Feeling All the Feels: Crash Course Psychology #25

Crash Course: Psychology
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Such regrettable outbursts are not unique to celebrities, of course, and they can be enough to make us think of our emotions as irrational. But they're not... well, not usually. When not getting the better of us, they have work to do. Part of their job is to provide the energy and motivation that lets us meet our goals and our needs, and despite the occasional public fail, they often improve our performance in a given situation.Mel Gibson did it, Tom Cruise nearly busted Oprah's couch doing it, and Kanye pretty much has owned it for years now. I'm talking about expressing too much emotion, usually in public and in weird and often insensitive ways.

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So emotions play an important role in how we think and behave. Of course, when they blow up and someone screams at a flight attendant or punches a paparazzo or jumps on stage and grabs the mic away from a teenager in the middle of her acceptance speech to say that someone else deserve the honor more - all hail Beyoncé - you're kind of off the rails of normal emotional function.

Okay, definition time, general idea. Emotion is a mind and body's integrated response to a stimulus of some kind. Emotions involve physiological arousal, expressive behaviors and conscious experience. These can be short flashes or long, lingering responses, and they can be very clear or very confusing. Say, you're walking home at night and you hear footsteps behind you. Physiological arousal occurs in the form of your heart pounding, your expressive behaviors could be like quickening your pace or moving toward a streetlight, and your conscious experience may include thinking "Oh I'm... I'm... gonna get mugged now? Is this like a werewolf behind me?" Feeling, you know, fear and panic.

We know those three pieces are there, but psychologists are still puzzling out exactly how they fit together. How do thinking and feeling interact? Which one comes first? And do these bodily reactions - the pounding heart, the need to pee, the sweaty palms - come as a result of the thought "I"m scared", or did my tweaking out body trigger the thought in my brain? These are just some of the questions that we'll be looking at in this messy, exhilarating, and terrifying world of emotions - no one gets out unscathed.

(Intro)

Our emotions represent and construct a big part of who we are. Think of how boring we would be - how boring the world would be without joy, embarrassment, heartache, or fear. What would motivate us to make decisions, be cautious, or bold, or strive to understand each other? What would keep our humanity intact? Where would punk rock come from? No doubt, we need our emotions, but how do they work?

Well, like, apparently everything in psychology, there are a few different theories. In the late 1800s, pioneering American psychologist William James suggested that our feelings follow our bodily reactions to external situations; that, for example, you feel sad because you are crying, or you're scared because you're shaking like a leaf. This idea was also proposed by Danish psychologist Carl Lange, and so, this concept that physiological arousal precedes emotion is called the James-Lange theory.

But American physiologist Walter Cannon wasn't feeling it. He thought that too many of the body's reactions were too similar: a racing heart, fluttering stomach, and sweaty hands could be attributed to passion, fear, excitement, or anger. So how could they cause such different emotions? His colleague, Philip Bard, agreed, concluding that bodily responses and emotions occur separately, but simultaneously - and this idea is the base of the Cannon-Bard theory of emotion. In other words, a racing heart doesn't cause fear, nor does the feeling of fear result in a racing heart, rather, both things just happen together.

Today, most psychologists agree that our emotions are also tangled up with our cognition: whether or not we're afraid of a dog on the sidewalk depends a lot on whether we're interpreting the animal's behavior as threatening or friendly, probably also, what our personal history with dogs is. In the 1960s, American psychologist Stanley Schachter and Jerome Singer interpreted this idea that cognition can define emotion, into what they called their "two-factor theory". They believed that to experience emotion, you must both fear physiological arousal, and cognitively label that arousal. And again, please remember that in psychology, arousal is different from how you're used to using it. Here, arousal can be thought of as activation or stress, or even energy - an increase in reactivity or wakefulness that primes us for some kind of action. So sometimes, arousal can spill over from one event to the next: say you just watched a heated soccer match, and you're all revved up, and someone looks at you funny. Suddenly, you might label that lingering arousal as anger, and the next thing you know, the whole stadium is one big rioting aggro chain reaction.

Schachter and Singer examine this so-called "spillover effect" with an experiment that involved an usual combination of college guys and drugs. First, they injected a bunch of college guys with the hormone epinephrine. This is basically adrenaline, and as you yourself have probably experienced, it induces a level of physiological activation that can go any number of ways emotionally. But then they threw a curve ball - some of the subjects were told to expect symptoms of feeling all revved up, while others were told the injection wouldn't produce any effects at all. Then, after being injected, each subject was left in a waiting room, and with them in the room was an actor, pretending to wait as well, and acting either all jerky and irritated, or super happy and euphoric. So the dude's just sitting there, jacked up on this hormone, and his heart is racing, and his cheeks are all flushed, and in the case where the subject was told not to expect the effects, the study found that the guy would actually adopt the emotion of the actor in the room, becoming happy or testy, depending on how the person was acting. His body was having a physiological response to the hormone, but he ended up effectively deciding which emotion he was feeling. But, if the subject had been told that the injection would make him feel all pumped up, he'd actually report very little emotion, just because he was blaming that racing heart and flushed face on the drug, not a particular state of mind. So in terms of the two-factor theory, the cause of physiological arousal had to be identified before a person could feel and label the response as a particular emotion.

