

# Personality and Cognition: How are They Related?

Mishi Chaturvedi, Tanvi Daita, Francesca DiMarcello, Glen Finnie,  
Mahek Khan, Bryanna Liu, Aidan Ryu, Arlind Sinani, and Audrey Wang

**Advisor:** Dr. Patrick Dolan

**Assistant:** Brenna Hezel



# Personality and Cognition: How are They Related?

Mishi Chaturvedi, Tanvi Daita, Francesca DiMarcello, Glen Finnie,  
Mahek Khan, Bryanna Liu, Aidan Ryu, Arlind Sinani, and Audrey Wang

**Advisor:** Dr. Patrick Dolan

**Assistant:** Brenna Hezel



# TEAM 12 PSYCHOLOGY PROJECT: COGNITIVE ILLUSIONS

---

Mishi Chaturvedi, Tanvi Daita, Francesca DiMarcello, Glen Finnie, Mahek Khan, Bryanna Liu, Aidan Ryu, Arlind Sinani, and Audrey Wang

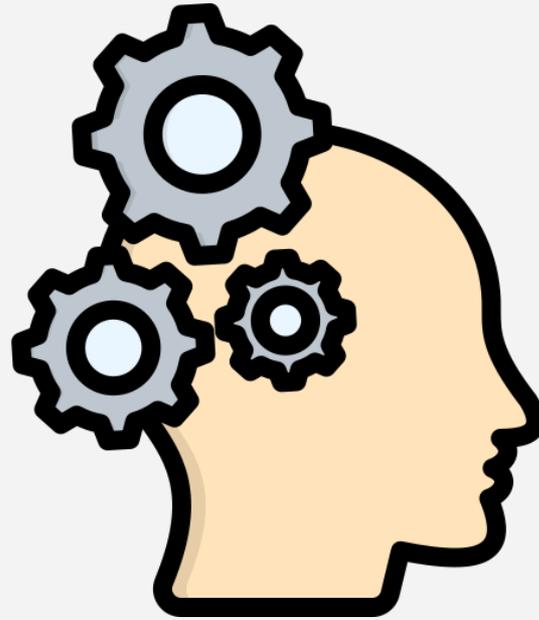
**Advisor:** Dr. Patrick Dolan

**Assistant:** Brenna Hezel

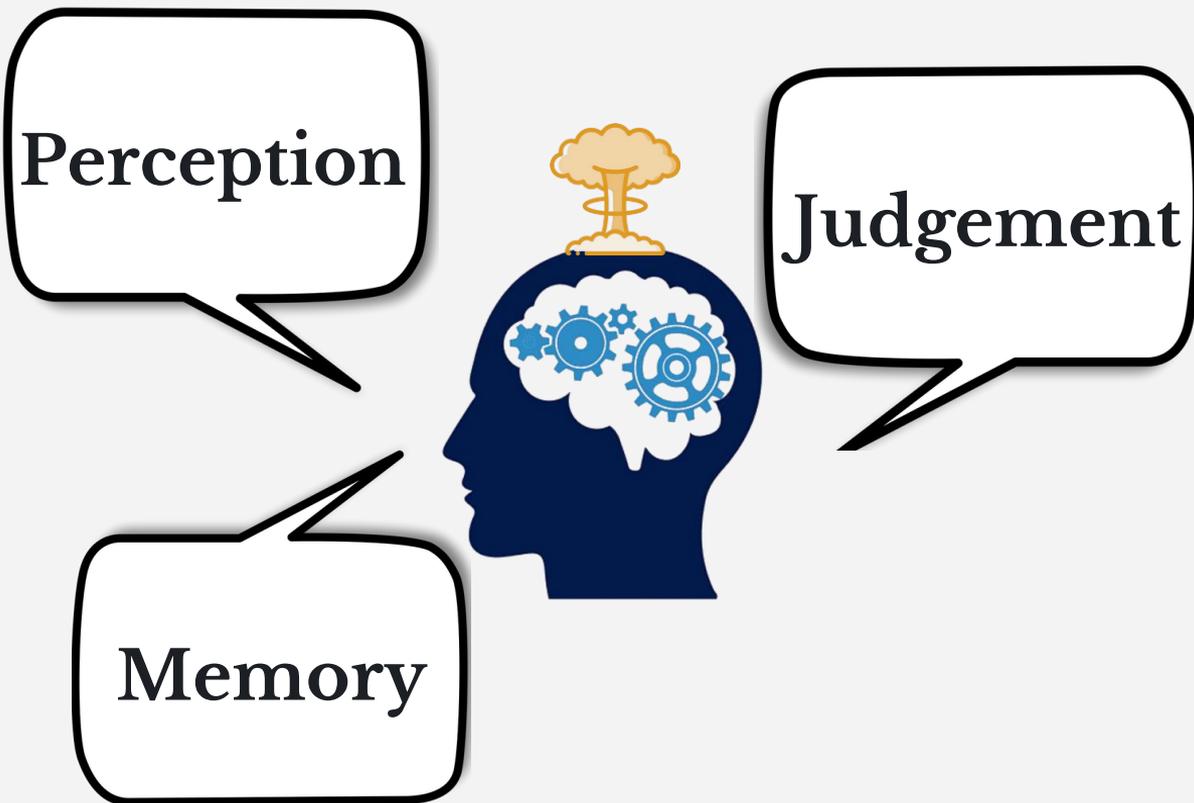


# COGNITION

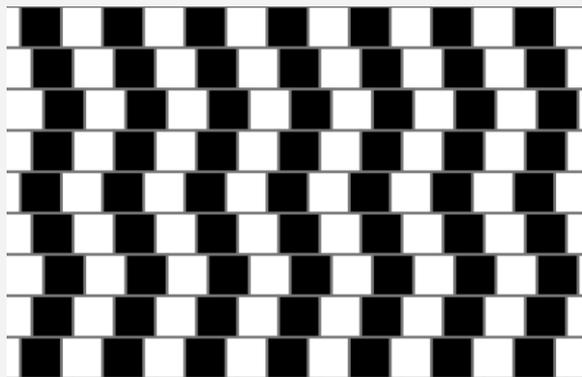
- How the brain:
  - Perceives
  - Understands
  - Remembers
  - LearnsInformation



