SUPPLEMENTARY MATERIALS

Below are contained the experiment materials for the manuscript "Strange but true: Corroboration and base-rate neglect." by Toby D. Pilditch, Sandra Lagator, and David Lagnado.

Page breaks are used to indicate where a new page started within each experiment. Participants were unable to cycle back through previous pages at any point.

In Experiments 2 and 3, note that the order of presentation for number and color scenarios was counterbalanced between subjects.

Experiment 1 Materials

Introduction

In this study you will be asked to imagine two versions of a breaking and entering case.

You will be asked several questions comparing the two cases as you gradually find out more information.

When you are ready, press "Next" to continue.

A possible break in...

========== *BACKGROUND INFORMATION* ==========

Consider the following. You are investigating a possible break in at a home in the city centre, where the front door has been knocked down. At present, you are trying to determine a description of the possible suspect.

Witnesses:

Several homes on the opposite side of the street overlook the scene. In each of the three overlooking houses, there is a witness. All three witnesses claim to have been drawn to the window overlooking the street by the noise of the front door being knocked down, and have since stayed within their homes, and as such we may consider them *independent* of each other (i.e., they have not communicated with each other).

You are gathering reports from each witness separately. Each witness - if they saw the culprit - will accurately provide a description. However, as the event took place at night, each witness may not be entirely reliable (i.e. there is a 50% probability the witness did not actually see anything, but feels obliged to say *something*). Importantly, **all witnesses can be considered *equally reliable***.

========== *TWO POSSIBLE ACCOUNTS* ==========

Now, consider two alternative descriptions of the culprit:

A: The culprit was wearing a **black hoodie**.

B: The culprit was wearing a **clown outfit**.

========== *QUESTIONS* ==========

Before you start finding out reports, consider the two descriptions and answer the following questions (*clicking the bar below each statement to indicate your estimate - between 0% (left-most point) and 100% (right-most point)*):

What is the probability of a culprit wearing a clown outfit?

[Slider 0-100%]

What is the probability of a culprit wearing a black hoodie?

[Slider 0-100%]

A possible break in...

========== *BACKGROUND INFORMATION* ==========

Consider the following. You are investigating a possible break in at a home in the city centre, where the front door has been knocked down. At present, you are trying to determine a description of the possible suspect.

Witnesses:

Several homes on the opposite side of the street overlook the scene. In each of the three overlooking houses, there is a witness. All three witnesses claim to have been drawn to the window overlooking the street by the noise of the front door being knocked down, and have since stayed within their homes, and as such we may consider them *independent* of each other (i.e., they have not communicated with each other).

You are gathering reports from each witness separately. Each witness - if they saw the culprit - will accurately provide a description. However, as the event took place at night, each witness may not be entirely reliable (i.e. there is a 50% probability the witness did not actually see anything, but feels obliged to say *something*). Importantly, **all witnesses can be considered *equally reliable***.

========== *TWO POSSIBLE ACCOUNTS* ==========

Now, consider two alternative descriptions of the culprit:

A: The culprit was wearing a **black hoodie**.

B: The culprit was wearing a **clown outfit**.

========== *QUESTIONS* ==========

1. Given everything you know so far, in which hypothetical account is the description of the culprit more likely to be true?

- There is no difference.
- B (Clown)

A (Hoodie)

2. How **confident** are you that **your response is correct**?

Click the bar below, indicating between 0% (left-most point) and 100% (right-most point).

Confidence (%)

[Slider 0-100%]

A possible break in...

========== *BACKGROUND INFORMATION* ==========

Consider the following. You are investigating a possible break in at a home in the city centre, where the front door has been knocked down. At present, you are trying to determine a description of the possible suspect.

Witnesses:

Several homes on the opposite side of the street overlook the scene. In each of the three overlooking houses, there is a witness. All three witnesses claim to have been drawn to the window overlooking the street by the noise of the front door being knocked down, and have since stayed within their homes, and as such we may consider them *independent* of each other (i.e., they have not communicated with each other).

You are gathering reports from each witness separately. Each witness - if they saw the culprit - will accurately provide a description. However, as the event took place at night, each witness may not be entirely reliable (i.e. there is a 50% probability the witness did not actually see anything, but feels obliged to say *something*). Importantly, **all witnesses can be considered *equally reliable***.

========== *TWO POSSIBLE ACCOUNTS* ==========

Now, consider two hypothetical accounts:

A: The culprit was wearing a **black hoodie**.

B: The culprit was wearing a **clown outfit**.

========== *EVIDENCE: WITNESS 1's REPORT* ==========

In the two hypothetical accounts, you now receive a report from witness 1:

A: Witness 1 reports the culprit was wearing a **black hoodie**.

B: Witness 1 reports the culprit was wearing a **clown outfit**.

========== *QUESTIONS* ==========

1. Given everything you know so far, in which hypothetical account is the description of the culprit more likely to be true?

- A (Hoodie)
- B (Clown)
- There is no difference.

2. How **confident** are you that **your response is correct**?

Click the bar below, indicating between 0% (left-most point) and 100% (right-most point).

Confidence (%)

[Slider 0-100%]

A possible break in...

========== *BACKGROUND INFORMATION* ==========

Consider the following. You are investigating a possible break in at a home in the city centre, where the front door has been knocked down. At present, you are trying to determine a description of the possible suspect.

Witnesses:

Several homes on the opposite side of the street overlook the scene. In each of the three overlooking houses, there is a witness. All three witnesses claim to have been drawn to the window overlooking the street by the noise of the front door being knocked down, and have since stayed within their homes, and as such we may consider them *independent* of each other (i.e., they have not communicated with each other).

You are gathering reports from each witness separately. Each witness - if they saw the culprit - will accurately provide a description. However, as the event took place at night, each witness may not be entirely reliable (i.e. there is a 50% probability the witness did not actually see anything, but feels obliged to say *something*). Importantly, **all witnesses can be considered *equally reliable***.

========== *TWO POSSIBLE ACCOUNTS* ==========

Now, consider two hypothetical accounts:

A: The culprit was wearing a **black hoodie**.

B: The culprit was wearing a **clown outfit**.

========== *PREVIOUS EVIDENCE:* ==========

In the two hypothetical accounts, you have received a report from witness 1:

A: Witness 1 reported the culprit was wearing a **black hoodie**.

B: Witness 1 reported the culprit was wearing a **clown outfit**.

========== *NEW EVIDENCE: WITNESS 2's REPORT* ==========

In the two hypothetical accounts, you now receive the report from witness 2:

A: Witness 2 reports the culprit was wearing a **black hoodie**.

B: Witness 2 reports the culprit was wearing a **clown outfit**.

========== *QUESTIONS* ==========

1. Given everything you know so far, in which hypothetical account is the description of the culprit more likely to be true?

- There is no difference.
- A (Hoodie)
- B (Clown)

2. How **confident** are you that **your response is correct**?

Click the bar below, indicating between 0% (left-most point) and 100% (right-most point).

Confidence (%)

[Slider 0-100%]

A possible break in...

========== *BACKGROUND INFORMATION* ==========

Consider the following. You are investigating a possible break in at a home in the city centre, where the front door has been knocked down. At present, you are trying to determine a description of the possible suspect.

Witnesses:

Several homes on the opposite side of the street overlook the scene. In each of the three overlooking houses, there is a witness. All three witnesses claim to have been drawn to the window overlooking the street by the noise of the front door being knocked down, and have since stayed within their homes, and as such we may consider them *independent* of each other (i.e., they have not communicated with each other).

You are gathering reports from each witness separately. Each witness - if they saw the culprit - will accurately provide a description. However, as the event took place at night, each witness may not be entirely reliable (i.e. there is a 50% probability the witness did not actually see anything, but feels obliged to say *something*). Importantly, **all witnesses can be considered *equally reliable***.

========== *TWO POSSIBLE ACCOUNTS* ==========

Now, consider two hypothetical accounts:

A: The culprit was wearing a **black hoodie**.

B: The culprit was wearing a **clown outfit**.

========== *PREVIOUS EVIDENCE:* ==========

In the two hypothetical accounts, you have received reports from witness 1 and 2:

A: Witness 1 and 2 each reported the culprit was wearing a **black hoodie**.

B: Witness 1 and 2 each reported the culprit was wearing a **clown outfit**.

========== *NEW EVIDENCE: WITNESS 3's REPORT* ==========

In the two hypothetical accounts, you now receive the report from witness 3:

A: Witness 3 reports the culprit was wearing a **black hoodie**.

B: Witness 3 reports the culprit was wearing a **clown outfit**.

========== *QUESTIONS* ==========

1. Given everything you know so far, in which hypothetical account is the description of the culprit more likely to be true?

- B (Clown)
- A (Hoodie)
- There is no difference.

2. How **confident** are you that **your response is correct**?

Click the bar below, indicating between 0% (left-most point) and 100% (right-most point).

Confidence (%)

[Slider 0-100%]

Experiment 2 Materials

Introduction

In this study you will be asked to imagine playing a version of the game of roulette.

This is what a roulette wheel looks like:

The slots are numbered 1-36 and distributed equally around the wheel. Half of the slots are black and half of the slots are red. When the wheel is spun a small ball is dropped on the wheel.

Players may bet on the outcome of a spin (which slot the ball ends up in) beforehand in two main ways:

By Color: Players may bet on whether the ball lands on red or black, where the probability of winning is 50% (i.e. 50/50).

By Number: Players may bet on whether the ball lands on a specific number, where the probability of winning is approximately 2.7% (or 1 in 36). Although the chance of winning is lower, players tend to do this given the return on the bet is higher.

If the ball lands in the chosen slot/slots, the player wins. If the ball lands in any other slot, the player loses.

When you are ready, press "Next" to continue.

