How extreme isolation can alter your sense of time

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Credit: AI-generated image (disclaimer)

A year and half alone in a cave might sound like a nightmare to a lot of people, but Spanish athlete Beatriz Flamini emerged with a cheerful grin and said she thought she had more time to finish her book.

She had almost no contact with the outside world during her impressive

feat of human endurance. For 500 days, she documented her experiences to help scientists understand the effects of extreme isolation.

One of the first things that became apparent on April 12, 2023, when she emerged from the cave was how fluid time is, shaped more by your personality traits and the people around you than a ticking clock.

When talking to reporters about her experiences, Flamini explained she rapidly lost her sense of time. The loss of time was so profound that, when her support team came to retrieve her, she was surprised that her time was up, instead believing she had only been there for 160–170 days.

Why did she lose her sense of time?

Our actions, emotions and changes in our environment can have powerful effects on the way in which our minds process time.

For most people, the rising and setting of the sun mark the passing of days, and work and social routines mark the passing of hours. In the darkness of an underground cave, without the company of others, many signals of passing of time will have disappeared. So Flamini may have become more reliant on psychological processes to monitor time.

One way in which we keep track of the passage of time is memory. If we don't know how long we have been doing something for, we use the number of memories formed during the event as an index to the amount of time that has passed. The more memories we form in an event or era, the longer we perceive it to have lasted.

Busy days and weeks filled with lots of novel and exciting events are typically remembered as longer than more monotonous ones where nothing noteworthy happens.

For Flamini, the absence of social interaction combined with a lack of information about family and current affairs (the war in Ukraine, the reopening of society after COVID lockdowns), may have significantly reduced the number of memories she formed during her isolation. Flamini herself noted: "I'm still stuck on November 21, 2021. I don't know anything about the world."

The loss of time may also reflect the reduced importance of time in cave life. In the outside world, the busyness of modern life, and social pressure to avoid wasting time, mean many of us live in a perpetual state of time stress. For us, the clock is a gauge of how productive and successful we are as adults.

A common thread

Flamini is not the first to experience a change in her experience of time after a change in environment. Similar experiences were reported by French scientist Michel Siffre during his two- to six-month-long cave expeditions in the 1960s and 70s.

A loss of sense of time was consistently reported by adults and children who spent prolonged periods isolated in nuclear bunkers (for research purposes) at the height of the cold war. It is also frequently reported by people serving prison sentences and was widely experienced by the general public during COVID-19 lockdowns.

Caves, nuclear bunkers, prisons and global pandemics share two features which seem to create an altered sense of time. They isolate us from the wider world and involve confined spaces.

Flamini, however, lived with an empty schedule stretching out into her future. No work meetings to prepare for, no appointments to hurry to and no social diary to manage.

She led a self-paced existence, where she could eat, sleep, and read as and when she liked. She occupied herself painting, exercising and documenting her experiences. This may have made the passage of time irrelevant.

As the biological rhythms of sleep, thirst and digestion took over from the ticking hands of the clock, Flamini may have simply paid less and less attention to the passage of time, causing her to eventually lose track of it.

Flamini's ability to let go of time may have been enhanced by her strong desire to achieve her 500-day goal. After all, she decided to go into the cave and she could leave if she wanted to.

For people who become confined against their will, time can become a prison itself. Prisoners of war and people serving prison sentences often report that monitoring the passage of time can become an obsession. It would seem that we are only able to really let go of time when we are in control of it.

Flamini's freedom may make leaving civilization behind for the caves look like an appealing prospect. However, life underground is not for the fainthearted. Survival depends upon your ability to maintain a high level of mental resilience.

If you have have the ability to remain calm and composed when things get tough, a strong belief that you are in control of your own behaviors, known as an internal locus of control, and become easily absorbed in your own thoughts, you made have the fortitude to succeed. However, you might find it simpler to switch off your notifications, clear the calendar and get lost in a bit of me time.

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