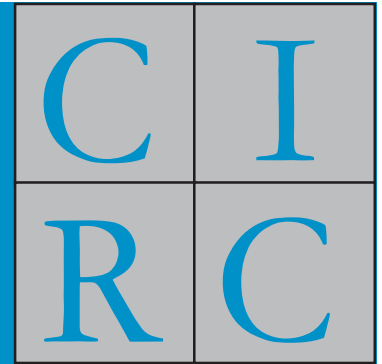


"I'm Not The Sort Of Person Who Is Good At This": The Threat Of Negative Stereotypes



Source: Steele, C. M. (1997). A threat in the air: How stereotypes shape intellectual identity and performance. *American Psychologist*, 52, 613-629.

Goals:

Teach the method of proof by disproof.

Teach the meaning of a negative stereotype.

Teach the meaning of stereotype threat and discuss how it can occur.

Basic Idea:

This lesson discusses how identification with a negative stereotype may hurt performance: Do girls who think girls are not supposed to be good at math and science perform worse than girls who don't believe this?

Gain Attention/Interest:

Think of the students in your math class. If the teacher were to randomly select a boy and a girl from the class to complete a problem at the board, who would have the advantage? Some people would say it depends on how the teacher treats the two standards. What if the teacher treated them the same — then what? Would you believe that the girl is probably at a disadvantage no matter what, even if she is good at math? Would you believe that Black students may have this disadvantage in almost all school subjects, even if they are really smart? We're not talking about teachers or other people discriminating against them—though this may take place— we're talking about students being at a disadvantage out of fear of fulfilling a **negative stereotype**. A stereotype is a general label that is used to describe a group of people. Stereotypes are not necessarily true. Examples of stereotypes are: people who wear glasses are smart, boys are better than girls at math, and girls with blonde hair are dumb (hence all the "dumb blonde" jokes).



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Think & Write #1

What do you think about negative stereotypes?

Some students may not know what to write and may need more specific questions, such as: What are some common negative stereotypes? Do they influence how people perform? How? Why?

Ask: What is Science?

Today we are going to talk about how science answers questions. You might already have some thoughts or images that spring into your mind when you hear the word “science.” But you might also be surprised to find out how broad the term science really is. Science

STEREOTYPE

Typically, general labels describing a group of people are believed to be negative, but they are not always negative — they can be positive as well (“people who wear glasses are smart”).

is not just the study of plants and atoms; science is a way of answering questions. When nonscientists answer questions, they usually try to find some examples or reasons to support their answer. For example, if nonscientists try to answer the

question of whether a girl or boy would have a disadvantage answering a math question, they might think of examples they had seen, and answer based on what they believe is likely. If girls struggle more, then girls likely have a disadvantage; if boys struggle more, then boys likely have a disadvantage. Scientists, however, answer questions in a different way.

Rather than look for examples that support their answer, scientists try as hard as possible to disprove their ideas. Sound strange? Most likely, but scientists do this for an important reason. If they try every way imaginable to show that their idea is wrong, but fail, what happens? They not only have a lot of support to show their idea is good, but on top of this, anyone who tries to say they are wrong is going to have trouble showing a weakness in their argument, because the scientists have already looked for every way the idea could be wrong. This is called the method of **proof by disproof**.

To do this, a scientist comes up with a **hypothesis**, which is another word for a prediction or a guess, about a question. Using our example from before, a hypothesis could be that girls are at a disadvantage when answering math questions. A nonscientist would seek examples of when

1 Ask: What is Science?

this statement is true to support his hypothesis. A scientist, however, would look for examples of when this statement is false, which would disprove her hypothesis. If, after actively trying to disprove a hypothesis, a scientist fails to do so, the scientist concludes the hypothesis might be true. So, if after trying to disprove the hypothesis that “girls are at a disadvantage in answering math questions,” scientists have not been able to disprove their hypothesis and show it is wrong, they conclude that girls might be at a disadvantage in answering math problems. This might sound like a lot of work for an answer that isn’t very strong, but scientists prefer to be more confident of a less strong answer, rather than less confident of a stronger answer.

