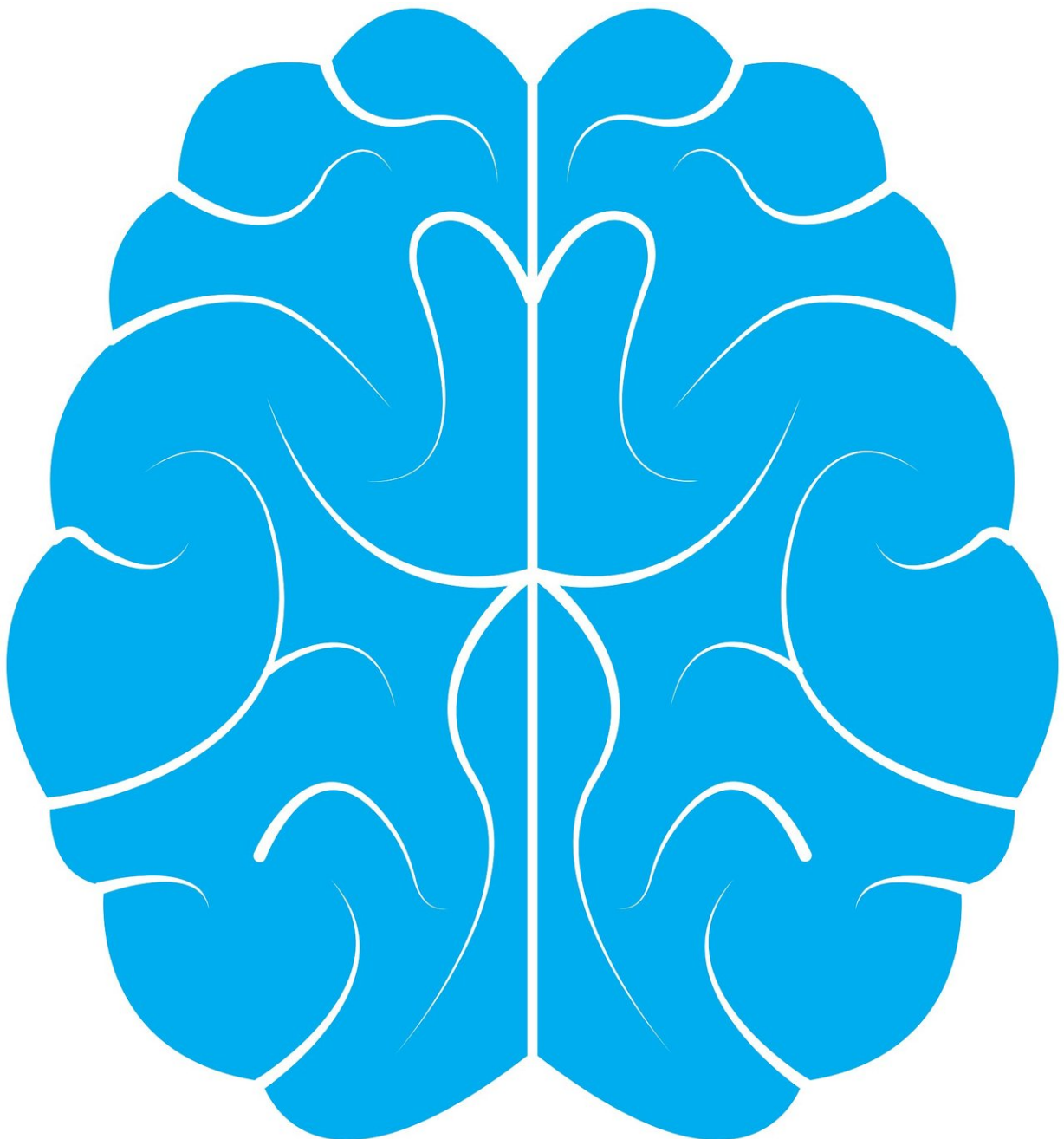


Study shows brain can be tricked into thinking body is working harder than it is

June 26 2019, by Bob Yirka



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A team of researchers affiliated with several institutions in France and Italy has found that the human brain can be tricked into thinking the body is working harder than it actually is. In their paper published in *Proceedings of the National Academy of Sciences*, the group describes experiments they conducted with volunteers riding exercise bikes, and what they learned from them.

People can feel differently during different exercises—sometimes, they feel like they have jogged a long way, for example, but the pedometer tells a different story. Oftentimes, estimates of exertion depend on [heart rate](#). In this new effort, the researchers sought to learn more about the complicated relationship between hearts and minds.

The experiments were quite simple. Eighteen volunteers rode exercise bikes while wearing headphones. The riding regimen was varied and the riders heard the sound of a beating heart through their headphones. In some cases, the [heart beat](#) was slow, other times it was fast. After riding, each volunteer was asked how hard they felt they had worked while riding the bike.

The researchers discovered that the volunteers judged themselves working harder than they actually were when they listened to a fast heartbeat. But they also found that they did not judge themselves working less hard if they were listening to a slower-than-normal heartbeat.

The researchers claim that it is possible to fool the [mind](#) into feeling

more exertion than has actually been experienced. They also suggest that the reason the brain refuses to believe a slower beating [heart](#) is because of ancient survival techniques. Back when humans had to rely on physical prowess to survive, it would have been disastrous to overexert during pursuit of prey because our minds were mistakenly thinking we were not working hard enough. They also note that logic suggests that it would be more difficult to convince someone that they were not working as hard as they thought they were, given their experience of their actual exertion.

More information: Pierpaolo Iodice et al. An interoceptive illusion of effort induced by false heart-rate feedback, *Proceedings of the National Academy of Sciences* (2019). [DOI: 10.1073/pnas.1821032116](https://doi.org/10.1073/pnas.1821032116)

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