

Do you love scary movies—or hide your eyes when they're on? Science helps explain why.

Personally, I've never been a big fan of having a guy dressed as a ghost jump out at me at a haunted house. Ditto for seeing a movie where some supernatural killer with a chainsaw or knives for fingernails stalks a bunch of terrified teenagers.

But I have plenty of friends who swear that getting scared half to death—be it at a haunted house, a scary movie, or a triple-loop roller coaster—is their idea of a good time. So just in time for Halloween, I thought I'd explore what is known about why some people choose to scare themselves for fun, and why some of us would much rather relax on a hayride instead.

Scientists have been examining this question for quite some time—and through many different lenses. They even have a term for people like my thrill-seeking friends—they're known as “Type T personality” in the medical literature. A person with a Type T personality experiences great pleasure by getting a lot of sensory information – he or she is a “high sensation seeker.” While such individuals may be exciting to be around, scientists also include in this group people who take greater risks, which may include the abuse of drugs or alcohol.

Brain differences

Let's start by exploring some of the hard science that makes me different from my friends with Type T personalities. One study found that the brains of young adults who scored as either high or low sensation seekers reacted differently to pictures meant to arouse them. The subjects were placed in a functional magnetic resonance imaging machine (fMRI), which can measure brain activity in different areas of the brain. They were then shown images, some of which were provocative, including nudity, erotica, violence, bodily mutilation, insects, and snakes.

The brains of the Type T people who liked risk were activated in areas associated with autonomic arousal. These are the areas of the brain that are responsible for reflexive or automatic alertness and activation, responses we may need in case of danger. This brain response is part of the “fight or flight” response ingrained in our evolutionary development. It occurs without us having to think much about it and may include impulsive actions without consideration of the consequences.

On the other hand, the parts of the brains that were activated in the low risk seekers were those associated with non-urgent, emotional regulation. The response in these people to the images was avoidance rather than a call to action.

In other research, it seems that two neurotransmitters—chemicals involved in brain function—play an important role in how much risk or danger we seek. One of these chemicals is called dopamine. It's released in the brain anytime something pleasurable happens—whether it's eating a great meal, winning a bet, or having sex. And it seems

that high levels of dopamine in the brain lead to risky behavior, whereas lower levels lead to less risk taking. Serotonin, another neurotransmitter, seems to act in the opposite way—it's been described by one researcher in this area as “the brakes...in the drive to risky behavior.”

Why do different people have different ways of responding to risk or danger? Much of it seems to be hardwired from birth: the tendency toward having higher or lower amounts of each neurotransmitter seems to be inherited from one's parents, and therefore, how risky we are is, at least partially, a matter that's decided at conception.

Genes

So is there actually a “thrill-seeking” gene or genes? That's still being debated. Some studies say yes, but others have been unable to confirm this finding. One gene in particular has been linked to novelty seeking—it's called “D4 dopamine receptor exon III”. And, in a study published just last month, scientists found that mutations on four dopamine-related genes matched with a person's willingness to take risks (as confirmed by a questionnaire given to each person). A number of other gene studies have suggested connections between neurotransmitters, genes, and personality type.

Psychological theories

Setting aside the question of whether or not a person is “born to be wild,” psychologists have wondered why it is that people would want to scare themselves, be it by bungee jumping or watching horror flicks. (I've wondered the same thing myself!)

Here are a few of their theories:

- 1- Since personal pleasure varies so widely, one person's scary might be another person's enjoyable/exciting.
- 2- Even though something might be scary and not enjoyable at the time, the “adrenaline rush” a person gets afterwards might be so great that the experience is worth it.
- 3- As long as people know they're actually safe—for example they know that what's on the movie screen is fake, or they are confident that their parachute is going to open—they can enjoy the thrill of being scared.
- 4- Many people feel a sense of accomplishment by “facing their fears.” Doing something that's absolutely terrifying and living to tell the tale—whether it's riding a rollercoaster, shooting the rapids, or watching a scary movie—can be immensely satisfying, especially when sharing the experience with others.

So, this Halloween, don't call the guy on the hayride a wimp and don't tell the guy on the rollercoaster he must have a death wish. In fact, there may be good biological reasons for the choices we make. Some may even be predestined from birth. Regardless of your choice, know that there may be a neurochemical explanation for what you find exhilarating, unacceptably terrifying, or way too tame.