[How extreme isolation warps the mind - BBC Future](https://www.bbc.com/future/article/20140514-how-extreme-isolation-warps-minds)

By Michael Bond14th May 2014

[**SCIENTIFIC AMERICAN JANUARY 1957**](https://www.scientificamerican.com/magazine/sa/1957/01-01/)

The Pathology of Boredom

Aviators sometimes suffer hallucinations during long, monotonous flights. The phenomenon is illuminated by a general examination of the effect of prolonged exposure to a monotonous environment

* By [Woodburn Heron](https://www.scientificamerican.com/author/woodburn-heron/)

*Sensory deprivation can cause hallucinations - sometimes starting with geometric shapes or points of light, and then getting stranger... (Akuei/Flickr)*

Experiments into isolation have shown hallucinaenic effects on participants

The most extensive took place at McGill University Medical Center in Montreal, led by the psychologist Donald Hebb. The McGill researchers invited paid volunteers – mainly college students – to spend days or weeks by themselves in sound-proof cubicles, deprived of meaningful human contact. Their aim was to reduce perceptual stimulation to a minimum, to see how their subjects would behave when almost nothing was happening. They minimised what they could feel, see, hear and touch, fitting them with translucent visors, cotton gloves and cardboard cuffs extending beyond the fingertips. As [**Scientific American magazine reported at the time**](http://www.nature.com/scientificamerican/journal/v196/n1/pdf/scientificamerican0157-52.pdf), they had them lie on U-shaped foam pillows to restrict noise, and set up a continuous hum of air-conditioning units to mask small sounds.

After only a few hours, the students became acutely restless. They started to crave stimulation, talking, singing or reciting poetry to themselves to break the monotony. Later, many of them became anxious or highly emotional. Their mental performance suffered too, struggling with arithmetic and word association tests.

But the most alarming effects were the hallucinations. They would start with points of light, lines or shapes, eventually evolving into bizarre scenes, such as squirrels marching with sacks over their shoulders or processions of eyeglasses filing down a street. They had no control over what they saw: one man saw only dogs; another, babies.

Some of them experienced sound hallucinations as well: a music box or a choir, for instance. Others imagined sensations of touch: one man had the sense he had been hit in the arm by pellets fired from guns. Another, reaching out to touch a doorknob, felt an electric shock.

When they emerged from the experiment they found it hard to shake this altered sense of reality, convinced that the whole room was in motion, or that objects were constantly changing shape and size.

##### solation (German: Isolierung) is a defence mechanism in psychoanalytic theory first proposed by Sigmund Freud.While related to repression, the concept distinguishes itself in several ways.It is characterized as a mental process involving the creation of a gap between an unpleasant or threatening cognition, and other thoughts and feelings.

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| Isolation (psychology) |
| **Website title:** | En.wikipedia.org |
| **URL:** | [https://en.wikipedia.org/wiki/Isolation\_(psychology)](https://en.wikipedia.org/wiki/Isolation_%28psychology%29) |
| The Perils of Social Isolation |
| **Website title:** | Psychology Today |
| **URL:** | <https://www.psychologytoday.com/us/blog/out-the-ooze/201611/the-perils-social-isolation>

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| How Social Isolation Affects the Brain |
| **Website title:** | The Scientist Magazine® |
| **URL:** | https://www.the-scientist.com/features/how-social-isolation-affects-the-brain-67701 |

[Frank T. McAndrew Ph.D.](https://www.psychologytoday.com/gb/contributors/frank-t-mcandrew-phd) |

<https://www.psychologytoday.com/gb/blog/out-the-ooze/201611/the-perils-social-isolation#:~:text=It%20increases%20levels%20of%20stress,has%20also%20been%20well%2Ddocumented>.

Humans are hardwired to interact with others, [especially during times of stress](https://labs.psych.ucsb.edu/kim/heejung/townsendkimmesquita-2.pdf). When we go through a trying ordeal alone, a lack of emotional support and [friendship](https://www.psychologytoday.com/gb/basics/friends) can increase our [anxiety](https://www.psychologytoday.com/gb/basics/anxiety) and hinder our coping ability.

This message was driven home in the recent thriller [*Shut In*](http://www.imdb.com/title/tt2582500/). In the film, Naomi Watts plays a widowed child psychologist who lives in isolation in rural New England with her son, who is comatose and bedridden as a result of an automobile accident. Snowed in and withdrawn from the outside world, Watts’ character descends into a desperate existence. It soon becomes difficult for her to distinguish the phantasms of her imagination from the reality of the creepy goings-on in her apparently haunted house.

*Shut In* isn’t the first movie to use isolation as a vehicle for madness. The characters played by Jack Nicholson in [*The Shining*](http://www.imdb.com/title/tt0081505/?ref_=nv_sr_1) and Tom Hanks in [*Castaway*](http://www.imdb.com/title/tt0162222/?ref_=nv_sr_3) found themselves in similar predicaments. Although these movies are fictional, the depicted toll on a protagonist’s psyche from being alone for so long is based on the very real science of [social isolation](https://www.psychologytoday.com/gb/basics/loneliness).

