Women found to be more susceptible to contagious yawning than men

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Credit: Petr Kratochvil / public domain

(Phys.org)—A trio of researchers with Università di Pisa, in Italy has found via observational study, that women are on average twice as likely to yawn after seeing someone else yawn, than are men. In their paper published in *Royal Society Open Science* the team describes how they carried out their five year study of yawing habits in people and what they learned as a result.

Everyone knows that yawning is contagious—one person yawning spontaneously can cause another person in the vicinity to yawn even if they are not tired or sleepy. Scientists still do not know why this happens, but it has also been documented in other animals—dogs for example have been seen to yawn after viewing a human being yawn. In this new effort, the researchers found that there is a gender difference in contagious yawning, and they suggest it is related to empathy.

The study consisted of the three researchers noting yawning occurrences in the people around them as they lived their daily lives; whether at work, on a train, or sitting next to a family member—every yawn and the contagion it caused was duly noted and added to a database—all told they recorded 1,461 instances of contagious yawning. After five years, the researchers looked at the data and found confirmation of some prior findings, e.g. that yawning contagion becomes more likely when the people involved have closer social bonds—seeing a friend yawn, for example, is more likely to cause mimicking yawns than seeing a stranger do it. But they also found something that had not been noted before, namely, that women are much more susceptible to yawning contagion than are men.

The researchers theorize that the difference between genders is tied to empathic abilities—women, they say, are naturally more inclined to empathize with others, especially those that are close to them. Some have suggested that contagious yawning is based on empathy—seeing someone else yawn causes other people to "feel" their tiredness, which causes them to yawn in return. If women are more empathetic, the researchers point out, it stands to reason that they would be more susceptible to empathetic based human behaviors such as yawning.

More information: Ivan Norscia et al. more than : gender bias supports the empathic nature of yawn contagion in , *Royal Society Open Science* (2016). DOI: 10.1098/rsos.150459

Abstract
Psychological, clinical and neurobiological findings endorse that empathic abilities are more developed in women than in men. Because there is growing evidence that yawn contagion is an empathy-based phenomenon, we expect that the female bias in the empathic abilities reflects on a gender skew in the responsiveness to others' yawns. We verified this assumption by applying a linear model on a dataset gathered during a 5 year period of naturalistic observations on humans. Gender, age and social bond were included in the analysis as fixed factors. The social bond and the receiver's gender remained in the best model. The rates of contagion were significantly lower between acquaintances than between friends and family members, and significantly higher in women than in men. These results not only confirm that yawn contagion is sensitive to social closeness, but also that the phenomenon is affected by the same gender bias affecting empathy. The sex skew, also found in other non-human species, fits with the female social roles which are likely to require higher empathic abilities (e.g. parental care, group cohesion maintenance, social mediation). The fact that female influence in social dynamics also relies on face-to-face emotional exchange raises concerns on the negative repercussions of having women's facial

expressions forcibly concealed.