What Is Our Collective Solution To Health Injustice?

Sonali Kolhatkar

12-18-2024 ~ *The fight over health care in the U.S. is about competing narratives: profit-making versus collective well-being. We need to articulate a publicly funded solution now—before corporate spin silences us.*

The December 4 killing of UnitedHealthcare CEO Brian Thompson and the public outrage over the state of healthcare it sparked, is a tale of many competing narratives: the killer's story, the public's story, the industry's story, and the politicians' and punditocracy's story. Which one wins out determines whether the United States ultimately replaces the healthcare system we know with a publicly funded version or continues to accept the flawed one we have.

Sweep away all the news spin, and at its heart, Brian Thompson's killing has highlighted two crucial narratives, the first of which is that armed violence is a way to solve problems. Guns are a force so ubiquitous in our society today that we have become collectively numb to their destruction. It is a uniquely American act of desperation aimed at the industry that only someone like Mangione could be lionized for.

Secondly, the long-overdue prevailing story emerging from the incident is the injustice baked into our healthcare system that leaves nearly no one in the nation untouched.

The story that has yet to be embraced collectively is what a systemic solution to

the crisis looks like. That solution must center on publicly-funded healthcare and a complete dismantling of the insurance industry.

Luigi Mangione, arrested after a days-long manhunt, hardly fits the profile of a vulnerable member of society wronged by Big Health Insurance. White, male, physically fit (other than the debilitating back pain he appears to have recently suffered), born into privilege, and sporting a head of thick hair and a winning smile, he is a man whose political leanings don't fit neatly into boxes that allow either the left or the right to unequivocally claim him or damn him. And yet he is just about the only archetype of a CEO-killer able to provoke the sort of public admiration in our white supremacist patriarchal world that Robin Hood would have been envious of.

I suspect that, like me, many people of color breathed a sigh of relief that the alleged killer wasn't a Brown or Black man, or an undocumented immigrant. If he were any of those things, the narrative of a CEO's murder would have been less about the CEO and more about the murderer. White men are allowed the space to be flawed human beings. Their motivations and mental health are interrogated since their race and gender absolve them of anything else. The "ideal hero" did the quintessentially American deed.

The fact that the CEO-killer wrote the words "deny," "defend," and "depose,"on bullet casings—words often used to describe the health insurance industry's tactics—made it clear from the outside that this was an act meant to tell a story: that a death-dealing industry governed by wealthy corporate fat cats deserves to be dismantled, that its time has come, that its leaders need to be taken down.

The killer struck a chord so deep that the industry and the punditocracy supporting it didn't have time to articulate a counternarrative before many among the public began celebrating the cold-blooded murder. Americans began rooting for a man who carried out the ultimate revenge fantasy of anyone who's ever been denied coverage. "Wanted" posters for other healthcare CEOs emerged on the streets of New York City, for "denying medical care for corporate profit." Comments filled with deep satisfaction and biting sarcasm over Thompson's killing appeared on Reddit boards. Merchandise inspired by the words on the bullet casings sold on retail websites such as Amazon. Ballads were sung on TikTok.

Stories are powerful. They can move us into action—individual vigilante violence or collective movement building toward solutions that benefit us all.

For decades, counternarratives by pro-industry groups kept us paralyzed into inaction. For example, 15 years ago, when the nation had the chance to rid itself of parasitic health insurance companies, a vocal "astroturf" group called the Tea Party, parading as a grassroots formation, stymied President Barack Obama's attempt to fundamentally reform healthcare. Obama didn't even back the best alternative—Medicare for all—and only went as far as proposing a "public option" to private health insurance, where people could buy into publicly funded health plans. The then-president explained that with a public option, "no government bureaucrat or insurance company bureaucrat gets between you and the coverage that you need."

Republicans, centrist Democrats, and their well-funded proxies fought back hard with powerful narratives, making wild claims about government "death panels," and killed the public option. The version of the Affordable Care Act that ultimately passed was a gift to the insurance industry with a few bright spots, such as the end of "pre-existing conditions" as a basis for price hikes. The story that private, for-profit health insurance is superior to publicly funded healthcare won out. It was such a powerful tale that the health insurance industry had us rooting for the profits of billionaires and against our own interests.

Now, a CEO is dead, allegedly at the hands of a telegenic white shooter, in an act that has seemingly broken our collective psychosis. Many claim the murder is merely retaliation for the untold numbers killed by health insurance denials of care. Thompson's death has unleashed countless horror stories about the industry's predations, while the response of wealthy executives and defenders of the industry has been, well, pathetic. UnitedHealth Group CEO Andrew Witty wrote in a New York Times op-ed, "No one would design a system like the one we have," and still he offered nothing more than greater transparency in how denials are decided upon rather than pledging to reduce or eliminate denials of coverage.

Peter Thiel, billionaire and co-founder of PayPal, spent ten seconds sweating and thinking of a response to a question about public glee over the CEO's killing before making an incoherent and nonsensical statement.

This is a moment like no other, an opportunity to rewrite the narratives around

healthcare, to re-cast it as a human right, a necessity akin to public education, not a profit-making opportunity for Thompson, Witty, and health insurance shareholders.

I fear that, unless we articulate concrete demands for publicly funded healthcare, we may lose this opportunity. Since Mangione's arrest, there have been concerns of copycat attacks against other insurance CEOs. A Florida woman was arrested for merely saying to a representative of Blue Cross Blue Shield after having a claim denied, "Delay, deny, depose. You people are next." Apparently, death threats are commonplace for health insurance executives. According to the Wall Street Journal, "Vicky Gregg, the former CEO of BlueCross BlueShield of Tennessee, said she got repeated death threats when she was in the job years ago."

Can we unite around, not just our common hatred of a system that preys on us, but on the system that will solve the crisis? That is our challenge. We have only a small window of time before the industry and the punditocracy that backs it could beat us into submission, convincing us that sympathy over the murder of one man ought to eclipse the neglect of millions and that there is no alternative to the unjust system we are living with.

Even Obama ultimately backed a Medicare-for-all system, albeit after he was out of office. Senator Bernie Sanders, one of the most stalwart champions of publicly funded healthcare, has called for the building of a political movement rather than random acts of violence, to replace health insurance with a single-payer system.

Sanders said, "The way we're going to reform our healthcare system is having people come together and understanding that it is the right of every American to be able to walk into a doctor's office when they need to and not have to take out their wallet." We deserve nothing less than that.

By Sonali Kolhatkar

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Source: Independent Media Institute

Credit Line: This article was produced by Economy for All, a project of the Independent Media Institute.

Why Do We Sleep And How Can We Sleep Better?

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Photo:
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12-17-2024 ~ *Sleep is a biological necessity, but it remains a mysterious phenomenon we don't fully understand.*

We spend about a third of our lives sleeping. But do we know why we do it? Is it for biological, psychological, or evolutionary reasons? Much research has based its findings on what happens when we don't sleep enough. The effects of sleeplessness aren't difficult to pinpoint. Still, apart from a scientific consensus that sleep is essential to several brain functions and plays some kind of

“housekeeping role,” scientists have yet to determine why.

As contended by the National Institute of Neurological Disorders and Stroke, an arm of the National Institutes of Health and the nation’s leading funder of brain research, “its biological purpose remains a mystery.”

Several theories have been advanced to explain sleep. Although these theories may be valid, none offer a complete explanation.

Why We Sleep: Many Theories

According to a theory proposed by the National Library of Medicine, sleep is essential for energy conservation. This is because our metabolic rate drops during sleep, resulting in daily energy savings of up to 15 percent. This theory argues that sleep was an evolutionary development, reducing energy use during those times—mainly at night—when it was less practical to hunt for food. On the other hand, sleep left our ancestors more vulnerable to predators.

Likewise, the restorative theory argues that sleep is necessary for the body to undertake improvements and regrowth, including muscle repair, protein synthesis, tissue growth, and hormone release. Some sleep researchers have hypothesized that without enough sleep, the brain may not be able to clear toxins effectively.

Still, a 2024 study published in Nature Neuroscience suggests this theory could be wrong. The study found that the clearance and movement of fluid in the brains of mice were markedly *reduced* during sleep. However, this was considered only indirect evidence.

A third theory focuses on brain plasticity—the ability of the brain to change and repair itself. Sleep allows the brain’s glymphatic system—or waste clearance system—to remove toxins from the brain that build up during the day. This lets the neurons, or nerve cells, reorganize to ensure proper brain function during waking hours.

According to Harvard Medical School’s Division of Sleep Medicine, “…brain plasticity is not entirely understood, but its connection to sleep has several critical implications. It is becoming clear, for example, that sleep plays a critical role in brain development in infants and young children. Infants spend about 13 to 14 hours per day sleeping, and about half of that time is spent in REM sleep, the

stage in which most dreams occur."

The synaptic homeostasis theory focuses on the brain's consolidating and culling functions during sleep. While we sleep, the memories we need to preserve are converted from short-term to long-term, a process involving heightened activity in the hippocampus. Those that are irrelevant or unnecessary are discarded—a nightly decluttering operation.

The number of synapses increases during the day due to activity. Synapses are the gaps where neurons meet and use chemicals to send signals through the nervous system. If allowed to accumulate, the brain would become overloaded, like a computer's hard drive running out of memory, making it necessary to prune the unnecessary synapses. Numerous studies supporting this theory show a pattern of synapses in experimental animals shrinking during sleep and expanding during wakefulness.

A 2024 study published in Science by György Buzsáki, professor of neuroscience at New York University, focuses on sudden and powerful high-frequency brain waves known as "sharp wave ripples," produced by the firing of many thousands of neurons within milliseconds of one another. They are "like a fireworks show in the brain," said Wannan Yang, a doctoral student in Buzsáki's lab. The sharp wave ripples fire when the mammalian brain rests, whether during a break between tasks or sleep. They are known to be involved in consolidating and storing memories.

The new research shows that they're also involved in selecting and "tagging" the high-priority memories, which are replayed in sleep while ignoring those without priority. Scientists believe resting and sleeping are vital to consolidating and retaining information. If you sleep all the time, you won't be able to form new memories. But if you stay awake all the time, you won't form them, either. "If you just run one algorithm, you will never learn anything," Buzsáki said. "You have to have interruptions."

A 2024 report in Current Biology underscores the relationship between learning and a good night's sleep, but from a different perspective: the changes in how brain cells are connected. Some synapses are in brain regions associated with learning and memory, and sleep deprivation hurts these synapses.

Theories explaining these connections have primarily been based on the belief

that synapses are identical. However, Seth Grant, a neuroscientist at the University of Edinburgh, and his team and others have found that synapses are surprisingly diverse in structure, the composition of proteins in the neurons surrounding them, and the types of neurotransmitters they use to send signals. Grant and his team call the set of synapses the "synaptome." In mice studies, the researchers allowed one group to get about six hours of sleep while prodding the second group to keep them awake. Although the total number of synapses remained constant in both groups, the diversity of subtypes fell in the sleep-deprived mice, especially in areas of the brain associated with learning and memory: the cortex and hippocampus.