To Schachter, Singer, and their disciples, this meant that arousal spurs emotion, but cognition directs it. And yet, some researchers like Polish-born American psychologist Robert Zajonc, contend that all emotions are the result of just putting a name to our arousal - he suggests that many of our emotional reactions occur separately, or even before our cognition kicks in. If you hear a sudden crash outside your window, you'll automatically react with a jolt before your brain has the chance to think, "Gee, what was that crazy noise? Should I feel startled?" This is, in part, because when it comes to emotions, it's thought that our brains process sensory

input by two different kinds of roots - top-down, or bottom-up approaches, and neuroscientists can actually chart these two pathways in action. Some bigger, more complex feelings, like love and hatred take what we call the "high-road." Say, you read a love letter from your sweetie. You can pin that mushy feeling in your heart to the sensory stimulus of reading traveling from your eyes all the way through your thalamus to your brain's cortex. There, it can be analyzed by means of your cognitive process, perhaps, consciously, perhaps implicitly - and labelled with, like, "Aw, so sweet," at which point, it heads to your limbic system, the central brain region that drives emotion, motivation. At that point, you respond with all the warm-fuzzies.

Other emotions, like simple likes, aversions, and fears, don't have to involve actual thinking, and take a sort of "low-road" neural path. Like, that crash outside, or a baseball flying at your head. Such "jump-out-of-your-chair" stimuli bypass the cortex and zip right from the ear or the eye to the amygdala in the limbic system. It's a knee-jerk reaction that allows us to react quickly, often in the face of potential danger. In other words, that slower, high-road cortex route allows thinking about feeling, while the quick low-road shortcut allows instant emotional reaction.

The stomach flip that happens when you see your ex, or the ten thousand pee breaks you gotta take before you give a speech, or your heart racing after a really good kiss - it's hard to argue with the fact that we often feel emotions with our bodies as much as with our brains. And you can thank your autonomic nervous system the next time you're freaking out or trying to calm yourself down. Perhaps, you recall when we talked about the roles of the sympathetic and parasympathetic branches of our autonomic nervous system. The sympathetic division is what arouses you in a crisis - it makes you hyper aware, makes your heart rate and breathing increase, spikes your blood sugar for extra energy - all that fun stuff. It's like a pit crew readying you for action, and once it's done its job and the danger has passed, the parasympathetic division steps in and talks you back down from the edge, slowing down your heart and breathing rates, and shutting off those stress hormones. Generally, rubbing your back and being all, "Everything's gonna be okay, baby." What you need is the right degree of arousal for the situation: for example, if you're navigating through fast moving traffic in an unfamiliar city, you wanna hit the sweet spot of optimal arousal that allows you to focus your attention without either freaking out or getting all mellow and sleepy.

Like we said before, there's a lot of overlap in the symptoms of different emotions. If you monitor the heart rate, breathing, and perspiration of a group of people who are watching three different movies, you probably couldn't tell who was watching the grisly horror movie, an angry fight, or a hot sex scene. Fear, anger, and sexual arousal often deliver some of the same biological signals. But those emotions certainly feel different to the people experiencing them, just as they usually look different to others observing their expressions. And though differences in emotion can appear subtle, or even undetectable on brain scans, many of them do show distinctive patterns. For most people, positive feelings tend to show more activity in the left frontal lobe, while negative ones show up more in the right frontal lobe. And someone who's very afraid will show increased activity in the amygdala, our more primal emotional center.

Emotions are fascinating things that drive us to do all sorts of brilliant and weird stuff. Understanding them and being able to read them both in yourself and others is vital if you wanna make it through even an average day. But misreading your emotions or someone else's can be confusing - even dangerous - and it's just one of the things that we'll be looking at next week.

Today, you learned about what emotions are, how they work, and why we need them. We talked about the James-Lange, Cannon-Bard, Schachter & Singer, and Zajonc theories, and we also looked at the relationship between cognition and emotion, and how the autonomic nervous system mobilizes emotion. Thanks for watching, especially to all of our Subbable subscribers who make Crash Course possible - to find out how you can become a supporter, just go to subbable.com.

This episode was written by Kathleen Yale, edited by Blake de Pastino, and our consultant is Dr. Ranjit Bhagwat. Our director and editor is Nicholas Jenkins, the script supervisor is Michael Aranda, who is also the sound designer, and the graphics team is Thought Café.