Semi-blind roulette…

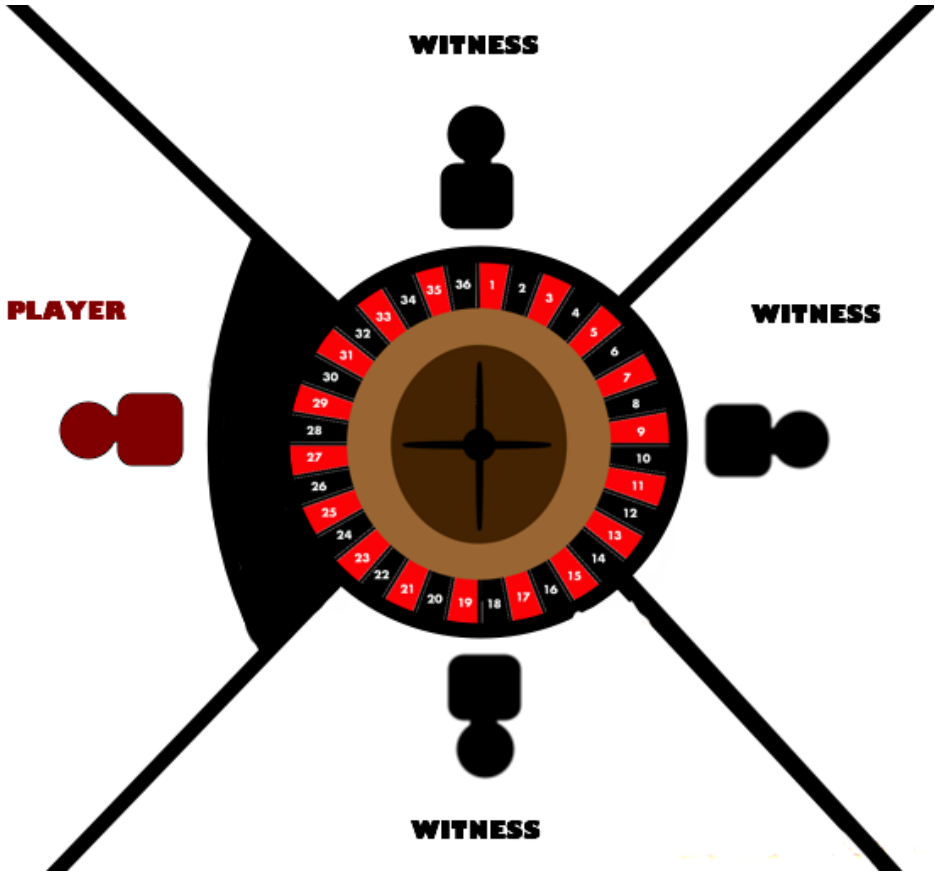
In this version of roulette you will act as a player. However, there is a barrier between yourself and the roulette wheel, and you are unable to observe the outcomes yourself. Instead, you must rely on reports that come from 3 witnesses, who press a button to indicate the outcome.

The Witnesses

The witnesses are able to see the wheel but cannot talk to each other (there are barriers between them), and their reports are silent button presses (so they cannot see what other witnesses have reported).

On any given spin, each witness has a **50% probability** of not paying attention, and missing the outcome of the spin (put another way, there is a 50% probability they are *unreliable*)! When a witness has seen the outcome of a spin, they will *always report it honestly*.

Unfortunately, even when not paying attention, the witnesses still need to press one of the buttons to indicate their report. Therefore, if unreliable, a witness will choose one of the available buttons randomly.



Over the course of this study, you will see two short scenarios.

As new information appears, you must answer a few questions regarding your (current) conclusions.

When you are ready, press "Next" to start the first scenario.

The Number Scenario (Part 1a)

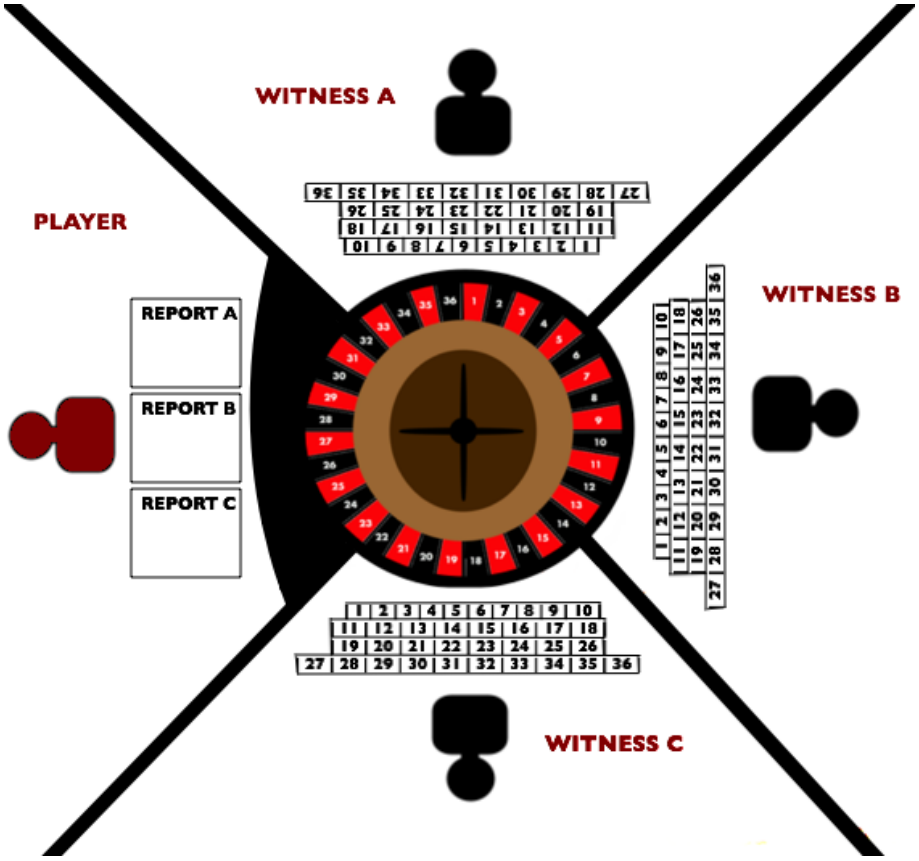
========== *BACKGROUND INFORMATION* ==========

Now imagine the following scenario: you are the player and **you have placed your bet that the ball will land on the number 34** (*1 of the 36 slots in total, i.e. a roughly 3% probability of the number 34*). The witnesses will press a button to indicate which number the ball has landed on. If the ball lands on 34, you win. If the ball lands on any other number, you lose. After each report you will be asked to answer a few short questions.

Witness Reminder:

On any given spin, each witness has a **50% probability** of not paying attention and missing the outcome of the spin (put another way, there is a 50% probability they are *unreliable*)! When a witness has seen the outcome of a spin, they will *always report it honestly*. Unfortunately, even when not paying attention, the witnesses still need to press one of the buttons to indicate their report. Therefore, if unreliable, a witness will choose one of the available buttons randomly.

========== *END OF BACKGROUND INFORMATION* ==========



Before you start finding out reports, please answer the following questions (*clicking the bar below each statement to indicate your estimate - between 0% (left-most point) and 100% (right-most point)*):

What is the probability that the ball has landed on **34**?

[Slider 0-100%]

What is the probability of each witness being **reliable** (i.e. paying attention to the outcome)?

[Slider 0-100%]

The Number Scenario (Part 1b)

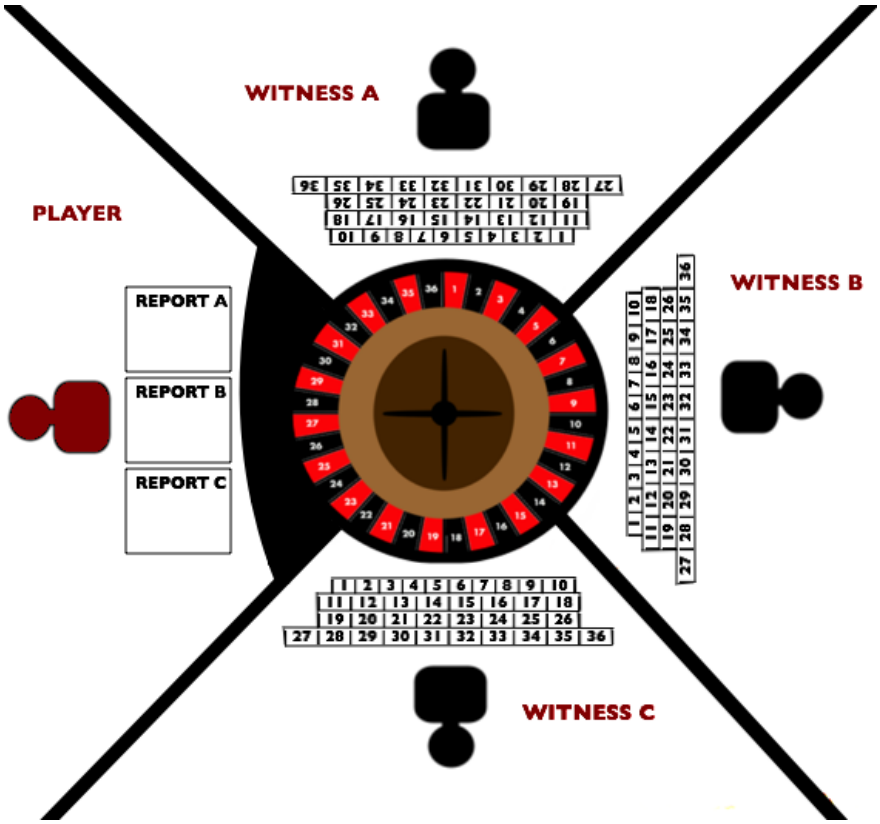
=== PREVIOUS BACKGROUND INFORMATION (SEE BELOW FOR NEW EVIDENCE) ===

Now imagine the following scenario: you are the player and **you have placed your bet that the ball will land on the number 34** (*1 of the 36 slots in total, i.e. a roughly 3% probability of the number 34*). The witnesses will press a button to indicate which number the ball has landed on. If the ball lands on 34, you win. If the ball lands on any other number, you lose. After each report you will be asked to answer a few short questions.

Witness Reminder:

On any given spin, each witness has a **50% probability** of not paying attention and missing the outcome of the spin (put another way, there is a 50% probability they are *unreliable*)! When a witness has seen the outcome of a spin, they will *always report it honestly*. Unfortunately, even when not paying attention, the witnesses still need to press one of the buttons to indicate their report. Therefore, if unreliable, a witness will choose one of the available buttons randomly.

========== END OF BACKGROUND INFORMATION ==========



========== ***NEW EVIDENCE***: *WITNESS A's REPORT* ==========

You now see Witness A's report:

Witness A reports the ball has landed on ***34***.

========== *END OF WITNESS A'S REPORT* ==========

Based on what you know ***at this point***, please provide your **current probability estimates** for the following:

(*Click the bars below, indicating between 0% (left-most point) and 100% (right-most point)*.)

Q1. What is the probability that the ball **has landed on 34**, given everything you know *so far*?

REMEMBER: The probability being asked for is for the ball having landed on 34 *in this particular instance* (i.e. **NOT** the probability for the ball landing on 34 *in general*).

[Slider 0-100%]

Q2. What is the probability that **witness A is reliable** (i.e. paid attention to *this* outcome); given everything you know *so far*?

REMEMBER: The probability being asked for is for witness A being reliable *in this particular instance* (i.e. **NOT** the probability of witness A being reliable *in general*).

[Slider 0-100%]

Q3. What is the probability that **witness C will also report that the ball has landed on 34**, given everything you know *so far*?

REMEMBER: The probability being asked for is for witness C also reporting that the ball has landed on 34*in this particular instance* (i.e. **NOT** the probability of witness C reporting that the ball has landed on 34 *in general*).