Quality sleep can also improve emotional well-being. Activity during sleep increases in certain parts of the brain—especially the amygdala, which is involved in emotional regulation and the response to fear. Research suggests that sleep deprivation causes the amygdala to overreact, heightening stress and anxiety, even when there is no fearful stimulus.

Similarly, sleep heightens activity in the striatum, which has several decision-making functions such as motor control, emotion, habit formation, and reward. Sleep also heightens activity in the insula, which some investigators believe "provides an awareness of the physical self as a feeling (sentient) entity, which may constitute a basis of selfhood."

Other theories emphasize the importance of sleep in maintaining normal health. Weight, for instance, is maintained because sleep has a pronounced effect on hunger hormones. Sleep increases leptin, making you feel sated after a meal, and decreases ghrelin, heightening appetite. This theory may explain why sleep deprivation is associated with an increase in obesity.

Sleep may also benefit the immune system. This is because, during sleep, the body produces cytokines—proteins that fight infection and inflammation—and antibodies that promote immunity. That may explain why—at least in some instances—a good night's sleep can mitigate colds and fevers.

Research has yielded evidence that sleep may help ward off dementia by providing a nightly shower for the brain, washing away the cellular waste accumulated during the day. This includes sticky clumps in the brain called plaques—amyloid deposits that build up during the day and that, in large

quantities, have been linked to the development of Alzheimer's. Research has found that adults aged 65 to 85 already have plaques in their brains; the less sleep they get, the more amyloid is present, and the worse their cognition is.

"Is lack of sleep sufficient to cause dementia? Probably not by itself alone," said Dr. Sudha Seshadri, the founding director of the Glenn Biggs Institute for Alzheimer's and Neurodegenerative Diseases at the University of Texas Health Science Center at San Antonio. "But it seems to definitely be a risk factor for increasing the risk of dementia, and perhaps also the speed of decline."

Sleep problems may also be an early sign of dementia—specifically Lewy body dementia and Parkinson's disease dementia. Such conditions may disrupt rapid eye movement (REM) sleep, causing people to act out physically in dreams.

However, too *much* sleep (nine hours or more) also appears to be linked to an increased risk for dementia. This might mean that other factors like depression, diabetes, or cardiovascular problems could be implicated.

A 2024 study led by Joseph Dzierzewski, senior vice president of research and scientific affairs at the National Sleep Foundation, showed that a good night's sleep could also lower feelings of loneliness. The study showed that of 2,297 adults in the United States, those who had seven to nine hours of sleep a night reported improvement in social relationships. The study indicated that younger adults were more likely to benefit than older adults, although researchers are uncertain why. Poor sleep may appear to contribute to feelings of loneliness because it adversely affects mood and leads to social withdrawal and lower self-esteem.

Evolutionary or adaptive theory argues that human inactivity during sleep helps us survive. If we remain stationary, we'll stay out of trouble, especially when we're vulnerable. Our ancestors survived by staying more or less still and avoiding accidents in the dark. Some experts take issue with this theory, contending that if survival were at stake, we'd be much better off if we were conscious and able to react to emergencies.

The Anatomy of Sleep

Several structures within the brain are involved with sleep. The peanut-sized hypothalamus is the hub of sleep-promoting nerve cells that affect sleep and arousal. Within this organ is the suprachiasmatic nucleus (SCN), a cluster of

thousands of cells sensitive to light. They control behavioral rhythm and are vital for the sleep/wake cycle. The SCN functions even in blind people, allowing them to sense light even when they can't see.

The cone-shaped pineal endocrine gland, located between the brain's two hemispheres, increases the production of the hormone melatonin from the SCN once we close our eyes. The pineal gland regulates the sleep-wake cycles and internal body clock, often called the circadian rhythm, which optimally should coincide with the external cycle of light and darkness.

The brain stem found at the base of the brain communicates with the hypothalamus, controlling transitions between waking and sleeping. The sleep-promoting cells in the hypothalamus combine with the brain stem to produce a brain chemical called gamma-aminobutyric acid (GABA), which tamps down the activity of arousal centers in both the hypothalamus and brain stem. This plays a role in REM sleep—the fourth sleep stage— when dreams occur. The brain stem also sends signals to the body, instructing muscles to relax, preventing people from physically acting out their dreams.

The egg-shaped thalamus is located in the middle of the brain. It controls the sensory and motor signals from the body to the brain. It also relays information from the senses to the cerebral cortex, the brain's outer covering that interprets and processes information that is separated into long and short-term memories. In most sleep phases, the thalamus is quiet, becoming active only during the REM state when it transmits images, sounds, and other sensations to the cortex, forming the dreams we experience. During REM sleep, the almond-shaped amygdala also goes to work, processing emotions that often accompany the dreams.

The basal forebrain—near the front and bottom of the brain—is also involved in the sleep-wake cycle. It releases a chemical (a byproduct of cellular energy consumption) called adenosine, which is believed to promote sleep. Caffeine counteracts adenosine, delaying sleepiness, so caffeinated drinks are not recommended before bedtime.

The Stages of Sleep

Sleep occurs in five stages: wake, N1, N2, N3, and REM. Stages N1 to N3 are non-rapid eye movement (NREM) sleep, with each stage leading to progressively

deeper sleep. Approximately 75 percent of sleep is spent in the NREM stages, with the majority spent in the N2 stage.

Typically, a person will go through all stages four to five times a night, each cycle taking roughly 90 to 110 minutes. The first REM sleep is usually short, becoming longer as the night continues.

Based on the frequency of waves during sleep, EEG recordings initially show alpha waves, which indicate wakefulness. Beta waves are seen when the person becomes drowsy. In the N1 sleep stage, we see the low-voltage theta waves—the lightest phase of sleep. In the more extended N2 sleep stage, the EEG registers sleep spindles—brief, powerful bursts of neuronal firing believed to be essential for memory consolidation.

The lowest-frequency delta waves are characteristic of N3—the deepest phase of non-REM sleep—during which the body repairs and regrows tissues, builds bone and muscle, and strengthens the immune system. It is also the stage when parasomnias such as sleepwalking, night terrors, and bedwetting can occur.

REM comprises 25 percent of the cycle and is characterized by beta waves, which are similar to brain waves when a person is still awake but falling asleep. This stage is associated with dreaming and is not considered a restful state because the brain is highly active and uses more power. People often awaken spontaneously during an episode of REM sleep.

Dreams

In a 2021 article entitled "The Effects of Sleep Quality on Dream and Waking Emotions," authors Francesca Conte and her colleagues investigated dreams. They reached two basic conclusions: On one hand, "there is a significant overlap between sleep physiology and the brain networks and neurochemical processes involved in affective modulation." On the other hand, people who suffer from mood or affective psychiatric disorders are also likely to have sleep disorders.

Sleeping and dreaming are related to emotional regulation, especially in REM sleep, where most dreams occur. The study noted a "distinctive neurochemical balance occurring during REM sleep," which sets the stage for processing emotional information.

This finding has led sleep researchers to propose a link between brain networks

involved in REM sleep and those involved in regulating emotion during the daytime. Researchers believe our dreams facilitate the "resolution of emotional conflicts, enhancing fear-extinction processes."

Another related theory—known as the "threat simulation theory" or the "social simulation theory"—proposes that we effectively rehearse or simulate threatening and difficult episodes in our dreams, which helps us cope with these situations when they arise in our waking lives. These researchers have determined that emotions we have while awake are closely associated with emotions we experience while we dream.

Researchers' findings suggest that even a single night of sleep deprivation is enough to increase reports of stress, anger, and anxiety, even in response to low-stress situations. This supports their theory that emphasizes the importance of sleep and dreaming to emotional regulation. "Habitual self-reported sleep quality has also been found to moderate the relationship between threat-related amygdala reactivity, negative affect, and perceived stress," they write.

Sleep Disorders

Several disorders make it difficult for people to fall asleep or stay asleep for seven to eight hours: insomnia, obstructive sleep apnea, narcolepsy, restless legs syndrome, and circadian rhythm disorders. They all disrupt sleep and account for what is known as "sleep debt."

Insomnia is among the most common sleep disorders, occurring in one out of three adults worldwide. It can be a minor inconvenience or a significant problem, depending partly on the individual's sleep habits, which can change with age.

There are two basic types of insomnia—those related to *time* and those related to *cause*. In the former category, insomnia may be acute (short-term) or chronic (long-term). Insomnia disorder refers to the chronic kind.

Sleep experts also classify types of insomnia: primary, which refers to insomnia that occurs spontaneously, and secondary, which means it's a symptom of some other underlying condition or circumstance. Ten percent of people meet the criterion of insomnia disorder.

There are three additional classifications of insomnia—initial, middle, and late. The first involves sleep onset, meaning you have trouble falling asleep. The

second, also known as “maintenance insomnia,” occurs when you wake up in the middle of the night but then go back to sleep. This form is prevalent. The third, called “early waking insomnia,” occurs when you wake up earlier than intended and can’t fall back asleep. All these forms are time-related.

Individuals who have cause-related chronic insomnia are diagnosed based on various factors. The occurrences would have to take place at least three times a week; they would have to last at least three months, and extraneous causes like medications or mental or physical disorders would have to be excluded.

Chronic insomnia can disrupt how the body sends and processes information, which not only makes you more anxious and stressed but also makes it more difficult to concentrate or learn new information and skills. Coordination is adversely affected, too, putting an individual at a higher risk for accidents. If this condition persists over a long time, more harmful manifestations are possible, including hallucinations and mania in those with bipolar disorder.

Experts are still uncertain why insomnia, especially chronic insomnia, occurs. They consider a patient’s family history, brain activity, and medical conditions such as acid reflux and Parkinson’s disease, all of which may contribute to the condition. Mental health conditions and life changes—even positive ones like moving into a new home or a promotion—are also factors that can account for insomnia.

The Effects of Sleep Deprivation on the Body

Sleep deprivation makes you more irritable, and if it goes on long enough, it can also disrupt the proper function of the body and metabolism.

The Immune System

During sleep, the immune system produces protective, infection-fighting substances like antibodies and cytokines that help fight and prevent bacterial and viral illnesses. Some cytokines also promote sleep. Not getting sufficient sleep curbs the strengthening of the immune system and may also extend the time the body needs to recover from illness.

The Respiratory System

Among sleep disorders, obstructive sleep apnea (OSA) significantly affects the respiratory system and hurts sleep quality. Normally, air should flow smoothly from the mouth and nose into the lungs at all times, including during sleep. OSA

is a breathing disorder that causes breathing to stop entirely for periods—known as apneic episodes—usually followed by periods of silence.

