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# Battling ‘Covid-19 Brain’



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## **Here’s the science on how stressful events like Covid-19 take a toll on the best of us.**

If you feel you haven’t been yourself lately, you’re not alone. The Covid-19 crisis has anti-compartmentalised our lives, heedlessly swirling together work and personal life, parenting and home schooling or loneliness, etc. Even young, healthy people are subject to levels of ambient anxiety, uncertainty and stress perhaps unprecedented in their lifetimes.

Our natural inclination when exposed to such a stormy emotional climate is to try to think our way through it. But in times like these, our brains tend to work differently. The prefrontal cortex, the area of the brain responsible for complex planning, working memory and analytical thinking, is swamped with ambiguous signals, impacting our decision-making abilities. Meanwhile, the brain scours its long-term memory systems for comparable experiences. Finding few precedents for this pandemic, it looks intently outward for guidance on what to do next.

The combination of impaired analytical thinking and heightened external sensitivity creates what can be called “Covid-19 brain” – a fragile, frazzled state that keeps our thoughts simultaneously on edge and unfocused. If this

description applies to you, it may help to know more about the neuroscience of how stressful events affect us.

## **Negative impacts upon society**

The impact can be measured scientifically. For example, one of Hilke's ongoing research projects (co-authored by **Tobias Kalenscher**) measures **skin conductance** and facial affect response encoding. It showed how, days after the Paris and Brussels terror attacks, Parisian students displayed diminished response to both visual stimuli and tangible rewards, such as winning money in the lottery. Our forthcoming working paper compares this to the emotional numbing often seen in patients suffering from post-traumatic stress disorder (PTSD).

Unlike bloody but short acts of terrorism, Covid-19 remains active, with no end in sight. The pandemic holds us in a prolonged state of live trauma. So far, the societal ramifications have been serious and threaten to get worse. In a recent paper in ***Nature Human Behaviour***, over 40 top scholars call for a rapid increase in research in the social and behavioural sciences around a number of topics made especially fraught by the pandemic, including unhealthy choices, social inequality, racism, political polarisation, fake news and misinformation.

Most alarming of all is what U.N. Secretary-General António Guterres called “a tsunami of hate and xenophobia, scapegoating and scare-mongering”. As our brain casts about for ways to make sense of the pandemic, we are especially susceptible to scapegoating. Chinese immigrants, for example, are **being targeted** based on nothing more than their ties to the pandemic's apparent country of origin. But Covid-19 has also caused a **rise in prejudice** against **minorities across the board**, further underscoring the dangerously escalating irrationality that has spread alongside the pandemic.

Another concerning result from the great body of Covid-related psychological research is that it has worsened societal problems such as obesity and how inequality affects it. A French research team studied **eating behaviour and physical activity** during the April-May lockdown. Their first results suggest that the lockdown led to unfavourable patterns in these behaviours (weight gain, increased junk food consumption, etc.), specifically among participants with lower socioeconomic status.

Fortunately, these negative tendencies may be corrected with exposure to the right exemplars. According to a recent discussion paper from [\*IZA Institute of Labour Economics\*](#), people chose to donate more money to Covid-19 causes and were more willing to learn about volunteering opportunities after watching video clips modelling prosocial behaviour from politicians and fellow citizens – compared to groups who saw either clips depicting selfish behaviour or a neutral, science-themed video.

The big lesson here is that prosocial role models who walk the talk can make a tremendous difference. Leaders in both business and politics are well positioned to prevent or reduce bad behaviours arising from Covid-19 brain.

### **Self-care in a pandemic**

Neuroscientific and psychological research also suggests a few simple methods we can use to regain some cognitive control. Many studies have shown that how we think about stress can make all the difference. Regarding stress as a [\*catalyst for positive change rather than a threat\*](#), for example, can promote clearer thoughts and keep negative emotions at bay.

Also, something as simple as listening to music can restore our equilibrium. Indeed, one study linked [\*emotions induced through music\*](#) to activity in brain networks that are essential for generation and regulation of emotions. Playing music in the background while working can also [\*bolster productivity\*](#) in times of stress by sustaining mental attention and sharpening focus.

Julia Jones who recently appeared as a guest speaker in Hilke’s MBA course “Neuroscience for Businesses”, has built her own venture around harnessing music to help professionals perform at their best and defeat stress. She has created an online tool (free to use during the Covid-19 crisis) called the **Focus Runway** which is designed to evoke a “state of flow”, or intense focus on the task at hand to the exclusion of nearly everything else, including the passage of time. After turning off all distractions, including superfluous browser windows and mobile phone notifications, users listen to an eight-minute audio loop. The music (composed and performed by Jones) is calibrated to interest the brain just enough to form an aural bubble around the listener without leaching attention away from work.

Jones also works with corporate clients to deliver music-based exercises for strengthening mental qualities such as controlled attention and active

listening. Using Zoom as a platform, she offers virtual sessions including drum or guitar lessons, energy-boosting singalongs (with all participants on mute so they can belt out songs regardless of vocal ability) and physical mirroring exercises set to a beat.

## **Riding the brainwaves**

Mindfulness is commonly used in the workplace to combat stress and burnout. Knowing some basics about how the brain operates can make this increasingly popular modality even more effective. Your state of mind at any given moment can be dissected in terms of brain activity. Low-frequency brainwaves, such as alpha waves, predominate during tired or relaxed moments. High-velocity activity, e.g. beta waves, are required for intense concentration and problem solving.

Medical professionals use EEG technology to gauge the frequency of brainwaves. Even without the equipment, however, you can learn to assess your own activity and structure your work accordingly. For example, a more relaxed mental state is better for expansive or creative tasks that would benefit from broader thinking, while high-frequency states are conducive to focused tasks requiring attention to detail (e.g. crunching numbers in Excel).

The newfound ubiquity of videoconferencing can help by letting you see your own body language, which is a reliable indicator of brain activity. Are you leaning forward to catch every nuance of what your colleagues are saying, sitting back pensively to digest what you're hearing, or slumped over in exhaustion? You can similarly gauge the pace and qualities of your team members' thinking by interpreting their body language

Once you've acquired a feel for the gait of your brain, the logical next step is to take the reins. That is one of the main purposes of mindfulness meditation. Exercises such as focusing on breathing can help regulate brain activity at will. Those who want a more clinical approach to retraining the brain can try performance neurofeedback. Another recent guest speaker in Hilke's course, **Thy-Diep ("Yip") Ta** (INSEAD MBA '17D), co-founder of the Mindful Coaching Academy and formerly Chief Well-Being Officer for the Munich-based neurotechnology start-up **brainboost**, associates all these techniques with the principle, originally espoused by neurobiologist **Dan Siegel**, "Where attention goes, neural firing flows, and neural connection grows." This basic idea of neuroplasticity – that our brain changes according to how we routinely use it – means that how we cope with Covid-19 brain has

implications that will outlast this crisis. It is worth devoting conscious attention to developing healthy mental habits, with the knowledge that it will only get easier with time.

## How research can help

The search for a Covid-19 vaccine has justifiably drawn generous attention and resources, but perhaps just as needed will be behavioural and neuroscientific studies on the manifold effects of the crisis. The knowledge creation in which INSEAD and its peer institutions are currently engaged may not only help us get through the present crisis and its aftermath, but also improve our preparedness for future disruptive events.

*Message from Hilke: Want to support our research on the Covid-19 brain (and are residing in France outside Ile-de France): Nous menons une étude sur l'impact de la crise sanitaire Covid-19 sur votre capacité à prendre des décisions. Intéressés ? Cliquez [ici](#) pour en savoir plus. Merci beaucoup !*

## Find article at

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