Consent & Information

You are being invited to take part in a research study being conducted by Texas A&M University and are asked to read this form so that you know about this research study. The information in this form is provided to help you decide whether or not to take part. If you decide to take part in the study, you will be asked to sign this consent form by clicking the button below. If you decide you do not want to participate, there will be no penalty to you, and you will not lose any benefit you normally would have.

WHY IS THIS STUDY BEING DONE?
The purpose of this study is to explore how individuals make inferences about the influence of biological factors in explaining psychological and behavioral traits in humans.

WHY AM I BEING ASKED TO BE IN THIS STUDY?
You are being asked to be in this study because of your affiliation with Amazon's Mechanical Turk (MTurk) survey program.

HOW MANY PEOPLE WILL BE ASKED TO BE IN THIS STUDY?
400 people will take part in this study.

WHAT ARE THE ALTERNATIVES TO BEING IN THIS STUDY?
The alternative is not to participate.

WHAT WILL YOU BE ASKED TO DO IN THIS STUDY?
Your participation in this study will last up to 25 minutes once you start the survey. You will first take a short, 1 minute screening survey. If you meet the inclusion criteria, you will be asked to give your opinion on the inferential power of different research designs aimed at exploring biological influences on human psychology and behavior. You will also be asked to answer questions concerning your attitudes and knowledge about this and related topics. If you do not meet the inclusion criteria, your participation will end after the screening survey.

ARE THERE ANY RISKS TO ME?
The things that you will be doing have no more/ risk than you would come across in everyday life. You do not have to answer anything you do not want to.

ARE THERE ANY BENEFITS TO ME?
There is no direct benefit to you by being in this study. What the researchers find out from this study will help society as a whole better understand how we interpret results concerning biological influences on human psychology and behavior.

WILL THERE BE ANY COSTS TO ME?
Aside from your time, there are no costs for taking part in the study.

WILL I BE PAID TO BE IN THIS STUDY?
You will receive $0.10 payment via the Amazon MTurk program for completing the screening survey. If you meet the inclusion criteria and are asked to complete the entire survey, you receive $1.00 as a bonus for completing the survey.

WILL INFORMATION FROM THIS STUDY BE KEPT PRIVATE?
The records of this study will be kept private. Your identity can not be linked to the research data, and no identifiers linking you to this study will be included in any sort of report that might be published. Research records will be stored securely and only Dr. Jeffrey Winking will have access to the records.

MTurk id’s will be stored on a password protected computer until the end of the study at which time they will be deleted.

Information about you will be kept confidential to the extent permitted or required by law. People who have access to your information include the Principal Investigator and research study personnel. Representatives of regulatory agencies such as the Office of Human Research Protections (OHRP) and entities such as the Texas A&M University Human Subjects Protection Program may access your records to make sure the study is being run correctly and that information is collected properly.

WHOM CAN I CONTACT FOR MORE INFORMATION?
You can call the Principal Investigator to tell him about a concern or complaint about this research study. The Principal Investigator is Dr. Jeffrey Winking and can be called at 979-845-5242 or emailed at jwinking@tamu.edu.

For questions about your rights as a research subject; or if you have questions, complaints, or concerns about the research and cannot reach the Principal Investigator or want to talk to someone other than the Investigator, you may call the Texas A&M Human Subjects Protection Program office.

- Phone number: (979) 458-4067
- Email: irb@tamu.edu

MAY I CHANGE MY MIND ABOUT PARTICIPATING?
You have the choice whether or not to be in this research study. You may decide to not begin or to stop the study at any time. If you choose not to be in this study, there will be no effect on you or your relationship with the Amazon MTurk.
By participating in the survey, you are giving permission for the investigator to use your information for research purposes.

Thank you.

Jeffrey Winking

I understand that by checking this box, I am providing informed consent for this study.

- [ ] I consent to participate.
- [x] I DO NOT consent to participate

Thank you for your consideration. Please return the hit if you have already accepted it.

Thank you for participating. Please answer the following screening questions. If you do not meet the eligibility requirements, your participation will end and you will receive $0.10.

If you do meet the eligibility requirements, you will fill out an additional survey. At the end of the survey, you will be given a unique code to copy and paste into the original MTurk hit before submitting.

What is your age?

What is your gender?
- Female
- Male
- Other

Which of these best describes where you live?

What is your highest level of education?

Thank you for taking the time to participate. Unfortunately, you do not meet the inclusion criteria for this study. Please submit the hit without the completion code and you will receive the $0.10 for participating.

Thanks!

Which of these best describes the field in which you earned your highest degree?

Which of these best describes your current employment?

Thank you for taking the time to participate. Unfortunately, you do not meet the inclusion criteria for this study. Please submit the hit without the completion code and you will receive the $0.10 for participating.

**Academia Questions**

Please answer the following questions from your own knowledge--do not look them up! You will have 30 seconds to answer each question.
Orientation

You are eligible to take the full survey. Please answer the following questions concerning biological influences.

Much has been written concerning the influence of biology in defining human psychological and behavioral traits (referred to in popular media as “nature vs. nurture”). While all traits are the culmination of complex processes of biological and environmental interactions, traits do differ in the degree to which biological variance (genetics, hormone levels, etc.) and experiential variance (upbringing, culture, etc.) explain outcomes. For instance, most would agree that the general preference for the room temperature to be 20°C (68°F) versus -20°C (-4°F) is likely mostly determined by biological causes, whereas the aesthetic preference for long versus short hair on men is likely mostly determined by experiential factors.

Note that under this characterization, experiential factors are defined to only include those environmental factors that are experienced through the senses over one’s lifetime (upbringing, culture, etc.). Some environmental factors, such as infant exposure to maternal hormones, would be considered biological and not experiential.

The goal of the current study is to explore how researchers interpret results to infer the degree to which biological factors explain variance in a trait.

Considering general psychological and behavioral traits, such as preferences for activities, intelligence, and personality, in general, how important do you think biological factors (genetics, hormone levels, etc.) and experiential factors (upbringing, culture, etc.) are in determining the variance in these traits?
Biological factors are much more important
Biological factors are somewhat more important
Biological and experiential factors are equally as important
Experiential factors are somewhat more important
Experiential factors are much more important

Considering differences between men and women in psychological and behavioral traits, such as preferences for activities, sexual and romantic preferences, and personality, in general, how important do you think biological factors (genetics, hormone levels, etc.) and experiential factors (upbringing, culture, etc.) are in determining the differences between men and women in these traits?

Biological factors are much more important
Biological factors are somewhat more important
Biological and experiential factors are equally as important
Experiential factors are somewhat more important
Experiential factors are much more important

On the general spectrum that exists in academia concerning the roles of biological and experiential factors in determining psychological and behavioral patterns in humans, where do you place yourself?

I have a strong biological orientation.
I have somewhat of a biological orientation.
I have somewhat of an experiential orientation.
I have a strong experiential orientation.

How closely do you follow research that is concerned with the influences of biological and experiential factors in determining psychological and behavioral traits in humans?

Not at all
A little
Somewhat
Quite a bit
A lot

How important is this subject matter to your own area of research or study?

Not at all
Somewhat Unimportant
Neither Important nor Unimportant
Somewhat Important
Extremely Important

Poli Outlook

Please answer the following questions concerning your outlook on social and political issues.

How important do you think it is for governments to invest in reducing social inequalities?

Unimportant
Of little importance
Moderately important
Important
Very important

To what degree do you believe one’s social position (e.g., income, career success, etc.) is achieved due to individual qualities (e.g., intelligence, industriousness, etc.) versus social factors (e.g., upbringing, discrimination, etc.)?

Individual qualities much more important.
Individual qualities moderately more important.
Individual qualities slightly more important.
Individual qualities and social factors equally as important.
Social factors slightly more important.
Social factors moderately more important.
Social factors much more important.

On social issues, where do you place yourself on the political spectrum?

Extremely conservative
Quite conservative
Somewhat conservative
Neither conservative nor liberal
Somewhat liberal
Quite liberal
Extremely liberal

On economic issues, where do you place yourself on the political spectrum?

