

Freeze response in dangerous situations is actually very useful, study shows

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Credit: Manel Vazquez from Pexels

When people face an acute threat, they tend to react in one of three ways: fight, flight or freeze. A [doctoral research project](#) conducted at Radboud University by Felix Klaassen to be defended on June 5 shows that the freeze response can be really helpful in dealing with a situation in a well-considered way. "People think we are paralyzed in a freeze response, but that isn't true at all."

A person who freezes in the face of an acute threat may seem totally overwhelmed. However, according to Klaassen, "It isn't true that nothing happens when we [freeze](#). Under the bonnet, all sorts of processes are taking place that help us deal with the situation."

When faced with an acute threat, such as a barking dog, or in those nervous moments just before we walk into a room to give a presentation, people experience anxiety. In such situations, they will balance a positive outcome against a negative one: yes, it may be scary to give that presentation, but the outcome may be worth it, so they enter the room, anyway.

"The initial response that all people have to a greater or lesser extent in such situations is the freeze response. Your body stiffens and your [heart rate](#) goes down. Your sensory processing is activated. In animals, you can see the ears prick up and the pupils enlarge."

Like the fight or flight response, the freeze response is completely automatic and you have no control over it. According to Klaassen, "Our study shows that a lot happens in the brain in a freeze response. Relevant information is processed more strongly."

As part of the study, respondents performed a task on a computer. They could win a sum of money by moving towards or away from a situation

by pressing a button. When they moved towards it, they could either receive the money, or their finger would receive a small electric shock—not terribly painful, but rather unpleasant.

Respondents did not know in advance which outcome they would get. If they decided to move away from the situations instead, they would avoid the shocks but would also miss out on the chance to win the money.

"While that was going on, we measured what was happening inside the body and in the brain. We saw that the stronger the freeze response, the more strongly the brain would balance rewards and punishments against each other.

"Weighing up rewards and punishments against each other more strongly allows us to do a better job of assessing the potential consequences of our actions. This may help us make the right decisions. We saw that the freeze response doesn't necessarily result in avoidance," the neuroscientist states.

According to Klaassen, "Our research shows that a freeze response ensures that you are more alert to possible dangers and possible rewards, so that you are able to take a more balanced decision. It doesn't paralyze us, but rather puts a temporary brake on the system, and when you release that brake, you are able to decide on the right course of action more quickly.

"So freezing can actually be a good thing, because it can help you deal better with the dangerous situations you encounter in life."

More information: At the heart of the decision: On the role of defensive freezing states in approach-avoidance decision-making under threat. repository.ubn.ru.nl/handle/2066/306647

Provided by Radboud University

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