# COGNITIVE ILLUSIONS



# COGNITIVE ILLUSIONS



**'INNOCENCE  
PROJECT**

## OUR GOAL

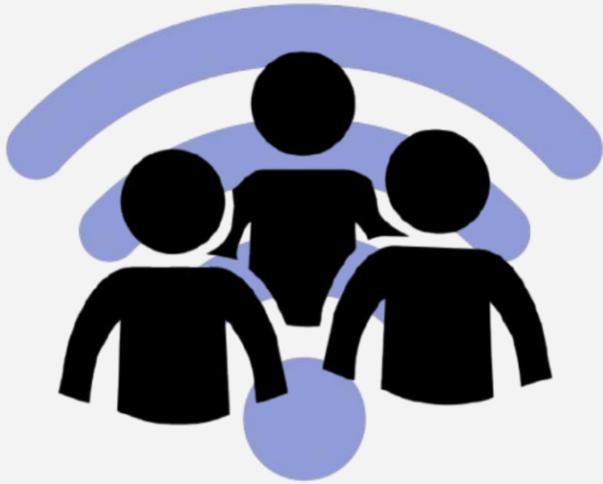
- Are GSNJS scholars less susceptible to cognitive tricks?
- Typically more intelligent → more resistant brains



## OUR HYPOTHESIS

- GSNJS scholars would be **less susceptible** to cognitive illusions than the general online population
  - Comparatively *higher intelligence*
  - More advanced academic achievements

# METHODOLOGY (PARTICIPANTS)



Online Participants  
(CloudResearch)



GSNJS

# DEMOGRAPHICS



|                      | <b>Online<br/>Participants</b> | <b>GSNJS</b> |
|----------------------|--------------------------------|--------------|
| Total Count          | 46                             | 46           |
| Average Age          | 40                             | 17           |
| Female<br>Percentage | 52%                            | 55%          |
| Male<br>Percentage   | 46%                            | 40%          |

# METHODOLOGY (MATERIALS)

qualtrics<sup>XM</sup>



- Anonymity
- Controlled environment
- Eysenck Personality Questionnaire

 **DREW**

Welcome to the Personality Survey!

This survey is designed to determine the personality types of Governor's School students in a manner that provides unique insight into the thinking and decision making used in their cognitive processes. Many of these questions may seem simple or basic; however, in most cases, we are testing both accuracy and reaction time, so please work as quickly as possible without sacrificing accuracy. Please keep your eyes on your screen and your headphones in at all times to eliminate potential distractions. Your overall time for the survey, as well as timings for certain individual question sets, will be recorded.

The survey should take approximately 15-20 minutes and involves simple questions intended to assess the most common personality characteristics. If at any point during the test should you wish to discontinue participation, you may do so without penalty. All answers you provide are completely anonymous. Please refrain from discussing your results. Your decision to participate is entirely voluntary. By pressing "continue," you are hereby agreeing to these conditions and providing consent. Thank you!

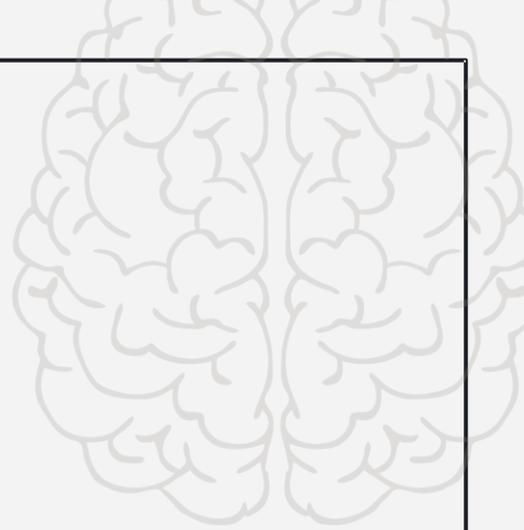
  

Survey Powered By Qualtrics

---

---

# MCGURK EFFECT



# MCGURK





AUDITORY



VS.



VISUAL



# CONTROL GROUP

AUDITORY: "BA"

VISUAL: "BA"

# EXPERIMENTAL GROUP

AUDITORY: "BA"

VISUAL: "FA"



# MCGURK



| SOUND HEARD | ONLINE PARTICIPANTS | GSNJS |
|-------------|---------------------|-------|
| "BA"        | 14%                 | 43%   |
| "FA"        | 77%                 | 52%   |

---

DEESE-ROEDIGER-  
MCDERMOTT  
(DRM) PARADIGM



# DRM PARADIGM

**Nurse  
Sick  
Lawyer  
Medicine  
Health**

**Hospital  
Dentist  
Physician  
Ill  
Patient**

**Office  
Stethoscope  
Surgeon  
Clinic  
Cure**

Please type all the words you remember from the previous list of words.



# DRM - RESULTS

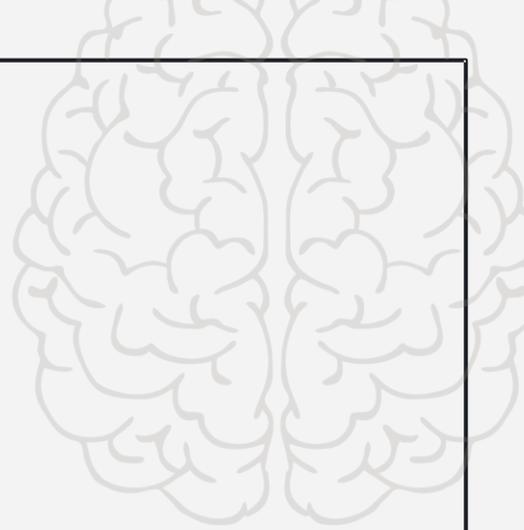
|                                   | ONLINE PARTICIPANTS | GSNJS |
|-----------------------------------|---------------------|-------|
| FALSE "DOCTOR" RECALL             | 57%                 | 48%   |
| CORRECT WORDS WRITTEN (% OF LIST) | 35%                 | 40%   |



---

---

# MOSES ILLUSION

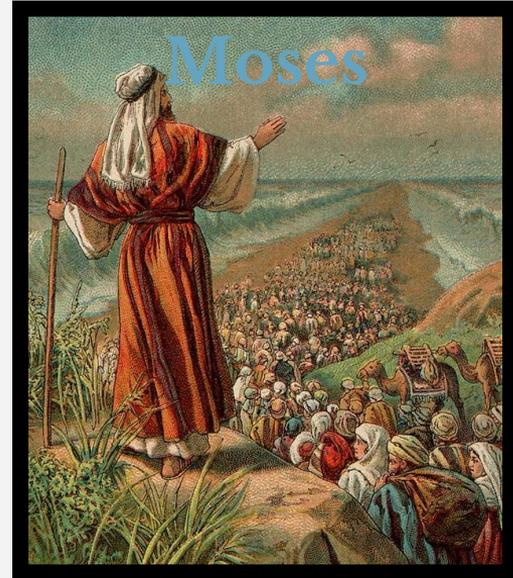


“How many of each kind of animal did  
Moses take on the ark?”