Extremely conservative
Quite conservative
Somewhat conservative
Neither conservative nor liberal
Somewhat liberal
Quite liberal
Extremely liberal
Often times, social policies are designed to balance improvements to the welfare for those who need it on one side and minimizing taxation on the other. Despite the fact that political outlooks are often polarized, most agree that both goals are important. It is also important that participants take the time to read all of the instructions. For the question below, please select the far right response, Minimizing taxes is much more important.

To what degree do you believe that investing in social welfare is important versus minimizing taxation?

Social welfare much more important
Social welfare slightly more important
Social welfare and minimizing taxes equally important
Minimizing taxes slightly more important
Minimizing taxes much more important

Statistical and Epistemology

Please answer the following questions concerning your statistical knowledge.

In reference to all of academia (including the sciences and humanities), how competent do you feel you are at interpreting statistical analyses?

Not at all competent
Not that competent
Somewhat competent
Quite competent
Very competent

Correlation tests are used to measure the degree to which two continuous variables are associated.

How familiar are you with this statistical test?

Not at all familiar
Not that familiar
Somewhat familiar
Quite familiar
Very familiar

T-tests are used to measure the likelihood that two groups differ along some continuous variable.

How familiar are you with this statistical test?

Not at all familiar
Not that familiar
Somewhat familiar
Quite familiar
Very familiar

In many statistical tests, p-values are used to measure the likelihood that a particular effect would occur by chance. Effects are said to be “statistically significant” if the p-value is less than 0.05, suggesting less than a 5% chance that the effect could have occurred by chance.

How familiar are you with p-values?

Not at all familiar
Not that familiar
Somewhat familiar
Quite familiar
Very familiar

When considering questions concerning human psychology and behavior, to what degree do you favor empirical, quantitative approaches versus interpretive, qualitative approaches?

I strongly favor empirical, quantitative approaches
I somewhat favor empirical, quantitative approaches
I favor them equally
I somewhat favor interpretive, qualitative approaches
I strongly favor interpretive, qualitative approaches

Now we will explore three recent studies exploring three different traits. Please use the sliding bars to indicate what you believe to be the inferential power of the study to suggest more or less of a biological influence in the determination of the trait.

1. GenOrd_TImpC_CCGBio
Please review the figure above, which was copied from an article in a peer-reviewed journal. Additional information has been added in red.

The figure is from a study examining the association between a particular genetic variant and Orderliness. Orderliness is a subcomponent of the personality factor Conscientiousness, and refers to the tendency to be regimented and organized as opposed to spontaneous and disorganized.

The figure shows that individuals who have a particular genetic variant score significantly higher on the Orderliness Scale.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported association between a particular genetic variant and Orderliness suggest that it is MORE likely that biological factors are important in the determination of Orderliness?

| Not at all informative | Somewhat more likely | Much more likely |
|-----------------------|----------------------|-----------------|
|                       |                      |                 |

Suggests MORE likely

Please review the figure above, which was copied from a presentation delivered at a major national conference. Additional information has been added in red.

**Figure 3** Orderliness scores by -1149 extrapallidary promoter region polymorphism. For G_{-1149} variant, N=82. For T_{-1149} variant, N=61. Error bars are 95% confidence intervals. \( t=8.31, p<0.001 \).
The figure is from a twin study examining *Implicit Association Scores* among twins in the Denmark Twin Registry. The *Implicit Association Scores* measure the degree to which participants associate negative terms with photos of Turkish immigrants versus those of native-born Danes. Other studies have found high *Implicit Association Scores* to be associated with other measures of racial prejudice and in-group bias.

The figure shows that identical twins reared TOGETHER and adopted siblings reared together were significantly correlated in their measures of *Implicit Association Scores*. However, identical twins reared APART showed no significant correlation in their *Implicit Association Scores*.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported correlation between identical twins reared TOGETHER and between adopted siblings reared together, but NOT between identical twins reared APART suggest that it is LESS likely that biological factors are important in the determination of *Implicit Association Scores*?

| Not at all informative | Somewhat less likely | Much less likely |
|-----------------------|---------------------|-----------------|
| 0                     |                     | Suggests LESS likely | 100 |

---

The figure is from a study examining a measure of *Geometric and Spatial Reasoning* among men and women across different populations, including a number of "non-Western, traditional-living populations." The *Geometric and Spatial Reasoning* scores are based on non-scholastic oriented tasks which include sections on angle relationships, 3D object rotation, and others.

The figure shows that men's scores are higher in each population and that these effects are significant in most of them.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported cross-cultural trend of men exhibiting higher *Geometric and Spatial Reasoning* scores suggest that it is MORE likely that biological factors are important in the determination of a sex difference in Geometric and Spatial Reasoning?

| Not at all informative | Somewhat more likely | Much more likely |
|-----------------------|---------------------|-----------------|
| 0                     |                     | 100            |
How socially preferable do you perceive high Orderliness to be?

| Very negative | Moderately negative | A little negative | Neither positive nor negative | A little positive | Moderately positive | Very positive |
|---------------|---------------------|-------------------|------------------------------|------------------|---------------------|--------------|
|               |                     |                   |                              |                  |                     |              |

How psychologically complex do you believe the trait Orderliness to be?

| Very simple | Moderately simple | Neither simple nor complex | Moderately complex | Very complex |
|-------------|-------------------|---------------------------|-------------------|--------------|
|            |                   |                           |                   |              |

How socially preferable do you perceive high Implicit Association to be (i.e. implicitly associating negative traits with an outside group)?

| Very negative | Moderately negative | A little negative | Neither positive nor negative | A little positive | Moderately positive | Very positive |
|---------------|---------------------|-------------------|------------------------------|------------------|---------------------|--------------|
|               |                     |                   |                              |                  |                     |              |

How psychologically complex do you believe Implicit Association to be?

| Very simple | Moderately simple | Neither simple nor complex | Moderately complex | Very complex |
|-------------|-------------------|---------------------------|-------------------|--------------|
|             |                   |                           |                   |              |

How socially preferable do you perceive high Geometric and Spatial Reasoning to be?

| Very negative | Moderately negative | A little negative | Neither positive nor negative | Modestly positive | A little positive | Very positive |
|---------------|---------------------|-------------------|------------------------------|------------------|------------------|--------------|
|               |                     |                   |                              |                  |                  |              |

How psychologically complex do you believe Geometric and Spatial Reasoning to be?

| Very simple | Moderately simple | Neither simple nor complex | Moderately complex | Very complex |
|-------------|-------------------|---------------------------|-------------------|--------------|
|             |                   |                           |                   |              |

2. TOrdB_CCGCul_GenAgAf

Please review the figure above, which was copied from a presentation delivered at a major national conference. Additional information has been added in red.

The figure is from a twin study examining Orderliness among twins in the Denmark Twin Registry. Orderliness is a subcomponent of the personality factor Conscientiousness, and refers to the tendency to be regimented and organized as opposed to spontaneous and disorganized.
The figure shows that identical twins reared TOGETHER and identical twins reared APART were significantly correlated in their measures of Orderliness. However, adopted siblings reared together showed no significant correlation in their Orderliness.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported correlation between identical twins reared TOGETHER and between identical twins reared APART, but NOT between adopted siblings reared together suggest that it is MORE likely that biological factors are important in the determination of Orderliness?

---

Please review the figure above, which was copied from an article in a peer-reviewed journal. Additional information has been added in red.

The figure is from a study examining a measure of Geometric and Spatial Reasoning among men and women across different populations, including a number of "non-Western, traditional-living populations." The Geometric and Spatial Reasoning scores are based on non-scholastic oriented tasks which include sections on angle relationships, 3D object rotation, and others.

The figure shows that while men's scores are higher in the U.S. and Germany, there is no consistent pattern among other populations.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported absence of a cross-cultural trend of men exhibiting higher Geometric and Spatial Reasoning scores suggest that it is LESS likely that biological factors are important in the determination of a sex difference in Geometric and Spatial Reasoning?
Please review the figure above, which was copied from an article in a peer-reviewed journal. Additional information has been added in red.

The figure is from a study examining the association between a particular genetic variant and Appetitive Aggression. Appetitive Aggression refers to proactive and predatory aggression and is associated with things such as likelihood of committing violence and positive attitudes towards warfare.