Define the Problem: See Many Sides

So, how exactly would a scientist go about answering such a question? Well, first it is extremely important to clearly state the question (or problem). Otherwise, room is left for people to argue about terms, situations, and any number of other issues. By clearly defining the problem, you can avoid much of this. Frequently, slightly changing how you look at a problem can help you look at it in a scientific way. For example, answering the question, “What is the best new movie?” can be very difficult because different people like different kinds of movies. However, by changing the question slightly to, “What was the most popular movie this week?” a solid answer is easier to find.

Today we are going to approach the question: Why do certain minority groups (females, African-Americans, Native Americans, etc.) tend to under perform in certain school subjects?

2
Define
the
Problem:

See
Many
Sides.

Think & Write #2

Have students form a hypothesis about the topic of negative stereotypes. Emphasize that it needs to be something a scientist could test. It should not be about something that cannot be tested.

To apply to college, high school students take the SAT (Scholastic Assessment Test). Over the years, colleges have found that, in general, students who score better on the SAT get slightly higher grades in college. Here's the tricky part. Say Jenny and Maria have the same SAT scores; Jenny is Black and Maria is White. Over the thousands of students who have taken the SAT during the last 50 years, the test predicts that Maria will get higher grades than Jenny in college, even though they had the same SAT score going in to college. One of the reasons Jenny may not do as well in college is that she is affected by **stereotype threat**. Stereotype threat happens when people believe the negative stereotypes others hold about their performance, and then they perform worse because of the resulting stress. In this case, Jenny believes that she is actually supposed to perform worse than Maria simply because a negative stereotype says she is supposed to. This belief that she is supposed to perform worse influences her performance by stressing her to the point that her performance drops.

Knowing how different groups look at this question can help scientists (and us, too) learn how to approach the question. What groups of people would be interested in this topic?

College Admissions Officers. College admission officers want to accept the most qualified students and create a diverse student body. Knowing how to best predict student performance can help college admissions officers do their job.

Teachers. If some groups of students typically don't perform as well in certain areas, knowing about it can help teachers try to combat this trend. Teachers want to know how they can best help all their students learn. Teachers attend four-year colleges and usually obtain a master's degree as well.

Students. Students are invested in how they perform in school, and if they have greater difficulty in some areas, they want to know about it, and more importantly, know what they can do about it.

Minorities. Discrimination of any kind is a much-discussed topic in our society. If some minorities suffer disadvantages that that may potentially be avoided, minorities want to know about them.

Lawyers. Lawyers frequently take part in cases in which minority status (e.g., gender or ethnicity) is related to the verdict. Lawyers attend four-year colleges and law school.

Policy Analysts. Policy analysts are concerned with how things influence the law, government, and society. Policy analysts attend four-year colleges and often study political science or law.

Psychologists. Psychologists conduct research on human behavior. Clinical psychologists also counsel patients. They attend four-year colleges and graduate school.

Sociologists. Sociologists study various aspects of society and large groups of people such as cultural or age-related groups. Sociologists attend four-year colleges and graduate school.

Later, we will discuss more about what the different members of these groups could potentially do to help. But first, we need to learn a little more about stereotype threat.

3

Fact Versus Opinion: What Constitutes Evidence?

Distinguish Fact From Opinion: Learn What Constitutes Scientific Evidence

To learn how scientists gather information, we need first to discuss the difference between facts and opinions. Even though we may be interested in people's opinions in our everyday lives—asking them what restaurants they like, what clothes they like to wear, what sports teams they cheer for — scientists aren't interested in these things. Scientists want facts so they can gather evidence to help answer their questions. What kind of evidence would we need to show that stereotype threat is present? Of the following, which would be evidence that stereotype threat is happening?

Scenario 1: Alicia has always been bad at math. No matter how hard she tries, she's never been able to keep up with the rest of her class.