This is **Noah**

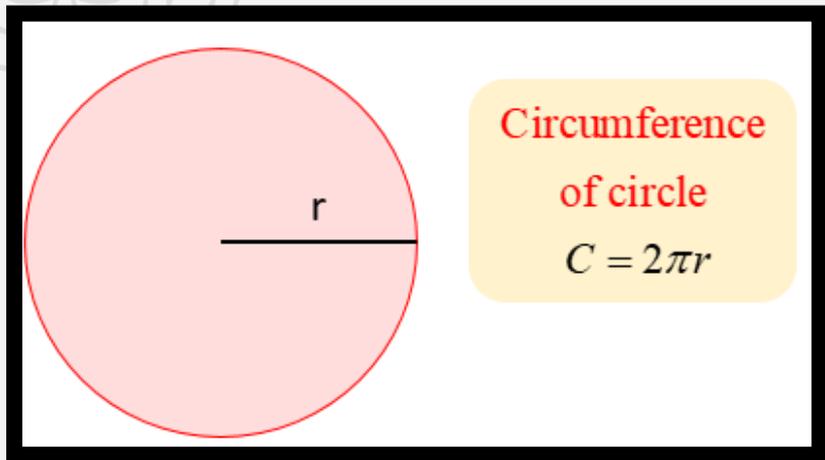


This is



## Question A:

“What shape has a  
circumference of  $\pi r^2$ ?”



$$\text{Area} = \pi r^2$$

## Answered “Circle”

Online  
Participants

59%

GSNJS

61%



## Question B:

“What is the name of the man in the red suit who rides a sleigh and delivers **birthday** presents in December?”



## Answered “Santa”

Online  
Participants

95%

GSNJS

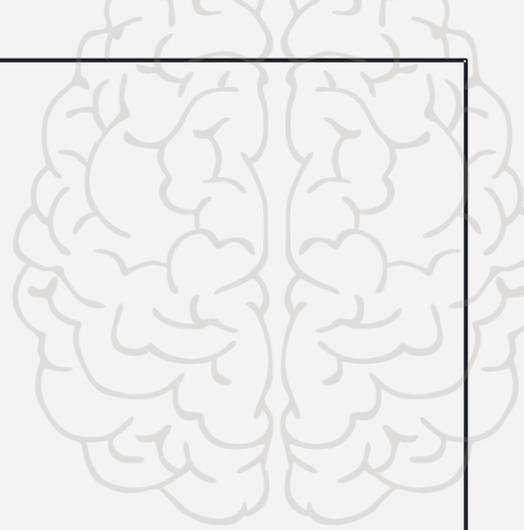
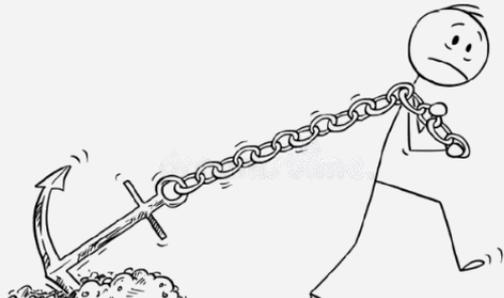
100%



---

---

# ANCHORING



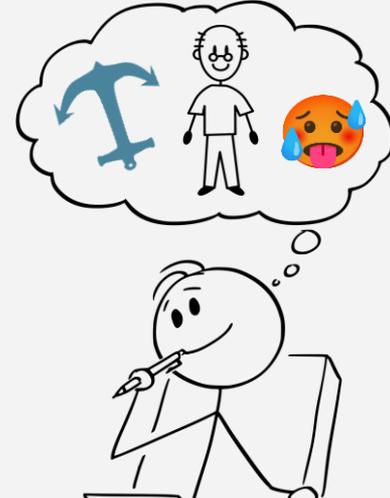
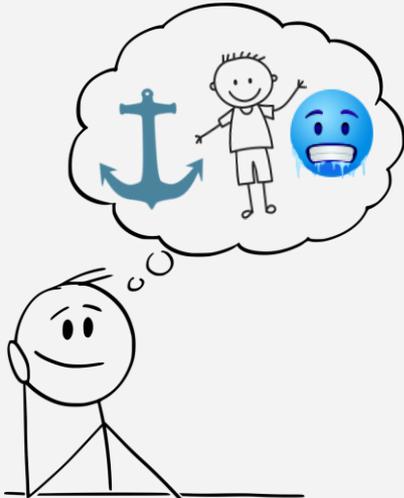
# ANCHORING



**Anchoring:** Person's judgement influenced by "anchor"

**Anchor:** Irrelevant, extreme reference value exposed to participants

**Question Type:** "Higher-Or-Lower" → Open-Ended Estimation



# ANCHORING

---

## Gandhi Questions:

Was Mahatma Gandhi older or younger than 9 years when he died?

Was Mahatma Gandhi older or younger than 140 years when he died?