The figure shows that individuals who have a particular genetic variant score significantly higher on the Appetitive Aggression Scale. As reported in the paper, the particular genetic variant associated with elevated Appetitive Aggression is estimated to occur with a frequency of 25-29% of individuals with primarily African ancestry, and 4-9% among those with primarily European ancestry.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported association between a particular genetic variant and Appetitive Aggression suggest that it is MORE likely that biological factors are important in the determination of Appetitive Aggression?

How socially preferable do you perceive high Orderliness to be?

Very negative  Moderately negative  A little negative  Neither positive nor negative  A little positive  Moderately positive  Very positive

How psychologically complex do you believe the trait Orderliness to be?

Very simple  Moderately simple  Neither simple nor complex  Moderately complex  Very complex

How socially preferable do you perceive high Geometric and Spatial Reasoning to be?

Very negative  Moderately negative  A little negative  Neither positive nor negative  A little positive  Moderately positive  Very positive

How psychologically complex do you believe Geometric and Spatial Reasoning to be?

Very simple  Moderately simple  Neither simple nor complex  Moderately complex  Very complex
How socially preferable do you perceive high Appetitive Aggression to be?

| Socially Preferable | Very Negative | Moderately Negative | A Little Negative | Neither Positive nor Negative | A Little Positive | Moderately Positive | Very Positive |
|---------------------|--------------|---------------------|------------------|------------------------------|------------------|---------------------|---------------|
|                     |              |                     |                  |                              |                  |                     |               |

How psychologically complex do you believe Appetitive Aggression to be?

| Psychologically Complex | Very Simple | Moderately Simple | Neither Simple nor Complex | Moderately Complex | Very Complex |
|-------------------------|-------------|-------------------|----------------------------|-------------------|--------------|
|                         |             |                   |                            |                   |              |

3. CCVBio_GenAg_TordC

Please review the figure above, which was copied from an article in a peer-reviewed journal. Additional information has been added in red.

The figure is from a study examining a measure of Verbal Acuity among men and women across different populations, including a number of non-Western, traditional-living populations. The Verbal Acuity scores are based on non-scholastic oriented tasks which include sections on verbal fluency, vocabulary size, and others.

The figure shows that women's scores are higher in each population and that these effects are significant in most of them.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported cross-cultural trend of women exhibiting higher Verbal Acuity scores suggest that it is MORE likely that biological factors are important in the determination of a sex difference in Verbal Acuity.

| Degree |
|--------|
| Not at all informative | Somewhat more likely | Much more likely |
|                  |                        |                |
| Suggests MORE likely |                       |               |

https://tamu.qualtrics.com/ControlPanel/Ajax.php?action=GetSurveyPrintPreview
Please review the figure above, which was copied from an article in a peer-reviewed journal. Additional information has been added in red.

The figure is from a study examining the association between a particular genetic variant and Appetitive Aggression. Appetitive Aggression refers to proactive and predatory aggression and is associated with things such as likelihood of committing violence and positive attitudes towards warfare.

The figure shows that individuals who have a particular genetic variant score significantly higher on the Appetitive Aggression Scale.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported association between a particular genetic variant and Appetitive Aggression Scores suggest that it is MORE likely that biological factors are important in the determination of Appetitive Aggression?

|                      | Not at all informative | Somewhat more likely | Much more likely |
|----------------------|------------------------|----------------------|------------------|
| Suggests MORE likely |                        |                      |                  |

https://tamu.qualtrics.com/ControlPanel/Ajax.php?action=GetSurveyPrintPreview
Please review the figure above, which was copied from a presentation delivered at a major national conference. Additional information has been added in red.

The figure is from a twin study examining Orderliness among twins in the Denmark Twin Registry. Orderliness is a subcomponent of the personality factor Conscientiousness, and refers to the tendency to be regimented and organized as opposed to spontaneous and disorganized.

The figure shows that identical twins reared TOGETHER and adopted siblings reared together were significantly correlated in their measures of Orderliness. However, identical twins reared APART showed no significant correlation in their measures of Orderliness.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported correlation between identical twins reared TOGETHER and between adopted siblings reared together, but NOT between identical twins reared APART suggest that it is LESS likely that biological factors are important in the determination of Orderliness?

Not at all informative | Somewhat less likely | Much less likely
--- | --- | ---

Suggests LESS likely

---

How socially preferable do you perceive high Verbal Acuity to be?

| Verbal Acuity | Very negative | Moderately negative | A little negative | Neither positive nor negative | A little positive | Moderately positive | Very positive |
|---------------|---------------|---------------------|------------------|-----------------------------|-----------------|-------------------|---------------|
|               |               |                     |                  |                             |                 |                   |               |

How psychologically complex do you believe Verbal Acuity to be?

| Verbal Acuity | Very simple | Moderately simple | Neither simple nor complex | Moderately complex | Very complex |
|---------------|-------------|-------------------|---------------------------|-------------------|--------------|
|               |             |                   |                           |                   |              |

How socially preferable do you perceive high Appetitive Aggression to be?

| Appetitive Aggression | Very negative | Moderately negative | A little negative | Neither positive nor negative | A little positive | Moderately positive | Very positive |
|-----------------------|---------------|---------------------|------------------|-----------------------------|-----------------|-------------------|---------------|
|                       |               |                     |                  |                             |                 |                   |               |

How psychologically complex do you believe Appetitive Aggression to be?

| Appetitive Aggression | Very simple | Moderately simple | Neither simple nor complex | Moderately complex | Very complex |
|-----------------------|-------------|-------------------|---------------------------|-------------------|--------------|
|                       |             |                   |                           |                   |              |

How socially preferable do you perceive high Orderliness to be?

| Orderliness | Very negative | Moderately negative | A little negative | Neither positive nor negative | A little positive | Moderately positive | Very positive |
|-------------|---------------|---------------------|------------------|-----------------------------|-----------------|-------------------|---------------|
|             |               |                     |                  |                             |                 |                   |               |

How psychologically complex do you believe the trait Orderliness to be?

| Orderliness | Very simple | Moderately simple | Neither simple nor complex | Moderately complex | Very complex |
|-------------|-------------|-------------------|---------------------------|-------------------|--------------|
|             |             |                   |                           |                   |              |

4. GenAgEur_TimpBio_CCVCul
Please review the figure above, which was copied from an article in a peer-reviewed journal. Additional information has been added in red.

The figure is from a study examining the association between a particular genetic variant and Appetitive Aggression. Appetitive Aggression refers to pro-active and predatory aggression and is associated with things such as likelihood of committing violence and positive attitudes towards warfare.

The figure shows that individuals who have a particular genetic variant score significantly higher on the Appetitive Aggression Scale. As reported in the paper, the particular genetic variant associated with elevated Appetitive Aggression is estimated to occur with a frequency of 25-29% of individuals with primarily European ancestry, and 4-9% among those with primarily African ancestry.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported association between a particular genetic variant and Appetitive Aggression Scores suggest that it is MORE likely that biological factors are important in the determination of Appetitive Aggression?

Not at all informative  Somewhat more likely  Much more likely

Suggests MORE likely
Please review the figure above, which was copied from an article in a peer-reviewed journal. Additional information has been added in red.

The figure is from a study examining *Implicit Association Scores* among twins in the Denmark Twin Registry. The *Implicit Association Scores* measure the degree to which participants associate negative terms with photos of Turkish immigrants versus those of native-born Danes. Other studies have found high *Implicit Association Scores* to be associated with other measures of racial prejudice and in-group bias.

The figure shows that identical twins reared TOGETHER and identical twins reared APART were significantly correlated in their measures of *Implicit Association*. However, adopted siblings reared together showed no significant correlation in their measures of Orderliness.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported correlation between identical twins reared TOGETHER and identical twins reared APART, but NOT between adopted siblings reared together suggest that it is MORE likely that biological factors are important in the determination of *Implicit Association Scores*?

|                          | Not at all informative | Somewhat more likely | Much more likely |
|--------------------------|-----------------------|----------------------|------------------|
| Suggests MORE likely     |                       |                      |                  |

---

Please review the figure above, which was copied from a presentation delivered at a major national conference. Additional information has been added in red.