[Slider 0-100%]

The Number Scenario (Part 2)

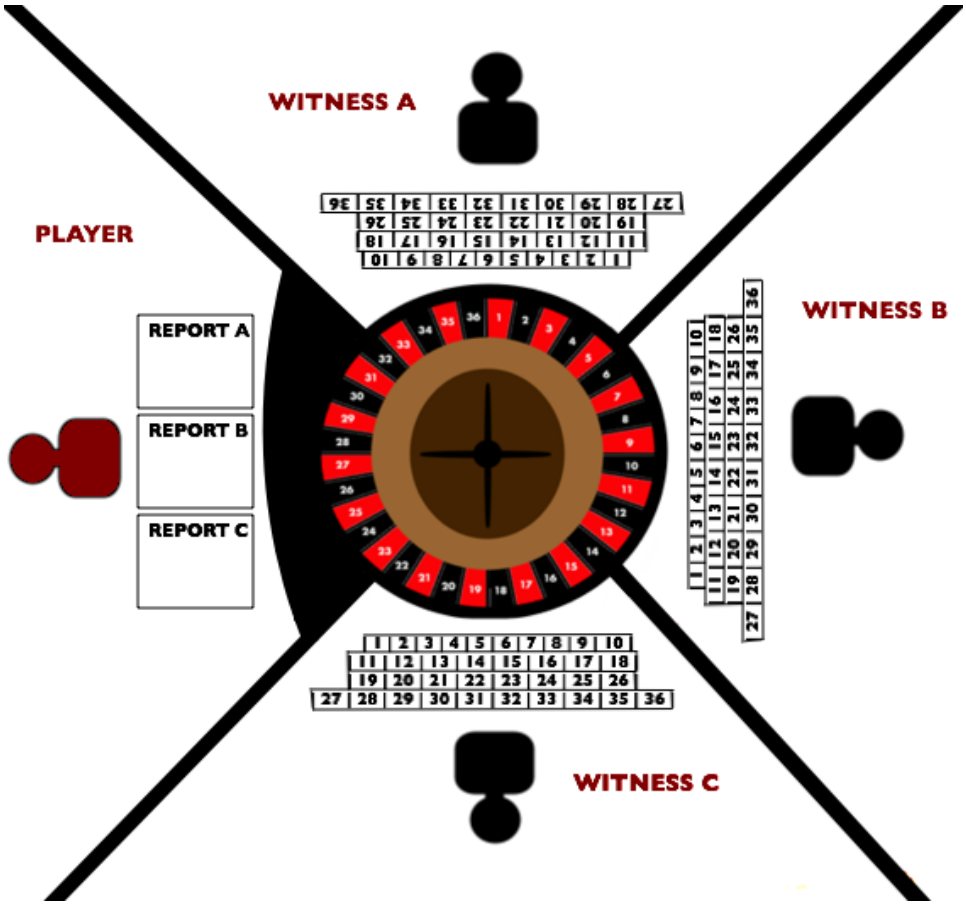
=== PREVIOUS BACKGROUND INFORMATION (SEE BELOW FOR NEW EVIDENCE) ===

Now imagine the following scenario: you are the player and **you have placed your bet that the ball will land on the number 34** (*1 of the 36 slots in total, i.e. a roughly 3% probability of the number 34*). The witnesses will press a button to indicate which number the ball has landed on. If the ball lands on 34, you win. If the ball lands on any other number, you lose. After each report you will be asked to answer a few short questions.

Witness Reminder:

On any given spin, each witness has a **50% probability** of not paying attention and missing the outcome of the spin (put another way, there is a 50% probability they are *unreliable*)! When a witness has seen the outcome of a spin, they will *always report it honestly*. Unfortunately, even when not paying attention, the witnesses still need to press one of the buttons to indicate their report. Therefore, if unreliable, a witness will choose one of the available buttons randomly.

========== END OF BACKGROUND INFORMATION ==========



====== ***PREVIOUS EVIDENCE***: *WITNESS A's REPORT* ======

You have seen Witness A's report:

*Witness A reported the ball has landed on **34**.*

========== *END OF WITNESS A'S REPORT* ==========

========== ***NEW EVIDENCE***: *WITNESS B's REPORT* ==========

You now see Witness B's report:

*Witness B also reports the ball has landed on **34**.*

========== *END OF WITNESS B'S REPORT* ==========

Based on what you know ***at this point***, please provide your **current probability estimates** for the following:

(*Click the bars below, indicating between 0% (left-most point) and 100% (right-most point).*)

Q1. What is the probability that the ball **has landed on 34**, given everything you know *so far*?

REMEMBER: The probability being asked for is for the ball having landed on 34 *in this particular instance* (i.e. **NOT** the probability for the ball landing on 34 *in general*).

[Slider 0-100%]

Q2. What is the probability that **witness A is reliable** (i.e. paid attention to *this* outcome); given everything you know *so far*?

REMEMBER: The probability being asked for is for witness A being reliable *in this particular instance* (i.e. **NOT** the probability of witness A being reliable *in general*).

[Slider 0-100%]

Q3. What is the probability that **witness C will also report that the ball has landed on 34**, given everything you know *so far*?

REMEMBER: The probability being asked for is for witness C also reporting that the ball has landed on 34*in this particular instance* (i.e. **NOT** the probability of witness C reporting that the ball has landed on 34 *in general*).

[Slider 0-100%]

The Number Scenario (Part 3)

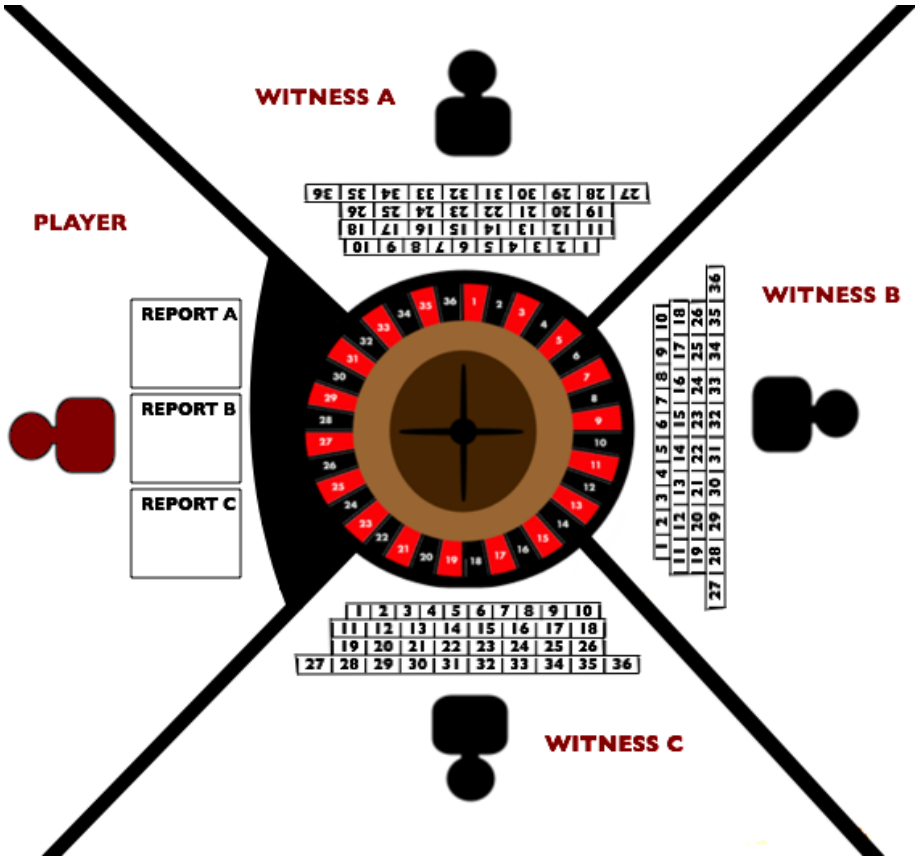
=== PREVIOUS BACKGROUND INFORMATION (SEE BELOW FOR NEW EVIDENCE) ===

Now imagine the following scenario: you are the player and **you have placed your bet that the ball will land on the number 34** (*1 of the 36 slots in total, i.e. a roughly 3% probability of the number 34*). The witnesses will press a button to indicate which number the ball has landed on. If the ball lands on 34, you win. If the ball lands on any other number, you lose. After each report you will be asked to answer a few short questions.

Witness Reminder:

On any given spin, each witness has a **50% probability** of not paying attention and missing the outcome of the spin (put another way, there is a 50% probability they are *unreliable*)! When a witness has seen the outcome of a spin, they will *always report it honestly*. Unfortunately, even when not paying attention, the witnesses still need to press one of the buttons to indicate their report. Therefore, if unreliable, a witness will choose one of the available buttons randomly.

========== END OF BACKGROUND INFORMATION ==========



=== ***PREVIOUS EVIDENCE***: *WITNESS A & WITNESS B's REPORTS* ===

You have seen Witness A and Witness B's reports:

Witness A reported the ball has landed on ***34***.

Witness B reported the ball has landed on ***34***.

========== *END OF WITNESS A & B'S REPORTS* ==========

========== ***NEW EVIDENCE***: *WITNESS C's REPORT* ==========

You now see Witness C's report:

Witness C reports the ball has landed on ***another number (not 34)***.

========== *END OF WITNESS C'S REPORT* ==========

Based on what you know ***at this point***, please provide your **current probability estimates** for the following:

(*Click the bars below, indicating between 0% (left-most point) and 100% (right-most point).*)

Q1. What is the probability that the ball **has landed on 34**, given everything you know *so far*?

REMEMBER: The probability being asked for is for the ball having landed on 34 *in this particular instance* (i.e. **NOT** the probability for the ball landing on 34 *in general*).

[Slider 0-100%]

Q2. What is the probability that **witness A is reliable** (i.e. paid attention to *this* outcome); given everything you know *so far*?

REMEMBER: The probability being asked for is for witness A being reliable *in this particular instance* (i.e. **NOT** the probability of witness A being reliable *in general*).

[Slider 0-100%]

Q3. What is the probability that **witness C is reliable** (i.e. paid attention to *this* outcome); given everything you know *so far*?

REMEMBER: The probability being asked for is for witness C being reliable *in this particular instance* (i.e. **NOT** the probability of witness C being reliable *in general*).

[Slider 0-100%]

You have now completed the first scenario.

Press Next to continue to the second (and final) scenario.