## **Seeing Ghosts**

Perhaps the strangest thing that can happen to someone in isolation is the experience of a “sensed presence,” or the feeling that another person—or a [supernatural](https://www.psychologytoday.com/gb/basics/magical-thinking) being—is with us.

Sensed presences [usually appear in environments with static physical and social stimulation](https://www.psychologytoday.com/gb/blog/out-the-ooze/201507/why-some-people-see-ghosts-and-other-presences), such as when you’re by yourself in a quiet, remote place—just like Watts’ character in Shut In. Low temperature and high levels of stress are also common ingredients.



Source: Joshua Slocum - Wikimedia Commons/Public Domain

Some of the most compelling descriptions of sensed presences come from lone sailors, mountain climbers, and Arctic explorers who have experienced [hallucinations](https://www.psychologytoday.com/gb/conditions/hallucinogen-persisting-perception-disorder) and [out-of-body experiences](https://www.psychologytoday.com/gb/basics/parapsychology). In [one amazing 1895 incident,](http://www.gutenberg.org/ebooks/6317) Joshua Slocum, the first person to circumnavigate the globe in a sailboat singlehandedly, said he saw and spoke with the pilot of Christopher Columbus’s ship The Pinta. Slocum claimed that the pilot steered his boat through heavy weather as he lay ill with food poisoning.

The vividness of a presence can range from a vague feeling of being watched to seeing a seemingly real person. It could be a god, a spirit, an ancestor, or a personal acquaintance. A famous example occurred in 1933, when British explorer [Frank Smythe attempted to climb Mt. Everest alone](https://www.librarycat.org/lib/suniru/item/133043879). He became so convinced that someone else was accompanying him on his climb that he even offered a piece of cake to his invisible partner.

Possible explanations for a sensed presence include the movement of boats (if sailing solo) and atmospheric or geomagnetic activity. Stress, lack of oxygen, monotonous stimulation, or a buildup of hormones can trigger changes in brain chemistry that induce altered states of consciousness. There’s actually [exciting new evidence](http://scienceintheclouds.blogspot.com/2015/01/why-do-some-people-see-ghosts.html) from a research group led by [neuroscientist](https://www.psychologytoday.com/gb/basics/neuroscience) [Olaf Blanke](http://www.cell.com/current-biology/abstract/S0960-9822%2814%2901212-3) that stimulating specific brain regions can trick people into feeling the presence of a ghostly apparition.

Radio play from the 1950s about man on Pluto for 6 years

<https://www.youtube.com/watch?v=x-cgmWrJ_OA>

# Hallucination Orbit (Isolation Psychosis, Radio Drama) by J. T. McIntosh - X Minus One

<https://www.wired.com/story/coronavirus-covid-19-isolation-psychology/>

First off, it’s important to remember that isolation doesn’t just numb your brain with boredom. “People start getting lethargic when they don’t have positive inputs into their small worlds,” says John Vincent, a clinical psychologist at the University of Houston. “We can expect depression to kick in, and depression and anxiety are kissing cousins.” These symptoms are likely to be particularly intense during coronavirus-related isolation, according to Lawrence Palinkas, who researches psychosocial adaptation to extreme environments at the University of Southern California. “Oftentimes, if you have a very well defined period of time in which you’re isolated people do pretty well up until the halfway point,” Palinkas says. “Then they experience a let down. But when you’re in a situation like we are now, when you’re not certain how long you’ll be asked to maintain social distance, that produces anxiety as well.”

When people, like those kept in solitary confinement or scientists working in a remote region, know their sentence is nearly up, their mood lifts again in anticipation. Those practicing social distancing due to Covid-19 may not get that any time soon. “Open, transparent, consistent communication is the most important thing governments and organizations can do: Make sure people understand why they are being quarantined first and foremost, how long it is expected to last,” says Samantha Brooks, who has studied the psychological impact of quarantine at King’s College London. “A huge factor in the negative psychological impact seems to be confusion about what's going on, not having clear guidelines, or getting different messages from different organizations.” So far, many governments, including the United States’, haven’t been heeding this advice.

***Read all of our coronavirus coverage***[here](https://www.wired.com/tag/coronavirus/?itm_campaign=ArticleLinkTopBlockquote)***.***

Perhaps even more concerning is that the psychological strain of loneliness manifests physiologically, too. Harry Taylor, who studies social isolation in older adults, particularly in the black community, says that it’s one of the worst things that humans can do to their overall well-being, adding that “the mortality effect of social isolation is like smoking 15 cigarettes per day.” In older people, social isolation seems to exacerbate any preexisting medical conditions, from cardiovascular diseases to Alzheimer’s, but its ill effects aren’t limited to those over 60.