Snoring is associated with OSA, but it is not necessarily a sign of OSA, which is seen most typically in older males and many postmenopausal women. People afflicted with OSA are more vulnerable to respiratory infections like colds and flu. This can worsen existing respiratory diseases.

The Cardiovascular System
A meta-analysis by Qiao He and colleagues, published in the European Journal of Preventive Cardiology, concluded that "insomnia symptoms [consisting] of difficulty initiating sleep, difficulty maintaining sleep and non-restorative sleep were associated with an increased risk of future cardio-cerebral vascular events."

Because sleep affects processes that maintain the health of the heart and blood vessels—including those that affect blood sugar, blood pressure, and inflammation—sleep disruption may affect the body's ability to heal and repair both organs. This can lead to cardiovascular disease, with an increased risk of heart attack and stroke.

The Endocrine System
The network of glands and organs that constitute the endocrine system releases hormones that regulate metabolism, energy level, reproduction, growth and development, and response to injury, stress, and mood. Thus, a typical night's sleep plays a vital role in the maintenance of this system. For instance, three hours of uninterrupted sleep is required for testosterone production. Any interruption of sleep, if it persists, could affect growth hormone production, which is especially important in children and adolescents since these hormones help build muscle mass and repair cells and tissues.

The Brain
Sleep deprivation may also harm the brain. Research published in October 2024 in Neurology showed that poor sleep quality in people's 40s can make their brains 1.6 to 2.6 years older in their 50s. The study examined nearly 600 participants asked about their sleep habits, including whether they had difficulty falling asleep, woke up multiple times a night, or woke up too early. MRI scans 10 years later revealed that those who reported poor sleep had brains that had aged prematurely compared to those who slept well.

Another study conducted in 2023 with a smaller sampling reached similar conclusions. “Age-related changes in several sleep characteristics indicate that reduced sleep quality is a frequent characteristic of aging,” the researchers wrote in the Journal of Neuroscience. Poor quality sleep has been associated with an increased risk of dementia, inflammation, and a weakened immune system.

The Digestive System

Sleep affects the levels of two hormones—leptin and ghrelin—which control feelings of fullness and hunger. Therefore, overeating before bed or snacking in the middle of the night can disrupt these hormones, raising the level of ghrelin, an appetite stimulant usually lowered during sleep.

Sleep deprivation also causes your body to release less insulin after you eat, interfering with its ability to reduce your glucose level and tolerance, a condition known as insulin resistance. This can lead to conditions like obesity and diseases like diabetes.

Obesity and Diabetes

Laboratory and epidemiological studies suggest that sleep loss may play a role in the increased prevalence of diabetes and obesity. Current data suggest the relationship between sleep deprivation and weight gain and diabetes risk may involve at least three pathways: 1) alterations in glucose metabolism, 2) upregulation of appetite, and 3) decreased energy expenditure. (Upregulation is defined as the process by which a cell increases its response to an external signal or a substance).

In the last few decades, more than 30 percent of adult men and women between 30 and 64 have reported sleeping less than six hours per night. This decrease in reported sleep occurred over the same period during which there was a significant increase in diabetes and mortality.

Furthermore, laboratory studies conducted by Kristen Knutson and her colleagues, documented in the Journal of Clinical Sleep Medicine, show an adverse impact of sleep loss on glucose regulation. This raises the possibility of an association between short sleep duration and the severity of existing diabetic conditions.

Two hormones—insulin and glucagon—work together to strike a balance and play a vital role in regulating a person’s blood sugar levels. Glucagon triggers the liver

to convert glycogen into glucose. Insulin enables blood glucose to enter cells, which are used to produce energy. This balance, called homeostasis, is necessary for health; when blood sugar is too high, the pancreas will secrete more insulin. Consistently high blood sugar levels can damage cells. When the balance is thrown off—which could be caused by diminished sleep—diabetes and other adverse conditions can result.

Causes of Sleep Deprivation

So why are people losing sleep? It's mainly stress. The American Psychological Association found that "the relationship between sleep and stress goes both ways—those who sleep less are more stressed, and those who are more stressed sleep less." In a 2024 Gallup poll, 63 percent of people who said they weren't getting enough sleep reported being often stressed, compared to 31 percent who said they were getting enough sleep.

Over the past 30 years, more Americans have become stressed, except for a sharp decrease in 2003. The Gallup poll showed that nearly half of all Americans—49 percent—reported frequently experiencing stress, up 16 points over the past two decades; these were the highest figures in Gallup's trend to date. Younger women were likelier to say they were stressed—29 points more likely than women 50 and older.

Stress is by no means the only cause of sleep deprivation. Not getting enough sleep is relatively common. Experts estimate between 50 million and 70 million adults in the U.S. meet the medical criteria for sleep deprivation at any point in time.

A variety of causes apart from stress may be to blame. Shift work may require employees to sleep during the day when sleep quality is worse than at night. The use or abuse of alcohol or caffeine consumption late in the day may be a factor. Sleeping in a new or unfamiliar place, such as a hotel, can negatively impact sleep. Also, medications such as corticosteroids and stimulants can create fitful sleep.

Medical conditions may also be responsible, such as sleep apnea; concussions and traumatic brain injuries; short-term illnesses like the common cold and flu; degenerative neurological disorders such as Alzheimer's disease or Parkinson's disease; and Parasomnias (disruptive sleep disorders) like night terrors, sleep

paralysis, and sleepwalking.

Sleep Labs

Sleep labs or sleep centers are located in several metropolitan areas throughout the U.S. They are set up to diagnose and treat people with severe sleep disorders such as obstructive apnea and chronic insomnia. Sleep studies, known as polysomnography, may require patients to stay overnight.

The rooms where the studies are conducted are designed to resemble hotel rooms and are dark and quiet. The sleeping area has a low-light video camera that lets technicians see what's happening when the lights are out. They communicate with the patient through an audio system and can enter the room to remove wires if they need to use the bathroom.

Before the patient goes to bed, technicians use a mild adhesive to apply sensors to the scalp, temples, chest, and legs. A small clip is placed on the finger or ear to monitor blood oxygen levels. As the patient sleeps, technicians monitor several signals: brain waves, eye movements, heart rate, breathing pattern, blood oxygen levels, body position, chest, abdominal and limb movement, and snoring and other noises.

Technicians may also use a positive airway pressure (PAP) machine for those with apnea. This device consists of a tight-sealing nosepiece or face mask through which a stream of air is delivered to help the patient breathe while sleeping. Although patients may not sleep as well under constant monitoring, the test results are usually unaffected. Getting a full night's sleep while being tested isn't necessary.

Who's Getting Enough Sleep and Who Isn't

According to Sleep Savvy Magazine, in 2023, the Dutch, Danes, and Swedes slept the best, with 77.05 percent, 76.17 percent, and 75.18 percent, respectively, sleeping between seven and nine hours per night. The worst sleepers were residents of Qatar (42.64 percent), Iran (43.42 percent), and South Korea (45.45 percent).

Australia, Egypt, and New Zealand had the highest number of extended sleepers (those who slept for ten hours or more). Meanwhile, 70.14 percent of Americans were estimated to sleep between seven and nine hours per night.

Despite their proven capacity to sleep longer, the Swedes led the world in online searches (86,014) for sleep aids, including products like white noise machines and supplements like melatonin. Americans came in second, with 49,486 searches for sleep aids. According to the Centers for Disease Control and Prevention (CDC), one in three adults in the U.S. experiences sleep deprivation, which may account for the increasing number of searches.

In 2013, Gallup found that 56 percent of Americans got the sleep they needed in terms of quality and quantity, and 43 percent did not. Eleven years later, the poll's results were almost the opposite, with 57 percent saying they were sleep deprived and 42 percent saying they were happy with the sleep they got. The share of those who got five hours or less rose to 20 percent, a dramatic rise compared to previous generations. In 1942, for example, only 3 percent reported getting five hours or less of sleep. According to the National Institutes of Health (NIH), an estimated 50 million to 70 million Americans have chronic or ongoing sleep disorders.

Although the decline in America's sleep in 2024 is across the board, adults 65 and older are more likely than those who are younger to get the sleep they need. Young adults aged 18 to 29 reported getting the least amount of sleep.

A Contrarian Survey?

Despite research showing that a good night's sleep is becoming increasingly rare among Americans, a survey by the American Time Use Survey (ATUS), conducted by the Bureau of Labor Statistics and the Census Bureau, showed that Americans slept about 10 minutes more daily compared to previous years. A careful look at the data shows the reason for contradictory results. The data came from a sample of people asked to report what they did all day. However, the sample was taken after the COVID-19 pandemic had shifted work habits for many but not all Americans.

Those who were able to work from home did indeed get a little more sleep, but people who had difficult jobs that required them to work away from home still suffered from sleep deprivation. In fact, in the last 30 years, the portion of the population getting less than five hours of sleep has increased to 20 percent. Furthermore, men are getting more sleep while women are still amassing sleep debt.

Sleep Deprivation and Women

Younger women are especially susceptible to sleep deprivation. A 2024 Gallup report found that 27 percent of younger women, compared to 46 percent of younger men, reported getting enough sleep. Furthermore, according to a 2024 report in Science Direct, "females are more affected by extended wakefulness and circadian misalignment than males are."

This led the researchers to propose that the "long-term effects such as sleep and metabolic disorders are likely to be more prevalent in females than in males." They admitted, though, that much about the sex-related differences in "key aspects of sleep-wake and circadian regulation" were still unknown.

"When you look in particular at adult women under the age of 50, that's the group where we're seeing the steepest movement in terms of their rate of sleeping less or feeling less satisfied with their sleep and also their rate of stress," reports Gallup senior researcher Sarah Fioroni.

She adds that sleep is undervalued even though it is considered one of the three pillars of health, along with diet and exercise. Fioroni argues that current policies are not conducive to women getting enough sleep and that paid family leave and flexible work hours might help women sleep more restfully.

Why sleep quantity and quality differ significantly between the sexes isn't well understood, particularly since women are often underrepresented in sleep and circadian rhythm research. Sleep researchers are exploring three areas: 1) how sex differences systematically influence sleep-wake and circadian regulation in humans; 2) how sex differences in sleep and circadian factors modulate metabolic control; and 3) how these differences may affect the development of precision medicine.

Women are approximately twice as likely to develop anxiety disorders, which are associated with lower sleep quality. They also report more incidences of sleep disturbances, including insomnia, frequent awakenings, non-restorative sleep, and unpleasant dreams or nightmares, especially during the premenstrual week and the first days of menstruation.

Sleep Deprivation and Teens

A study by the National Sleep Foundation found that teens weren't sleeping well—a staggering 87 percent weren't getting the recommended eight to 10 hours

of sleep per night. Sleep deprivation was associated with difficulty in concentration, poor grades, drowsiness while driving, anxiety, depression, suicidal ideation, and suicide attempts.

