

Who are you calling scaredy-cat?

**Fear is like marmite
– we either love it
or hate it. But what
dictates whether
we're a horror junkie
or a jittery sort?
Stylist investigates**

WORDS: EMMA LEDGER





When was the last time you were really, truly terrified?

Perhaps

Hereditary

left you so traumatised you'll never fully enjoy *Muriel's Wedding* again. Or maybe you spend your weekends picking your way around the haunted corridors of National Trust properties and hurling yourself out of planes at 12,000ft.

The truth is, we all get scared. We are all biologically wired to have a physiological response to things that would naturally terrify us as humans. The difference is – some of us love the jolt of adrenaline that comes with seeing a creepy child in a blood-spattered white dress, and some of us loathe it.

Researchers at the American Psychological Association have

found that some people thrive on the uncertainty and the intensity associated with 'scary' activities – from roller coasters to Halloween zombie runs.

"There's almost nothing else, including sex, that can match [fear] in terms of the incredible sensory experience that the body is put through," says psychologist Frank Farley.

So why do some of us enjoy thrusting ourselves into these situations? According to Steve Joordens, psychology professor at the University of Toronto, it's not just any type of fear that we embrace. It's a controlled type of fear. "None of us actually want to feel *real* fear," he explains, such as the fear that would come with being involved in an attack or accident. "Real fear has an over-arching 'I'm going to die' feeling, and for most of us, that can be extremely scary." What we *do* enjoy, however, is the

type of fear that comes when we know that our lives are not in danger – watching *The Haunting Of Hill House* from the comfort of our own sofa, for example, or learning about gruesome murders on a serial killer tour.

But that still doesn't mean we *all* love it. Research shows there can be biological reasons behind our loving or loathing of fear. A study from the University of Bonn reveals that fear can act on people at a genetic level, specifically via the COMT gene, which directs how signals are transferred between nerves. The study found that people who had two identical COMT genes had higher anxiety levels and were more susceptible to being terrified. Whereas those who had different versions of the gene were more likely to enjoy, say, a scary movie and even laugh at the most 'terrifying' parts.

Evolutionary psychologists agree that doing things such as watching horror films can also tap into our primal fears, such as the fear of being eaten (although as humans we've been more likely to be gobbled up by prehistoric mammals than any creature from a Guillermo Del Toro film).

To delve further into the impact fear can have on our brains and bodies, *Stylist* collaborated with Cambridge University's neuroscience department and one of the most classic horror films of all time. Two writers – one who loves being terrified and one who loathes it – both watched *The Exorcist* while they were linked up to a heart rate monitor and an electroencephalogram (EEG) in order to analyse the electrical activity of their brains. Here's how they (and their brainwaves) fared.



“I’m clearly wired differently, I hate being scared”

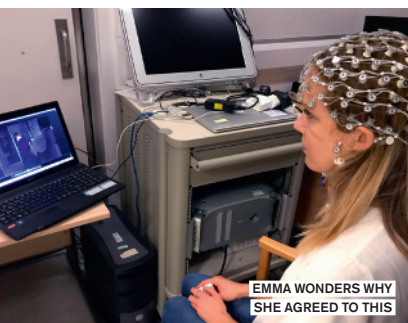


Emma Ledger is a certified scarey-cat

You might think me a wuss, but I simply do not enjoy being

afraid. I've always felt this way; ducking invites from friends to go on 'ghost-hunting' tours and looking blank when *Someone* references "the bit in *The Shining* with bathtub lady". I reject any idea that I'm missing out by not taking part in these 'scary activities', but I'm interested to see how I'll react to *The Exorcist*.

Our experiment is led by Dr Jon Simons and PhD student Michael Siena of Cambridge University's Behavioural and Clinical Neuroscience Institute. Dr Simons says there are many reasons people hate scary situations such as watching horror. "Highly empathetic people can be easily overstimulated by



what they see," he says. "And children exposed to scary movies, or who have real-life scary experiences, might become more sensitive or responsive, which might mean they don't enjoy fear as adults."

Monitoring the 128 EEG electrodes stuck to my scalp, Dr Simons says my brain "is very active" from the moment the film starts. I take this as a compliment about my intelligence, until I realise he just means that I'm in a state of high alert as the adrenaline surges.

During *The Exorcist's* more disturbing moments (nobody say, 'crucifix'), Siena tracks two waves coming from different parts of my brain. "Your adrenal gland can't tell real danger from fake danger," he says. "The signals I'm watching on screen are beta and theta brainwaves. Beta waves are related to your

fight-or-flight response. They originate in your motor cortex, they're getting that part of your brain ready, and the theta waves begin at the back of the head and move forward to the amygdala and hippocampus, which relate to emotion and memory. It's your brain making a decision and processing a threat." This all triggers the fight-or-flight response to fear, which for me means flight. As fast as possible.

The film's first properly scary scene features the possessed Regan convulsing while strapped to a bed. I'm super tense and sitting bolt upright. At several points I even make involuntary fists – unsurprising, given that researchers at the University of Amsterdam found that scary situations generate 'alarm reactions': bodily responses to a sudden stimulus that lead to muscle contractions.

According to Dr Simons, I had minimal eye movement during the film. I think I was fighting the urge to shut them, but he says people often focus more on stimuli they're worried about.

A study by the University of Wollongong found that more empathetic people tend to sweat more when watching scary films, and I'm definitely feeling the heat. My pulse rate has already leapt by 14 to 87bpm and I feel like I'm in the spin class from hell.