Please note: In this scenario, you have a ***different set of witnesses at a different roulette table.***

The Color Scenario (Part 1a)

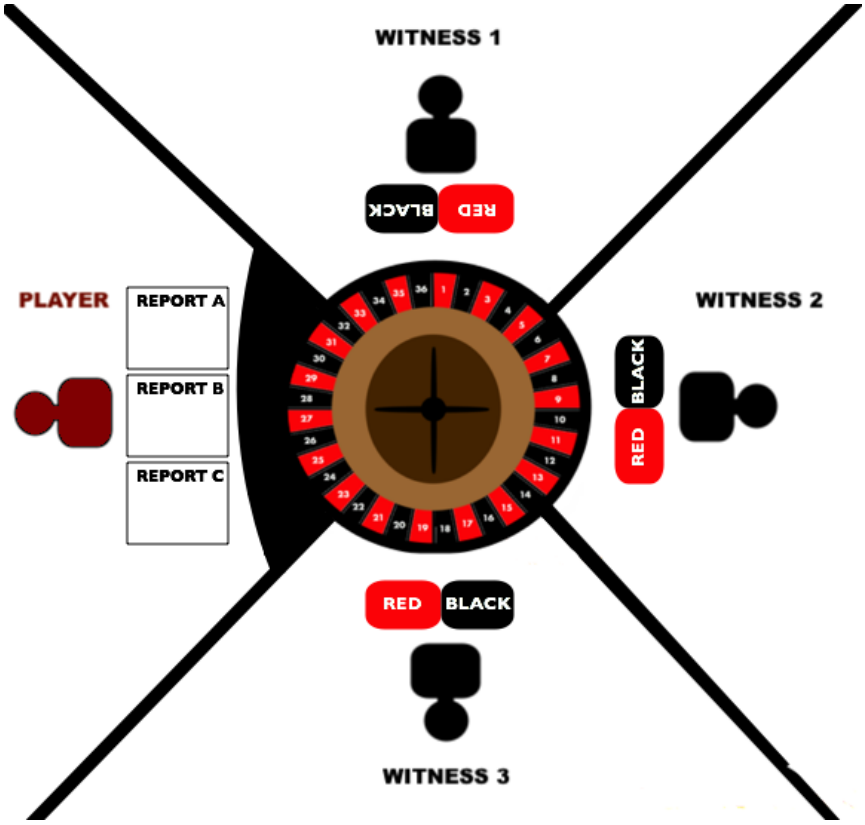
========== *BACKGROUND INFORMATION* ==========

Now imagine the following scenario: you are the player and **you have placed your bet that the ball will land on red** (*there is an equal number of red and black slots, i.e. a 50% probability of red*). The witnesses will press a button to indicate whether the ball landed in a red or a black slot. After each report you will be asked to answer a few short questions.

Witness Reminder:

On any given spin, each witness has a **50% probability** of not paying attention and missing the outcome of the spin (put another way, there is a 50% probability they are *unreliable*)! When a witness has seen the outcome of a spin, they will *always report it honestly*. Unfortunately, even when not paying attention, the witnesses still need to press one of the buttons to indicate their report. Therefore, if unreliable, a witness will choose one of the available buttons randomly.

========== *END OF BACKGROUND INFORMATION* ==========



Before you start finding out reports, please answer the following questions (*clicking the bar below each statement to indicate your estimate - between 0% (left-most point) and 100% (right-most point)*):

What is the probability that the ball has landed on **red**?

[Slider 0-100%]

What is the probability of each witness being **reliable** (i.e. paying attention to the outcome)?

[Slider 0-100%]

The Color Scenario (Part 1b)

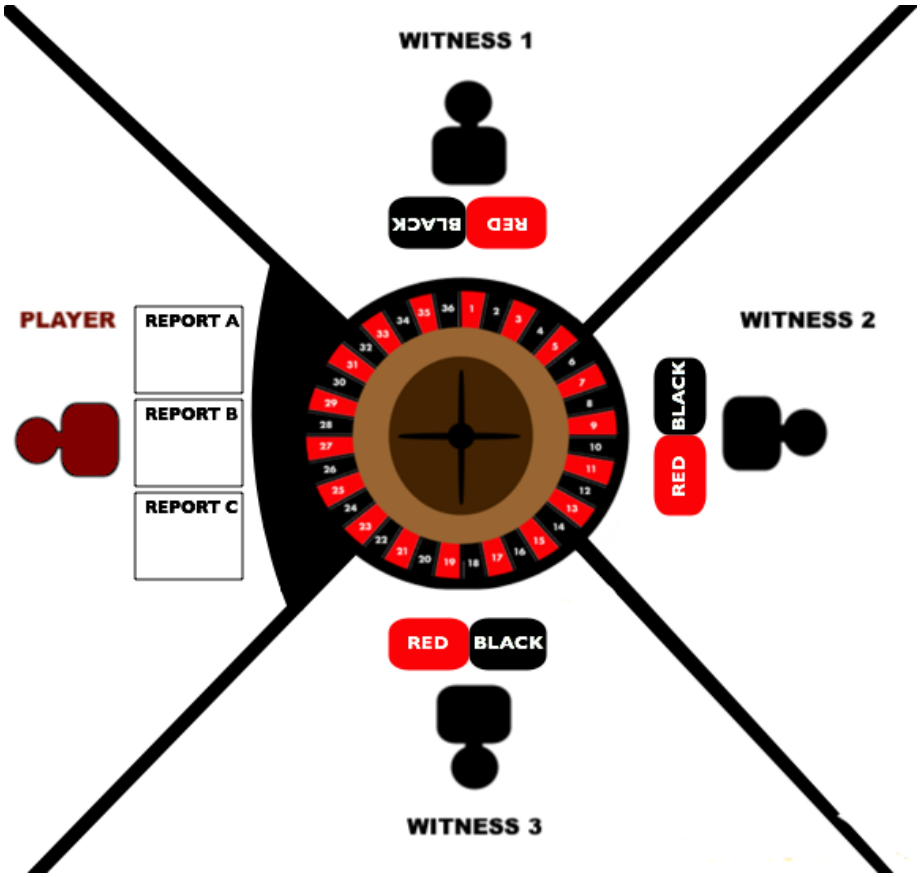
=== PREVIOUS BACKGROUND INFORMATION (SEE BELOW FOR NEW EVIDENCE) ===

Now imagine the following scenario: you are the player and **you have placed your bet that the ball will land on red** (*there is an equal number of red and black slots, i.e. a 50% probability of red*). The witnesses will press a button to indicate whether the ball landed in a red or a black slot. After each report you will be asked to answer a few short questions.

Witness Reminder:

On any given spin, each witness has a **50% probability** of not paying attention and missing the outcome of the spin (put another way, there is a 50% probability they are *unreliable*)! When a witness has seen the outcome of a spin, they will *always report it honestly*. Unfortunately, even when not paying attention, the witnesses still need to press one of the buttons to indicate their report. Therefore, if unreliable, a witness will choose one of the available buttons randomly.

========== END OF BACKGROUND INFORMATION ==========



========== ***NEW EVIDENCE***: *WITNESS 1's REPORT* ==========

You now see Witness 1's report:

Witness 1 reports the ball has landed on ***red***.

========== *END OF WITNESS 1'S REPORT* ==========

Based on what you know ***at this point***, please provide your **current probability estimates** for the following:

(*Click the bars below, indicating between 0% (left-most point) and 100% (right-most point)*.)

Q1. What is the probability that the ball **has landed on red**, given everything you know *so far*?

REMEMBER: The probability being asked for is for the ball having landed on red *in this particular instance* (i.e. **NOT** the probability for the ball landing on red *in general*).

[Slider 0-100%]

Q2. What is the probability that **witness 1 is reliable** (i.e. paid attention to *this* outcome); given everything you know *so far*?

REMEMBER: The probability being asked for is for witness 1 being reliable *in this particular instance* (i.e. **NOT** the probability of witness 1 being reliable *in general*).

[Slider 0-100%]

Q3. What is the probability that **witness 3 will also report that the ball has landed on red**, given everything you know *so far*?

REMEMBER: The probability being asked for is for witness 3 also reporting that the ball has landed on red *in this particular instance* (i.e. **NOT** the probability of witness 3 reporting that the ball has landed on red *in general*).

[Slider 0-100%]

The Color Scenario (Part 2)

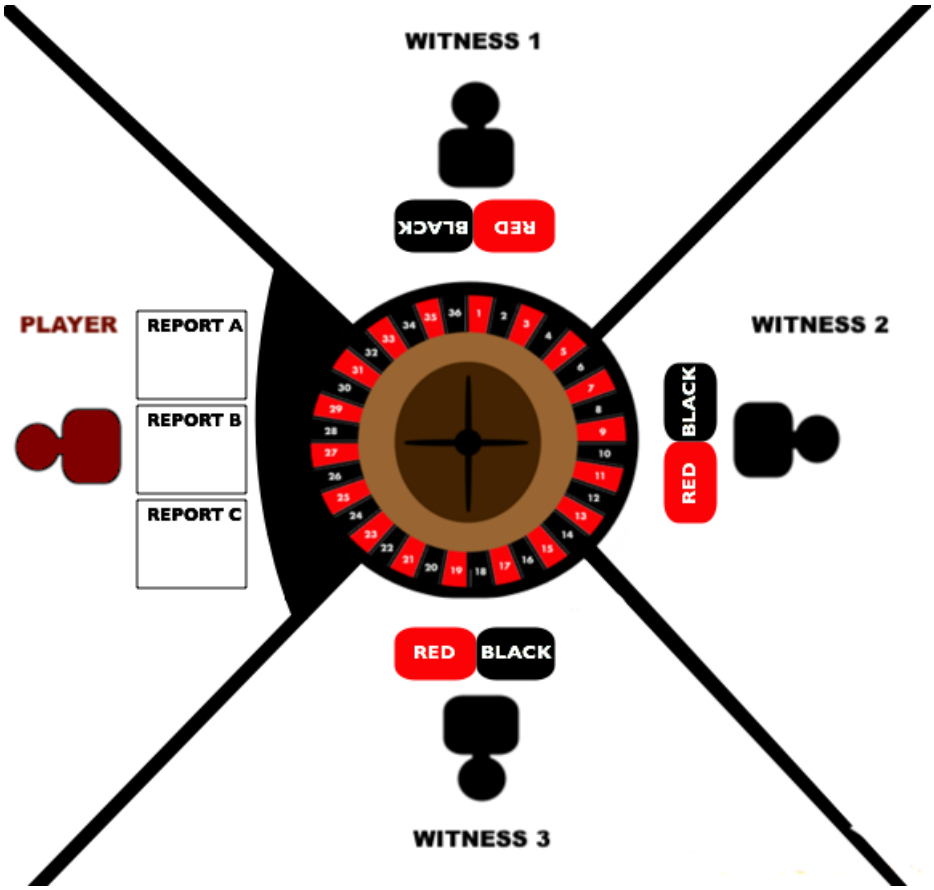
=== PREVIOUS BACKGROUND INFORMATION (SEE BELOW FOR NEW EVIDENCE) ===

Now imagine the following scenario: you are the player and **you have placed your bet that the ball will land on red** (*there is an equal number of red and black slots, i.e. a 50% probability of red*). The witnesses will press a button to indicate whether the ball landed in a red or a black slot. After each report you will be asked to answer a few short questions.

Witness Reminder:

On any given spin, each witness has a **50% probability** of not paying attention and missing the outcome of the spin (put another way, there is a 50% probability they are *unreliable*)! When a witness has seen the outcome of a spin, they will *always report it honestly*. Unfortunately, even when not paying attention, the witnesses still need to press one of the buttons to indicate their report. Therefore, if unreliable, a witness will choose one of the available buttons randomly.

========== END OF BACKGROUND INFORMATION ==========



====== ***PREVIOUS EVIDENCE***: *WITNESS 1's REPORT* ======

You have seen Witness 1's report:

Witness 1 reported the ball has landed on ***red***.

========== *END OF WITNESS 1'S REPORT* ==========

========== ***NEW EVIDENCE***: *WITNESS 2's REPORT* ==========

You now see Witness 2's report:

Witness 2 also reports the ball has landed on ***red***.

========== *END OF WITNESS 2'S REPORT* ==========

Based on what you know ***at this point***, please provide your **current probability estimates** for the following:

(*Click the bars below, indicating between 0% (left-most point) and 100% (right-most point).*)

Q1. What is the probability that the ball **has landed on red**, given everything you know *so far*?