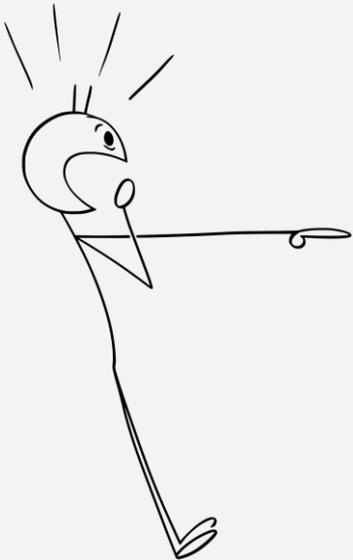


# ANCHORING-RESULTS



|             | ONLINE PARTICIPANTS | GSNJS |
|-------------|---------------------|-------|
| GANDHI LOW  | 68                  | 66    |
| GANDHI HIGH | 83                  | 74    |

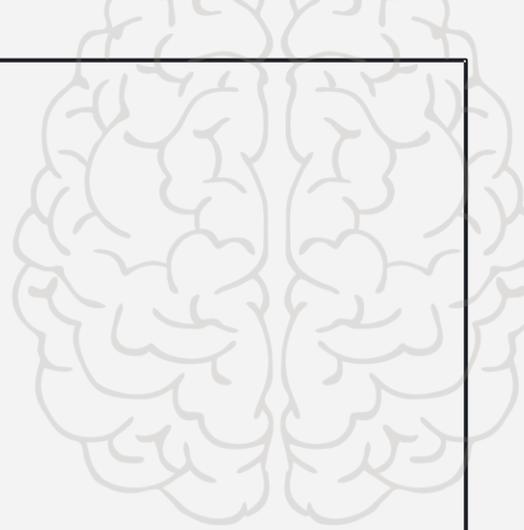
Actual: Gandhi (78 Years)



---

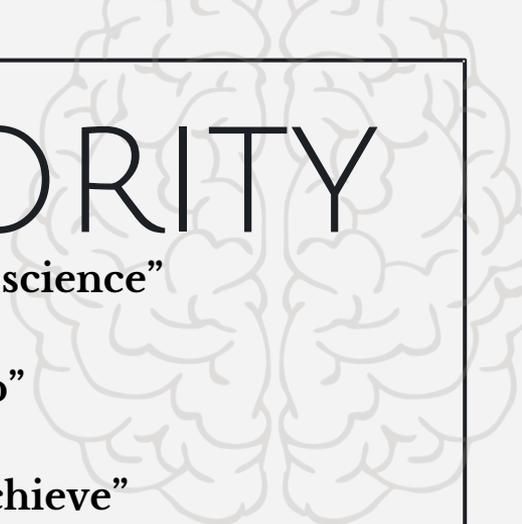
---

# ILLUSORY SUPERIORITY



---

# ILLUSORY SUPERIORITY



“Ability to understand issues”

“Knowledge about science”

“Ability to work independently”

“Leadership”

“Ability to work with a research  
team”

“Motivation to achieve”

“Compassion for other people”

“Communication”

“Creativity”

“Skills in mathematics”

“Critical thinking”

“Statistics”

“Discussion participation”

“Reading comprehension”

# ILLUSORY SUPERIORITY

“Below is a list of skills that might be relevant for a NJ Governor's School Scholar. Using the rating scale below, rate your skill on each item, in comparison to the average NJ Governor's School Scholar. Use the drop down list to select your ratings for each item.”



- 1 = Very Unskilled
- 2
- 3 = Average
- 4
- 5 = Very Skilled



# AVERAGE RATING

|                        | ONLINE PARTICIPANTS | GSNJS |
|------------------------|---------------------|-------|
| AVERAGE OVERALL RATING | 3.47                | 3.80  |

## Rating Scale:

1 = Very Unskilled

2

3 = Average

4

5 = Very Skilled



# AVERAGE RATING

|                            | ONLINE PARTICIPANTS | GSNJS |
|----------------------------|---------------------|-------|
| AVERAGE OVERALL RATING     | 3.47                | 3.80  |
| PERCENT OF RATINGS ABOVE 4 | 20%                 | 39%   |

## Rating Scale:

1 = Very Unskilled

2

3 = Average

4

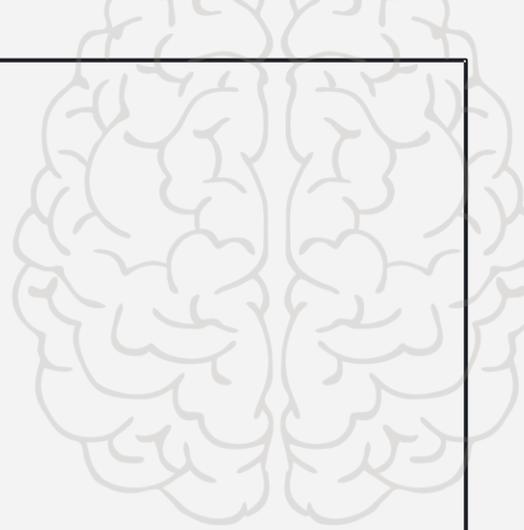
5 = Very Skilled



---

---

FORER





# PERSONALITY TYPE: QYR

"YOU HAVE A **NEED FOR OTHER PEOPLE TO LIKE** AND ADMIRE YOU, AND YET YOU TEND TO BE **CRITICAL OF YOURSELF**. WHILE YOU HAVE SOME PERSONALITY **WEAKNESSES**, YOU ARE ABLE TO COMPENSATE FOR THEM WITH YOUR **STRENGTHS**. YOU HAVE CONSIDERABLE UNUSED CAPACITY THAT YOU HAVE NOT TURNED TO YOUR ADVANTAGE. **DISCIPLINED** AND SELF-CONTROLLED ON THE OUTSIDE, YOU TEND TO BE **WORRISOME** AND INSECURE ON THE INSIDE. AT TIMES YOU HAVE SERIOUS DOUBTS AS TO WHETHER YOU HAVE MADE THE RIGHT DECISION OR DONE THE RIGHT THING. YOU PREFER **A CERTAIN AMOUNT OF CHANGE** AND VARIETY AND BECOME DISSATISFIED WHEN HEMMED IN BY RESTRICTIONS AND LIMITATIONS. YOU ALSO PRIDE YOURSELF AS AN INDEPENDENT THINKER; AND DO NOT ACCEPT OTHERS' STATEMENTS WITHOUT SATISFACTORY PROOF. BUT YOU HAVE FOUND IT UNWISE TO BE TOO FRANK IN REVEALING YOURSELF TO OTHERS. AT TIMES YOU ARE **EXTROVERTED**, AFFABLE, AND SOCIABLE, WHILE AT OTHER TIMES YOU ARE **INTROVERTED**, WARY, AND RESERVED. SOME OF YOUR ASPIRATIONS MAY SEEM UNREALISTIC BUT YOU HAVE A STRONG MOTIVATION AND DRIVE."