The figure is from a twin study examining *Implicit Association Scores* among twins in the Denmark Twin Registry. The *Implicit Association Scores* measure the degree to which participants associate negative terms with photos of Turkish immigrants versus those of native-born Danes. Other studies have found high *Implicit Association Scores* to be associated with other measures of racial prejudice and in-group bias.

The figure shows that identical twins reared TOGETHER and identical twins reared APART were significantly correlated in their measures of *Implicit Association*. However, adopted siblings reared together showed no significant correlation in their measures of Orderliness.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported correlation between identical twins reared TOGETHER and identical twins reared APART, but NOT between adopted siblings reared together suggest that it is MORE likely that biological factors are important in the determination of *Implicit Association Scores*?

|                          | Not at all informative | Somewhat more likely | Much more likely |
|--------------------------|-----------------------|----------------------|------------------|
| Suggests MORE likely     |                       |                      |                  |

---

Please review the figure above, which was copied from an article in a peer-reviewed journal. Additional information has been added in red.

The figure is from a study examining a measure of *Verbal Acuity* among men and women across different populations, including a number of "non-Western, traditional-living populations." The *Verbal Acuity* scores are based on non-scholastic oriented tasks which include sections on verbal fluency, vocabulary size, and others.

The figure shows that while women's scores are higher in the U.S. and Germany, there is no consistent pattern among other populations.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported absence of a cross-cultural trend of women exhibiting higher *Verbal Acuity* scores suggest that it is LESS likely that biological factors are important in the determination of a sex difference in *Verbal Acuity*?

|                          | Not at all informative | Somewhat less likely | Much less likely |
|--------------------------|-----------------------|----------------------|------------------|
| Suggests NOT at all      |                       |                      |                  |

---

Please review the figure above, which was copied from a presentation delivered at a major national conference. Additional information has been added in red.

The figure is from a twin study examining *Implicit Association Scores* among twins in the Denmark Twin Registry. The *Implicit Association Scores* measure the degree to which participants associate negative terms with photos of Turkish immigrants versus those of native-born Danes. Other studies have found high *Implicit Association Scores* to be associated with other measures of racial prejudice and in-group bias.

The figure shows that identical twins reared TOGETHER and identical twins reared APART were significantly correlated in their measures of *Implicit Association*. However, adopted siblings reared together showed no significant correlation in their measures of Orderliness.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported correlation between identical twins reared TOGETHER and identical twins reared APART, but NOT between adopted siblings reared together suggest that it is MORE likely that biological factors are important in the determination of *Implicit Association Scores*?

|                          | Not at all informative | Somewhat more likely | Much more likely |
|--------------------------|-----------------------|----------------------|------------------|
| Suggests MORE likely     |                       |                      |                  |

---

Please review the figure above, which was copied from an article in a peer-reviewed journal. Additional information has been added in red.

The figure is from a study examining a measure of *Verbal Acuity* among men and women across different populations, including a number of "non-Western, traditional-living populations." The *Verbal Acuity* scores are based on non-scholastic oriented tasks which include sections on verbal fluency, vocabulary size, and others.

The figure shows that while women's scores are higher in the U.S. and Germany, there is no consistent pattern among other populations.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported absence of a cross-cultural trend of women exhibiting higher *Verbal Acuity* scores suggest that it is LESS likely that biological factors are important in the determination of a sex difference in *Verbal Acuity*?

|                          | Not at all informative | Somewhat less likely | Much less likely |
|--------------------------|-----------------------|----------------------|------------------|
| Suggests NOT at all      |                       |                      |                  |
How socially preferable do you perceive high *Appetitive Aggression* to be?

| Socially Preferable | Very negative | Moderately negative | Neither positive nor negative | A little positive | Moderately positive | Very positive |
|---------------------|--------------|---------------------|------------------------------|------------------|--------------------|--------------|

How psychologically complex do you believe *Appetitive Aggression* to be?

| Psychologically Complex | Very simple | Moderately simple | Neither simple nor complex | Moderately complex | Very complex |
|-------------------------|-------------|-------------------|---------------------------|--------------------|--------------|

How socially preferable do you perceive high *Implicit Association* to be (i.e. implicitly associating negative traits with an outside group)?

| Socially Preferable | Very negative | Moderately negative | Neither positive nor negative | A little positive | Moderately positive | Very positive |
|---------------------|--------------|---------------------|------------------------------|------------------|--------------------|--------------|

How psychologically complex do you believe *Implicit Association* to be?

| Psychologically Complex | Very simple | Moderately simple | Neither simple nor complex | Moderately complex | Very complex |
|-------------------------|-------------|-------------------|---------------------------|--------------------|--------------|

How socially preferable do you perceive high *Verbal Acuity* to be?

| Socially Preferable | Very negative | Moderately negative | Neither positive nor negative | A little positive | Moderately positive | Very positive |
|---------------------|--------------|---------------------|------------------------------|------------------|--------------------|--------------|

How psychologically complex do you believe *Verbal Acuity* to be?

| Psychologically Complex | Very simple | Moderately simple | Neither simple nor complex | Moderately complex | Very complex |
|-------------------------|-------------|-------------------|---------------------------|--------------------|--------------|

5. TmpC_CCGBio_GenAg

Please review the figure above, which was copied from a presentation delivered at a major national conference. Additional information has been added in red.

The figure is from a twin study examining *Implicit Association Scores* among twins in the Denmark Twin Registry. The *Implicit Association Scores* measure the degree to which participants associate negative terms with photos of Turkish
immigrants versus those of native-born Danes. Other studies have found high Implicit Association Scores to be associated with other measures of racial prejudice and in-group bias.

The figure shows that identical twins reared TOGETHER and adopted siblings reared together were significantly correlated in their measures of Implicit Association Scores. However, identical twins reared APART showed no significant correlation in their Implicit Association Scores.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported correlation between identical twins reared TOGETHER and between adopted siblings reared together, but NOT between identical twins reared APART suggest that it is LESS likely that biological factors are important in the determination of Implicit Association Scores?

Suggests LESS likely

The figure shows that men's scores are higher in each population and that these effects are significant in most of them.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported cross-cultural trend of men exhibiting higher Geometric and Spatial Reasoning scores suggest that it is MORE likely that biological factors are important in the determination of a sex difference in Geometric and Spatial Reasoning.

Suggests MORE likely
Please review the figure above, which was copied from an article in a peer-reviewed journal. Additional information has been added in red.

The figure is from a study examining the association between a particular genetic variant and *Appetitive Aggression*. *Appetitive Aggression* refers to proactive and predatory aggression and is associated with things such as likelihood of committing violence and positive attitudes towards warfare.

The figure shows that individuals who have a particular genetic variant score significantly higher on the *Appetitive Aggression Scale*.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported association between a particular genetic variant and *Appetitive Aggression* suggest that it is MORE likely that biological factors are important in the determination of *Appetitive Aggression*?

| Not at all informative | Somewhat more likely | Much more likely |
|------------------------|----------------------|------------------|
| Suggests MORE likely   |                      |                  |

How socially preferable do you perceive high *Implicit Association* to be (i.e. implicitly associating negative traits with an outside group)?

| Very negative | Moderately negative | A little negative | Neither positive nor negative | A little positive | Moderately positive | Very positive |
|---------------|---------------------|-------------------|-------------------------------|-------------------|---------------------|--------------|

How psychologically complex do you believe *Implicit Association* to be?

| Very simple | Moderately simple | Neither simple nor complex | Moderately complex | Very complex |
|-------------|-------------------|-----------------------------|-------------------|--------------|

How socially preferable do you perceive high *Geometric and Spatial Reasoning* to be?

| Very negative | Moderately negative | A little negative | Neither positive nor negative | Modesty positive | A little positive | Very positive |
|---------------|---------------------|-------------------|-------------------------------|-----------------|-------------------|--------------|

How psychologically complex do you believe *Geometric and Spatial Reasoning* to be?

| Very simple | Moderately simple | Neither simple nor complex | Moderately complex | Very complex |
|-------------|-------------------|-----------------------------|-------------------|--------------|
How socially preferable do you perceive high Appetitive Aggression to be?

| Option       | Circle |
|--------------|--------|
| Very negative|        |
| Moderately negative|     |
| A little negative|       |
| Neither positive nor negative|   |
| A little positive|        |
| Moderately positive|     |
| Very positive |        |

How psychologically complex do you believe the trait Appetitive Aggression to be?

| Option       | Circle |
|--------------|--------|
| Very simple  |        |
| Moderately simple|   |
| Neither simple nor complex |       |
| Moderately complex |     |
| Very complex |        |

6.CCGCul_GenAgEur_TOrdB

Figure 2. Geometric and Spatial Reasoning Scores by Gender Across Populations.

