?

```
[                                                                    ]
```

In general, how reliable do you think fingerprint evidence is?

Very Reliable

Reliable

Somewhat Reliable

Somewhat Unreliable

Unreliable

Very Unreliable

In general, how reliable do you think DNA evidence is?

Very Reliable

Reliable

Somewhat Reliable

Somewhat Unreliable

Unreliable

Very Unreliable

You have now completed the survey.   Thank you.

Block 13

Thank you for considering participating in this study, which is being sponsored by the National Institute of Standards and Technology. Please read the following information before continuing.

Purpose of the research study: The purpose of the study is to examine how lawyers understand and evaluate forensic evidence.

What you will do in the study: If you participate, you will be asked some questions about your background and then be given a description of a hypothetical criminal case. After reading about the case, you will be asked to evaluate the evidence in the case and the likelihood that the defendant committed the alleged crime in light of this evidence. You may skip any questions that make you uncomfortable.

Time required: The study will require about 10 to 15 minutes of your time.

Risks: There are no anticipated risks in this study.

Benefits: There are no benefits to participation. If you wish, you can send an email message to pgm6u@virginia.edu, and we will send you a copy of any manuscripts based on the research (or summaries of our results).

Confidentiality: All data you provide will remain anonymous and will not be connected to your email, IP address, or other personal information. Data with no information that could be used to identify individual participants will

be posted on a public website so that the data will be available to other researchers.

Participation and withdrawal: Your participation in this study is completely voluntary, you may skip any question, and you may quit at any time by simply closing your web browser. You may not withdraw after you submit your data because all responses are anonymous.

Compensation: You will receive payment for participation.

If you have questions about the study, contact:
Gregory Mitchell, University of Virginia School of Law, 580 Massie Road, Charlottesville, Virginia 22903-1738
434-243-4088, pgm6u@virginia.edu

If you have questions about your rights in this study (refer to SBS Protocol #2017-0174), contact:
Tonya R. Moon, Ph.D., Chair, Institutional Review Board for the Social and Behavioral Sciences
One Morton Dr., Suite 500, University of Virginia, P.O. Box 800392, Charlottesville, VA 22908-0392
(434) 924-5999, irbsbshelp@virginia.edu, www.virginia.edu/vpr/irb/sbs

You may want to print a copy of this consent form to keep.

By continuing on in this study, you are acknowledging that you have read the above information, that you are 18 years of age or older and give your consent to participate in this internet-based study and consent to analyze the resulting data. **If you would like to continue your participation, please click on the arrow below to go to the next page.**