# PERSONALITY TYPE: QTE

"YOU HAVE A **NEED FOR OTHER PEOPLE TO LIKE** AND ADMIRE YOU, AND YET YOU TEND TO BE **CRITICAL OF YOURSELF**. WHILE YOU HAVE SOME PERSONALITY **WEAKNESSES**, YOU ARE ABLE TO COMPENSATE FOR THEM WITH YOUR **STRENGTHS**. YOU HAVE CONSIDERABLE UNUSED CAPACITY THAT YOU HAVE NOT TURNED TO YOUR ADVANTAGE. **DISCIPLINED** AND SELF-CONTROLLED ON THE OUTSIDE, YOU TEND TO BE **WORRISOME** AND INSECURE ON THE INSIDE. AT TIMES YOU HAVE SERIOUS DOUBTS AS TO WHETHER YOU HAVE MADE THE RIGHT DECISION OR DONE THE RIGHT THING. YOU PREFER **A CERTAIN AMOUNT OF CHANGE** AND VARIETY AND BECOME DISSATISFIED WHEN HEMMED IN BY RESTRICTIONS AND LIMITATIONS. YOU ALSO PRIDE YOURSELF AS AN INDEPENDENT THINKER; AND DO NOT ACCEPT OTHERS' STATEMENTS WITHOUT SATISFACTORY PROOF. BUT YOU HAVE FOUND IT UNWISE TO BE TOO FRANK IN REVEALING YOURSELF TO OTHERS. AT TIMES YOU ARE **EXTROVERTED**, AFFABLE, AND SOCIABLE, WHILE AT OTHER TIMES YOU ARE **INTROVERTED**, WARY, AND RESERVED. SOME OF YOUR ASPIRATIONS MAY SEEM UNREALISTIC BUT YOU HAVE A STRONG MOTIVATION AND DRIVE."





# PERSONALITY TYPE: QYE

"YOU HAVE A **NEED FOR OTHER PEOPLE TO LIKE** AND ADMIRE YOU, AND YET YOU TEND TO BE **CRITICAL OF YOURSELF**. WHILE YOU HAVE SOME PERSONALITY **WEAKNESSES**, YOU ARE ABLE TO COMPENSATE FOR THEM WITH YOUR **STRENGTHS**. YOU HAVE CONSIDERABLE UNUSED CAPACITY THAT YOU HAVE NOT TURNED TO YOUR ADVANTAGE. **DISCIPLINED** AND SELF-CONTROLLED ON THE OUTSIDE, YOU TEND TO BE **WORRISOME** AND INSECURE ON THE INSIDE. AT TIMES YOU HAVE SERIOUS DOUBTS AS TO WHETHER YOU HAVE MADE THE RIGHT DECISION OR DONE THE RIGHT THING. YOU PREFER **A CERTAIN AMOUNT OF CHANGE** AND VARIETY AND BECOME DISSATISFIED WHEN HEMMED IN BY RESTRICTIONS AND LIMITATIONS. YOU ALSO PRIDE YOURSELF AS AN INDEPENDENT THINKER; AND DO NOT ACCEPT OTHERS' STATEMENTS WITHOUT SATISFACTORY PROOF. BUT YOU HAVE FOUND IT UNWISE TO BE TOO FRANK IN REVEALING YOURSELF TO OTHERS. AT TIMES YOU ARE **EXTROVERTED**, AFFABLE, AND SOCIABLE, WHILE AT OTHER TIMES YOU ARE **INTROVERTED**, WARY, AND RESERVED. SOME OF YOUR ASPIRATIONS MAY SEEM UNREALISTIC BUT YOU HAVE A STRONG MOTIVATION AND DRIVE."





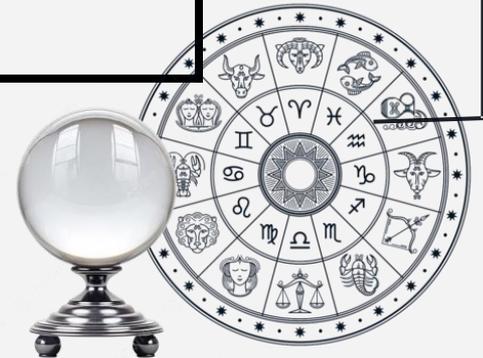
# PERSONALITY TYPE: QTR

"YOU HAVE A **NEED FOR OTHER PEOPLE TO LIKE** AND ADMIRE YOU, AND YET YOU TEND TO BE **CRITICAL OF YOURSELF**. WHILE YOU HAVE SOME PERSONALITY **WEAKNESSES**, YOU ARE ABLE TO COMPENSATE FOR THEM WITH YOUR **STRENGTHS**. YOU HAVE CONSIDERABLE UNUSED CAPACITY THAT YOU HAVE NOT TURNED TO YOUR ADVANTAGE. **DISCIPLINED** AND SELF-CONTROLLED ON THE OUTSIDE, YOU TEND TO BE **WORRISOME** AND INSECURE ON THE INSIDE. AT TIMES YOU HAVE SERIOUS DOUBTS AS TO WHETHER YOU HAVE MADE THE RIGHT DECISION OR DONE THE RIGHT THING. YOU PREFER **A CERTAIN AMOUNT OF CHANGE** AND VARIETY AND BECOME DISSATISFIED WHEN HEMMED IN BY RESTRICTIONS AND LIMITATIONS. YOU ALSO PRIDE YOURSELF AS AN INDEPENDENT THINKER; AND DO NOT ACCEPT OTHERS' STATEMENTS WITHOUT SATISFACTORY PROOF. BUT YOU HAVE FOUND IT UNWISE TO BE TOO FRANK IN REVEALING YOURSELF TO OTHERS. AT TIMES YOU ARE **EXTROVERTED**, AFFABLE, AND SOCIABLE, WHILE AT OTHER TIMES YOU ARE **INTROVERTED**, WARY, AND RESERVED. SOME OF YOUR ASPIRATIONS MAY SEEM UNREALISTIC BUT YOU HAVE A STRONG MOTIVATION AND DRIVE."