For female/male, N=98/101, 100/99, 46/31, 94/100, 42/37, 42/47, 20/33 respectively. Error bars represent standard errors. ** p<0.01, * p<0.05, † p<0.01.

Please review the figure above, which was copied from an article in a peer-reviewed journal. Additional information has been added in red.

The figure is from a study examining a measure of Geometric and Spatial Reasoning among men and women across different populations, including a number of “non-Western, traditional-living populations.” The Geometric and Spatial Reasoning scores are based on non-scholastic oriented tasks which include sections on angle relationships, 3D object rotation, and others.

The figure shows that while men’s scores are higher in the U.S. and Germany, there is no consistent pattern among other populations.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported absence of a cross-cultural trend of men exhibiting higher Geometric and Spatial Reasoning scores suggest that it is LESS likely that biological factors are important in the determination of a sex difference in Geometric and Spatial Reasoning.

| Option       | Circle |
|--------------|--------|
| Not at all informative |     |
| Somewhat less likely |       |
| Much less likely |        |

Suggests LESS likely
Please review the figure above, which was copied from an article in a peer-reviewed journal. Additional information has been added in red.

The figure is from a study examining the association between a particular genetic variant and Appetitive Aggression. **Appetitive Aggression** refers to proactive and predatory aggression and is associated with things such as likelihood of committing violence and positive attitudes towards warfare.

The figure shows that individuals who have a particular genetic variant score significantly higher on the Appetitive Aggression Scale. As reported in the paper, the particular genetic variant associated with elevated Appetitive Aggression is estimated to occur with a frequency of 25-29% of individuals with primarily European ancestry, and 4-9% among those with primarily African ancestry.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported association between a particular genetic variant and Appetitive Aggression Scores suggest that it is MORE likely that biological factors are important in the determination of Appetitive Aggression?

| Not at all informative | Somewhat more likely | Much more likely |
|------------------------|----------------------|------------------|
|                        |                      |                  |

Suggests MORE likely
Please review the figure above, which was copied from a presentation delivered at a major national conference. Additional information has been added in red.

The figure is from a twin study examining Orderliness among twins in the Denmark Twin Registry. Orderliness is a subcomponent of the personality factor Conscientiousness, and refers to the tendency to be regimented and organized as opposed to spontaneous and disorganized.

The figure shows that identical twins reared TOGETHER and identical twins reared APART were significantly correlated in their measures of Orderliness. However, adopted siblings reared together showed no significant correlation in their Orderliness.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported correlation between identical twins reared TOGETHER and between identical twins reared APART, but NOT between adopted siblings reared together suggest that it is MORE likely that biological factors are important in the determination of Orderliness?

| Not at all informative | Somewhat more likely | Much more likely |
|-----------------------|----------------------|------------------|
|                       |                      |                  |

Suggests MORE likely

How socially preferable do you perceive high Geometric and Spatial Reasoning to be?

| Very negative | Moderately negative | A little negative | Neither positive nor negative | A little positive | Moderately positive | Very positive |
|---------------|---------------------|------------------|------------------------------|------------------|---------------------|--------------|
|               |                     |                  |                              |                  |                     |              |

How psychologically complex do you believe Geometric and Spatial Reasoning to be?

| Very simple | Moderately simple | Neither simple nor complex | Moderately complex | Very complex |
|-------------|-------------------|---------------------------|--------------------|--------------|
|             |                   |                           |                    |              |

How socially preferable do you perceive high Appetitive Aggression to be?

| Very negative | Moderately negative | A little negative | Neither positive nor negative | A little positive | Moderately positive | Very positive |
|---------------|---------------------|------------------|------------------------------|------------------|---------------------|--------------|
|               |                     |                  |                              |                  |                     |              |

How psychologically complex do you believe Appetitive Aggression to be?

| Very simple | Moderately simple | Neither simple nor complex | Moderately complex | Very complex |
|-------------|-------------------|---------------------------|--------------------|--------------|
|             |                   |                           |                    |              |

How socially preferable do you perceive high Orderliness to be?

| Very negative | Moderately negative | A little negative | Neither positive nor negative | A little positive | Moderately positive | Very positive |
|---------------|---------------------|------------------|------------------------------|------------------|---------------------|--------------|
|               |                     |                  |                              |                  |                     |              |

How psychologically complex do you believe the trait Orderliness to be?

| Very simple | Moderately simple | Neither simple nor complex | Moderately complex | Very complex |
|-------------|-------------------|---------------------------|--------------------|--------------|
|             |                   |                           |                    |              |

7.GenAgAf_TOrdC_CCVBio
Please review the figure above, which was copied from an article in a peer-reviewed journal. Additional information has been added in red.

The figure is from a study examining the association between a particular genetic variant and Appetitive Aggression. Appetitive Aggression refers to proactive and predatory aggression and is associated with things such as likelihood of committing violence and positive attitudes towards warfare.

The figure shows that individuals who have a particular genetic variant score significantly higher on the Appetitive Aggression Scale. As reported in the paper, the particular genetic variant associated with elevated Appetitive Aggression is estimated to occur with a frequency of 25-29% of individuals with primarily African ancestry, and 4-9% among those with primarily European ancestry.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported association between a particular genetic variant and Appetitive Aggression Scores suggest that it is MORE likely that biological factors are important in the determination of Appetitive Aggression?

Not at all informative  Somewhat more likely  Much more likely

Suggests MORE likely
Please review the figure above, which was copied from a presentation delivered at a major national conference. Additional information has been added in red.

The figure is from a twin study examining Orderliness among twins in the Denmark Twin Registry. Orderliness is a subcomponent of the personality factor Conscientiousness, and refers to the tendency to be regimented and organized as opposed to spontaneous and disorganized.

The figure shows that identical twins reared TOGETHER and adopted siblings reared together were significantly correlated in their measures of Orderliness. However, identical twins reared APART showed no significant correlation in their measures of Orderliness.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported correlation between identical twins reared TOGETHER and between adopted siblings reared together, but NOT between identical twins reared APART suggest that it is LESS likely that biological factors are important in the determination of Orderliness?

- Not at all informative
- Somewhat less likely
- Much less likely

Suggests LESS likely

---

Please review the figure above, which was copied from an article in a peer-reviewed journal. Additional information has been added in red.

The figure is from a study examining a measure of Verbal Acuity among men and women across different populations, including a number of "non-Western, traditional-living populations." The Verbal Acuity scores are based on non-scholastic oriented tasks which include sections on verbal fluency, vocabulary size, and others.

The figure shows that women's scores are higher in each population and that these effects are significant in most of them.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported cross-cultural trend of women exhibiting higher Verbal Acuity scores suggest that it is MORE likely that biological factors are important in the determination of a sex difference in Verbal Acuity?