REMEMBER: The probability being asked for is for the ball having landed on red *in this particular instance* (i.e. **NOT** the probability for the ball landing on red *in general*).

[Slider 0-100%]

Q2. What is the probability that **witness 1 is reliable** (i.e. paid attention to *this* outcome); given everything you know *so far*?

REMEMBER: The probability being asked for is for witness 1 being reliable *in this particular instance* (i.e. **NOT** the probability of witness 1 being reliable *in general*).

[Slider 0-100%]

Q3. What is the probability that **witness 3 will also report that the ball has landed on red**, given everything you know *so far*?

REMEMBER: The probability being asked for is for witness 3 also reporting that the ball has landed on red *in this particular instance* (i.e. **NOT** the probability of witness 3 reporting that the ball has landed on red *in general*).

[Slider 0-100%]

The Color Scenario (Part 3)

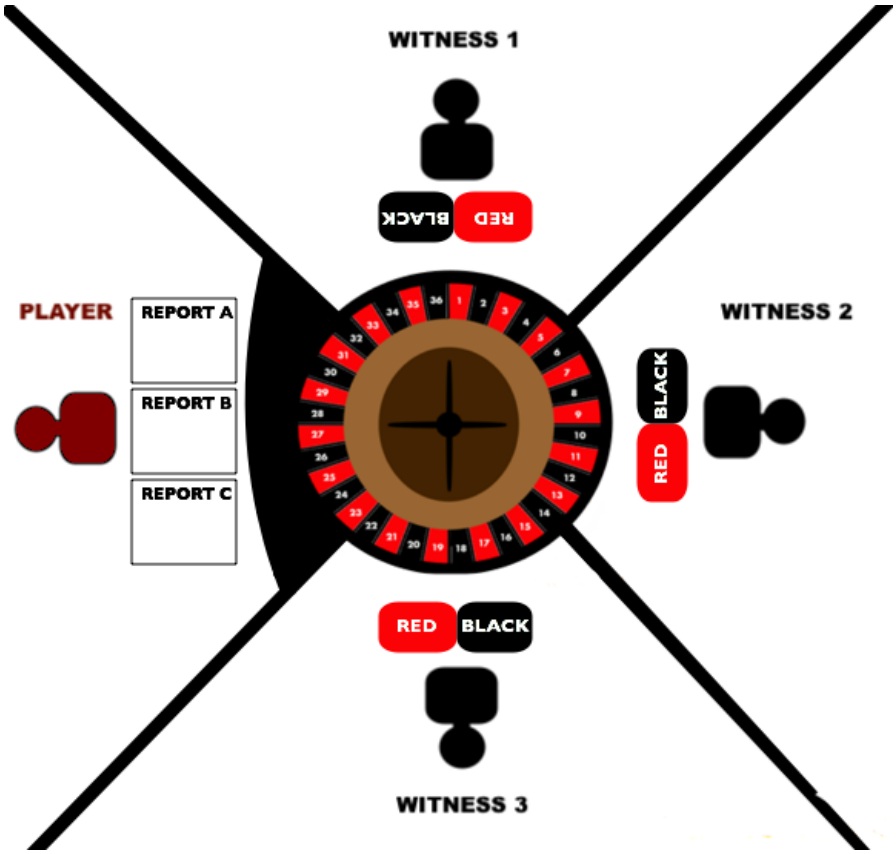
=== PREVIOUS BACKGROUND INFORMATION (SEE BELOW FOR NEW EVIDENCE) ===

Now imagine the following scenario: you are the player and **you have placed your bet that the ball will land on red** (*there is an equal number of red and black slots, i.e. a 50% probability of red*). The witnesses will press a button to indicate whether the ball landed in a red or a black slot. After each report you will be asked to answer a few short questions.

Witness Reminder:

On any given spin, each witness has a **50% probability** of not paying attention and missing the outcome of the spin (put another way, there is a 50% probability they are *unreliable*)! When a witness has seen the outcome of a spin, they will *always report it honestly*. Unfortunately, even when not paying attention, the witnesses still need to press one of the buttons to indicate their report. Therefore, if unreliable, a witness will choose one of the available buttons randomly.

========== END OF BACKGROUND INFORMATION ==========



=== ***PREVIOUS EVIDENCE***: *WITNESS 1 & WITNESS 2's REPORTS* ===

You have seen Witness 1 and Witness 2's reports:

Witness 1 reported the ball has landed on ***red***.

Witness 2 reported the ball has landed on ***red***.

========== *END OF WITNESS 1 & 2'S REPORTS* ==========

========== ***NEW EVIDENCE***: *WITNESS 3's REPORT* ==========

You now see Witness 3's report:

Witness 3 reports the ball has landed on ***black***.

========== *END OF WITNESS 3'S REPORT* ==========

Based on what you know ***at this point***, please provide your **current probability estimates** for the following:

(*Click the bars below, indicating between 0% (left-most point) and 100% (right-most point)*.)

Q1. What is the probability that the ball *has landed on red*, given everything you know *so far*?

REMEMBER: The probability being asked for is for the ball having landed on red *in this particular instance* (i.e. **NOT** the probability for the ball landing on red *in general*).

[Slider 0-100%]

Q2. What is the probability that **witness 1 is reliable** (i.e. paid attention to *this* outcome); given everything you know *so far*?

REMEMBER: The probability being asked for is for witness 1 being reliable *in this particular instance* (i.e. **NOT** the probability of witness 1 being reliable *in general*).

[Slider 0-100%]

Q3. What is the probability that **witness 3 is reliable** (i.e. paid attention to *this* outcome); given everything you know *so far*?

REMEMBER: The probability being asked for is for witness 3 being reliable *in this particular instance* (i.e. **NOT** the probability of witness 3 being reliable *in general*).

[Slider 0-100%]

Experiment 3 Materials

Introduction

In this study you will be asked to imagine playing a version of the game of roulette.

This is what a roulette wheel looks like:

The slots are numbered 1-36 and distributed equally around the wheel. Half of the slots are black and half of the slots are red. When the wheel is spun a small ball is dropped on the wheel.

Players may bet on the outcome of a spin (which slot the ball ends up in) beforehand in two main ways:

By Color: Players may bet on whether the ball lands on red or black, where the probability of winning is 50% (i.e. 50/50).

By Number: Players may bet on whether the ball lands on a specific number, where the probability of winning is approximately 2.7% (or 1 in 36). Although the chance of winning is lower, players tend to do this given the return on the bet is higher.

If the ball lands in the chosen slot/slots, the player wins. If the ball lands in any other slot, the player loses.

When you are ready, press "Next" to continue.

Semi-blind roulette…

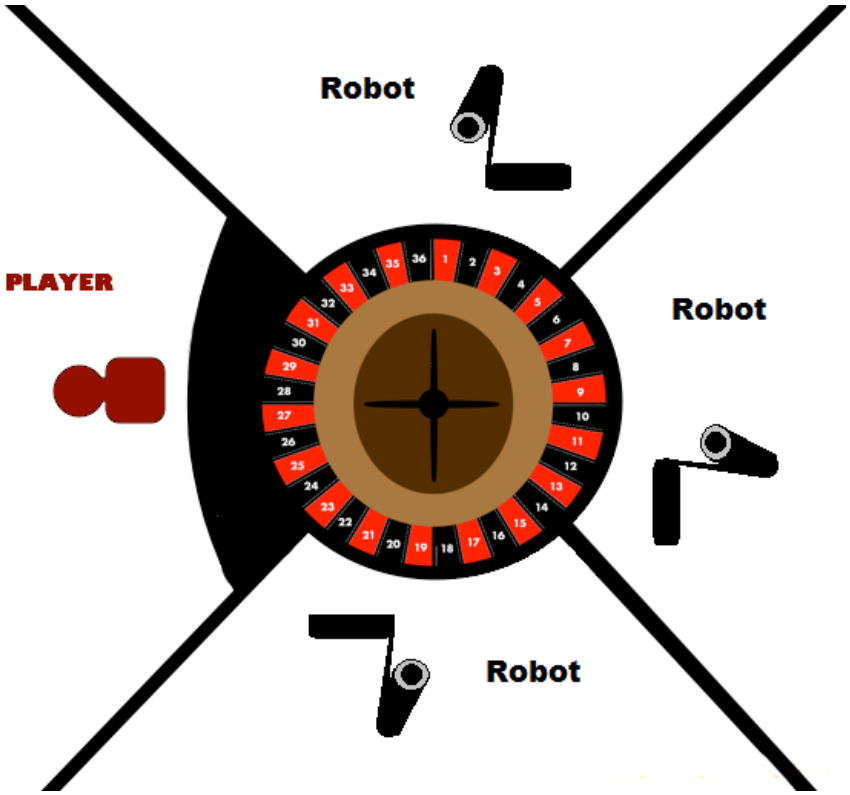
In this version of roulette you will act as a player. However, there is a barrier between yourself and the roulette wheel, and you are unable to observe the outcomes yourself. Instead, you must rely on reports that come from three robots that light up a bulb to indicate the outcome.

The Robot Witnesses

Each robot views the wheel with a camera, and codes the image into an electrical signal. This signal is then sent through the robot's processor to light up the bulb corresponding to the slot the ball land has landed on.

Critically, the processor of each robot may be faulty. This fault causes the camera image to become scrambled, and results in the processor lighting a random bulb (i.e. a random report is generated). Initially, we can assume there is a **50% probability** of a robot's processor being faulty. When the processor does not have a fault, it will *always light up the correct bulb*.

All robots are automatically activated to provide reports (lit bulbs) by the wheel being spun, irrespective of whether that report has been through a processor that is accurate (and thus the report is accurate) or faulty (and thus a random report has been produced).



Over the course of this study, you will see two short scenarios.

As new information appears, you must answer a few questions regarding your (current) conclusions.

When you are ready, press "Next" to start the first scenario.