The researchers also found that participants in the study had an increase in white blood cells and a higher concentration of haematocrit, the ratio of red blood cells to volume of blood. This mimics the state of being poised to defend against an intruder. I do feel pumped, but it's not an enjoyable feeling.

There is lots of evidence to suggest those who relish the feeling of fear experience stress differently, and often enjoy other 'safe fears' like rollercoasters (I don't). I'm clearly wired never to enjoy scary situations. My genes are much too boring for that, and that's fine with me.

“It’s not that I don’t feel fear – it’s that I love it”



Lucy Vine has always been a thrill-seeker

There is a running joke among my friends that

were I ever to be arrested for a violent crime, I'd be convicted by a jury based solely on my extensive (and disturbing) horror film collection. Since I was a kid I've always chased things that scare me, whether it's watching a gory film, riding a rollercoaster, swimming with sharks, or skydiving. It's not that I don't feel fear – it's that I love it. All my nerves standing on end, the adrenaline rush, the catharsis. I'm never more aware and awake than when I'm afraid.

I've watched *The Exorcist* countless times, but interestingly, my brainwaves don't seem so different to Emma's. Mine are also spiking at tense moments, even though I'm enjoying them.

"These waves mean you're paying attention and your brain is assessing what it's seeing," says Dr Simons. "Any fearful type of stimulus, whether it's a horrible scene, a photo of an accident or even a fearful face, can cause elevated levels of activation in the amygdala as the brain is flooded with different chemicals."

Although both mine and Emma's brains acknowledge something scary is happening, how we process that sensation couldn't be more different. My pulse rate only rises by a few numbers and I have no change in temperature. Siena says this could be because I can frame scary things in an exciting way. This is due to what psychologists call my "adrenaline-seeking personality". I like the physical and emotional release – the boost in adrenaline, endorphins, serotonin, oxytocin and dopamine that accompany the intense experience of watching horror. For me, that physiological response has a lot in common with other high 'arousal states', like feeling

really excited or laughing.

Research has shown that people differ in their chemical response to scary activities, with some individuals getting more of a kick out of dopamine than others. A recent study by David Zald, professor of psychology at Vanderbilt University, shows that some brains lack what he calls 'brakes' on dopamine release and re-uptake, meaning these people enjoy thrilling or scary situations more.

Another enjoyable part of 'self-scaring' in safe spaces can be an increased sense of confidence after it's over.



Sociologist and 'scare specialist' Dr Margee Kerr says, "It's partially due to a phenomenon known as excitation transfer. After the physical reactions associated with fear wear off – faster heart rate and breathing – they are replaced with intense relief."

And it's not necessarily a bad thing. Dr Simons says, "Fear is an evolved response. Even in those caveman days, we needed both types of people: those who ran from fear, who would stay and look after the tribe, and those possibly like you, who were going to fight the invaders." Basically, what he's saying is that I'd be the first to die in a zombie apocalypse. At least I'd be high on dopamine ...



With thanks to the behavioural research company **Liveminds**, who find genuine participants for research projects of all kinds. Their behavioural recruitment is powered by live social data on two billion people in over 190 countries; liveminds.com



YOU CAN RUN, BUT YOU CAN'T HIDE

Stylist ranks Halloween films from entry-level scary to full-on fright fest

SAFE FOR SCAREDY-CATS



THE WITCHES (1990)

Yes, it's ostensibly a kids' film, but the Roald Dahl adaptation about a group of witches who lure children to their deaths is, quite frankly, messed up.

Scariest moment: Anjelica Huston peeling her face off.

THE SHINING (1980)

If you didn't watch this at a sleepover growing up, you haven't lived. Lifts gushing with blood, creepy twins and old ladies floating in bathtubs. This is horror 2.0.

Scariest moment: REDRUM!



GET OUT (2017)

This filmic meditation on racism is as chilling, intense and allegorical as it is clever. When young black photographer (Daniel Kaluuya) meets his white girlfriend's Obama-supporting parents, things descend into a melee of bigotry, murder and mind control.

Scariest moment: Alison Williams casually eating Fruit Loops while researching black men's bodies to hijack.

THE BLAIR WITCH PROJECT (1999)

Using the 'found footage' technique to genuinely scary effect, three film students vanish while making a documentary in the woods.

Scariest moment: The sound of children playing at night.



IT (2017)

The 2017 remake of Stephen King's classic horror is the highest-grossing 18-rated film ever. But as well as red balloons, yellow raincoats and killer clowns, the film also goes deeper, exploring the grief and anger children can feel when those who are supposed to protect them do the opposite.

Scariest moment: Pennywise in the drain, obv.

WOLF CREEK (2005)

Following the traditional stranded-backpackers-wander-into-killer's-lair formula (but in the Australian outback), *Wolf Creek* is shockingly sadistic.

Scariest moment: Liz's spinal column is severed, turning her into a "head on a stick".



THE BABADOOK (2014)

This psychological horror – about a widowed mother whose son starts talking to 'something' in the house – is utterly terrifying.

Scariest moment: When the Babadook croaks its name through Amelia's bedsheets.



THE EXORCIST (1973)

When Regan becomes possessed by a demon, heads spin (literally), rooms freeze and lives are lost. Totally traumatising.

Scariest moment: In a deleted scene, Regan does a 'spider walk' while vomiting blood.



HEREDITARY (2018)

As an artist and miniaturist who is haunted in more ways than one by her manipulative dead mother, Toni Collette is magnificent in this relentless supernatural thriller, dubbed the next-gen *Exorcist*.

Scariest moment: The lamp post decapitation scene, and Collette's visceral response to it.

PREPARE TO SCREAM