Alexander Chouker, a physician researcher who studies stress immunology at the University of Munich, has seen radical changes in the bodies of people participating in simulations of manned spaceflight missions like [Mars-500](https://www.wired.com/2013/01/sleep-problems-mars-500/). “They were young and trained people not in a condition of real threat,” he says. “The pure fact of being confined affects the body. If you change your environment in a quite extreme way, it is changing you.” Participants, some of whom were only isolated for three months, experienced changes to their sleep, changes to their immune, endocrine, and neurocognitive systems, and alterations to their metabolisms. “Being confined and isolated affects the human physiology as a whole,” Chouker says.

Does this mean your body will go wonky like an astronaut trapped on fake Mars for over a year? Not necessarily. You probably aren’t truly socially isolated, at least not to that extreme degree. And even those who study the negative consequences of social isolation still think practicing social distancing is a good idea. “Covid-19 is flipping everything on its head,” Taylor says. “This is the first time since we have been alive that actively practicing social isolation is a method to improve health.”

People who go through a period of isolation, whether they’ve been on the International Space Station or in quarantine, often experience PTSD symptoms and struggle while reintegrating back into their ordinary routine. Social isolation may gradually become your normal, and losing it may still be a jolt.

Fortunately, you’re not in this alone, and you shouldn’t leave others that way, either. “For the general public who are not isolated, think about those people who were in your network that you haven’t heard from in a while, and give them a call or write a letter,” Cudjoe says. “Strengthen those weak connections.” With any luck, you’ll emerge from social distancing a whole lot closer.

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## Films

## Crowhurst (Simon Rumley, 2017)

Independent British filmmaker [Simon Rumley’s retelling](https://www.thetimes.co.uk/article/film-review-crowhurst-b9lrx9rbp) of Donald Crowhurst’s [disastrous attempt](https://www.independent.co.uk/news/uk/this-britain/drama-on-the-waves-the-life-and-death-of-donald-crowhurst-421934.html) to sail solo and non-stop around the world in 1968, which ended in his disappearance and probable suicide, offers a masterclass in low-budget filmmaking. A good deal of the movie consists of Crowhurst (played by the excellent Justin Salinger) alone on a very small trimaran. Rumley, however, puts the viewer squarely inside Crowhurst’s head as his loneliness, isolation and fear of failure slowly cause him to crack.

another biopic about the amateur sailor who died while competing in, and cheating at, the 1968/69 *Sunday Times*Golden Globe Race.

This time the budget is low and the spirit is gonzo as the thriller director Simon Rumley (*Red White & Blue*) employs some effective devices (heavy shadows, deliberately off-kilter performances, bonkers musical interludes) to transform the Crowhurst story into an unsettling, claustrophobic psycho-horror.

One study found that the highest users of social media also reported the highest levels of perceived [social isolation](https://www.psychologytoday.com/gb/basics/loneliness) (Primack, Shensa, Sidani, Miller, 2017). This is concerning since we are being immersed in a world in which virtual connection is our only option.

However, the presence of loneliness reflects the absence of connection, not the absence of people. That’s why a person can feel lonely even in a crowd. In fact, being in the middle of a crowd can make some people feel even lonelier if none of the members of their known support network are present, and they feel unable to connect with others around them. And, conversely, with a strong support network in place, even when you are holed up alone in your home, you can still enjoy a sense of connection and support from people who care for and about you.

There are three types of loneliness: existential loneliness, emotional loneliness, and social loneliness. We will focus on social loneliness in this article, but more information on the other two types is available [here](https://www.psychologytoday.com/gb/blog/lifetime-connections/201907/the-3-types-loneliness-and-how-combat-them).

Social loneliness occurs when you don’t feel a sense of belonging to a group beyond yourself. You might even feel social loneliness even when you’re in a [romantic relationship](https://www.psychologytoday.com/gb/basics/relationships) with a partner you treasure. If you don’t have a wider circle of social support, you may feel that you, or you and your partner, don’t have a group with whom you belong.

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**PREFRONTAL CORTEX:**In some studies, people who are lonely have been found to have reduced brain volumes in the prefrontal cortex, a region important in decision making and social behavior, although other research suggests this relationship might be mediated by personality factors. Rodents that have been isolated from their conspecifics show dysregulated signaling in the prefrontal cortex.

**HIPPOCAMPUS:** People and other animals experiencing isolation may have smaller-than-normal hippocampi and reduced concentrations of brain-derived neurotrophic factor (BDNF), both features associated with impaired learning and memory. Some studies indicate that levels of the stress hormone cortisol, which affects and is regulated by the hippocampus, are higher in isolated animals.

**AMYGDALA:**About a decade ago, researchers found a correlation between the size of a person’s social network and the volume of their amygdala, two almond-shaped brain areas associated with processing emotion. More-recent evidence suggests the amygdalae are smaller in people who are lonely.

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