- Not at all informative
- Somewhat more likely
- Much more likely

---
How socially preferable do you perceive high *Appetitive Aggression* to be?

|                | Very negative | Moderately negative | A little negative | Neither positive nor negative | A little positive | Moderately positive | Very positive |
|----------------|---------------|---------------------|------------------|-------------------------------|-----------------|---------------------|---------------|

How psychologically complex do you believe *Appetitive Aggression* to be?

|                | Very simple | Moderately simple | Neither simple nor complex | Moderately complex | Very complex |
|----------------|-------------|-------------------|---------------------------|--------------------|-------------|

How socially preferable do you perceive high *Orderliness* to be?

|                | Very negative | Moderately negative | A little negative | Neither positive nor negative | A little positive | Moderately positive | Very positive |
|----------------|---------------|---------------------|------------------|-------------------------------|-----------------|---------------------|---------------|

How psychologically complex do you believe the trait *Orderliness* to be?

|                | Very simple | Moderately simple | Neither simple nor complex | Moderately complex | Very complex |
|----------------|-------------|-------------------|---------------------------|--------------------|-------------|

How socially preferable do you perceive high *Verbal Acuity* to be?

|                | Very negative | Moderately negative | A little negative | Neither positive nor negative | A little positive | Moderately positive | Very positive |
|----------------|---------------|---------------------|------------------|-------------------------------|-----------------|---------------------|---------------|

How psychologically complex do you believe *Verbal Acuity* to be?

|                | Very simple | Moderately simple | Neither simple nor complex | Moderately complex | Very complex |
|----------------|-------------|-------------------|---------------------------|--------------------|-------------|

Please review the figure above, which was copied from a presentation delivered at a major national conference. Additional information has been added in red.

The figure is from a twin study examining *Implicit Association Scores* among twins in the Denmark Twin Registry. The *Implicit Association Scores* measure the degree to which participants associate negative terms with photos of Turkish immigrants versus those of native-born Danes. Other studies have found high *Implicit Association Scores* to be associated with other measures of racial prejudice and in-group bias.

Figure 2: Bivariate correlations for sibling Implicit Association Scores. N=21 for MZ Twins Apart; N=20 for MZ Twins Reared Together; N=22 for Adopted Siblings Reared Together.
The figure shows that identical twins reared TOGETHER and identical twins reared APART were significantly correlated in their measures of Implicit Association. However, adopted siblings reared together showed no significant correlation in their measures of Orderliness.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported correlation between identical twins reared TOGETHER and identical twins reared APART, but NOT between adopted siblings reared together suggest that it is MORE likely that biological factors are important in the determination of Implicit Association Scores?

| Not at all informative | Somewhat more likely | Much more likely |
|------------------------|----------------------|------------------|
| Suggests MORE likely   |                      |                  |

Please review the figure above, which was copied from an article in a peer-reviewed journal. Additional information has been added in red.

The figure is from a study examining a measure of Verbal Acuity among men and women across different populations, including a number of "non-Western, traditional-living populations." The Verbal Acuity scores are based on non-scholastic oriented tasks which include sections on verbal fluency, vocabulary size, and others.

The figure shows that while women's scores are higher in the U.S. and Germany, there is no consistent pattern among other populations.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported absence of a cross-cultural trend of women exhibiting higher Verbal Acuity scores suggest that it is LESS likely that biological factors are important in the determination of a sex difference in Verbal Acuity?

| Not at all informative | Somewhat less likely | Much less likely |
|------------------------|----------------------|------------------|
| Suggests LESS likely   |                      |                  |
Please review the figure above, which was copied from an article in a peer-reviewed journal. Additional information has been added in red.

The figure is from a study examining the association between a particular genetic variant and Orderliness. Orderliness is a subcomponent of the personality factor Conscientiousness, and refers to the tendency to be regimented and organized as opposed to spontaneous and disorganized.

The figure shows that individuals who have a particular genetic variant score significantly higher on the Orderliness Scale.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported association between a particular genetic variant and Orderliness suggest that it is MORE likely that biological factors are important in the determination of Orderliness?

How socially preferable do you perceive high Implicit Association to be (i.e. implicitly associating negative traits with an outside group)?

How psychologically complex do you believe Implicit Association to be?

How socially preferable do you perceive high Verbal Acuity to be?

How psychologically complex do you believe Verbal Acuity to be?
How socially preferable do you perceive high Orderliness to be?

|                      | Very negative | Moderately negative | A little negative | Neither positive nor negative | A little positive | Moderately positive | Very positive |
|----------------------|---------------|---------------------|-------------------|-----------------------------|-----------------|---------------------|--------------|
|                      |               |                     |                   |                             |                 |                     |              |

How psychologically complex do you believe the trait Orderliness to be?

|                      | Very simple   | Moderately simple   | Neither simple nor complex | Moderately complex | Very complex |
|----------------------|---------------|---------------------|---------------------------|--------------------|--------------|
|                      |               |                     |                           |                    |              |

9.CCVCul_GenOrd_TImpB

Please review the figure above, which was copied from an article in a peer-reviewed journal. Additional information has been added in red.

The figure is from a study examining a measure of Verbal Acuity among men and women across different populations, including a number of “non-Western, traditional-living populations.” The Verbal Acuity scores are based on non-scholastic oriented tasks which include sections on verbal fluency, vocabulary size, and others.

The figure shows that while women’s scores are higher in the U.S. and Germany, there is no consistent pattern among other populations.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported absence of a cross-cultural trend of women exhibiting higher Verbal Acuity scores suggest that it is LESS likely that biological factors are important in the determination of a sex difference in Verbal Acuity.

|                      | Not at all informative | Somewhat less likely | Much less likely |
|----------------------|-----------------------|----------------------|------------------|
|                      |                       |                      |                  |

Suggests LESS likely
Please review the figure above, which was copied from an article in a peer-reviewed journal. Additional information has been added in red.

The figure is from a study examining the association between a particular genetic variant and Orderliness. Orderliness is a subcomponent of the personality factor Conscientiousness, and refers to the tendency to be regimented and organized as opposed to spontaneous and disorganized.

The figure shows that individuals who have a particular genetic variant score significantly higher on the Orderliness Scale.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported association between a particular genetic variant and Orderliness suggest that it is MORE likely that biological factors are important in the determination of Orderliness?

Not at all informative  Somewhat more likely  Much more likely

Suggests MORE likely

---

Figure 3  Orderliness scores by rs1149 extraperitoneal promoter region polymorphism. For G.1149 variant, N=82. For T.1149 variant, N=61. Error bars are 95% confidence intervals. t=-8.31, p<0.001. **p-value**

---

Figure 2  Bivariate correlations for sibling implicit Association Scores. N=21 for MZ Twins Apart; N=30 for MZ Twins Reared Together; N=22 for Adopted Siblings Reared Together.

**DISCUSSION**
The figure is from a twin study examining Implicit Association Scores among twins in the Denmark Twin Registry. The Implicit Association Scores measure the degree to which participants associate negative terms with photos of Turkish immigrants versus those of native-born Danes. Other studies have found high Implicit Association Scores to be associated with other measures of racial prejudice and in-group bias.

The figure shows that identical twins reared TOGETHER and identical twins reared APART were significantly correlated in their measures of Implicit Association. However, adopted siblings reared together showed no significant correlation in their measures of Orderliness.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported correlation between identical twins reared TOGETHER and identical twins reared APART, but NOT between adopted siblings reared together suggest that it is MORE likely that biological factors are important in the determination of Implicit Association Scores?

| Not at all informative | Somewhat more likely | Much more likely |
|-----------------------|---------------------|-----------------|
|                       |                     |                 |
| Suggests MORE likely  |                     |                 |

How socially preferable do you perceive high Verbal Acuity to be?

| Very negative | Moderately negative | A little negative | Neither positive nor negative | A little positive | Moderately positive | Very positive |
|---------------|---------------------|-------------------|------------------------------|------------------|---------------------|---------------|
|               |                     |                   |                              |                  |                     |               |

How psychologically complex do you believe Verbal Acuity to be?

| Very simple | Moderately simple | Neither simple nor complex | Moderately complex | Very complex |
|-------------|-------------------|---------------------------|-------------------|--------------|
|             |                   |                           |                   |              |

How socially preferable do you perceive high Orderliness to be?

| Very negative | Moderately negative | A little negative | Neither positive nor negative | A little positive | Moderately positive | Very positive |
|---------------|---------------------|-------------------|------------------------------|------------------|---------------------|---------------|
|               |                     |                   |                              |                  |                     |               |

How psychologically complex do you believe the trait Orderliness to be?

| Very simple | Moderately simple | Neither simple nor complex | Moderately complex | Very complex |
|-------------|-------------------|---------------------------|-------------------|--------------|
|             |                   |                           |                   |              |

How socially preferable do you perceive high Implicit Association to be (i.e. implicitly associating negative traits with an outside group)?

| Very negative | Moderately negative | A little negative | Neither positive nor negative | A little positive | Moderately positive | Very positive |
|---------------|---------------------|-------------------|------------------------------|------------------|---------------------|---------------|
|               |                     |                   |                              |                  |                     |               |

How psychologically complex do you believe Implicit Association to be?

| Very simple | Moderately simple | Neither simple nor complex | Moderately complex | Very complex |
|-------------|-------------------|---------------------------|-------------------|--------------|
|             |                   |                           |                   |              |

10.GenAg_TOrdB_CCGCul
Please review the figure above, which was copied from an article in a peer-reviewed journal. Additional information has been added in red.