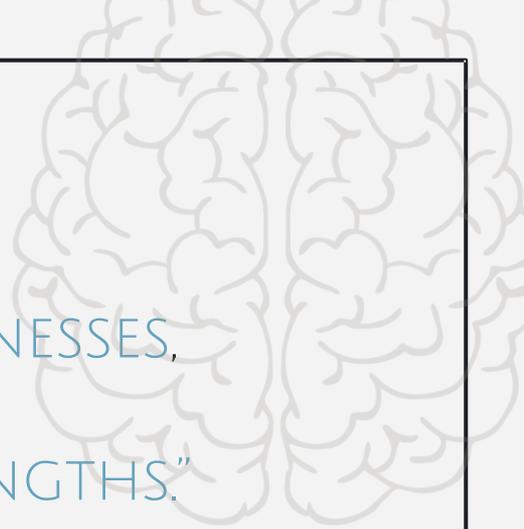


# FORER

|         | ONLINE PARTICIPANTS | GSNJS |
|---------|---------------------|-------|
| AVERAGE | 3.59                | 4.13  |
| 4-5     | 63%                 | 83%   |



- 
- “YOU HAVE SOME PERSONALITY WEAKNESSES,  
YOU...COMPENSATE ... WITH YOUR STRENGTHS.”
  - “YOU ARE EXTROVERTED ... YOU ARE INTROVERTED,”
  - “NEED FOR OTHER PEOPLE TO LIKE AND ADMIRE  
YOU ... YOU TEND TO BE CRITICAL OF YOURSELF.”



---

# FORER

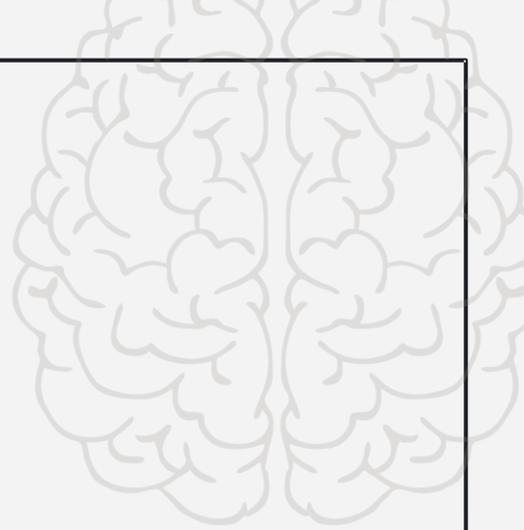
- Occurs because...
  - Subjective validation
  - Confirmation bias



---

---

# DISCUSSION



ARE GOVERNOR'S SCHOOL SCHOLARS  
MORE OR LESS SUSCEPTIBLE TO VARIOUS  
COGNITIVE ILLUSIONS?



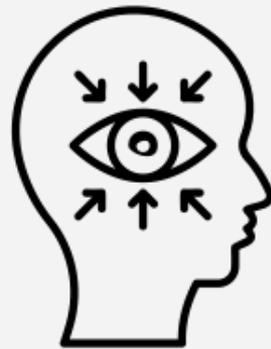
# OVERALL FINDINGS – SCHOLAR STRENGTHS

- Attention to detail
  - McGurk Effect
  - DRM/False Memory



# OVERALL FINDINGS – SCHOLAR WEAKNESSES

- Inaccurate/Flawed self-perception
  - Illusory Superiority Effect
  - Forer Effect



# OVERALL FINDINGS – SIMILARITIES

- Perception
- Decision Making
- Predictions



# LIMITATIONS

- Testing Environment
- Limited Sample Size
- Age Contrast



# FUTURE RESEARCH

- Age
- Experience/Interest



# CONCLUSION

- Susceptibility varies
- High-performing students:
  - Excel in memory & detail
  - Struggle with self-perception



---

# ACKNOWLEDGEMENTS

## Supporters:

Office of the Secretary of Higher  
Education of New Jersey  
The Overdeck Family Foundation  
Novartis  
Bristol Myers Squibb  
GSNJS Alumnae and Parents of  
Alumnae

## Participants:

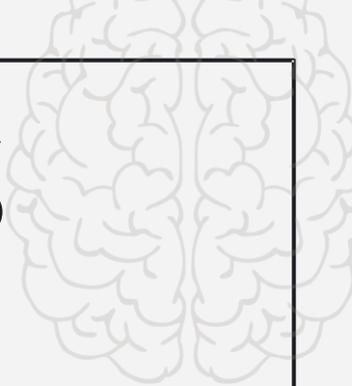
GSNJS Scholars

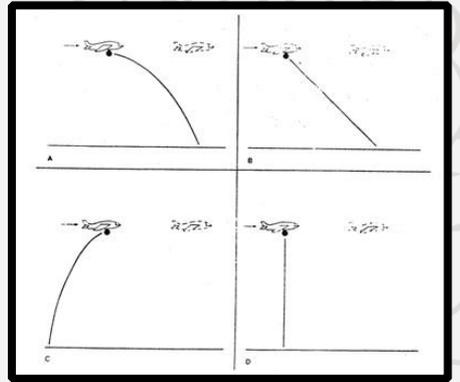
## Mentors:

Dr. Patrick Dolan  
Brenna Hezel

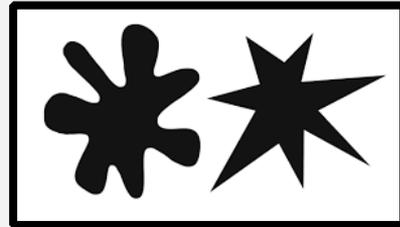
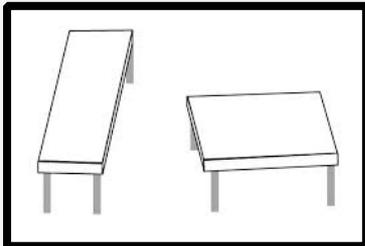
## Directors:

Dr. Adam Cassano  
Dr. Stephen Dunaway





# EXTRA TASKS



Copyright (c) 1997 Levin & Simons. All rights reserved.

# COIN TOSS

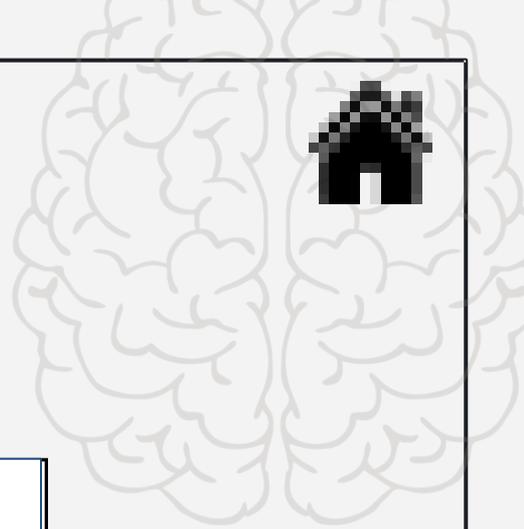
“Which of the following specific series is most likely?”