Being a member of a group that has a negative stereotype does not necessarily mean that the reason Alicia does poorly in math is because of stereotype threat. It could just mean that math is not one of her stronger subjects.

Scenario 2: At a certain school, Black students tend to get lower grades than White students do.

Stereotype threat might be present, but it's hard to tell without more information. There could be any number of reasons why there is a difference in grades. A scientist would need more information before being able to conclude that stereotype threat is taking place and is responsible for these effects. It is situations like these that often lead scientists to ask such questions.

Scenario 3: Tyrone and Mark take the same classes and get the same grades in school. Tyrone is Black and Mark is White. Tyrone is nervous about taking the SAT because he has heard that Black students often do poorly on the test. When they take the SAT, Mark scores 90 points higher than Tyrone (the maximum score is 1600).

Because they both take the same classes and get the same grades, it is probably safe to say that they were equally qualified to do well on the SAT. However, Mark scored higher than Tyrone did. Though we would likely need a little more information, this scenario has the looks of a stereotype-threat situation.

Weigh Evidence and Make Decisions

To test whether or not stereotype threat occurs, some scientists gave a math test to a group of males and females. All of the students excelled at math. The participants were told they would be given a difficult math test that typically showed gender differences—with males usually scoring higher than females. Because all the participants were roughly equally qualified to do well on the test based on past performance, the only difference was that females were put in a stereotype-threat situation by being told that “females typically did not do as well as males”.

As the scientists expected, the females in what was now a stereotype threat situation generally scored lower than the equally qualified men. Using similar methods with a literature skills test (an area in which females do not have a negative performance stereotype), women and men scored equally well. Thus, it appears that in order for stereotype threat to

4

Weigh
Evidence
and
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occur, certain factors must be present. Scientists have conducted numerous studies and currently believe that, in order for stereotype threat to occur, the person must be in the following situation:

- Be a member of a group for which a negative stereotype exists (example: females and math).
- Identify positively with that domain (example: do well at math).
- Fear being negatively stereotyped (example: be afraid of people thinking you will do poorly).
- In order for a negative stereotype to cause stereotype threat, the negative stereotype must be self-relevant. This means that a person has to believe the stereotype both is true and applies to her or him.

Scientists now believe that success in school depends largely on how much you identify with school. If you like school and think it is a good place for you, then you will be much more likely to succeed there. The theory of stereotype threat assumes that our society and culture can make it more difficult for members of certain groups (e.g., females or African-Americans) to identify with school in a positive way. In fact, stereotype threat shows that in areas where a negative stereotype exists, members of these groups can perform worse out of fear of confirming negative stereotypes.

However, scientists have also found that there are ways to reduce stereotype threat, which also reduces the negative effects that stereotype threat causes. This is an important part of science; scientists don't want simply to find answers to questions, scientists want to know how our answers can help people. Some of the ways to combat stereotype threat are:

1. **Create optimistic teacher-student relationships.**

If students and teachers have good, well-established relationships, then students will be less likely to worry that they will be associated with a negative stereotype.

2. **Provide challenging work.**

Giving students challenging (but not overwhelming) work shows that their abilities are both noticed and respected. (Remember, students who struggle in a subject are not at risk for stereotype threat, it is students who excel in a subject who are at risk for stereotype threat.)

3. **Stress the ability to expand intelligence.**

Stressing that, through hard work and experience, people can improve their abilities and will work to combat stereotype threat.

4. **Support belongingness.**

Showing support in the belief that a student has the ability to do well can help reduce stereotype threat.

5. **Provide role models.**

Peers, or other members of the affected group, can act as examples to show that stereotype threat can be overcome.

Think & Write #3

How about now?

Have students write about their thoughts now that they have learned what scientists have found about stereotype threat. Were their hypotheses correct? Do they feel the same as they did during Think & Write 1?

We've discussed a lot of information with a lot of details. Let's review by talking about a specific example.

