Pandemic Time

Stewart Hendrickson

July 2, 2020, Seattle

"Who knows where the time goes?"

Across the evening sky, all the birds are leaving But how can they know it's time for them to go? Before the winter fire, I will still be dreaming I have no thought of time For who knows where the time goes? Who knows where the time goes?

Sad, deserted shore, your fickle friends are leaving Ah, but then you know it's time for them to go But I will still be here, I have no thought of leaving I do not count the time For who knows where the time goes?

Who knows where the time goes?

And I am not alone while my love is near me
I know it will be so until it's time to go
So come the storms of winter and then
The birds in spring again
I have no fear of time
For who knows how my love grows?
And who knows where the time goes? (Sandy Denny)



Who Knows Where The Time Goes? (mp3) Fairport Convention with Sandy Denny YouTube

Pandemic Time moves differently. Mostly slow, sometimes fast. The days all seem the same – what day is it? What happens to time during these times? Where does the time go?

When I look out my window, everything looks pretty much the same, but it isn't. "What makes COVID so weird is that the physical environment looks very normal," said Dr. Mary McNaughton-Cassill, a professor of psychology at the University of Texas at San Antonio. "But we have lost every single social anchor that we would normally use... The difference between Friday and Saturday has been temporarily erased, you know you're not going out today."

What is time? Time is like a river forever flowing, in one direction only. As I sit at a fixed point on the bank, all I see is what is directly in front of me. The past disappears as the river flows on, and I have to wait for the future to appear.

I cannot look ahead at what might appear. Time is just a fixed point, an instant, an eye-blink. The past is forever gone. If I drop a glass bowl on a hard surface and it shatters into many pieces, I can't reconstruct it in time – I can't run the movie of life backward. Entropy rules. The second law of physics states that, in a closed system, entropy (disorder) increases unless one adds energy from outside – gluing the broken pieces of the bowl together requires work. The future is always yet to come. We live in a probabilistic world, everything happens by chance. It is impossible to predict exactly what will happen next (*Chance and Necessity*, *Jacques Monod*).

Time has no place in modern physics – there are no fundamental equations in which time appears – it is a human idea. Aristotle's idea of time depended on the measurement of change, how long it takes for something to happen – the earth to revolve from day to night and back, the earth to orbit around the sun, a grain of sand to drop through an hourglass, or for me to travel by train from Seattle to Portland. These changes might not be constant.

If nothing changes in our world, does that mean that time does not exist? Aristotle thought so. Newton, however, argued that a *true time* exists even when nothing changes. Both agreed that things need to change in space and time, the two are necessary for time to exist. Newton argued that there is *empty space*, which can exist between two objects, so that *true time* still exists. Aristotle countered that empty space is absurd – if two separate things exist there must be something between them, and without something between them time cannot exist.

It turns out Aristotle and Newton were both right. But Newton was wrong in assuming that time was independent of other things. Space can be described as *place* – I am here and you are there. Time can be described as *when* – when did that change happen? *Place* (space) and *when* (time) are real, but they are not absolute, they are interrelated. Einstein described a new entity, *space-time*, to take the place of space and time – the speed at which something is moving in space influences its measurement of time. That's when things appear to get very weird.

Reference: The Order of Time, Carlo Rovelli.

What is Pandemic Time? It occurs mainly in our brains as perceived time. Time is measured in our brains by the rate of exchange of information. When we are intent on doing a complicated task, learning new things, or observing new scenes, a lot of information is exchanged in our brains. The rate of this exchange makes our perceived time move faster. But when we are not doing much, doing only repetitive tasks that don't require much thought, or only looking at an unchanging scene, our perceived time moves slower. Each change of information is like a tick – the rate that these ticks appear determines our perceived sense of time.

In our imposed isolation, time seems to move slowly if we are not actively involved mentally. Structuring our time so that we move more often from one task to another causes those mental ticks to change faster, and time seems to go by faster. My mornings go by faster than my afternoons, which are less structured.

Too much information exchange, however, can lead to anxiety and disorientation. In starting a new job, we have to learn new tasks, adapt to new schedules, and make many decisions. All of this leads to an increase of bandwidth in our brains – too much is going on. It takes time to adjust and calm down.

During a pandemic we may have to adjust to new living conditions and ways of doing things, causing us to be less at ease, disturbing our sleep patterns and our interactions with other people. Listening to too much news and television shows when subjects change rapidly from one thing to another can also have the same effect. We need to simplify our lives, slow down the pace of what we do.

Remembering past events and anticipating future developments are also different during the pandemic. I can remember when the lockdown occurred, but I can't remember when I had my doctor's appointment or when my best friend called last. That is because I have no major bookmarks to tie those events together. We all remember when the twin towers came down, where we were, and what happened before and after. During the pandemic, few major memorable events have occurred to tie other events together.

As for the future, we are uneasy. When, if ever, will this pandemic wind down? What will the world be like afterward? Uncertainty is disturbing. There's not much we can do about that. Take it as it comes, even though it will undoubtedly come very slowly, particularly in pandemic time.

All the above is a lot to think about. Consider what affects you the most. Structure your days. Keep your time moving, not too slow, and not too fast. Moderation. Peace.

Stewart Hendrickson is Professor Emeritus (chemistry), St. Olaf College, Northfield, MN; and Research Professor Emeritus (chemistry), University of Washington, Seattle, WA. He currently lives in Seattle, WA.