The Number Scenario (Part 1a)

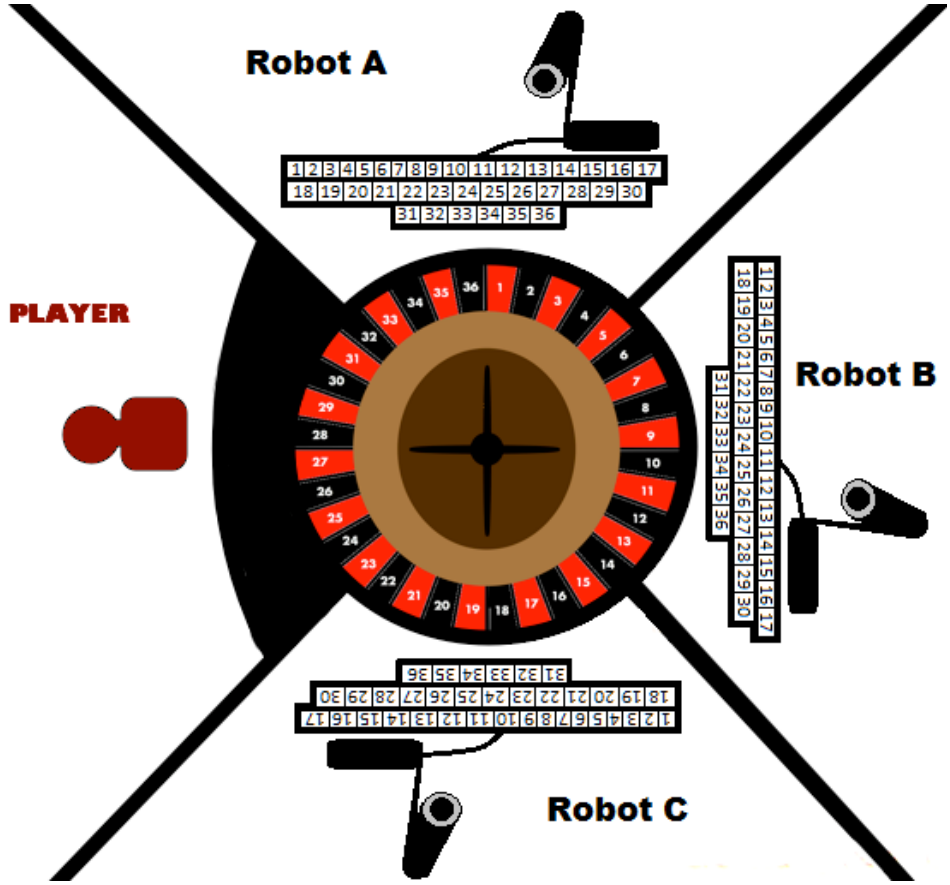
========== *BACKGROUND INFORMATION* ==========

Now imagine the following scenario: you are the player and **you have placed your bet that the ball will land on the number 34** (*1 of the 36 slots in total, i.e. a roughly 3% probability of the number 34*). The witnesses will press a button to indicate which number the ball has landed on. If the ball lands on 34, you win. If the ball lands on any other number, you lose. After each report you will be asked to answer a few short questions.

Robot Reminder:

Each robot has a processor which has a 50% probability of being faulty. If faulty, the signal from the camera is scrambled, resulting in a bulb being lit at random (i.e. a random report). Put another way, there is a 50% probability of a robot being *unreliable*! When the processor is not faulty (i.e. accurate), it will *always light up the correct bulb*. Unfortunately, a faulty (unreliable) processor will still light up one of the bulbs *at random*.

========== *END OF BACKGROUND INFORMATION* ==========



Before you start finding out reports, please answer the following questions (*clicking the bar below each statement to indicate your estimate - between 0% (left-most point) and 100% (right-most point)*):

What is the probability that the ball has landed on **34**?

[Slider 0-100%]

What is the probability of each robot witness being **reliable** (i.e. has a processor that is not faulty, and will therefore pass on an accurate signal)?

[Slider 0-100%]

The Number Scenario (Part 1b)

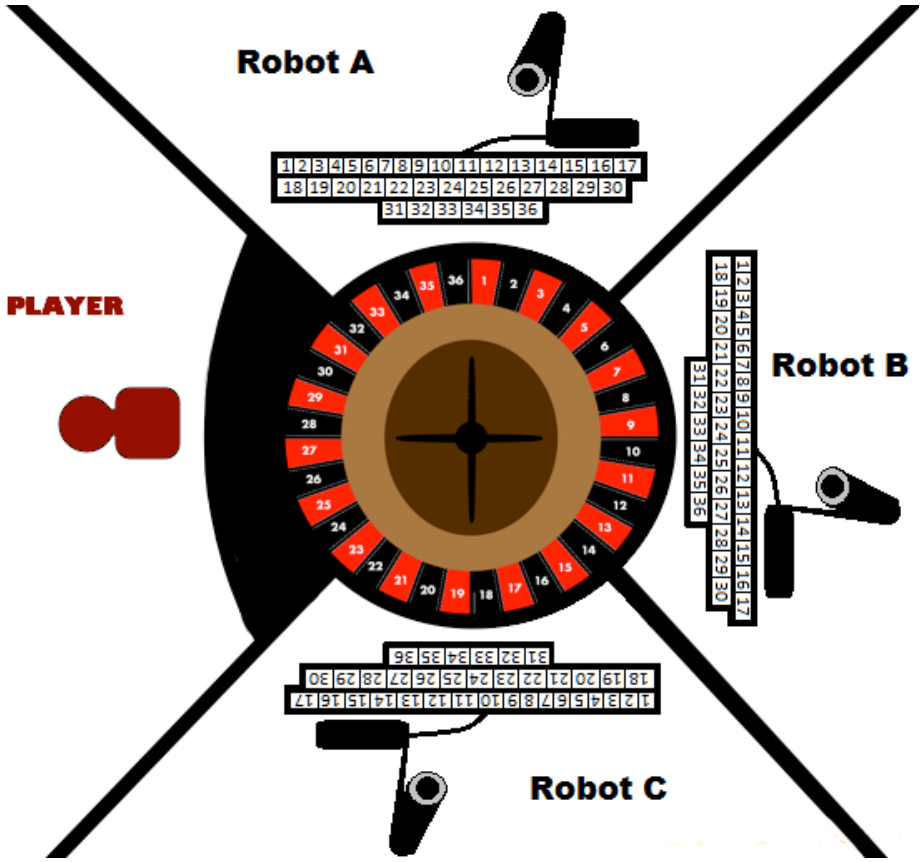
=== PREVIOUS BACKGROUND INFORMATION (SEE BELOW FOR NEW EVIDENCE) ===

Now imagine the following scenario: you are the player and **you have placed your bet that the ball will land on the number 34** (*1 of the 36 slots in total, i.e. a roughly 3% probability of the number 34*). The witnesses will press a button to indicate which number the ball has landed on. If the ball lands on 34, you win. If the ball lands on any other number, you lose. After each report you will be asked to answer a few short questions.

Robot Reminder:

Each robot has a processor which has a 50% probability of being faulty. If faulty, the signal from the camera is scrambled, resulting in a bulb being lit at random (i.e. a random report). Put another way, there is a 50% probability of a robot being *unreliable*! When the processor is not faulty (i.e. accurate), it will *always light up the correct bulb*. Unfortunately, a faulty (unreliable) processor will still light up one of the bulbs *at random*.

========== END OF BACKGROUND INFORMATION ==========



========== ***NEW EVIDENCE***: *ROBOT A's REPORT* ==========

You now see Robot A's report:

Robot A reports the ball has landed on ***34***.

========== *END OF ROBOT A'S REPORT* ==========

Based on what you know ***at this point***, please provide your **current probability estimates** for the following:

(*Click the bars below, indicating between 0% (left-most point) and 100% (right-most point)*.)

Q1. What is the probability that the ball **has landed on 34**, given everything you know *so far*?

REMEMBER: The probability being asked for is for the ball having landed on 34 *in this particular instance* (i.e. **NOT** the probability for the ball landing on 34 *in general*).

[Slider 0-100%]

Q2. What is the probability that **Robot A is reliable** (i.e. does not have a faulty processor), given everything you know *so far*?

[Slider 0-100%]

Q3. What is the probability that **Robot C will also report that the ball has landed on 34**, given everything you know *so far*?

[Slider 0-100%]

The Number Scenario (Part 2)

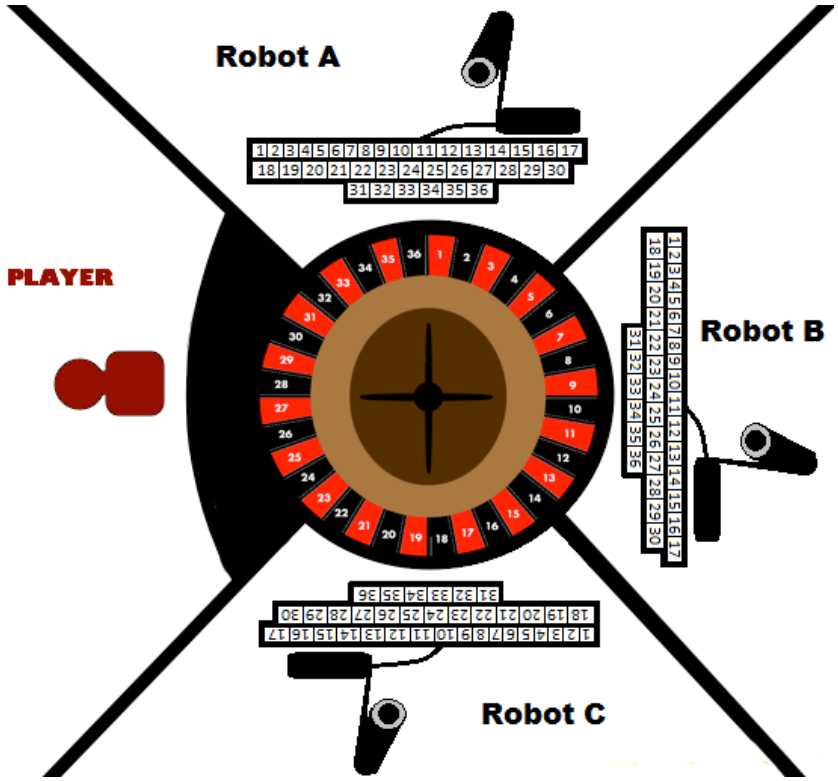
=== PREVIOUS BACKGROUND INFORMATION (SEE BELOW FOR NEW EVIDENCE) ===

Now imagine the following scenario: you are the player and **you have placed your bet that the ball will land on the number 34** (*1 of the 36 slots in total, i.e. a roughly 3% probability of the number 34*). The witnesses will press a button to indicate which number the ball has landed on. If the ball lands on 34, you win. If the ball lands on any other number, you lose. After each report you will be asked to answer a few short questions.

Robot Reminder:

Each robot has a processor which has a 50% probability of being faulty. If faulty, the signal from the camera is scrambled, resulting in a bulb being lit at random (i.e. a random report). Put another way, there is a 50% probability of a robot being *unreliable*! When the processor is not faulty (i.e. accurate), it will *always light up the correct bulb*. Unfortunately, a faulty (unreliable) processor will still light up one of the bulbs *at random*.

========== END OF BACKGROUND INFORMATION ==========



====== ***PREVIOUS EVIDENCE***: *ROBOT A's REPORT* ======

You have seen Robot A's report:

Robot A reported the ball has landed on ***34***.

========== *END OF ROBOT A'S REPORT* ==========

========== ***NEW EVIDENCE***: *ROBOT B's REPORT* ==========

You now see Robot B's report:

Robot B also reports the ball has landed on ***34***.

========== *END OF ROBOT B'S REPORT* ==========

Based on what you know ***at this point***, please provide your **current probability estimates** for the following:

(*Click the bars below, indicating between 0% (left-most point) and 100% (right-most point)*.)

Q1. What is the probability that the ball **has landed on 34**, given everything you know *so far*?

REMEMBER: The probability being asked for is for the ball having landed on 34 *in this particular instance* (i.e. **NOT** the probability for the ball landing on 34 *in general*).

[Slider 0-100%]

Q2. What is the probability that **Robot A is reliable** (i.e. does not have a faulty processor), given everything you know *so far*?