A) H T H H T T

B) H H H H H H



| Answered<br>“Both” |     |
|--------------------|-----|
| <b>GSNJS</b>       | 51% |
| <b>Online</b>      | 7%  |



# HOSPITAL BIRTHS



“A certain town is served by two hospitals. In the larger hospital about 45 babies are born each day, and in the smaller hospital about 15 babies are born each day. As you know, about 50% of all babies are boys. However, the exact percentage varies from day to day. Sometimes it may be higher than 50%, sometimes lower. For a period of one year, each hospital recorded the days on which more than 60% of the babies born were boys. Which hospital do you think recorded more such days?”



- The larger hospital
- The smaller hospital
- About the same (that is, within 5% of each other)

| Answered “Smaller Hospital” |     |
|-----------------------------|-----|
| <b>NJGSS</b>                | 60% |
| <b>Online</b>               | 24% |

# CONJUNCTION FALLACY



“Linda is 31 years old, single, outspoken and very bright. At university she studied philosophy. As a student she was deeply concerned with issues of discrimination and social justice and also participated in anti-nuclear demonstrations.”

Rank the statements from most to least to most likely:

- Linda is a bank teller.
- Linda is a bank teller and is active in the feminist movement.
- Linda is active in the feminist movement.

|               | Ranked Conjunction 1st | Ranked Conjunction 2nd | Ranked Conjunction 3rd |
|---------------|------------------------|------------------------|------------------------|
| <b>NJGSS</b>  | 24%                    | 44%                    | 31%                    |
| <b>Online</b> | 13%                    | 70%                    | 17%                    |



# PENNY

Q: Which option in the previous set was the correct United States penny?

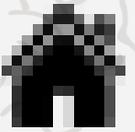


Answered "A"

GSNJS 40%

Online Participants 30%

# INTUITIVE PHYSICS

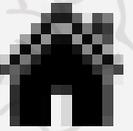


In the diagram above, the plane is flying horizontally to the right at a constant altitude and a constant speed. If a ball is dropped from the indicated point of origin, which path do you think the ball will follow once dropped from the plane? Select the letter that corresponds to your answer.

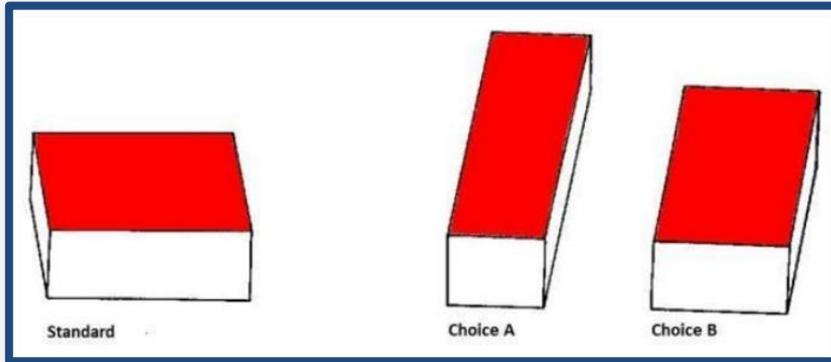
|                        | Answered<br>“D” | Took<br>Physics |
|------------------------|-----------------|-----------------|
| GSNJS                  | 74%             | 98%             |
| Online<br>Participants | 26%             | 54%             |



# TABLE TOP



**Q:** Select the table with the same shaded dimension (area in red) as the standard.

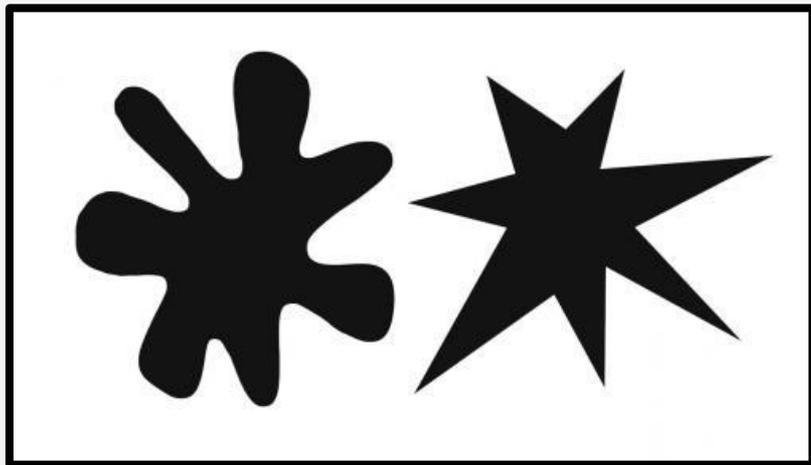


- A. Choice A
- B. Choice B
- C. Neither

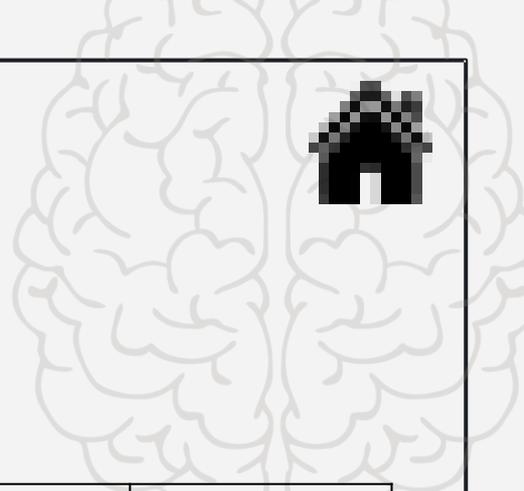
|                     | Correct (A) | Lure (B) | Neither (C) |
|---------------------|-------------|----------|-------------|
| GSNJS               | 23%         | 43%      | 34%         |
| Online Participants | 11%         | 48%      | 41%         |

# KIKI/BOUBA

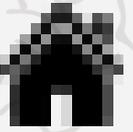
If you were to name the two shapes above, which seems most fitting to you?



|        | Bouba - Left, Kiki - Right | Kiki - Left, Bouba - Right |
|--------|----------------------------|----------------------------|
| Online | 93%                        | 7%                         |
| GSNJS  | 100%                       | 0%                         |



# CHANGE BLINDNESS



|                                   | WITH<br>Warning | WITHOUT<br>Warning |
|-----------------------------------|-----------------|--------------------|
| Online<br>(Noticed<br>Difference) | 9%              | 0%                 |
| GSNJS<br>(Noticed<br>Difference)  | 18%             | 0%                 |



# DECOY

If you were purchasing your favorite drink at the movie theater, which size would you choose?



|                    | Small | Medium | Large |
|--------------------|-------|--------|-------|
| GSNJS - 2 Options  | 87%   | N/A    | 13%   |
| GSNJS - 3 Options  | 57%   | 17%    | 26%   |
| Online - 2 Options | 54%   | N/A    | 46%   |
| Online - 3 Options | 32%   | 9%     | 59%   |



# PICTURE PRIMING



Would you like to have a donkey as a pet?



