Emotion, Stress, and Health: Crash Course Psychology #26

Crash Course: Psychology
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Did you know that astronauts in space have a hard time communicating without words because their weightless bodily fluids make their faces all puffy and hard to read? Have you heard that Botox can actually improve your mood, and not by smoothing your wrinkles, but actually by easing depression? Or that this "come here" gesture is common in the US, but is considered so rude in the Philippines that it could actually get you arrested? Yeah. All true.

Emotions and the ways we express them are strange and powerful things. And emotions aren't just a psychological phenomena, they affect our bodies and our health. Because so many emotions have a certain contagious quality, our feelings and the behaviors they drive also affect the minds, and bodies, and health of those around us. This is true whether your emotions at the moment are of the feel-good variety, or not. The powers of both positivity and negativity are stronger than you may know. Lots of studies have shown that people with a positive outlook on life tend to live longer, more fulfilling lives than their mean and grumpy neighbors.

Fear, anger, and other more difficult emotions and how we handle them are pretty closely related to this thing called stress. And stress is so powerful that it can straight up kill you in any number of ways, given the right opportunity. For better or worse, we spend a lot of our lives swirling around like leaves on the winds of competing emotions. Before we can hope to harness these feelings, we first have to understand them.

(Intro)

What do you think this person is feeling? How about him? And her? What about this one? It's not really hard to tell, is it? Most of us are better than we think at reading non-verbal cues and subtle expressions. The understanding among some, but not all psychologists, like emotion expert Paul Ekman, is that facial expressions are culturally universal. So, a Greek, Britain, American, Samoan, or Nigerian would all be able to discern the same basic emotions - happiness, sadness, disgust, anger, fear, and surprise, just by looking at your face.

And our expressions don't just communicate emotions, according to the facial feedback hypothesis, they can help regulate our emotions, too. The act of smiling broadly, even if you aren't happy, can actually lift your mood just as scowling can lower it. This is how, bizarrely enough, a recent randomized controlled clinical trial suggested that a little Botox injection in the forehead might actually lessen depression. 'Cause apparently it's hard to feel down if your frowning muscles are frozen. Of course, whether your face is paralyzed or not, some people are better at reading your emotions than others. For example, introverts are usually better at interpreting people's feelings, while extroverts are often better at expressing them.

And you've probably heard embarrassing stories, or even experienced first-hand how different cultures express emotions through particular gestures that are far from universal.
For example, in the United States, this is a peace sign, but you don't wanna flip it around in the UK, and the iconic thumbs up gesture means "good job" in many cultures, but if you toss that thumb around in Greece, let's just say you won't make any new friends.

But of course, emotions involve a lot more than making faces and hand gestures - they're also about our conscious experience of what we're feeling. So, how do we actually feel all these feels, and how many different emotions are there? Back in the 1970s, American psychologist Carroll Izard identified ten distinct basic human emotions, present from infancy on. They are: joy, surprise, sadness, anger, disgust, contempt, shame, fear, guilt, and interest or excitement. Others have since suggested that pride should be added to that list, and still others believe that love should be classified as a basic emotion as well, but Izard has argued that these and other emotions are just familiar combinations of the classic ten.

Today, some psychologists describe our emotional experiences using a two-dimensional model. The idea there is that any of the emotions you might feel while, like, reading Harry Potter or something, are expressed on a spectrum, and as a combination of valence - roughly speaking, good or bad - and arousal - excited or not excited, basically. So if you're feeling both really excited and super positive when Harry final bested Voldemort, you could say you were "elated". On the other hand, if you're at that part in *Deathly Hallows* when Harry, Ron, and Hermione are just sorta wandering around on the land in a heavy mood, maybe your emotions fell more on the opposite side of the spectrum - in this instance, feeling depressed might be a combination of negative emotion and lack of excitement.

Eventually, every emotion can fall in degrees on this two-dimensional scale - like being terrified means you're more frightened than if you're just scared - just as being enraged is a more extreme version of anger than simply being mad. These polarities, positive versus negative, high arousal versus low arousal, affect our psychological states, and therefore, our bodies, as well, because you'll remember that what is psychological is ultimately biological. And when it comes to the physical effects of our emotions, it pretty much goes the way you might expect: happiness is healthful while chronic anger or depression makes us vulnerable to all kinds of problems with health and well-being.