And it's only getting worse. "I think high school is the real danger spot in terms of sleep deprivation," said William Dement, founder of the Stanford Sleep Disorders Clinic, the first of its kind in the world. He claims that lack of sleep can impact kids' physical and emotional health and performance in school, sports, and driving. The problem becomes more pronounced when teens start high school and have to get up earlier for class even though they're going to bed later, a universal issue in this age group.

High school hours are out of sync with their students' biological clocks. "When teens wake up earlier, it cuts off their dreams," says pediatric sleep specialist Rafael Pelayo with the Stanford Sleep Disorders Clinic. Their circadian rhythm shifts to a later time, making it more difficult to fall asleep before 11 p.m., which would be necessary for a sufficient night's sleep.

Then there's the habit—some call it an addiction—of checking their smartphones. Some 92 percent of U.S. teens have smartphones, and 24 percent report being online "constantly," according to a 2023 report by the Pew Research Center. Some 72 percent of teens bring cell phones and other electronic devices into their bedrooms.

This issue has received much-renewed attention thanks to a 2024 book titled *The Anxious Generation* by social psychologist Jonathan Haidt. He argues that smartphones have led to a "great rewiring of childhood," which in turn has led to an "epidemic of mental illness." Haidt calls these phones "experience blockers," adding that "once you give the phone to a child, it's going to take up every moment that is not nailed down to something else." Another name for these phones could be "sleep blockers." He advocates banning phones in high school and prioritizing real-world play and independence.

Sleep Deprivation and Workers

According to a 2022 Gallup report, 11 million of the 155 million full- and part-time U.S. employees reported getting less than adequate sleep over the previous month. This was followed by 33 million respondents who reported only fair sleep. Gallup also concluded that absenteeism due to poor sleep results in an estimated

$44.6 billion in lost productivity each year.

A sense of well-being is linked to sleep and is essential for optimal job performance. Research has shown poor sleep impairs a worker's ability to focus, learn efficiently, and consolidate memory. Depression and anxiety may be triggered or exacerbated by poor sleep and can adversely affect job performance, on top of the effects of just being tired.

Lack of adequate sleep is also related to turnover. The Gallup survey suggests that workers who don't sleep well are more likely to report having changed jobs in the previous 12 months, either voluntarily or involuntarily. This tendency to change jobs could become a vicious cycle, as workers who change jobs frequently may experience poorer sleep than they did previously.

Businesses should emphasize the importance of sleep, exercise, healthy eating, and stress management to their employees. Gallup adds that "by treating sleep as a major mechanism for improving employee well-being, employers can simultaneously improve the lives of their workers along with business outcomes that are critical to their success."

The Business of Sleep

Sleep deprivation has driven desperate people to try new solutions that might give them a good night's sleep. Revenue in the sleep aids market in the U.S. is estimated to be $3.89 billion in 2024. With an annual growth rate of 2.48 percent, "sleep economy" revenues should reach $4.29 billion by 2028. The global market for sleep aids (beds, mattresses, and tech devices) is $432 billion annually.

According to the Sleep Foundation, a company that compiles news about sleeping trends, the sleep apnea devices market alone is estimated to be worth $13.5 billion in 2024, and it's expected to keep growing.

New tech products drive tremendous growth in the sleep market. Venture capital funding for sleep tech nearly doubled between 2017 and 2021.

A 2023 American Academy of Sleep Medicine survey shows that one-third of Americans have tried a sleep tracker. These devices, which people use to optimize their sleep, typically cost between $200 and $300 and monitor physical signs during sleep, such as heart rate and body movement.

Most of these devices are promoted for tracking sleep duration, sleep phases

(deep or close to waking), sleep quality (by detecting interrupted sleep and letting the user know if they are tossing, turning, or waking at night), and environmental factors such as light and room temperature. Users can also track lifestyle factors affecting their sleep, like how much caffeine they consumed that day.

There are two main classifications of sleep trackers—wearable and nonwearable. A nonwearable product called Dodow, which claims to have over one million users, is a small wireless device that can be turned on with a button. It projects a soft light that stops the user's mind from racing and guides their breath back to a relaxed state.

Another non-wearable device, Homni, resembles a bedside lamp equipped with integrated sensors, light, and a Bluetooth speaker connected to an app that "analyzes your sleep environment, tracks sleep quality and cycles, and makes your morning wakeup routine more pleasurable."

The wearable Muse S Headband "tracks brain activity, heart rate, breathing, and movement while [an individual] fall[s] asleep and throughout the night." However, these products come with a caveat: The data they collect can't be used to diagnose sleep disorders, and the FDA doesn't approve them.

Mattress sales have also enjoyed a boom, doubling between 2015 and 2020. Smart mattresses and beds are costly; they retail for between $2,000 and $5,000. These products are called "smart" because they allow the user to control firmness levels and temperature at the push of a button. They're also supposed to provide insights into one's sleep health over time.

One example is the Sleep Number 360 p6 Smart Bed, which offers "built-in, adjustable air chambers for customizable comfort, along with biometric sensors, so the bed can automatically adapt to movement to keep you at your preferred firmness all night long." The bed also comes with an app that allows users to track their sleep and measure how long it takes to fall asleep.

The Satva Solaire Adjustable Firmness Mattress features 50 different firmness levels. It offers users memory foam and latex to "experience the familiar comfort and support you'd expect from a more traditional mattress."

The Eight Sleep Pod 4 Ultra smart mattress allows users to adjust the temperature on each side of the bed to suit their comfort.

There are many other novel sleep products, including eye masks made of high-end materials like mulberry silk. Other masks are weighted with glass beads or have pockets for storing sleep stones. Weighted blankets containing ball bearings, plastic pellets, and other objects that make them five to 30 pounds heavier than standard blankets have grown in popularity because they make users feel more comfortable and secure. Furthermore, specially designed pillows are available to those who want to customize their product's shape retention, moldability, and temperature control.

There is also a flourishing market for podcasts that promise to lull users to sleep. The Women's Meditation Network has produced 20 podcasts for this purpose, which consist of "a soothing series of episodes" intended to "calm the stresses typical of many women."

Katie Krimitsos, the founder of the network, is responsible for the podcast "Sleep Meditation for Women," which has drawn about one million monthly listeners. "Our interpretation of how fast life should be and what we should 'accomplish' or have or do has exponentially increased," Krimitsos says, explaining why her podcasts for women have become so popular.

Those who want to try a beverage that might help them fall asleep can make themselves a Sleepy Girl Mocktail. This drink consists of tart cherry juice and magnesium powder topped with ice and sparkling water or soda. The cherry juice contains small amounts of melatonin—which may improve sleep quality and insomnia—and tryptophan, which increases sleep time and efficiency in insomnia patients.

The fitness center Equinox is getting into the sleep business, offering clients who can afford its elite concierge services a "sleep coach." Its website says, "[I]n each session, [a client] and [their] coach will evaluate sleep habits, find opportunities, implement better behaviors, and track your progress towards your goals."

Sleep Medications

Americans are taking fewer prescription and nonprescription medications to help them sleep. A 2022 study published in the Journal of Clinical Sleep Medicine documented a 31 percent decline in the use of common sleep medications between 2013 and 2018. The trend is likely due to a growing awareness of these medications' potential side effects and dangers. The 86 percent decrease among

Americans over 80 is particularly noteworthy.

A 2020 survey from the National Center for Health Statistics presented a snapshot of those Americans who regularly took sleep medication:

– 8.4 percent of adults took sleep medication every day or most days throughout the previous month.

– 6.6 percent of men compared with 10.2 percent of women took sleep medication.

– Men in lower and middle-income groups were more likely to use sleep medication than men with the highest family incomes.

Furthermore, a 2023 study by Leng and her colleagues found that sleep medication varied by race for both men and women:

– White people were more likely than Black people to take sleep medication, with 7.71 percent of White respondents taking them frequently, compared to 2.66 percent of Black respondents. Black people were half as likely to take prescription hypnotics.

There are three types of sleep medications—nonprescription (over the counter), supplements (which can be sold without FDA approval), and prescription.

Nonprescription Medications
According to the American Academy of Sleep Medicine, antihistamines are the most common ingredient in over-the-counter sleep aids.

These medications tend to fall into two main types—diphenhydramine (Benadryl) and doxylamine succinate (Sleep Eze, Sominex, Nytol, Tylenol PM, Kirkland Sleep Aid, and Unisom SleepGels). Both types of antihistamines help allergy sufferers with difficulty sleeping. Diphenhydramine is the milder of the two and is less likely to cause grogginess, equivalent to a hangover the next day. It may, however, cause daytime drowsiness, constipation, and dry mouth. Still, tolerance builds up quickly, and the medication loses effectiveness after a few nights.

Doxylamine is one of the most sedating over-the-counter antihistamines, and it leaves the system slower than diphenhydramine. In general, it is also more expensive than diphenhydramine. In the absence of allergies, these drugs are not

recommended for sleep.

Another product—Aleve PM—combines the antihistamine diphenhydramine and naproxen (a non-steroidal anti-inflammatory drug or NSAID) to treat sleeping problems caused by minor aches and pains.

Doctors advise patients to take these medications only on a short-term basis because extended use can exacerbate insomnia. These medications are also not recommended for patients with certain types of glaucoma, peptic ulcers, urinary retention, women who are pregnant or breastfeeding, or seniors at risk for dementia.

Supplements
Many people prefer supplements because they are naturally—as opposed to chemically—derived. However, the hormones, amino acids, herbs, and plants available in stores haven't been well studied, so their effectiveness as sleep medication is uncertain.

People often take melatonin for sleep because it is a hormone that helps control an individual's natural sleep-wake cycle and may reduce the time it takes to fall asleep. Travelers frequently use it to mitigate the effects of jet lag. Valerian root, a plant extract, has been shown to have some therapeutic effects. Some people take it to help them fall asleep and experience better-quality sleep.

A meta-study found that melatonin was "remarkably effective in preventing or reducing jet lag," especially for travelers crossing five time zones (although it can be beneficial for those traveling shorter distances), in an easterly direction who have had jet lag in the past. If taken early in the day, however, it can cause sleepiness and difficulty in adjusting to the local time zone. Researchers maintain that melatonin still needs further study and routine pharmaceutical quality control.

Ginkgo biloba is a natural herb that may aid sleep and relaxation, but the evidence is limited.

Glycine is an amino acid that may help people sleep more quickly and improve sleep quality.

Magnesium is an essential ion in the human body and is used to help relax and

enhance sleep quality.

L-theanine is another amino acid that may improve sleep quality.

Lavender is an herb that can induce a calming and sedentary effect to improve sleep. It has been studied for its therapeutic use in treating parasitic infections, burns, insect bites, and spasms. Growing evidence suggests that lavender oil may effectively treat several neurological disorders.