[Slider 0-100%]

Q3. What is the probability that **Robot C will also report that the ball has landed on 34**, given everything you know *so far*?

[Slider 0-100%]

The Number Scenario (Part 3)

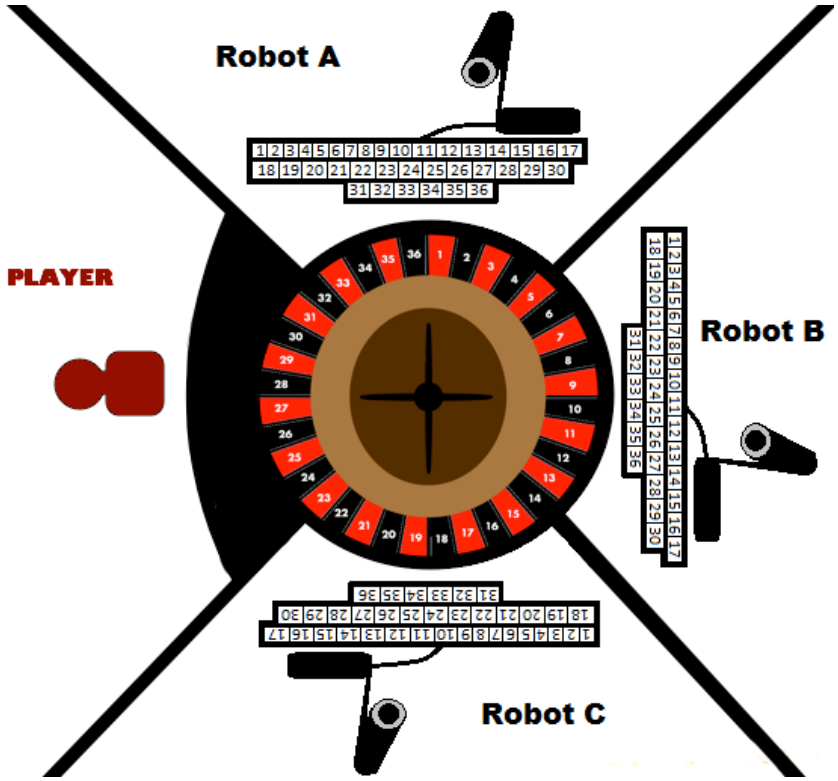
=== PREVIOUS BACKGROUND INFORMATION (SEE BELOW FOR NEW EVIDENCE) ===

Now imagine the following scenario: you are the player and **you have placed your bet that the ball will land on the number 34** (*1 of the 36 slots in total, i.e. a roughly 3% probability of the number 34*). The witnesses will press a button to indicate which number the ball has landed on. If the ball lands on 34, you win. If the ball lands on any other number, you lose. After each report you will be asked to answer a few short questions.

Robot Reminder:

Each robot has a processor which has a 50% probability of being faulty. If faulty, the signal from the camera is scrambled, resulting in a bulb being lit at random (i.e. a random report). Put another way, there is a 50% probability of a robot being *unreliable*! When the processor is not faulty (i.e. accurate), it will *always light up the correct bulb*. Unfortunately, a faulty (unreliable) processor will still light up one of the bulbs *at random*.

========== END OF BACKGROUND INFORMATION ==========



*=== **PREVIOUS EVIDENCE**: ROBOT A & B's REPORTS ===*

You have seen Robot A and Robot B's reports:

*Robot A reported the ball has landed on **34**.*

*Robot B reported the ball has landed on **34**.*

========== END OF ROBOT A & B'S REPORTS ==========

*========== **NEW EVIDENCE**: ROBOT C's REPORT ==========*

You now see Robot C's report:

*Robot C reports the ball has landed on **another number (not 34)**.*

========== END OF ROBOT C'S REPORT ==========

Based on what you know ***at this point***, please provide your **current probability estimates** for the following:

(*Click the bars below, indicating between 0% (left-most point) and 100% (right-most point).*)

Q1. What is the probability that the ball **has landed on 34**, given everything you know *so far*?

REMEMBER: The probability being asked for is for the ball having landed on 34 *in this particular instance* (i.e. **NOT** the probability for the ball landing on 34 *in general*).

[Slider 0-100%]

Q2. What is the probability that **Robot A is reliable** (i.e. does not have a faulty processor), given everything you know *so far*?

[Slider 0-100%]

Q3. What is the probability that **Robot C is reliable** (i.e. does not have a faulty processor), given everything you know *so far*?

[Slider 0-100%]

You have now completed the first scenario.

Press Next to continue to the second (and final) scenario.

Please note: In this scenario, you have a ***different set of witnesses at a different roulette table.***

The Color Scenario (Part 1a)

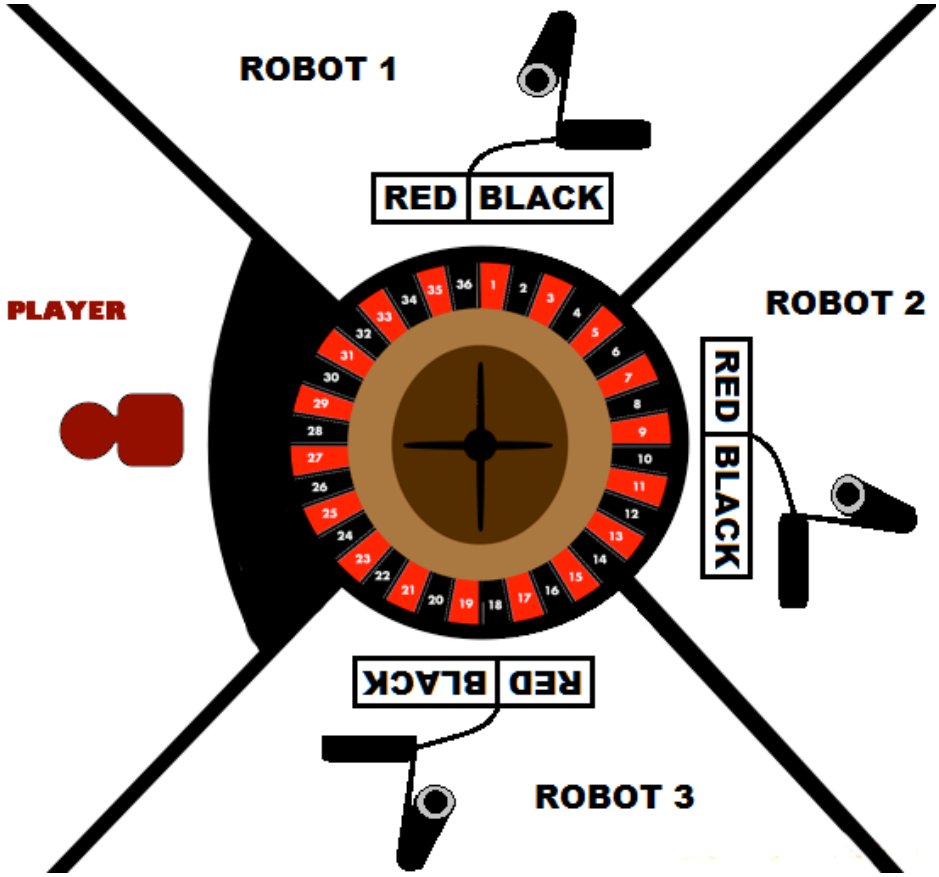
========== *BACKGROUND INFORMATION* ==========

Now imagine the following scenario: you are the player and **you have placed your bet that the ball will land on red** (*there is an equal number of red and black slots, i.e. a 50% probability of red*). The witnesses will press a button to indicate whether the ball landed in a red or a black slot. After each report you will be asked to answer a few short questions.

Robot Reminder:

Each robot has a processor which has a 50% probability of being faulty. If faulty, the signal from the camera is scrambled, resulting in a bulb being lit at random (i.e. a random report). Put another way, there is a 50% probability of a robot being *unreliable*! When the processor is not faulty (i.e. accurate), it will *always light up the correct bulb*. Unfortunately, a faulty (unreliable) processor will still light up one of the bulbs *at random*.

========== *END OF BACKGROUND INFORMATION* ==========



Before you start finding out reports, please answer the following questions (*clicking the bar below each statement to indicate your estimate - between 0% (left-most point) and 100% (right-most point)*):

What is the probability that the ball has landed on **red**?

[Slider 0-100%]

What is the probability of each robot witness being **reliable** (i.e. has a processor that is not faulty, and will therefore pass on an accurate signal)?

[Slider 0-100%]

The Color Scenario (Part 1b)

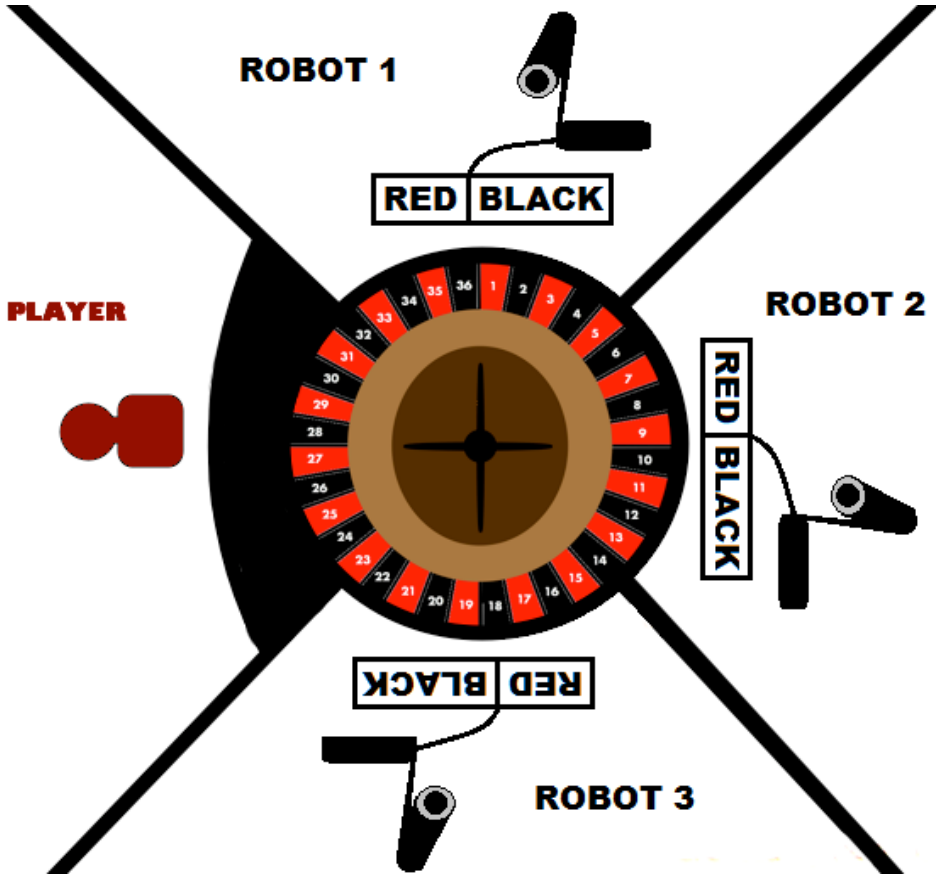
=== PREVIOUS BACKGROUND INFORMATION (SEE BELOW FOR NEW EVIDENCE) ===

Now imagine the following scenario: you are the player and **you have placed your bet that the ball will land on red** (*there is an equal number of red and black slots, i.e. a 50% probability of red*). The witnesses will press a button to indicate whether the ball landed in a red or a black slot. After each report you will be asked to answer a few short questions.