The figure is from a study examining the association between a particular genetic variant and Appetitive Aggression. *Appetitive Aggression* refers to proactive and predatory aggression and is associated with things such as likelihood of committing violence and positive attitudes towards warfare.

The figure shows that individuals who have a particular genetic variant score significantly higher on the Appetitive Aggression Scale.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported association between a particular genetic variant and Appetitive Aggression suggest that it is MORE likely that biological factors are important in the determination of Appetitive Aggression?

| Not at all informative | Somewhat more likely | Much more likely |
|-----------------------|----------------------|------------------|
|                       |                      |                  |

Suggests MORE likely

---

**DISCUSSION**

*Figure 2.* Bivariate correlations for sibling Orderliness Scores. N=21 for MZ Twins Apart; N=30 for MZ Twins Reared Together; N=22 for Adopted Siblings reared together.
Please review the figure above, which was copied from a presentation delivered at a major national conference. Additional information has been added in red.

The figure is from a twin study examining Orderliness among twins in the Denmark Twin Registry. Orderliness is a subcomponent of the personality factor Conscientiousness, and refers to the tendency to be regimented and organized as opposed to spontaneous and disorganized.

The figure shows that identical twins reared TOGETHER and identical twins reared APART were significantly correlated in their measures of Orderliness. However, adopted siblings reared together showed no significant correlation in their Orderliness.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported correlation between identical twins reared TOGETHER and between identical twins reared APART, but NOT between adopted siblings reared together suggest that it is MORE likely that biological factors are important in the determination of Orderliness?

| Not at all informative | Somewhat more likely | Much more likely |
|------------------------|----------------------|------------------|
| Suggests MORE likely   |                      |                  |

Please review the figure above, which was copied from an article in a peer-reviewed journal. Additional information has been added in red.

The figure is from a study examining a measure of Geometric and Spatial Reasoning among men and women across different populations, including a number of "non-Western, traditional-living populations." The Geometric and Spatial Reasoning scores are based on non-scholastic oriented tasks which include sections on angle relationships, 3D object rotation, and others.

The figure shows that while men's scores are higher in the U.S. and Germany, there is no consistent pattern among other populations.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported absence of a cross-cultural trend of men exhibiting higher Geometric and Spatial Reasoning scores suggest that it is LESS likely that biological factors are important in the determination of a sex difference in Geometric and Spatial Reasoning?

| Not at all informative | Somewhat less likely | Much less likely |
|------------------------|----------------------|------------------|
|                        |                      |                  |
How socially preferable do you perceive high *Appetitive Aggression* to be?

|                      | Very negative | Moderately negative | A little negative | Neither positive nor negative | A little positive | Moderately positive | Very positive |
|----------------------|---------------|---------------------|-------------------|-------------------------------|------------------|---------------------|--------------|

How psychologically complex do you believe *Appetitive Aggression* to be?

|                      | Very simple | Moderately simple | Neither simple nor complex | Moderately complex | Very complex |
|----------------------|------------|-------------------|---------------------------|--------------------|-------------|

How socially preferable do you perceive high *Orderliness* to be?

|                      | Very negative | Moderately negative | A little negative | Neither positive nor negative | A little positive | Moderately positive | Very positive |
|----------------------|---------------|---------------------|-------------------|-------------------------------|------------------|---------------------|--------------|

How psychologically complex do you believe the trait *Orderliness* to be?

|                      | Very simple | Moderately simple | Neither simple nor complex | Moderately complex | Very complex |
|----------------------|------------|-------------------|---------------------------|--------------------|-------------|

How socially preferable do you perceive high *Geometric and Spatial Reasoning* to be?

|                      | Very negative | Moderately negative | A little negative | Neither positive nor negative | A little positive | Moderately positive | Very positive |
|----------------------|---------------|---------------------|-------------------|-------------------------------|------------------|---------------------|--------------|

How psychologically complex do you believe *Geometric and Spatial Reasoning* to be?

|                      | Very simple | Moderately simple | Neither simple nor complex | Moderately complex | Very complex |
|----------------------|------------|-------------------|---------------------------|--------------------|-------------|

11.TOrdC_CCVBio_GenAgEur

![Figure 1](https://tamu.qualtrics.com/ControlPanel/Ajax.php?action=GetSurveyPrintPreview)

**Discussion**

Please review the figure above, which was copied from a presentation delivered at a major national conference. Additional information has been added in red.

The figure is from a twin study examining Orderliness among twins in the Denmark Twin Registry. Orderliness is a subcomponent of the personality factor Conscientiousness, and refers to the tendency to be regimented and organized as opposed to spontaneous and disorganized.
The figure shows that identical twins reared TOGETHER and adopted siblings reared together were significantly correlated in their measures of Orderliness. However, identical twins reared APART showed no significant correlation in their measures of Orderliness.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported correlation between identical twins reared TOGETHER and between adopted siblings reared together, but NOT between identical twins reared APART suggest that it is LESS likely that biological factors are important in the determination of Orderliness?

| Not at all informative | Somewhat less likely | Much less likely |
|-----------------------|----------------------|-----------------|
|                       |                      | Suggests LESS likely |

![Figure 2: Verbal Acuity Scores by Gender Across Populations.](image)

Please review the figure above, which was copied from an article in a peer-reviewed journal. Additional information has been added in red.

The figure is from a study examining a measure of Verbal Acuity among men and women across different populations, including a number of "non-Western, traditional-living populations." The Verbal Acuity scores are based on non-scholastic oriented tasks which include sections on verbal fluency, vocabulary size, and others.

The figure shows that women's scores are higher in each population and that these effects are significant in most of them.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported cross-cultural trend of women exhibiting higher Verbal Acuity scores suggest that it is MORE likely that biological factors are important in the determination of a sex difference in Verbal Acuity?

| Not at all informative | Somewhat more likely | Much more likely |
|-----------------------|----------------------|-----------------|
|                       |                      | Suggests MORE likely |

https://tamu.qualtrics.com/ControlPanel/Ajax.php?action=GetSurveyPrintPreview
Please review the figure above, which was copied from an article in a peer-reviewed journal. Additional information has been added in red.

The figure is from a study examining the association between a particular genetic variant and *Appetitive Aggression*. *Appetitive Aggression* refers to proactive and predatory aggression and is associated with things such as likelihood of committing violence and positive attitudes towards warfare.

The figure shows that individuals who have a particular genetic variant score significantly higher on the *Appetitive Aggression Scale*. As reported in the paper, the particular genetic variant associated with elevated *Appetitive Aggression* is estimated to occur with a frequency of 25-29% of individuals with primarily European ancestry, and 4-9% among those with primarily African ancestry.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported association between a particular genetic variant and *Appetitive Aggression Scores* suggest that it is MORE likely that biological factors are important in the determination of *Appetitive Aggression*?

| Not at all informative | Somewhat more likely | Much more likely |
|-----------------------|---------------------|------------------|
|                       |                     |                  |
| Suggests MORE likely  |                     |                  |

**Figure 3** Appetitive Aggression Scale scores by -1149 extrapituitary promoter region polymorphism. For G_{1149} variant, N=82. For T_{1149} variant, N=61. Error bars are 95% confidence intervals. t=8.31, p<0.001. p-value Not at all informative Somewhat more likely Much more likely

How socially preferable do you perceive high *Orderliness* to be?

| Very negative | Moderately negative | A little negative | Neither positive nor negative | A little positive | Moderately positive | Very positive |
|---------------|---------------------|-------------------|-----------------------------|------------------|---------------------|--------------|
|               |                     |                   |                             |                  |                     |              |

How psychologically complex do you believe the trait *Orderliness* to be?

| Very simple | Moderately simple | Neither simple nor complex | Moderately complex | Very complex |
|-------------|-------------------|---------------------------|-------------------|--------------|
|             |                   |                           |                   |              |

How socially preferable do you perceive high *Verbal Acuity* to be?

| Very negative | Moderately negative | A little negative | Neither positive nor negative | A little positive | Moderately positive | Very positive |
|---------------|---------------------|-------------------|-----------------------------|------------------|---------------------|--------------|
|               |                     |                   |                             |                  |                     |              |

How psychologically complex do you believe *Verbal Acuity* to be?

| Very simple | Moderately simple | Neither simple nor complex | Moderately complex | Very complex |
|-------------|-------------------|---------------------------|-------------------|--------------|
|             |                   |                           |                   |              |

https://tamu.qualtrics.com/ControlPanel/Ajax.php?action=GetSurveyPrintPreview
How socially preferable do you perceive high Appetitive Aggression to be?