Would you like to have a seal as a pet?



|                       | Donkey Prime | Seal Prime | Snake Prime |
|-----------------------|--------------|------------|-------------|
| GSNJS - Donkey Guess  | 67%          | 40%        | 38%         |
| GSNJS - Seal Guess    | 27%          | 60%        | 56%         |
| Online - Donkey Guess | 82%          | 42%        | 87%         |
| Online - Seal Guess   | 6%           | 25%        | 13%         |



# AVERAGE PER SKILL

| SKILL                                | ONLINE PARTICIPANTS | GSNJS |
|--------------------------------------|---------------------|-------|
| ABILITY TO UNDERSTAND ISSUES         | 4.06                | 3.98  |
| ABILITY TO WORK INDEPENDENTLY        | 4.30                | 4.27  |
| ABILITY TO WORK WITH A RESEARCH TEAM | 3.59                | 3.8   |
| COMPASSION FOR OTHER PEOPLE          | 3.96                | 4.11  |
| CREATIVITY                           | 3.57                | 3.64  |
| CRITICAL THINKING                    | 3.80                | 3.85  |
| DISCUSSION PARTICIPATION             | 2.96                | 3.27  |



# AVERAGE PER SKILL

| SKILL                   | ONLINE PARTICIPANTS | GSNJS |
|-------------------------|---------------------|-------|
| KNOWLEDGE ABOUT SCIENCE | 3.00                | 3.50  |
| LEADERSHIP              | 2.67                | 3.76  |
| MOTIVATION TO ACHIEVE   | 3.33                | 4.29  |
| COMMUNICATION           | 3.50                | 3.76  |
| SKILLS IN MATHEMATICS   | 3.09                | 3.96  |
| STATISTICS              | 2.71                | 2.98  |
| READING COMPREHENSION   | 4.04                | 3.89  |



# ANCHORING

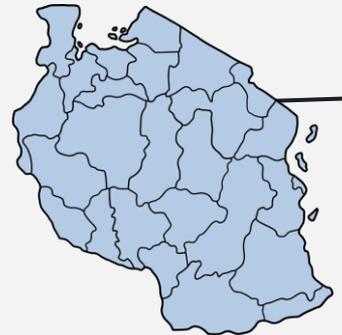
---

## Tanzania Questions:

?

Is the mean temperature in Tanzania higher or lower than  $51^{\circ}\text{F}$ ?

Is the mean temperature in Tanzania higher or lower than  $106^{\circ}\text{F}$ ?



# ANCHORING-RESULTS

|               | ONLINE PARTICIPANTS | GSNJS |
|---------------|---------------------|-------|
| TANZANIA LOW  | 79                  | 75    |
| TANZANIA HIGH | 92                  | 89    |

Actual: Tanzania (78 degrees F)



# STATISTICAL DATA

**Table II: Statistical Data for GSNJS Scholars vs. Online Participants**

|          | p-value | alpha = 0.05 |
|----------|---------|--------------|
| Fa Video | 0.0273  | < 0.05       |

**Table IV: Statistical Data for GSNJS Scholars vs. Online Participants**

|                       | p-value | alpha = 0.05 |
|-----------------------|---------|--------------|
| False "Doctor" Recall | 0.259   | > 0.05       |

**Table VI: Statistical Data for GSNJS Scholars vs. Online Participants**

|                | p-value    | alpha = 0.05 |
|----------------|------------|--------------|
| GSNJS Priming  | 0.00000489 | < 0.05       |
| Online Priming | 0.00000147 | < 0.05       |

**Table IX: Statistical Data for GSNJS Scholars vs. Online Participants**

|                 | p-value | alpha = 0.05 |
|-----------------|---------|--------------|
| Circle Question | 0.906   | > 0.05       |
| Santa Question  | 0.312   | > 0.05       |

**Table XI: Statistical Data for GSNJS Scholars vs. Online Participants**

|           | p-value   | alpha = 0.05 |
|-----------|-----------|--------------|
| Table Top | 0.1616681 | > 0.05       |

**Table XVIII: Statistical Data for GSNJS Scholars vs. Online Participants**

|                | p-value   | alpha = 0.05 |
|----------------|-----------|--------------|
| Correct Answer | 0.0000014 | < 0.05       |

# STATISTICAL DATA

**Table XIV: Statistical Data for GSNJS Scholars vs. Online Participants**

|                   | p-value  | alpha = 0.05 |
|-------------------|----------|--------------|
| GSNJS - Gandhi    | 0.0713   | > 0.05       |
| Online - Gandhi   | 0.00930  | < 0.05       |
| GSNJS - Tanzania  | 0.000575 | < 0.05       |
| Online - Tanzania | 0.00776  | < 0.05       |

**Table XVI: Statistical Data for GSNJS Scholars vs. Online Participants**

|              | p-value | alpha = 0.05 |
|--------------|---------|--------------|
| GSNJS Decoy  | 0.275   | > 0.05       |
| Online Decoy | 0.380   | > 0.05       |

**Table XXII: Statistical Data for GSNJS Scholars vs. Online Participants**

|                | p-value | alpha = 0.05 |
|----------------|---------|--------------|
| Correct Answer | 0.0175  | < 0.05       |

**Table XX: Statistical Data for GSNJS Scholars vs. Online Participants**

|                | p-value | alpha = 0.05 |
|----------------|---------|--------------|
| Average Rating | 0.0178  | < 0.05       |