

### ***You don't sound like me: Accent ratings show in-group avoidance amid COVID-19***

In an increasingly multicultural society such as Canada, a speaker's accent may provide a more reliable indication of group membership than visible ethnicity. Using voice alone, one can infer social identity (Krauss et al., 2002) and reliably identify a speaker's group membership status (Rakić et al., 2011). The current study utilizes this accent to group membership correspondence to study how the media's portrayal of COVID-19 influences the perception of in-group and out-group accents as a function of pathogen disgust sensitivity (Tybur et al., 2009).

Disgust sensitivity is theorized to be a psychological first line of defense against disease, evolved to create an automatic aversion to pathogenic stimuli likely to induce infection (Schaller & Park, 2011). Previous research has found that, as an individual's level of disgust sensitivity increases, so does prejudice towards out-group members (Faulkner et al., 2004), and attraction towards in-group members (Imada & Mifune, 2021). Certain circumstances such as the presence of a disease threat make intergroup boundaries more pronounced, reducing desire for contact with out-group members (Millar et al., 2020). In accented speech perception, participants with higher pathogen disgust perceive in-group accents as more similar and out-group accents as less similar when primed with a disease threat (Reid et al., 2012).

The current study is a conceptual replication of Reid et al. (2012), instead using a real world pathogen threat. In a repeated measures design, 72 native speakers of English were primed with news headlines manipulating the salience of COVID-19 before listening to the same short paragraphs read by different speakers. Headlines unrelated to COVID-19/disease were presented first, followed by headlines either downplaying or emphasizing (counterbalanced) the severity of COVID-19. After each block of headlines, participants rated the distance between their own accent and the speaker's accent (1-very similar to mine, 7-very different from mine). Auditory stimuli were sourced from the *Speech Accent Archive* (Weinberger, 2015), consisting of 12 different speakers: four native speakers of Canadian English, four speakers of 'familiar' foreign-accented English (Mandarin, Spanish), and four speakers of 'unfamiliar' foreign accented English (Zulu, Kurdish, Kiswahili, and Amazigh).

Statistical analysis using a General Additive Mixed-Model (Baayen & Divjak, 2017) showed that individuals with higher disgust sensitivity rated native speakers as less similar to their own accent following headlines mentioning COVID-19, regardless of its tone, compared to neutral headlines. The effect of headlines was not found for ratings of familiar or unfamiliar foreign accented speakers. This relationship was only predicted by participants' pathogen disgust sensitivity, irrespective of political views, belief in science, or general attitudes towards COVID-19. The results suggest that regardless of the headline's tone (downplay/severe), mentioning COVID-19 invoked a disgust reaction among participants. Contrary to Reid et al. (2012), this response was only present for ratings of native speakers, suggesting that the COVID-19 headlines induced an intra-group threat response in the current participants.

The results suggest that a speaker's accent provides information about group membership relevant to disease avoidance processes. The fact that this effect occurred only for native-speaker accents implies that disease avoidance behaviors are more complex than a simple dichotomy between aversion to out-group and attraction to in-group members. It is likely that during a pandemic where limiting contact with others is encouraged, the "out-grouping" effect can be extended to in-group members due to an increased risk of contracting COVID-19 within the group. Accent perception is sensitive to knowledge about a particular disease and its mechanism for infection, likely mediating how individuals with high pathogen disgust sensitivity perceive in-group and out-group members.

## References

- Baayen, R. H., & Divjak, D. (2017). Ordinal GAMMs: A New Window on Human Ratings. In A. Makarova, S. M. Dickey, & D. Divjak, Each Venture a New Beginning: Studies in Honor of Laura A. Janda. Slavica Publishers. <https://muse.jhu.edu/book/57545>
- Faulkner, J., Schaller, M., Park, J. H., & Duncan, L. A. (2004). Evolved Disease-Avoidance Mechanisms and Contemporary Xenophobic Attitudes. *Group Processes & Intergroup Relations*, 7(4), 333–353. <https://doi.org/10.1177/1368430204046142>
- Imada, H., & Mifune, N. (2021). Pathogen Threat and In-group Cooperation. *Frontiers in Psychology*, 12, 678188. <https://doi.org/10.3389/fpsyg.2021.678188>
- Krauss, R. M., Freyberg, R., & Morsella, E. (2002). Inferring speakers' physical attributes from their voices. *Journal of Experimental Social Psychology*, 8.
- Millar, M., Fink-Armold, A., & Lovitt, A. (2020). Disease Salience Effects on Desire for Affiliation With In-Group and Out-Group Members: Cognitive and Affective Mediators. *Evolutionary Psychology*, 18(3), 147470492093070. <https://doi.org/10.1177/1474704920930700>
- Rakić, T., Steffens, M. C., & Mummendey, A. (2011). Blinded by the accent! The minor role of looks in ethnic categorization. *Journal of Personality and Social Psychology*, 100(1), 16–29. <https://doi.org/10.1037/a0021522>
- Reid, S. A., Zhang, J., Anderson, G. L., Gasiorek, J., Bonilla, D., & Peinado, S. (2012). Parasite primes make foreign-accented English sound more distant to people who are disgusted by pathogens (but not by sex or morality). *Evolution and Human Behavior*, 33(5), 471–478. <https://doi.org/10.1016/j.evolhumbehav.2011.12.009>
- Schaller, M., & Park, J. H. (2011). The Behavioral Immune System (and Why It Matters). *Current Directions in Psychological Science*, 20(2), 99–103. <https://doi.org/10.1177/0963721411402596>
- Tybur, J. M., Lieberman, D., & Giskevicius, V. (2009). Microbes, mating, and morality: Individual differences in three functional domains of disgust. *Journal of Personality and Social Psychology*, 97(1), 103–122. <https://doi.org/10.1037/a0015474>
- Weinberger, S. (2015). Speech accent archive. George Mason University. <http://accent.gmu.edu/>