- Very negative
- Moderately negative
- A little negative
- Neither positive nor negative
- A little positive
- Moderately positive
- Very positive

How psychologically complex do you believe Appetitive Aggression to be?

- Very simple
- Moderately simple
- Neither simple nor complex
- Moderately complex
- Very complex

**12.CCGBio_GenAgAf_TmpC**

*Figure 2.* Geometric and Spatial Reasoning Scores by Gender Across Populations.

Please review the figure above, which was copied from an article in a peer-reviewed journal. Additional information has been added in red.

The figure is from a study examining a measure of Geometric and Spatial Reasoning among men and women across different populations, including a number of "non-Western, traditional-living populations." The Geometric and Spatial Reasoning scores are based on non-scholastic oriented tasks which include sections on angle relationships, 3D object rotation, and others.

The figure shows that men's scores are higher in each population and that these effects are significant in most of them.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported cross-cultural trend of men exhibiting higher Geometric and Spatial Reasoning scores suggest that it is MORE likely that biological factors are important in the determination of a sex difference in Geometric and Spatial Reasoning.

| Not at all informative | Somewhat more likely | Much more likely |
|-----------------------|----------------------|------------------|
| 0                     | 100                  |

Suggests MORE likely
Please review the figure above, which was copied from an article in a peer-reviewed journal. Additional information has been added in red.

The figure is from a study examining the association between a particular genetic variant and Appetitive Aggression. Appetitive Aggression refers to proactive and predatory aggression and is associated with things such as likelihood of committing violence and positive attitudes towards warfare.

The figure shows that individuals who have a particular genetic variant score significantly higher on the Appetitive Aggression Scale. As reported in the paper, the particular genetic variant associated with elevated Appetitive Aggression is estimated to occur with a frequency of 25-29% of individuals with primarily African ancestry, and 4-9% among those with primarily European ancestry.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported association between a particular genetic variant and Appetitive Aggression suggest that it is MORE likely that biological factors are important in the determination of Appetitive Aggression?

| Not at all informative | Somewhat more likely | Much more likely |
|-----------------------|----------------------|------------------|
|                       |                      |                  |
| Suggests MORE likely  |                      |                  |
Please review the figure above, which was copied from a presentation delivered at a major national conference. Additional information has been added in red.

The figure is from a twin study examining *Implicit Association Scores* among twins in the Denmark Twin Registry. The *Implicit Association Scores* measure the degree to which participants associate negative terms with photos of Turkish immigrants versus those of native-born Danes. Other studies have found high *Implicit Association Scores* to be associated with other measures of racial prejudice and in-group bias.

The figure shows that identical twins reared TOGETHER and adopted siblings reared together were significantly correlated in their measures of *Implicit Association Scores*. However, identical twins reared APART showed no significant correlation in their *Implicit Association Scores*.

Please answer the question below using only inferences that can be derived from the result above, assuming that the research design of this study is sound (e.g., appropriate sampling was used and controls taken into account).

To what degree does the reported correlation between identical twins reared TOGETHER and between adopted siblings reared together, but NOT between identical twins reared APART suggest that it is LESS likely that biological factors are important in the determination of *Implicit Association Scores*?

| Not at all informative | Somewhat less likely | Much less likely |
|-----------------------|----------------------|-----------------|
|                       |                      |                 |
| **Suggests LESS likely** |                      |                 |

How socially preferable do you perceive high *Geometric and Spatial Reasoning* to be?

| Very negative | Moderately negative | A little negative | Neither positive nor negative | Modestly positive | A little positive | Very positive |
|---------------|---------------------|-------------------|------------------------------|-------------------|------------------|---------------|

How psychologically complex do you believe *Geometric and Spatial Reasoning* to be?

| Very simple | Moderately simple | Neither simple nor complex | Moderately complex | Very complex |
|-------------|-------------------|----------------------------|--------------------|--------------|

How socially preferable do you perceive high *Appetitive Aggression* to be?

| Very negative | Moderately negative | A little negative | Neither positive nor negative | A little positive | Modestly positive | Very positive |
|---------------|---------------------|-------------------|------------------------------|------------------|-------------------|---------------|

How psychologically complex do you believe the trait *Appetitive Aggression* to be?

| Very simple | Moderately simple | Neither simple nor complex | Moderately complex | Very complex |
|-------------|-------------------|----------------------------|--------------------|--------------|

How socially preferable do you perceive high *Implicit Association* to be (i.e. implicitly associating negative traits with an outside group)?

| Very negative | Moderately negative | A little negative | Neither positive nor negative | A little positive | Modestly positive | Very positive |
|---------------|---------------------|-------------------|------------------------------|------------------|-------------------|---------------|

How psychologically complex do you believe *Implicit Association* to be?

| Very simple | Moderately simple | Neither simple nor complex | Moderately complex | Very complex |
|-------------|-------------------|----------------------------|--------------------|--------------|

Debriefing Final

Debriefing--PLEASE READ!

Thank you for participating!
THE RESULTS THAT YOU SAW WERE NOT REAL DATA. These results had to be artificially generated to hold other variables constant.

This study is designed to explore alleged biases that influence the way in which researchers interpret studies that examine biological influences in patterns of human psychology and behavior. Specifically, it is designed to test whether those who favor biological approaches assign greater inferential power to studies that DO suggest biological causes for traits that influence social outcomes (allegation: rationalizing the status quo of inequality) and whether those who disfavor biological approaches assign greater inferential power to studies that DO NOT suggest biological causes for traits that influence social outcomes (allegation: only accepting evidence that supports the possibility of social equality).

The results that are shown vary somewhat among participants. They vary by whether 1) a biological cause is or is not suggested, 2) whether the relevant trait is socially important, and 3) whether the effect favors a privileged group.

In this way, we can test whether those who favor a biological approach perceive greater inferential power in a study if it suggests a biological cause for a socially important trait and particularly if it favors a privileged group.

Conversely, we can test whether those who do not favor biological approaches perceive less inferential power in a study if it suggests a biological cause for a socially important trait and particularly if it favors a privileged group.

Please verify that you understand that the results that you saw were not real by clicking the button below.

☐ I understand the results were not real.

Given the stated goals, how well do you think this study design will allow for an accurate measurement of the purported biases in interpretations of studies of biological influences in patterns of human psychology and behavior?

| Not at all | A little | Somewhat | Quite well | Very well |
|------------|----------|----------|------------|-----------|

While taking the survey, were you suspicious that the results were not real?

| Not at all | A little | Somewhat | Quite a bit | Very much |
|------------|----------|----------|-------------|-----------|

Do you think your suspicions affected how you answered the questions concerning inferential power?

| Not at all | A little | Somewhat | Quite a bit | Very much |
|------------|----------|----------|-------------|-----------|

You have reached the end of the survey. Please do not discuss the nature of this survey with others. We are relying on the honesty of fellow researchers!

Thank you very much for participating. Citations for reports of this study will appear on this website: http://anthropology.tamu.edu/html/profile­­jeffreywinking.html.

Please click the Next button to receive your code. Copy this into the box on the mTurk site to receive your $1.00 bonus.