

Name: \_\_\_\_\_ Class: \_\_\_\_\_

## Lessons from failure: Why we try, try again

*Your mindset after facing failure can make all the difference*

By Bethany Brookshire  
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*In this informational text, Bethany Brookshire discusses a study that explores how people respond to failure and what makes them try again. As you read, take notes on what makes people try again after failure.*

- [1] Everyone experiences failures. But not everyone brushes themselves off and tries again. A new study shows that focusing on what can be learned from a failure appears to help people persevere<sup>1</sup> — with a better chance of success the next time.

Jamil Bhanji is *neuroscientist*<sup>2</sup> at Rutgers University in Brunswick, N.J. There are two main parts to any challenge that may cause someone to fail, he says. First, there are the aspects a person can control. Whether students study for a test, for instance, is under their control. But there also are aspects outside people's control. Getting sick could make someone too tired to study, even if he might want to.



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No matter what causes a letdown, there can be many ways to cope,<sup>3</sup> Bhanji explains. One way is to concentrate on what led to the failure in the first place. If someone fails a test, a problem-focused approach might be to study more or better the next time.

But people who fail can also try focusing on emotions, says Bhanji. The test-taker might feel bad now, but he can convince himself that things will look brighter in the morning. Bhanji describes that as an emotion-focused approach.

- [5] Bhanji's team wanted to find out what strategies people use to forge ahead<sup>4</sup> after failing. To test this, they brought 30 volunteers into a lab and had them play a computer game. The game modeled a classroom and the aim was for players to graduate from the class. Those who succeeded would earn \$10.

1. **Persevere (verb):** to continue doing something even if it's difficult
2. a person who studies how the brain and nervous system works
3. **Cope (verb):** to deal with a problem or difficulty
4. to move forward

But getting a player's character to move across the computer screen and pass the class was no easy task. Along the way, players faced setbacks that could return their characters back to where they had started. For instance, one set of players encountered an "exam." They had to guess at the right answer to a test, pressing the right key to move forward. If they guessed wrong, they moved back to start. Another group of players faced a non-voluntary "course cancellation." Their players, too, got sent back to the beginning of the game — but there was nothing they could have done to prevent it.

After each "failure," players were asked if they would like to try again.

The scientists looked at activity levels in parts of each volunteer's brain as they played. The researchers used a brain-scanning technique known as *functional magnetic resonance imaging*, or fMRI. It measures where blood flow is highest and lowest. An area with lots of blood flow suggests that brain region is active. The researchers looked for which brain areas' blood flow changed when the players decided to try again.

They found that activity was reduced in some parts of the brain when players were tackling challenges. For instance, the *ventral striatum* (VEN-truhl Stry-AY-tum) sits deep in the skull and is important in motivation — such as whether to try again. Activity here dropped off when players brushed off a failure that had been within their control (such as guessing the wrong key and failing that so-called exam). The lower the activity in this brain region, the more likely a player was to give the game another go. Reduced activity in this area may not be pleasant, since it's associated with getting something wrong. But it also is associated with learning. As they change their behavior, participants might begin to feel they can do better next time.

- [10] But when players were faced with a course cancellation — something they couldn't control — the activity dropped in a different part of their brains. That part is located right above the eyes and called the *ventromedial prefrontal cortex* (VEN-troh-MEED-ee-uhl Pree-FRON-tul KOR-tex). This area affects how we judge risk, control our emotions and make decisions. And for uncontrollable setbacks, the lower the activity here, the more likely players were to not give up.

After a setback we can't control, you realize that this "isn't due to your own actions [and] you can't correct that behavior," Bhanji explains. And this is where successful people put more emphasis on interpreting their emotions in a way that allows them to forge ahead. So when failures are beyond someone's control, he says, rethinking our emotional responses seems to help.

## Persevering under pressure

Many failures — from exams to athletics — occur during times of stress. That prompted Bhanji and his team to repeat their experiment. This time, the scientists stressed out their participants before they played the game. This was a physical and mental stress: participants dipped their hands in ice cold water while a video camera recorded their faces.

After this ice-water bath, the group that faced "exams" still kept trying over and over when they failed. But the group facing course cancellations — conditions they could not control — were now more likely to give up. This could mean that when people are under stress, they are only motivated to forge on if they can learn from their setbacks. If failures are beyond their control, stress may make them less able to control their emotions — and persevere.

Bhanji presented the new data October 19 here at the Society for Neuroscience annual meeting.

- [15] This study helps scientists understand what helps people surmount<sup>5</sup> setbacks, says Candace Raio. She's a psychologist at New York University in New York City. But, she warns, the computer game was short, as was the ice-water bath. It would be interesting to see if stress and the ability to learn from mistakes have a similar impact on sticking with longer-term goals, she says. These might include staying in school until you graduate or finishing some long-term project, such as building a game.

Most obstacles "are not entirely under our control, and not entirely out of our control," Bhanji observes. If people focus on the parts over which they have some control, "they will be more likely to be persistent,"<sup>6</sup> he suspects — even in times of stress.

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5. **Surmount** (*verb*): to overcome a difficult obstacle  
6. **Persistent** (*adjective*): continuing to do something even if it's difficult

## Text-Dependent Questions

**Directions:** For the following questions, choose the best answer or respond in complete sentences.

1. PART A: Which statement identifies the central idea of the text?
  - A. The people who are most successful think of failures as caused by uncontrollable forces rather than their own decisions.
  - B. Studies have shown that people are more upset about failures caused by their own actions rather than those outside of their control.
  - C. In the face of failure, it's beneficial for people to focus on the things they can control, including how they respond to the failure.
  - D. People with stress in their lives are less likely to try again after a failure; therefore, it's important to remain calm and positive in the face of failure.
  
2. PART B: Which detail from the text best supports the answer to Part A?
  - A. "Bhanji's team wanted to find out what strategies people use to forge ahead after failing. To test this, they brought 30 volunteers into a lab and had them play a computer game." (Paragraph 5)
  - B. "Activity here dropped off when players brushed off a failure that had been within their control (such as guessing the wrong key and failing that so-called exam)." (Paragraph 9)
  - C. "So when failures are beyond someone's control, he says, rethinking our emotional responses seems to help." (Paragraph 11)
  - D. "This could mean that when people are under stress, they are only motivated to forge on if they can learn from their setbacks." (Paragraph 13)
  
3. How does paragraph 2 contribute to the development of ideas in the text?
  - A. It shows how there are different causes of failure.
  - B. It emphasizes how frustrating failures outside of our control can be
  - C. It reveals the different ways that people perceive failure.
  - D. It introduces the best way for someone to approach a challenge.
  
4. How can Bhanji's study affect other people's experiences with failure?
  - A. Bhanji's data show people how they can benefit from failing and trying again.
  - B. Bhanji's data prove that people should try to avoid failure when approaching challenges.
  - C. Bhanji's data encourage people to rethink their definition of failure.
  - D. Bhanji's data show people what response to failure will make them likely to try again.

5. How does the discussion of the ventral striatum and the ventromedial prefrontal cortex help us understand how the brain is affected by failure?

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