Robot Reminder:

Each robot has a processor which has a 50% probability of being faulty. If faulty, the signal from the camera is scrambled, resulting in a bulb being lit at random (i.e. a random report). Put another way, there is a 50% probability of a robot being *unreliable*! When the processor is not faulty (i.e. accurate), it will *always light up the correct bulb*. Unfortunately, a faulty (unreliable) processor will still light up one of the bulbs *at random*.

========== END OF BACKGROUND INFORMATION ==========



========== ***NEW EVIDENCE***: *ROBOT 1's REPORT* ==========

You now see Robot 1's report:

Robot 1 reports the ball has landed on ***red****.*

========== *END OF ROBOT 1'S REPORT* ==========

Based on what you know ***at this point***, please provide your **current probability estimates** for the following:

(*Click the bars below, indicating between 0% (left-most point) and 100% (right-most point)*.)

Q1. What is the probability that the ball **has landed on red**, given everything you know *so far*?

REMEMBER: The probability being asked for is for the ball having landed on red *in this particular instance* (i.e. **NOT** the probability for the ball landing on red *in general*).

[Slider 0-100%]

Q2. What is the probability that **Robot 1 is reliable** (i.e. does not have a faulty processor), given everything you know *so far*?

[Slider 0-100%]

Q3. What is the probability that **Robot 3 will also report that the ball has landed on red**, given everything you know *so far*?

[Slider 0-100%]

The Color Scenario (Part 2)

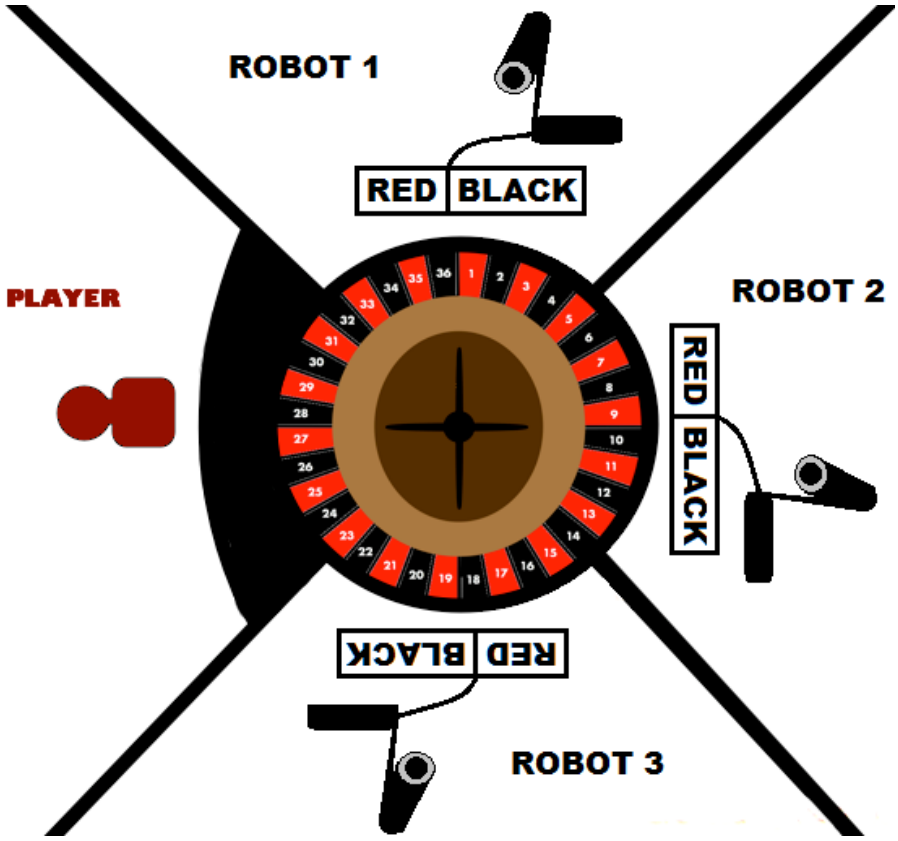
=== PREVIOUS BACKGROUND INFORMATION (SEE BELOW FOR NEW EVIDENCE) ===

Now imagine the following scenario: you are the player and **you have placed your bet that the ball will land on red** (*there is an equal number of red and black slots, i.e. a 50% probability of red*). The witnesses will press a button to indicate whether the ball landed in a red or a black slot. After each report you will be asked to answer a few short questions.

Robot Reminder:

Each robot has a processor which has a 50% probability of being faulty. If faulty, the signal from the camera is scrambled, resulting in a bulb being lit at random (i.e. a random report). Put another way, there is a 50% probability of a robot being *unreliable*! When the processor is not faulty (i.e. accurate), it will *always light up the correct bulb*. Unfortunately, a faulty (unreliable) processor will still light up one of the bulbs *at random*.

========== END OF BACKGROUND INFORMATION ==========



====== ***PREVIOUS EVIDENCE***: *ROBOT 1's REPORT* ======

You have seen Robot 1's report:

Robot 1 reported the ball has landed on ***red****.*

========== *END OF ROBOT 1'S REPORT* ==========

========== ***NEW EVIDENCE***: *ROBOT 2's REPORT* ==========

You now see Robot 2's report:

Robot 2 also reports the ball has landed on ***red****.*

========== *END OF ROBOT 2'S REPORT* ==========

Based on what you know ***at this point***, please provide your **current probability estimates** for the following:

(*Click the bars below, indicating between 0% (left-most point) and 100% (right-most point)*.)

Q1. What is the probability that the ball **has landed on red**, given everything you know *so far*?

REMEMBER: The probability being asked for is for the ball having landed on red *in this particular instance* (i.e. **NOT** the probability for the ball landing on red *in general*).

[Slider 0-100%]

Q2. What is the probability that **Robot 1 is reliable** (i.e. does not have a faulty processor), given everything you know *so far*?

[Slider 0-100%]

Q3. What is the probability that **Robot 3 will also report that the ball has landed on red**, given everything you know *so far*?

[Slider 0-100%]

The Color Scenario (Part 3)

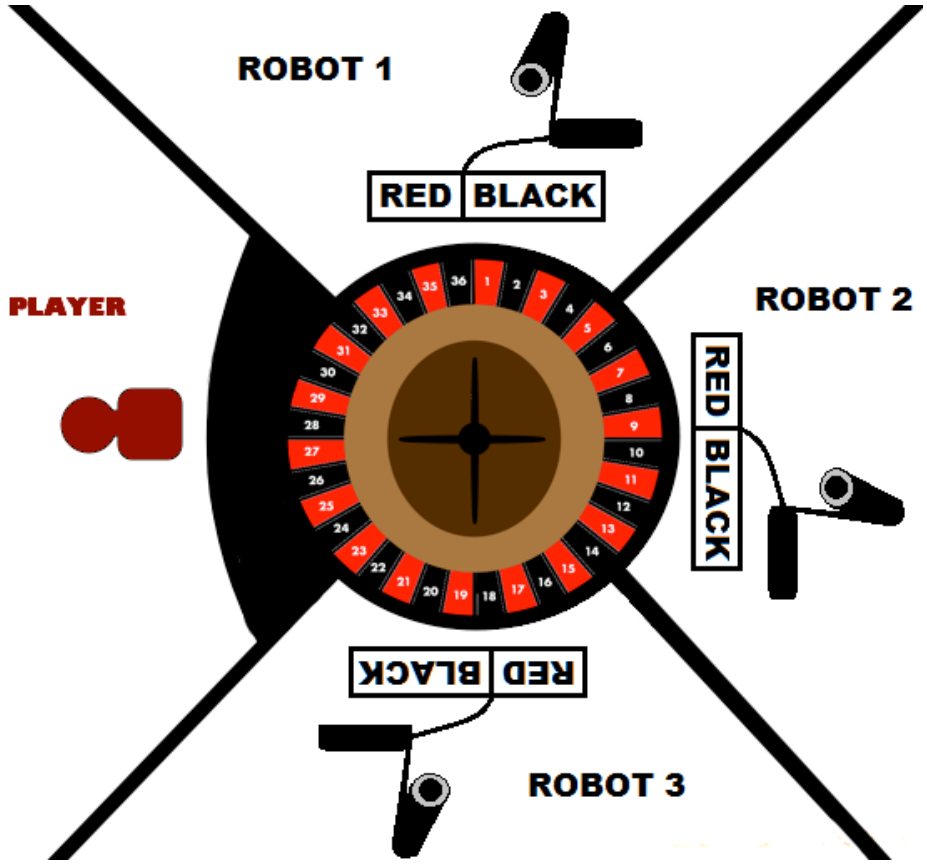
=== PREVIOUS BACKGROUND INFORMATION (SEE BELOW FOR NEW EVIDENCE) ===

Now imagine the following scenario: you are the player and **you have placed your bet that the ball will land on red** (*there is an equal number of red and black slots, i.e. a 50% probability of red*). The witnesses will press a button to indicate whether the ball landed in a red or a black slot. After each report you will be asked to answer a few short questions.

Robot Reminder:

Each robot has a processor which has a 50% probability of being faulty. If faulty, the signal from the camera is scrambled, resulting in a bulb being lit at random (i.e. a random report). Put another way, there is a 50% probability of a robot being *unreliable*! When the processor is not faulty (i.e. accurate), it will *always light up the correct bulb*. Unfortunately, a faulty (unreliable) processor will still light up one of the bulbs *at random*.

========== END OF BACKGROUND INFORMATION ==========



*=== **PREVIOUS EVIDENCE**: ROBOT 1 & 2's REPORTS ===*

You have seen Robot 1 and Robot 2's reports:

*Robot 1 reported the ball has landed on **red**.*

*Robot 2 reported the ball has landed on **red**.*

========== END OF ROBOT 1 & 2'S REPORTS ==========

*========== **NEW EVIDENCE**: ROBOT 3's REPORT ==========*

You now see Robot 3's report:

*Robot 3 reports the ball has landed on **black**.*

========== END OF ROBOT 3'S REPORT ==========

Based on what you know ***at this point***, please provide your **current probability estimates** for the following:

(*Click the bars below, indicating between 0% (left-most point) and 100% (right-most point).*)

Q1. What is the probability that the ball *has landed on red*, given everything you know *so far*?

REMEMBER: The probability being asked for is for the ball having landed on red *in this particular instance* (i.e. **NOT** the probability for the ball landing on red *in general*).

[Slider 0-100%]

Q2. What is the probability that **Robot 1 is reliable** (i.e. does not have a faulty processor), given everything you know *so far*?

[Slider 0-100%]

Q3. What is the probability that **Robot 3 is reliable** (i.e. does not have a faulty processor), given everything you know *so far*?

[Slider 0-100%]