Cannabidiol, or CBD, is a chemical derived from the cannabis plant that may cause drowsiness and have a calming effect in large doses. In a 2019 studypublished in the Permanente Journal, researchers found that people who took CBD oil felt less anxious and slept better within a month.

Prescription Drugs
There are several types of prescription drugs used as sleep aids, including benzodiazepines, which belong to a class of medications called hypnotics. Examples include alprazolam (Xanax), clonazepam (Klonopin), diazepam (Diastat, Valium), estazolam (Prosom), lorazepam (Ativan), temazepam (Restoril), and triazolam (Halcion).

These drugs may be used to treat parasomnias—disruptive sleep-related disorders that can include abnormal movements, talking while sleeping, nightmare disorder, sleep terrors, sleepwalking, sleep-related eating disorders, and sleep paralysis. Occasionally, they are also used to treat bruxism (teeth grinding) and short-term insomnia. These sleeping pills may be helpful to those who want an insomnia medication that stays in the system longer, but they have some severe downsides because they can cause addiction and dependence.

Non-benzodiazepine hypnotics, such as eszopiclone (Lunesta), zaleplon(Sonata), zolpidem (Ambien, Edluar, Intermezzo), and Zolpimist—a sedative administered as a nasal spray—are used to treat short-term insomnia. Ramelteon (Rozerem), a melatonin receptor stimulator, also treats insomnia.

Anti-Parkinsonian drugs (dopamine agonists) such as gabapentin enacarbil (Horizant), pramipexole (Mirapex), ropinirole (Requip), and rotigotine (Neupro) may be used to treat restless legs syndrome and periodic limb movement disorder (also called nocturnal myoclonus syndrome).

Anticonvulsants, such as carbamazepine (Carbatrol, Epitol, Tegretol), gabapentin (Neurontin), gabapentin enacarbil (Horizant), pregabalin (Lyrica), and valproate (Depakene, Depakote, Depakon) may be used to treat nocturnal eating syndrome, restless legs syndrome, periodic limb movement disorder, and insomnia related to bipolar disorder.

Antinarcoleptics, such as methylphenidate (Ritalin) and modafinil (Provigil), can improve daytime wakefulness in shift workers or people with narcolepsyor apnea. Pitolisant (Wakix) and sodium oxybate (Xyrem, Xywav) are drugs that can control excessive daytime sleepiness and loss of muscle control in people with narcolepsy.

Antidepressants or antianxiety medications may be used to aid sleep because drowsiness is one of their main side effects. These include medications such as mirtazepine (Remeron), quetiapine (Seroquel), and trazodone (Desyrel).

Orexin receptor antagonists are involved in regulating the sleep-wake cycle. This type of drug reduces the action of orexin in the brain, which is active during the day. These include daridorexant (Quviviq), lemborexant (Dayvigo), and suvorexant (Belsomra).

Doxepin (Silenor) is approved for use in people with trouble sleeping. Silenor may help with sleep maintenance by blocking histamine receptors.

Physicians caution patients against developing a physical dependence on any of these drugs or using them with opioids, which depress breathing and increase the risk of overdose. Patients should also avoid alcohol, only take sleep medication at bedtime, be alert to side effects, and quit any medications slowly and carefully. A medical evaluation is essential before taking any prescription drug, and patients are also advised to take these medications only as directed by a physician.

Getting a Good Night's Sleep

When searching online for "restful sleep," one would find many sites offering advice to insomniacs. The Mayo Clinic promotes "Six Steps to Better Sleep." Harvard Health offers "Eight Secrets to a Good Night's Sleep." Healthline suggests "Top 15 Proven Tips to Sleep Better at Night." The Sleep Foundation provides "20 Tips for How to Sleep Better." All these sites—and many others—share common tips.

Sticking to a sleep schedule is advised, though the recommended amount of sleep

changes with age. For example, an infant might need up to 17 hours of sleep, a teen would need eight to 10 hours, an adult would need seven hours, and older adults would require seven to eight hours.

Consistency is important. We should consider turning the process of going to bed into a ritual. For instance, a calming bath before bedtime may improve sleep quality and efficiency (getting to sleep quickly). One should go to bed and get up at the same time every day—even on weekends. If you're still tossing and turning after 20 minutes, it might help to leave your bed and bedroom and read a book or listen to soothing music until you become drowsy and ready for sleep.

Heavy meals within a couple of hours before bedtime should be avoided. Health.com recommends a healthy small snack like an apple if you are hungry before bedtime. Caffeine and alcohol should also be avoided two or three hours before bedtime. A high-carb meal eaten four hours before bed helps people fall asleep faster. A low-carb diet also improves sleep, indicating that carbs aren't always necessary to induce sleep, especially if you're used to a low-carb diet.

Some sleep experts warn against drinking any liquids two hours before bedtime. Nocturia is the medical term for excessive urination during the night, which can keep one from getting a good night's sleep.

The bedroom should be cool, dark, and quiet. Studies have shown that increasing temperatures can disturb sleep. A temperature of 70 degrees Fahrenheit (20 degrees Celsius) is considered optimal, but this may vary depending on individual preferences.

Smartphones, laptops, and televisions that emit blue light should be avoided before bedtime. Optimally, electronic devices should be banned from the bedroom altogether. Individuals shouldn't eat in bed or turn it into an office by using the bed to make calls, text, or work on their laptops.

Long daytime naps may interfere with sleep at night. A nap lasting no more than an hour is recommended. However, there are exceptions; some people who nap regularly and frequently don't have any difficulty falling or staying asleep at night.

Exercise and exposure to the outdoors may also positively influence sleep. But exercise shortly before bedtime may do the opposite. A morning workout or a

brisk walk is recommended.

Exposure to sunshine and bright lights (especially in winter) can be helpful if you have insomnia. Some studies have shown that exposure to bright lights reduced the time it took to fall asleep by up to 86 percent. Furthermore, meditation and stress management can be helpful to those who have trouble falling asleep due to anxiety.

If one has trouble falling asleep over a prolonged period, a constant urge to move their leg, or a burning pain in their stomach, chest, or throat—symptoms of apnea, restless legs syndrome, and gastroesophageal reflux disease, respectively—they should consult their healthcare provider.

By Leslie Alan Horvitz

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Source: Independent Media Institute

Credit Line: This article was produced by Earth | Food | Life, a project of the Independent Media Institute.

The Global South Is On The Brink Of A Disastrous Debt Crisis. Reform Is Urgent.

Ilene Grabel – ilenegrabel.com
Photo: © Tommy Collier Productions

12-16-2024 ~ *The coming debt crisis will surpass that of the 1980s and disproportionately impact women, economist Ilene Grabel warns.*

Countries across the Global South are experiencing climate, poverty and development crises — all made worse by the unbearable costs of debt servicing. Indeed, according to Development Finance International, "Citizens of the Global South now face the worst debt crisis since global records began." Low-income countries, which have seen the amount paid on foreign debt payment increase by 150 percent since 2011, are being hit especially hard.

In the exclusive interview for *Truthout* that follows, Ilene Grabel, a leading economist in global finance and global financial governance, sheds light on the roots of the Global South debt crisis and offers specific strategies for easing the debt burden of developing countries. She argues that the obstacles to debt relief are purely political and ideological, as the global financial architecture is "morally bankrupt" and was designed to serve the interests of the rich at the expense of the poor. Grabel is Distinguished University Professor at the University of Denver and Professor of International Finance at the Josef Korbel School of International Studies of the University of Denver. She has conducted commissioned research

for various United Nations agencies and NGOs, and is the author of the multi-award-winning book, *When Things Don't Fall Apart: Global Financial Governance and Developmental Finance in an Age of Productive Incoherence* (MIT Press).

C. J. Polychroniou: The debt crisis in the Global South is not a new phenomenon, but has been exacerbated since the outbreak of the COVID-19 pandemic to the point that many experts regard it as the worst debt crisis ever. Now, you have studied extensively the Global South debt crisis, so what's your take on this critical issue? Why are so many developing countries facing rising debt burdens this decade? And why is the Global South paying so much more to service its debt than it receives?

Ilene Grabel: A debt crisis of epic proportions is emerging in the Global South. Some have referred to this as a "silent debt crisis." But it's loud and clear. We are poised on the cusp of a new "lost decade" with vast debt overhangs, widespread debt distress, demands for austerity by lenders, and severe economic slowdowns just some of the legacies of this crisis. The term "lost decade" was used to describe the crisis of the 1980s — the last time the Global South faced a debt crisis.

The total external debt stock of low- and middle-income countries (LMICs) reached an historic high of $8.8 trillion in 2023. (Except where noted, data drawn from the World Bank.) In 2023, LMICs (excluding China) paid a record $971 billion toward debt service (i.e., principal and interest). That's the highest level since 1973. It was more than double the amount a decade ago. Interest payments by LMICs increased by a third to $406 billion in 2023. For the poorest countries, interest payments have quadrupled since 2013 and reached an all-time high of $34.6 billion in 2023. The UN reports that in the last three years, over a dozen governments have defaulted on their debt and over 30 of the world's poorest countries experienced "debt distress." This is greater than the number of defaults in the previous two decades.

The combined effects of high interest rates in the Global North (despite recent rate reductions) and a strengthening dollar have increased the cost of servicing debts. Fifty-seven percent of all long-term external debts held by LMICs (excluding China) and 40 percent of the debt held by the poorest countries are at variable interest rates tied to rates in the Global North. And more than 80 percent of public- and publicly-guaranteed debt in LMICs is repayable only in dollars,

which means that the dollar's appreciation increases debt service costs. The strengthening of the dollar since the U.S. election has made matters worse.

Foreign private creditors largely pulled out of lending to Global South countries starting in 2022 as debt distress accelerated and interest rates in the Global North rose in 2022 and 2023. Indeed, since 2022 foreign private creditors have received nearly $141 billion more in debt service payments from governments than they've disbursed in new loans. That was the first time since 2015 that private lenders withdrew more funds from the Global South than they disbursed.

Many, including yourself, believe that the current debt crisis is not only more serious than the debt crisis of the 1980s, but that its consequences will also be far more traumatic. Why is that? And why is it, as you have argued, that the burdens of today's debt crisis in the Global South are borne disproportionately by women?

The lost decade of the 1980s serves as a powerful warning of what's to come. That period witnessed economic collapse under radical austerity programs, untold human suffering and setbacks to human development (including women's equality), compounding intergenerational social and economic losses; and environmental degradation as natural resources were sacrificed to the burdens of debt service. The miseries of that period amplified already existing deficits in the care economy, increasing the burdens and threatening the life chances of women and girls the world over.