Vignette

Karly does well in her math classes, but when she was taking the SAT, she had to mark a circle showing she was a female. Doing this made her think about the negative stereotype that girls perform worse than boys in math. Thinking about this in turn made her believe that she, as a girl, might do worse than Charlie.

In this example, Karly was aware of the negative stereotype (girls don't perform well on math tests) and identified with it (she believed that it was true), instead of identifying with her ability to perform well in math. Karly also did well in math classes. This is an example of stereotype threat.

5

Move From Science To Society.

Move From Science to Society

Erika is applying to college and wants to major in math. Her grades and test scores are not as high in math as Tom's, but they are just a little lower. If stereotype threat has hindered Erika's performance, who is the more impressive math student? Who has more math ability? Colleges are faced with situations such as this one every year. What if Erika's scores were just a bit lower? (How much lower?) Who should get in? If college admissions committees are not aware of the scientific data on stereotype threat, the methods used by these committees to accept or reject students could be drastically different from those used by a committee that is aware of stereotype threat.

Revisit, Review, Reflect, and Re-evaluate

Scientists don't simply answer a question, think about how it can apply to society, and then move on to a completely new question. They constantly revisit questions they have answered to reflect on whether or not the conclusions are right, or if there is a way to improve upon them. By reviewing and re-evaluating previous answers, scientists are able to learn how best to go about answering new questions or improving old answers. Because our society is always changing concerning education as well as ethnic and gender issues, the topic of stereotype threat needs continual updating. The environment of the classroom ten years ago is likely not the same as it will be ten years from now. For example, 25 years ago, there would have been no stereotype threat for computer use for any group of people because almost no one used computers. Today, however, computers are all around us, and some groups (e.g., the elderly) may feel stereotype threat when using computers. Maybe stereotype threat will change, too — the only way to know is for scientists to revisit, review, reflect, and re-evaluate.

6

Revisit, Review, Reflect, and Re-evaluate.

Think & Write #4

What's next?

Based on what they know now, have students predict the future of science and stereotype threat. What might be done to help us understand more about stereotype threat and how to reduce its occurrence?

Discussion Questions

1. What could Karly have been done beforehand to help perform to her full potential on the SAT?
2. Why is understanding the effects of stereotype threat important to non-scientists?
3. Scientists have found five ways to combat stereotype threat. Would these actions help everyone, or just people who suffer from stereotype threat? Why? Explain.

Homework Questions

1. Explain stereotype threat to a person who is not in the class. What does he or she think about it?
2. Develop a way that your school/class could integrate two of the five ways to combat stereotype threat.

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Quiz Questions

Version A

1. A negative stereotype is:
 - a. a general label used to describe a group of people.
 - b. the opposite of the general label used to describe a group of people.
 - c. feeling bad about what others think about a group that you are a part of.
 - d. trying to make a group of people feel bad about something
2. Select the answer that puts the steps a scientist follows in the correct order.
 - a. gather proof by disproof; define the terms; make a hypothesis; revisit, review, reflect, and re-evaluate;
 - b. revisit, review, reflect, and re-evaluate; define the terms; make a hypothesis; gather proof by disproof
 - c. gather proof by disproof; define the terms; revisit, review, reflect, and re-evaluate; make a hypothesis
 - d. define the terms; make a hypothesis; gather proof by disproof; revisit, review, reflect, and re-evaluate
3. True or False. Tyrone, an African-American, is a straight A student. He is nervous about taking the SAT test because he has heard that African-Americans often do poorly on the test. While taking the SAT test he could experience stereotype threat.
 - a. True
 - b. False

Quiz Questions

Version B

1. _____ is a general label used to describe a group of people that is typically assumed to be negative, but does not have to be.
2. Organize the following steps in the order that scientists follow them.

Order

define the terms

gather proof by disproof

make a hypothesis

revisit, review, reflect, and re-evaluate

3. Give an example of a situation in which stereotype threat might occur.

Quiz Questions

Version C

1. What is a negative stereotype?

2. Define stereotype threat.

3. Give an example of a situation in which stereotype threat might occur.
