What are emotions?
The classical view says your brain is off, then something happens and a defined set of neurons fires to cause an emotion. So, say a snake slithers towards you – it supposedly triggers a built-in circuit for fear: your heart races, you sweat and you make a specific, universal facial expression that everybody in the world can recognise.

Every time you feel fear, the same neurons produce the same reaction, and that’s true not just for you but for every other healthy human in the world.

So in the traditional picture, emotions are hardwired in all of us? Right. Definitely happiness, sadness, anger, fear, surprise and disgust. It is a very commonsensical view.

This view has held for nearly a century, but you say it is flawed. Why?
The problem is the data don’t bear it out. People don’t generally scowl when they are angry, they don’t pout when they’re sad, and they don’t widen their eyes when afraid.

I lost faith in the classical view at graduate school. I tried to reproduce a finding that had been published a number of times, which should reliably lead people to experience anxiety or depression. In eight experiments over three years, I was never able to replicate it.

When I looked closely at my data, I realised that my subjects weren’t distinguishing between anxiety and depression. So I figured I would just measure emotion objectively – without asking how they felt. I thought it would be straightforward because everybody knew that different emotions have unique facial and physical signals.

But it didn’t work. If you look at the literature on facial expressions, most studies that support universality use a kind of psychological cheat – experimenters might force subjects to pick from a small set of emotion words when shown a facial expression, or unwittingly train subjects in the appropriate emotion concepts.

My lab and others have shown that if you remove these cues, say, by asking subjects what a face means without a list of words to choose from, the whole effect falls apart. Studies of cardiovascular changes, brain imaging and measurements of the neurons themselves consistently call the classical view into doubt.

So what really goes on in our brains when we experience emotion?
Put simply, your brain constantly takes in information and tries to make sense of it to regulate your body appropriately. What caused this flash of light, your brain asks, or this change in air pressure, this ache or tightness? What are they most similar to from the past? This constant stream of guesses produces your feelings.

How does emotion arise from this process?
When the sensations from your body are very intense, your brain categorises them as an emotion. It does this using concepts. To understand how this works, think about money. It is a human-created concept: those pieces of paper have no objective value, but we impose a function on them that they would not have otherwise. Emotions are similarly
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