There's no question that we are at the start of a debt crisis that's certain to worsen dramatically in the coming years. Debt service obligations to multilateral, bilateral and private creditors directly reduce available funding for already under-resourced shock absorbers, social protections (including those that support women's workforce participation and caring labor), public investment and investments in physical and social infrastructures that support growth and gender equality. Moreover, as in previous financial and debt crises, support from the Bretton Woods institutions (BWIs) is conditioned on austerity programs that entail, among other things, fiscal consolidation, public expenditure reductions, increased consumption and value-added taxes, user fees (that can restrict educational access for girls), and measures that contract public sector employment.

Constraints on fiscal space are already being felt anew across the Global South.

Deeper constraints surely lie ahead. Indeed, there's ample evidence that the austerity agenda has arrived, and it appears likely to be more severe than that associated with the crisis of the 1980s. Constraints on fiscal space and economic crises are always borne disproportionately by women, as per decades of research by feminist economists.

The current debt crisis is and promises to be much worse and harder to address than the debt crisis of the 1980s. Chief among the reasons is that today's lending landscape has far more bilateral, multilateral and private players. This includes the traditional cast of characters, but also and importantly China, India and petrostates. This crowded creditor landscape makes coordination, overcoming deadlocks and bringing relevant actors to the table difficult, especially in a world in which multilateral institutions and democracy are under threat. Today's debt and broader financial architecture is not only crowded, it's also more noxious. The greater toxicity stems from financialization and the power of the financial community, including the credit rating agencies and vulture funds. The deficient BWIs are at the apex of a failed global financial architecture. Moreover, the weakened fabric of multilateralism — coupled with the densely populated debt architecture — makes addressing the debt crisis simultaneously more urgent and complex than in the 1980s.

As if the debt crisis weren't enough, it's unfolding in a world of crises. These include food, refugees and climate crises; wars and other humanitarian disasters; and a backlash to democracy.

Many see the global financial architecture as dysfunctional. What's your take?

I agree, and indeed would go further. I share the view of UN Secretary-General António Guterres, who rightly indicted the global financial system, calling it "morally bankrupt" as it is a "system created by rich countries to benefit rich countries" and "to punish the poor."

The global financial architecture is anti-developmental, crisis-prone and unfit to address the development and climate challenges of our time. It reflects the power and economic realities of a long-gone post-WWII environment. The financial architecture is characterized by asymmetries that include the exorbitant privilege enjoyed by the U.S. and other northern economies. This privilege allows them to borrow and lend in their own currencies, while also giving them the ability to

borrow on global markets at far lower rates than countries of the Global South. It also allows them to pursue monetary policies without regard for the global spillover effects. And it permits them to exercise undue influence and veto power at the BWIs, institutions that operate under outdated, rigid, exclusionary rules and norms. International Monetary Fund (IMF) practice exhibits severe dysfunction and inequities. For instance, interest rates on loans from the IMF have long been higher than they should be in view of the capacities of their clients. High surcharges on IMF loans to middle-income borrowers disadvantage borrowers at a time when needs are greatest.

Global South debt reform is a hot and controversial topic. What strategies do you recommend for easing external debt burdens and supporting sustainable development? Is there an economic and moral imperative for the cancellation of external debt for heavily indebted poor countries and those on the front lines of climate change?

It's essential that bold, comprehensive steps be taken — and quickly. In a paper commissioned by UN Women and the International Labour Organization, I consider strategies to ameliorate external debt burdens. I draw on approaches advanced by scholars, think tanks, policy makers and civil society advocates. In what follows, I outline a few key approaches.

One avenue involves new approaches to the IMF's Debt Sustainability Analyses (DSAs). DSAs are produced annually as part of the IMF's routine monitoring. More importantly, they are also produced when a country applies for assistance, during surveillance of an existing IMF program and during debt restructuring negotiations. DSAs should incorporate assessments of social markers (such as human rights) and climate commitments; introduce a Sustainable Development Goals (SDG) "carve out" that exempts public investment in SDG-related goals from counting toward a country's debt-to-GDP calculation; and not a DSA, but a "Sustainable Development Finance Assessment."

Another strategy involves the development of a Sovereign Debt Restructuring Mechanism (SDRM). There's a pressing need for an international legal framework for a SDRM that's comprehensive, consistent, binding, timely and transparent — and available to LMICs. An SDRM must incentivize or force all creditors to come to the table together in good faith. Participation of private lenders in restructuring negotiations might be forced or incentivized through debt

exchanges for longer maturities or lower interest rates.

In addition to an SDRM, comprehensive debt relief on bilateral, multilateral and private debt is unambiguously essential. It must involve creditor haircuts and debt cancellations on some portion of outstanding debt, particularly in the poorest countries and those most immediately vulnerable to climate change. Without debt relief, we consign countries to austerity and constrain their policy autonomy. Barbados's Prime Minister Mia Mottley recently called for cancelling the debts of countries on the front lines of climate change. There are important precedents for debt relief, such as the BWI's Heavily Indebted Poor Countries Initiative of 1996.

In today's conflicted, multipolar world and complicated debt architecture, collective action by debtors may make a difference when it comes to debt cancellation. In this context, the formation of a "debtors' cartel" is overdue. In this scenario, a group of countries collectively agree to stop servicing the debt owed to public and private creditors until they agree to a set of terms that enable essential domestic spending. Coordinated action by creditors is not unprecedented. After all, that's what the Paris and London Clubs of creditors involve.

In certain contexts, debt standstills may be a useful stopgap. In such cases, the costs of a standstill must be clear to the borrower up front and preferably borne by the creditor. Credit rating agencies must be brought on board at the outset of standstill discussions. The World Bank includes a "debt-pause clause" in new and existing lending agreements with 45 small island states and states experiencing "qualifying events." This provision should be extended to all borrowing countries and represents a model on which other lenders should build. Also important is the introduction of "multi-year suspension clauses" for external shocks, including climate catastrophes and pandemics. Barbados has introduced such clauses into its loans. These might be included in agreements with all lenders. Credit rating agencies should be precluded from downgrading debt when such clauses are activated.

Several of the debt mitigation strategies I've discussed depend on institutional and governance reforms at the BWIs that expand the voice and vote of the Global South. Debt reprofiling by the BWIs is an important tool that should be utilized, especially in crises. This could involve extending maturity structures, including meaningful grace periods in loan agreements that could be activated during

crises, and lowering borrowing costs (e.g., though lending rate caps). Surcharges on IMF loans should be eliminated permanently, well beyond the modest, inadequate steps taken on surcharges in November 2024.

Many have argued for new, annual, large-scale issuance of special drawing rights (SDRs). SDRs are an international reserve asset that the IMF creates electronically, by fiat, and at no cost to the institution. This is the single most potentially impactful, virtually cost-free way to provide the liquidity support necessary to shoulder the debt crisis, avoid cuts in much needed social spending, make support available for SDG-related and especially climate finance, and increase global inclusion. Countries of the Global North should also be encouraged to lend or preferably donate unused SDRs to countries that can use them to advance economic and human development and sustainability.

The current moment does not feel propitious when it comes to progress on the fronts you identify — your thoughts?

We are standing on the brink in so many respects. During the 1980s debt crisis, Tanzania's former President Julius Nyerere said, "[T]he world's children do not have to starve to pay the debts of those who came before." It was true then. It's true now. It was true then. It's true now. It was true then. It's true now.

The task ahead involves creating, exploiting and widening openings for the implementation of the strategies I've discussed. This necessitates sustained engagement, advocacy, coalition building, and a firm grasp of the facts in the face of ideological blinders. The chief obstacles are not the absence of workable economic strategies. The obstacles are political and ideological. It's my hope that in the coming years the multilateral cooperation that's in such short supply today can be reinvigorated, made more inclusive and supportive of social and environmental goals, and made more permissive of national policy choices and innovations in the service of improving lives and the health of our planet. In the meantime, there is much work to do — and quickly.

In these exceedingly difficult times, we can and should embrace what Albert Hirschman termed "possibilism." Possibilism involves a hard-headed appreciation of the profound challenges we face, while not letting ourselves be overwhelmed by "futilism." We have to look for and exploit all openings for change and coalition building, even if — as seems likely in the next four years — these openings will be

small. There's too much at stake and no time to waste for the world to remain stuck on the shores of what cannot be done.

It's impossible not to acknowledge the rise of illiberal governments and the hollowing out of multilateralism. In this dismal landscape, it might be more realistic to think about medium-term rather than short-term strategies. At best, the Trump administration will be so preoccupied with vengeance, chaos and personal gain that actors committed to decency and progress on the debt and climate crises — *a coalition of the willing* — will not be weighed down by the traditional commitment to maintaining retrogressive U.S.-led multilateralism. Admittedly, that was far less toxic than what's to come. But even previous U.S. administrations were obstacles to progress. And perhaps there will be space for action created by the void in the multilateral landscape that's sure to be widened by Trump. It's conceivable that leaders outside the U.S. who seek to reshape multilateralism to make it more permissive, create new multilateralisms, or step into the brink to serve their own interests will at least buy indebted countries some breathing room. Time will tell.

Source:
https://truthout.org/articles/the-global-south-is-on-the-brink-of-a-disastrous-debt-crisis-reform-is-urgent/

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What Is Driving State-Sponsored Attacks On Citizens Abroad?

John P. Ruehl – Source: Independent Media Institute

12-14-2024 ~ *Kidnappings and killings of citizens by their own governments abroad are becoming increasingly common. The normalization of this trend will erode the sovereignty of all nations, as well as the safety of their citizens.*

In July 2020, Iranian dissident Jamshid Sharmahd was visiting Dubai when he was suddenly abducted. Mobile phone data later traced his movements to Oman's port

city of Sohar, before the signal went silent. Days later, he reappeared in Iran, accused of leading a terrorist group and orchestrating attacks in Iran, charges his family denies. After years in detention, he was executed in October 2024.

Iran's actions are part of a longstanding pattern. Since the 1979 Revolution, its government has targeted dissidents overseas. Notable cases include the 1991 stabbing death of the Shah's last prime minister in Paris and the 1992 assassination of four Iranian-Kurdish dissidents at a Berlin restaurant. These operations appear to have escalated again, with an Iranian journalist kidnapped in Iraq in 2019, an opposition leader kidnapped in Turkey in 2020, and a thwarted attempt to kidnap an Iranian journalist in the U.S. that year as well.

Functioning governments exercise a monopoly on violence and detention within their borders, including lawful imprisonment and capital punishment. In conflict zones, these powers sometimes extend into contested areas, blurring legal distinctions. However, Iran's extraterritorial operations mark a trend of smaller nations increasingly adopting tactics reserved for major powers, bypassing international protocols to punish citizens overseas.

Covert operations targeting your own citizens in other countries require substantial resources and intelligence to track individuals, orchestrate a hit, and avoid detection. The modern era of such operations was shaped in part by the surge of political assassinations by militant and terrorist groups in the early 1970s. Governments responded with their own covert actions, both domestically and internationally, broadening their targets to include political activists and opposition figures.