The good news is that if we're angry or sad, we often overestimate the duration of our bad moods and underestimate our capacity to adapt and bounce back from traumas, even if things feel hopeless, depressing or stressful in the thick of it. And we've all experienced stress before - sometimes on a daily, or even hourly basis. Much like anger or joy, stress can slowly build and simmer, or it can strike suddenly and with great intensity. And yeah, stress, certainly the chronic or extreme type, can be bad for your health, but defining stress is trickier than you might think.

Psychologists would define stress as the process by which we perceive and respond to certain events, or stressors, that we view as challenging or threatening. In other words, stress isn't technically an emotion, it's more of a reaction to a disturbing or disruptive stimulus.

And our reactions stem in part from our appraisal of that stimulus. A person can either roll with or get worked up about a missed flight, an increased work load, or a strange thump in the house. These external stressors typically fall into three main categories: catastrophes, or unpredictable large-scale events like war, natural disasters, or terrorist attacks, significant life changes, things like moving, having a child, losing or getting a new job, or the death of a loved one, and then just everyday inconveniences, like getting caught in traffic or running late or feuding with your roommates.

Any of these stressful events, big or small, even the good things, can fire up your sympathetic nervous system and trigger that old "fight or flight" response. In this way, it's important to understand that stress is ultimately natural. You experience it for a reason, and a bit of short-lived stress can actually be a good thing. It can make you active and alert when you need to be, like an upcoming chemistry test might be stressing you out, but that might help you find focus so you can dominate that thing. And in your body moderate stress can kick the immune system into action to do things like heal wounds and fight infections. It does this by triggering the release of stress hormones like adrenaline and cortisol. These chemical messengers are what get your organ

systems to respond the way you need them to when you're getting charged by a bear, or focusing really hard on the gas law for your chemistry test.

But they're also why chronic stress can really wreck a body and mind. Research has shown that abused children have a high risk of chronic disease, and people suffering from post-traumatic stress disorder, PTSD, which we'll talk about in an upcoming episode, experience higher rates of digestive, respiratory, circulatory, and infectious diseases.

A lot of these negative connections between your body's systems have to do with the fact that many of its most basic functions, like blood pressure, breathing, body temperature, digestion, and heartbeat, are in part regulated by the autonomic nervous system. We've talked before about how the sympathetic side of that system cranks you up and the parasympathetic arm calms you down, but both of those systems also interact with the so-called "brain in the gut", the enteric nervous system, which helps regulate gastrointestinal functioning.

And it's this brain-gut connection that explains how stress causes digestive problems. Because when that werewolf pops out of the bushes and a wave of cortisol washes through you, your body wants to focus its energy on sending blood to your muscles so that you can react quickly. Which is good, right? But it may do that partly by shutting down digestion or decreasing the amount of digestive secretions and making your colon spasm. An anxious mind can lead to an anxious gut.

Stress is an even bigger risk factor in North America's leading cause of death, heart disease, because it contributes to increased blood pressure, heart rate, and cholesterol levels in a number of different ways. Essentially, when your stressed-out nervous system is redirecting all of its energy sources to your muscles and brain, it pulls flow away from your other organs. And one of those organs is the liver, whose job includes removing the fat and cholesterol from your blood. So basically, when a stressed liver can't filter properly, that extra fat and cholesterol ends up circulating in your blood, which can settle around the heart.

Don't believe me? One study monitored the blood cholesterol and clotting speed of forty male tax accountants throughout the year, and it found that their cholesterol and clotting rates, and thus risk of heart attacks, increased dramatically during the weeks before tax day, as they stressed out about finishing their work.

And physiologically speaking, it's worth pointing out that some close relatives to stress, when it comes to their effects on the body, are pessimism and depression, which also has been linked to stress and heart disease. Many types of studies have found that people characterized by their optimism, happiness, love, and positive feelings often live significantly longer than their grumpy, dour counterparts. Researchers don't quite know exactly how chronic negative emotional states influence health, but it may be some combination of lifestyle or behavioral factors, like neglecting your health or not taking your heart meds when you're feeling blue, or social factors, like the way that depression can be isolating and thus prevent others from helping you out, or biological factors, like increases in certain kinds of inflammatory proteins released by the immune system in response to stress and sadness.

So in the end, while stress may not directly cause disease, you could say that the two walk hand in hand. In that way, it isn't a stretch to say that chronic stress can kill, so go ahead, take a deep breath, feel your emotions, appreciate them, don't let them run your life.

Today, we talked more about how our emotions work and how we use facial expressions to help us communicate. We also looked at the two-dimensional model of emotional experience and how anger, happiness, and depression can affect our health. We also discussed what stress does to your nervous system and how chronic stress can damage the functioning of your biological systems.

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