



## WHY IS YAWNING CONTAGIOUS?

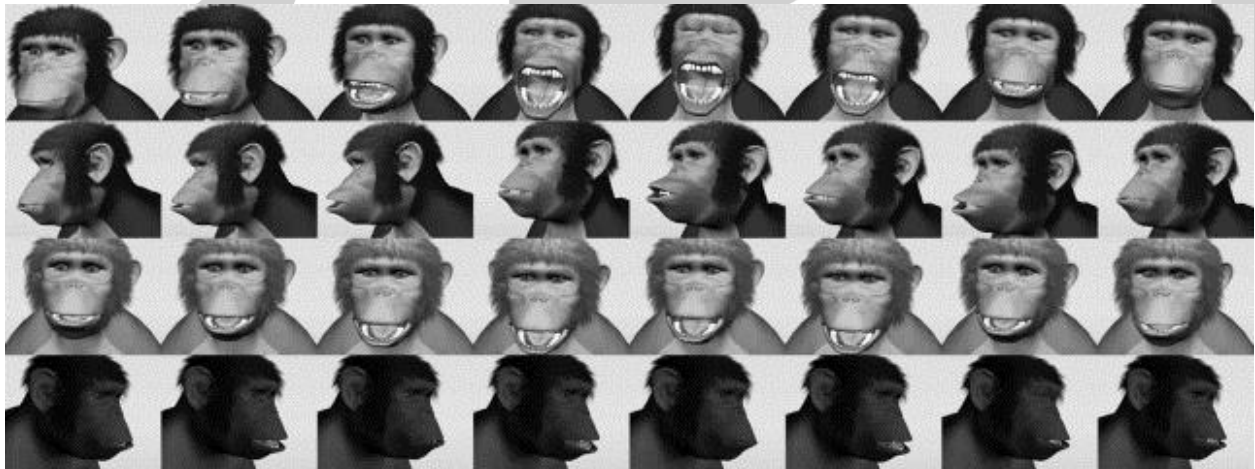
\$500,000

North Carolina and Georgia  
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Seeing, hearing, reading, or even thinking about yawning causes yawning.<sup>251</sup> The National Institutes of Health (NIH) has been studying the phenomenon of contagious yawning for years.

The “most comprehensive” review of potential triggers such as empathy and tiredness found these factors “have little effect on contagious yawning.”<sup>252</sup> The study was conducted at the Duke University School of Medicine<sup>253</sup> and funded with part of a \$139,000 grant provided by NIH’s National Institute of Mental Health.<sup>254</sup>

More than two-thirds of the 328 participants in the Duke study “contagiously yawned at least once” while watching a three minute video of people yawning.<sup>255</sup> Yet the researchers could not identify any reason for the reaction.



*Chimpanzees were shown this videos of animated characters yawning to see if it triggered them to yawn as well. It did.*

Age was the only factor that might be related to contagious yawning with older study participants being less likely to yawn. “Age was the most important predictor of contagious yawning, and even age was not that important. The vast majority of variation in the contagious yawning response was just not explained,” explains study author Elizabeth Cirulli.<sup>256</sup>

The results of this study “are in contrast to previous studies, which have identified correlations between yawning susceptibility and empathic abilities, time of day, and subjective measures of intelligence,” according to the researchers.<sup>257</sup>

Empathy has long been one of the factors assumed to be associated with the reaction, but the Duke study dispels that notion. “Despite the general viewpoint that contagious yawning must be a product of empathy,” the study which had more participants than most of the previous studies did not pick up any such association, which the authors say suggests that contagious yawning is not simply a product of one’s capacity for empathy.”<sup>258</sup>

To pinpoint what parts of the brain process contagious yawning, another study supported by NIH’s Intramural Division of the National Institute of Neurological Disorders and Stroke conducted functional magnetic resonance imaging (fMRI) on human subjects as they viewed a video of yawns. While the study could not explain how or why contagious yawning occurs, the findings “suggest a role for the prefrontal cortex in the processing of contagious yawning,” according to the researchers.<sup>259</sup>

Chimpanzees also experience contagious yawning<sup>260</sup> and NIH is financing studies to understand why. The yawning chimp research is paid for by a base grant from NIH to the Yerkes National Primate Research Center’s (NPRC) Field Station<sup>261</sup> and as part of a supported fellowship program at Emory University.<sup>262</sup> The Yerkes NPRC receives about \$10 million every year from NIH for the base grant,<sup>263</sup> while Emory receives more than \$1 million annually for the fellowship program.<sup>264</sup>

Chimpanzees were shown a video of other chimps yawning and were more likely to yawn “after watching familiar chimpanzees yawn than after watching strangers yawn.”<sup>265</sup>

Another yawning chimp study came with a twist. The chimpanzees again viewed a video, but this one featured animated characters yawning. The cartoon characters even triggered contagious yawning by the chimps.<sup>266</sup>

Campbell says the computer animations used in the study “were obviously fake,” even to the chimpanzees. “I think the animations look good, but they do not look real, and I’m sure that they do not look real to the chimps either.”<sup>267</sup>

The chimps let out yawns anyway and it “was pretty dramatic, with them really stretching their jaw muscles,” describes lead author Matthew Campbell.<sup>268</sup>

“These results support the phenomenon of contagious yawning in chimpanzees,” according to the researchers, who “conclude that it was the yawns themselves, and not boredom, that produced greater yawning in response to the yawn video.”<sup>269</sup>

The findings may have implications for humans, the researchers claim. “Understanding how chimpanzees connect with animations, to both empathize and imitate, may help us to understand how humans do the same.”<sup>270</sup> The project “opens the door to future studies on animals, including humans, using animations.”<sup>271</sup>

These studies may be interesting to Washington bureaucrats and some researchers, but are more likely to elicit yawns from taxpayers.



*Tara the chimp yawns in response to viewing a video of another chimpanzee yawning.*