Globalization, interconnected diaspora networks, and advances in surveillance technologies have further enabled these activities. As diplomatic repercussions wane and global enforcement diminishes—particularly from the U.S., which has faced its own criticism for extraordinary rendition and drone strikes on U.S. citizens abroad—states act with growing impunity and plausible deniability. Civilians unaffiliated with political disputes are occasionally caught in the crossfire, diminishing the sanctity of national sovereignty further.

Few countries are as brazen as Iran has been for decades, but other countries are also demonstrating their reach. In neighboring Pakistan, national forces recently apprehended a Pakistani citizen in Myanmar in October 2024. Turkey, however,

has escalated its extraterritorial operations the most in recent years in response to the 2016 coup attempt. Turkish authorities claim to have abducted over 80 individuals from 18 countries between 2016 and 2018 alone. One incident in 2018 saw six Turkish nationals kidnapped in Kosovo and sent back to Turkey, prompting a diplomatic rift between the two nations.

Turkey's assertiveness in targeting its citizens abroad has not stopped other governments from using it as a stage for their own actions. In 2018, Saudi Arabia orchestrated the killing of U.S.-Saudi citizen journalist Jamal Khashoggi inside its consulate in Istanbul. The killing drew global outrage and strong condemnation from the Turkish government. However, Washington's reluctance to impose significant consequences on Saudi Arabia emboldened other states.

Algeria abducted a dissident in neighboring Tunisia in 2021, continuing a practice that has become common in parts of Africa. South Sudan, for instance, kidnapped two of its citizens from Kenya in 2017. In another high-profile case, three Rwandan diplomats were expelled from South Africa in 2014 after being implicated in the murder of a former Rwandan intelligence chief and attacks on two other Rwandan exiles.

In Eastern Europe, assassinations of government officials became a grim reality amid the political and social upheaval of the 1990s. Governments often responded in kind, targeting individuals beyond their borders. Russia's approach has been particularly notable for its persistence and evolving methods.

Dozens of Chechen separatist supporters and others with links to organized crime have been killed in other countries, with operations often executed by Chechens to obscure Moscow's direct involvement. These include killings in Turkey in 2011 and Germany in 2019.

Russia's political killings in the UK have also drawn international attention. In 2006, former FSB agent Alexander Litvinenko was fatally poisoned with a radioactive substance in London. In 2018, another former Russian intelligence agent, Sergei Skripal, survived a poisoning attempt, though a local civilian was killed. These high-profile attacks conveyed to other Russians seeking to flee the country that even in the intelligence capital of Europe, no one is beyond Russia's reach.

Further afield, Russian authorities are believed to have been involved in the 2018

killings of three Russian journalists in the Central African Republic, investigating Russian private military companies. And since the start of the Ukraine War, Russian authorities are suspected to be behind numerous deaths of prominent Russian citizens in other countries, as well as of at least one defector in Spain in 2023.

Russia's actions have set a precedent for other post-Soviet states. Uzbekistan has a history of targeting dissidents overseas, starting with the 2006 kidnapping of Uzbek human rights activist Muzafar Avazov from Kyrgyzstan. Accusations have since included a 2012 attempted assassination of an Uzbek citizen in Sweden and suspected involvement in the 2014 murder of an Uzbek Islamic cleric in Turkey.

In 2021, Belarus forced a Ryanair flight traveling through its airspace to land in Minsk so authorities could board the plane and detain a journalist. Although technically in Belarusian airspace, it violated international norms regarding the sanctity of civil aviation.

China has also adopted sophisticated measures to suppress dissent in other countries. Its growing power allows it to enforce cooperation with some governments to repatriate wanted Chinese nationals, including the increasing use of "overseas police stations" to intimidate expatriates into compliance—a practice unmatched in its scope, though other nations have employed similar tactics to convince citizens to return home. But China's history of abductions, in one of the largest expat populations in the world, spans decades.

A pro-democracy activist was seized in Vietnam in 2002, for example, while a former Chinese diplomat who had sought asylum in Australia was allegedly drugged and transported via ship back to China in 2005. Its actions have become more visible in recent years, particularly in Southeast Asia. In 2015, a book publisher was kidnapped from his apartment in Thailand, followed by a pro-democracy activist in Thailand the next year.

Thailand itself has been implicated in targeting dissidents abroad. In 2019, the killing of government critic Ko Tee in Laos raised suspicions of Thai involvement, as did the targeting of other critics, including an activist in Cambodia in 2020.

North Korea demonstrated its willingness to use foreign agents to silence critics when Kim Jong Nam, the estranged half-brother of North Korean leader Kim Jong Un, was assassinated in Malaysia in 2017. A Vietnamese and Indonesian citizen

were accused of acting on Pyongyang's behalf. Later that year, Vietnam faced backlash after its agents were accused of kidnapping a Vietnamese oil company executive in Berlin and forcibly returning him to Vietnam, sparking a diplomatic conflict with Germany.

India has also stepped up its efforts against individuals it accuses of supporting the Khalistan independence movement, which seeks an independent Sikh state within India. In 2023, tensions flared between India and Canada when evidence surfaced linking India to the assassination of a Sikh separatist leader in British Columbia, as well as a foiled plot to kill another leader in New York. The incidents triggered a major diplomatic row, while additional reports revealed India was intensifying its surveillance of diaspora communities in the UK and Australia.

India's actions in particular pose a risk to normalizing this behavior further. Countries like China, Russia, and Iran already engage in extraterritorial operations, but India's status as a growing partner to the West raises the stakes. If a nation with close ties to Western democracies can act with relative impunity, what might other states feel emboldened to do? India's actions will potentially pressure Western states to crack down on Khalistan independence advocates to maintain diplomatic balance, and these concessions could inspire others to act in a similar manner to get the same results.

The increasing willingness of countries like India to test these boundaries has been preceded by decades of U.S. intelligence agencies kidnapping and assassinating U.S. citizens abroad. But after 9/11, the U.S. intensified and officialized such practices under the banner of "extraordinary rendition," detaining hundreds of foreign nationals and U.S. citizens accused of terrorism, many of which were later sent to third countries and often tortured.

The increasing use of drone technology has transformed government operations abroad, including the targeting of their own citizens. In 2011, U.S. citizen Anwar al-Awlaki, a Yemeni American cleric linked to Islamic extremism, was killed in Yemen by a U.S. drone strike. Despite his ties to extremist groups, his killing raised serious concerns about the erosion of due process, though the strike encountered limited domestic pushback.

The operation reflected a broader policy shift by the U.S. in the 21st century, justified under the premise that military action is permissible in areas where

states are “unwilling or unable” to address terrorism. By 2013, the Obama administration publicly acknowledged that four U.S. citizens had been killed by similar drone strikes overseas.

Advancements in technology are making it steadily more difficult for individual citizens to evade governments seeking to track them abroad. States are showing a growing boldness in crossing borders, encouraged by Washington’s targeting of its own citizens and its leniency toward allies engaging in similar actions.

Concerns are also linked to the increasing involvement of dual citizens in these situations. Many countries refuse to recognize dual citizenship, complicating their treatment under international law and further straining diplomatic norms. This escalation of targeting one’s own citizens in other countries risks evolving into broader attacks on foreign nationals. In November 2024, Israeli citizen Zvi Kogan was assassinated in the United Arab Emirates, reportedly by three Uzbek nationals. While the motives remain unclear, the incident follows a year of heightened tensions between Iran and Israel, as well as years of Israeli operations targeting Iranian citizens within Iran and elsewhere.

Rising sabotage and covert operations in the West and Russia since the Ukraine war have shown the ease with which foreign powers infiltrate other nations. Alongside the increasing trend of governments targeting their own citizens abroad, the possibility of citizens being attacked by external actors within their own countries is becoming alarmingly real.

A world where sovereignty is routinely undermined—where states deny asylum, target their citizens, and strike foreign nationals—threatens to further erode trust, security, and the rule of law in an already fragile global order. Perhaps if these practices can occur anywhere, confirming that no state is immune to the consequences of unchecked impunity, then even powerful nations may find themselves incentivized to curtail them.

By John P. Ruehl

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Source: Independent Media Institute

Credit Line: This article was produced by Economy for All, a project of the Independent Media Institute.

With Martial Law Defeated, Now Is A Decisive Moment For Change In South Korea

12-12-2024 ~ Late at night on December 3, soldiers stormed into South Korea's National Assembly in armored vehicles and combat helicopters. Assembly staff desperately blocked their assault with fire extinguishers and barricades. South Korea's President Yoon Suk Yeol had just declared martial law to "eliminate 'anti-state' forces."

Outside the National Assembly, people gathered from all over Seoul and beyond. Within the hour, thousands were violating the martial law's ban on all political activities and protests. People shivered in the cold as they stood off against the army and police, armed with nothing but songs and chants. They needed to defend the National Assembly until the vote to revoke martial law. Their chants grew louder: "Abolish martial law!" "Down with the dictatorship!"

Yoon conceded to the National Assembly vote and people's resistance on the morning of December 4. His short-lived self-coup plunged South Korea into a furor. South Koreans managed to stop the rise of another dictatorship. Now, they need to organize into a force that can impeach him and carry out the structural changes required to ensure a complete democratic transformation in South Korea.

South Korea has a long history of using martial law to establish authoritarian rule. Yoon's attempt was the 17th martial law in the 76 years since the founding of the

Republic of Korea. The last time martial law was declared was 45 years ago, following Chun Doo-hwan's coup that established Korea's third dictatorship. The 1979 martial law was met with people's resistance in the city of Gwangju, which the military regime massacred. South Korea also narrowly escaped martial law in 2017, when the Defense Security Command planned to seize control of Seoul with tanks and special forces for President Park Geun-hye, but she was impeached before the planned self-coup could be executed.

Impeachment is on the horizon again. Shocked and enraged by the attempted coup, about a million people rushed to the streets, demanding Yoon be ousted and arrested. However, there are two hurdles on the road to impeachment. First, two-thirds of the National Assembly must vote in favor of the motion. The combined strength of the opposition parties is just eight members short of two-thirds, which means there must be dissenting members from the ruling People Power Party for the impeachment motion to pass. On December 7, the motion failed to pass as all but three members of the ruling party boycotted the vote. However, the opposition parties intend to introduce the impeachment motion every week until it passes.

Second, once the National Assembly passes the motion, the decision of whether or not to impeach is up to the Constitutional Court. If at least six out of the nine justices are in favor of the decision, the president will be impeached. But, with only six justices on the bench, it is one short of its quorum of seven. However, Article 23, Paragraph 1 of the Constitutional Court Act, which specifies the quorum, was temporarily suspended in October. Thus, if the six justices are unanimous in their decision, Yoon could be impeached. Nonetheless, this possibility remains within legal gray areas.

