

Finding relief in ritual: A healthy dose of repetitive behavior reduces anxiety

September 22 2011

What do a patient with obsessive compulsive disorder (OCD), a basketball star, and an animal in captivity have in common? According to new research from Tel Aviv University, they share a clear behavioral link that reduces stress.

In a new study, Prof. David Eilam and his graduate student Hila Keren of TAU's Department of Zoology at the George S. Wise Faculty of Life Sciences found that repetitive behavior in general - and especially ritualistic-like behavior - is not only a human phenomenon but also one in the animal world. They concluded that ritualistic behavior in both humans and animals developed as a way to induce calm and manage [stress](#) caused by unpredictability and uncontrollability - heightening our belief that we are in control of a situation that is otherwise out of our hands.

Pursued in collaboration with Prof. Pascal Boyer of Washington University and Dr. Joel Mort of the U.S. Air Force Research Laboratory, the research has been published in *Neuroscience and Biobehavioral Reviews*.

Heads or tails?

Almost every human and animal activity can be divided into three parts, Prof. Eilam explains - "preparatory," "functional," and "confirmatory." The functional aspect is defined by the specific actions that must occur in order to complete a task. But the preparatory and confirmatory

actions, dubbed "head" and "tail" actions by the researchers, are not strictly required in order to get the job done. We complete them both before and after the central task, but they are not necessarily related to it. Individuals complete different head and tail activities for every task.

During the course of their study, Prof. Eilam and his fellow researchers watched and analyzed videotapes of people completing common tasks, such as putting on a shirt, locking a car, or making coffee, as well as basketball players completing a free-throw. In the case of basketball players, explains Prof. Eilam, all they actually need to do to complete their action is throw the ball. So why the preceding ritualistic behavior, such as bouncing the ball precisely six times?

"The routine they perform in the moments before shooting the ball is a method to focus their full concentration and control their actions." Prof. Eilam says. It's also an essential part of sports psychology. If players feel that completing their repetitive actions will enhance their performance, they tend to be more successful. This could include anything from locker room antics to LeBron James' infamous pre-game chalk toss.

Even in the context of daily activities, head and tail activities can be differentiated quite easily from the functional action in between. However, they are exaggerated in OCD sufferer who might check and recheck whether the stove has been turned off, for example. These idiosyncrasies are individual to each person, says Prof. Eilam, who notes that rituals are like fingerprints - unique to each individual.

Defining pathology

While everyone exhibits repetitive behavior, not everyone's behavior is obsessive, the researchers say. OCD patients present a pathological tendency towards [repetitive behavior](#) or thought patterns.

OCD patients were observed to engage in more "tail" activity than [basketball players](#) who displayed more "head" activity, says Prof. Eilam. The former suffer from a feeling of incompleteness - they are unsure whether or not their task has been completed, and compulsive behavior is driven by a need to verify the action. Unlike a free-throw, where there is a distinct cue - throwing the ball - that signals the end of the action, a common compulsive behavior, such as washing one's hands, might not have as clear an ending. There is no external reference to indicate "absolute clean."

Because those who suffer from OCD can set themselves complicated routines, they often cannot trust that they have fully completed an action, thereby extending the confirmatory tail phase of an action. This is the key difference between normal and pathological rituals, Prof. Eilam says.

Provided by Tel Aviv University

Citation: Finding relief in ritual: A healthy dose of repetitive behavior reduces anxiety (2011, September 22) retrieved 17 February 2023 from <https://medicalxpress.com/news/2011-09-relief-ritual-healthy-dose-repetitive.html>

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