# Chimpanzees yawn contagiously in response to android robot’s facial cues



Recent research has revealed that chimpanzees can "catch" yawns from an android robot mimicking human facial expressions, adding a new dimension to our understanding of contagious yawning. This behaviour, observed in various species, is often linked to social interactions and may involve elements of empathy and imitation. The study, published in the journal *Nature*, sheds light on how chimpanzees respond not just to their peers, but also to non-living entities.

Yawning is a behaviour associated with various physiological and psychological states, including shifts in attention and temperature regulation. Its contagious aspect has typically been observed in mammals and some fish, though the evolutionary origins remain largely a mystery. Notably, this phenomenon develops gradually: humans tend to display contagious yawning by around four years of age, while chimpanzees show similar tendencies starting at five years.

In this groundbreaking study, researchers tested 14 adult chimpanzees, aged between 10 and 33 years, using an android head equipped with 33 motors to simulate realistic facial expressions, including yawning and gaping. All chimps participated in four 15-minute sessions, during which the android exhibited various behaviours. The results indicated a fascinating response; eight of the fourteen chimpanzees yawned in reaction to the android's yawns, with a notable variation in response intensity depending on the android's mouth position—full yawns elicited more robust reactions compared to less expressive cues.

Moreover, eight chimpanzees were observed lying down, engaging in behaviours typically associated with drowsiness, such as gathering bedding materials. This suggests that rather than triggering an automatic response, observing an android yawn may cue chimpanzees to rest. These findings are significant as they appear to demonstrate contagious yawning from an inanimate source, a first in the field. It opens new avenues for exploration into how robots and other artificial entities may influence animal behaviour.

Researchers believe these results could enhance our understanding of the biological mechanisms underlying contagious yawning, an area that has sparked considerable interest. Previous studies have confirmed the phenomenon in chimpanzees, revealing strong and lasting effects of up to 1.5 minutes after an initial yawn, suggesting an intricate interplay of social and biological factors at work.

As the fascination with contagious yawning continues to grow, scientists aim to investigate whether other behaviours exhibited by robots can also elicit similar responses in animals. This study not only bridges the gap between human-like behaviour in robots and its potential impact on our closest living relatives but also deepens the ongoing inquiry into the evolutionary and social roots of yawning itself. The findings encourage further research into interspecies interactions, particularly in the context of advanced robotics and the social dynamics of animal behaviour.

### 📌 Reference Map:

* Paragraph 1 – [[1]](https://www.independent.co.uk/news/science/chimps-android-robot-yawn-contagion-b2765059.html), [[2]](https://www.nature.com/articles/s41598-019-49698-6)
* Paragraph 2 – [[1]](https://www.independent.co.uk/news/science/chimps-android-robot-yawn-contagion-b2765059.html), [[5]](https://www.nature.com/articles/s41598-019-49698-6)
* Paragraph 3 – [[3]](https://www.nature.com/articles/s41598-019-49698-6), [[6]](https://www.nature.com/articles/s41598-019-49698-6)

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## Bibliography

1. <https://www.independent.co.uk/news/science/chimps-android-robot-yawn-contagion-b2765059.html> - Please view link - unable to able to access data
2. <https://www.nature.com/articles/s41598-019-49698-6> - A 2019 study published in *Scientific Reports* observed 18 captive-reared chimpanzees at the Los Angeles Zoo to confirm the existence of contagious yawning in this species. The researchers found that chimpanzees exhibited contagious yawning, with a strong effect lasting up to 1.5 minutes and a less strong effect lasting up to 3.5 minutes. This study provides observational evidence supporting the phenomenon of contagious yawning in chimpanzees, lending support to previous experimental studies on the subject.
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