What would happen after the impeachment? After the 2016 candlelight protests led to the impeachment of the corrupt Park Geun-hye regime, Moon Jae-in of the Democratic Party took power, promising to "Complete the Candlelight Revolution" by reforming the authoritarian government institutions, vestiges of dictatorship, and corrupt corporate conglomerates. Trusting his promise, mass mobilization efforts stopped. The power that overthrew the Park regime stepped down from the stage, hoping for top-down changes.

With more than 80 percent support ratings, the highest of any president, Moon was well-empowered to reform South Korean society toward greater equality and

democracy. However, he did not take long to backtrack on many of his policies, and the promised social, economic, and constitutional reforms were never implemented. The Moon administration had started with boundless possibilities for social change, but in the end, it failed to fulfill its historic responsibility, instead contenting itself with maintaining the neoliberal status quo. The people's disappointment and the subsequent political apathy led to the election of Yoon Suk Yeol, whose inept and authoritarian rule culminated in this martial law fiasco.

Now, history is about to repeat itself. At this moment, popular mobilization is necessary more than ever. The danger of a second martial law still looms. The people need to make a show of force so that the president does not attempt another coup. His power is already crumbling, with dissenting voices even within the military, but the threat will continue to haunt Korean democracy until he is entirely removed from office. Institutional hurdles and legal uncertainties are still present on the path to impeachment. The people need to apply constant pressure so that the impeachment motion pushes through the National Assembly and the Constitutional Court.

The 2016 candlelight uprising shows that a change in administration does not bring meaningful social change by itself, no matter how promising it may seem. It is necessary for the struggle to not stop at mobilization. At this point, the mobilization for impeachment is simply a defensive action to prevent further harm. The people need to seize the initiative and impose an alternative social order with their power to take one step further and change society for the better. To build this power, the people need to be organized into a concrete political force that can confidently propose a clear vision of a new society. Such a force would then need to hold the new administration accountable to the people's demands and push toward the formation of that new society.

On December 4, 50 representatives of civil society organizations came together in an emergency meeting to debate the path forward. They agreed to create a coalition based on three goals: oust Yoon, hold the ruling party accountable, and achieve popular sovereignty and society-wide reforms. These goals are just a starting point. Now, the progressive forces in South Korea need to unite around the people's struggle and listen to their demands closely. Analyses and debates then need to transform those demands into an actionable program of social change. It is the duty of the progressive forces now to present the people with the broadest unity and the sharpest vision to help them build and organize their

power.

The situation continues to unfold in South Korea. Each passing moment shakes the foundation of the current social order and further opens the horizon of possibility. The people experienced a taste of their power in their defense to uphold democracy. It is now up to them to decide whether this movement will end here or will lead to the creation of a new, transformative power that will finally complete the democratization of South Korea. Now more than ever, the solidarity of the progressive forces all around the world is necessary to spur the Korean people onward to seize this moment and forge their own destiny.

By Steven Lee

Author Bio: This article was produced by Globetrotter. Steven Lee is a member of both the translation and the action teams of the International Strategy Center.

Source: Globetrotter

Not As Simple As 1, 2, 3: Humanity Has A Surprisingly Diverse Understanding Of Numbers

12-10-2024 ~ *Language plays an important role in understanding the concept of numbers.*

Numeracy or numerosity, the ability to think about and use numbers, varies

among human cultures and within populations, much like intelligence does.

Many known languages, for example, have no words for numerals above 2 or 3. A linguist who curated a database of the world's languages in 2015 estimated that of the 6,880 languages for which there are published data on numerals, 1,093 had a counting system that ends at 2 or 3.

Compare that lack of a developed counting system to today's technologically complex societies, where the average person encounters about 1,000 numbers an hour in daily life, as estimated by cognitive neuroscientist Brian Butterworth, professor emeritus at University College London.

At a simple level, we keep time, keep a calendar, memorize addresses and phone numbers, and at a more complex level, we calculate interest rates and stock valuations, election vote percentages, temperatures and rain accumulations, missile trajectories, and astronomical relationships.

Cultures With Restricted Numeracy

What does a culture with a restricted number system look like? Early reports of this came from 16th-century explorers, who described the hunter-gatherer tribes they found, for example, the Taino and Tupinambá in the Americas. Anthropologists later documented hundreds of other societies that only used numbers up to 2 or 3.

Today, the Pirahã in Brazil are "the only known tribe/people whose language and culture appear not to have progressed beyond an analog notion of magnitude, similar to that of higher animals," an applied mathematician wrote in 2023 in his review of prehistoric mathematics origins. The cultural reason suggested for this is that the Pirahã "reject the value of future planning and are completely non-materialistic."

Anthropologist Caleb Everett, the son of missionaries who lived with the Pirahã in his youth, describes the tribe as "cognitively normal and well-adapted" to their environment, with a "superior understanding" of their river ecology.

The Pirahã number about 700 people and live in very small villages along the Maici River, a small tributary of the Amazon. They are semi-nomadic and thus have regular contact with outsiders. A comprehensive 2011 review of Pirahã numeracy described experiments in two Pirahã villages to test whether tribal

individuals could match quantities larger than 3, which is where their number system ends. Matching consisted of selecting how many empty rubber balloons would match three spools of thread in various arrangements.

Everett and co-author Keren Madora reviewed previous research on the Pirahã and numeracy that had contradictory results about the Pirahã ability to make one-to-one number correspondence for quantities greater than 3. The reason, Everett and Madora suggested, is that the Pirahã have no number words for integers more than 3. They based their conclusion on fieldwork that Madora did with the Pirahã.

Madora, who has 30 years of experience speaking the Pirahã language, spent months in one village, and at the request of the Pirahã, taught them basic arithmetic. To do this, she invented words for numbers 4 through 10, based on their existing word for hand. After becoming familiar with the new number words, the research review stated that the Pirahã demonstrated "heightened performance on the one-to-one matching task."

The researchers concluded that exact recognition of quantities greater than 3 "relies on a culturally constructed conceptual tool, namely precise number terminology, which is not universal to all human societies."

The Brain and Numbers

The fact that members of a society with a restricted number system could accurately work with numbers larger than three when adult individuals were taught new words for larger numbers indicates both the importance of a language for numbers and the inherent ability of the human brain to develop.

Perhaps there is a capacity for numeracy, whether or not it is developed across all human cultures and within cultures. Studies of the brain and numeracy may provide evidence of whether a capacity for numeracy is universal, even when a language for numbers is not.

Today advanced imaging technologies, including magnetic resonance imaging (MRI) and other neuro-imaging methods, can help assess the capacity for numeracy by identifying the brain cortex areas and neural networks associated with specific skills in math competence.

A 2023 review of the neural bases of math competence proposed that a

“distributed and interconnected network of regions across the brain, primarily focused on frontal and parietal cortices” is key for complex math skills. The frontoparietal area of the brain is generally the control network responsible for coordinating goal-directed tasks.

For adolescents with better math ability, the review reported that gray matter volume in the frontoparietal area is important, as is the thinning of the cortex and having a larger frontoparietal network surface. The authors of the review also emphasized that “cortical plasticity” in childhood makes it an important time for math training.

The authors noted that although the number of studies investigating the effects of short-term math training on children is “scarce,” the existing studies demonstrate that proper training improves “neural processing and function.” They also cited one study that “showed that aerobic fitness training could improve children’s math learning outcomes via cortical thinning.”

Overall, studies show that math training improves neural efficiency in math, and over time, makes specific math tasks more automatic. Not surprisingly, math skills were associated with general intelligence, reading capability, and cognitive ability.

More studies are needed, the review concluded, to examine specific neural connections in math abilities. Importantly, the authors also cautioned that the present studies’ conclusions don’t permit “causal relations” between brain structure and math abilities, only correlations.

What Are Numbers and Which Species Can Count?

A continuing controversy in the study of numeracy is whether number sense precedes language historically, or vice versa. Another debated question is whether number literacy is the basis for abstract thinking.

Homo sapiens may be the only species with symbolic thinking, but research has demonstrated that many animal species can count and that the neural mechanisms involved may be similar to those of humans. As one specialist in psychology and language described it, “animals are mathematically inclined, but only to a certain degree.” This researcher noted, for example, that monkeys could remember and compare sets of numbers (performing similarly to young children) and could learn the meaning of Arabic numerals.

Comparing numbers is important for animal survival. “Any creature that can tell the difference between a tree with 10 pieces of fruit from another with only six pieces, or between two predators and three on the horizon, has a better chance of surviving and reproducing,” the researcher commented.

It’s not only primates that can perform numerical comparisons: Studies have shown that other mammals (including dogs, cats, rodents, and dolphins) and some species of fish, birds, reptiles, and amphibians can also discriminate between numbers to varying degrees. A detailed 2021 neuroscience review of “how evolution shaped different animal brains to process numerical information” points out what is now known and the research needed.

From Restricted Numeracy to Calculus

How *Homo sapiens* evolved from having rudimentary numeracy to using calculus is a fascinating question.

Did numeracy start with our hands and feet, as some linguists, anthropologists, and others suggest? Most of the world’s number systems use multiples of base 5, 10, or 20—corresponding to the number of fingers on one hand, two hands, plus the toes on both feet. The word “five” in many languages is derived from the word for “hand,” Everett wrote.

Others argue that numeracy is inherently abstract. University of Bologna philologists Miguel Valério and Silvia Ferrara wrote in 2020, “Linguistic evidence does not support an evolution of numbers from concrete to abstract. There is no evidence that early numbers were conceived as fused with counted objects.”

The authors reviewed the early Mesopotamian development of language and counting, as well as that of other ancient cultures where writing might have been independently invented and concluded that numbers were “always abstract.”

The convergence of number development and writing, they wrote, “pivots on the appearance of power-based systems of number notation.” In other words, a system of notating numbers came into being using a number base and its powers and this coincides with the beginning of writing in Mesopotamia.

Further evidence to support the argument that numeracy is abstract comes from experiments with newborn infants. An international group of researchers, writing in 2008, showed that newborns “spontaneously associate stationary, visual-spatial

arrays of 4–18 objects with auditory sequences of events on the basis of number." In other words, the infants recognize and compare numbers when they hear and see them.

The experiments familiarized the infants with a particular sequence of sounds or images and then measured the length of their gaze when presented with matching or non-matching sequences. The infants looked longer at the matching sequences.

The authors concluded: "Their performance provides evidence for abstract numerical representations at the start of postnatal experience."

An Open Field of Study

Many fascinating questions remain in the study of numerosity in humans and animals in addition to those discussed here. For example, did numerosity lead to the cognitive basis for abstractive and symbolic thinking? Or what role did plants play in the human development of mathematics?

Finally, some of the research on this subject is quite practical: It can have immediate application to helping children and adults with math learning difficulties, so that fewer people will be able to say, "I'm not good at math."

By Marjorie Hecht

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Source: Human Bridges

Credit Line: This article was produced by Human Bridges.