

Supplemental Material S2. Listening comprehension task COVID-19 modifications.

The listening comprehension task was originally created to be conducted in person. However, due to the COVID-19 pandemic, we transitioned the task to an unmoderated remote experimental task. Throughout this transition, we made many changes to the original task to ensure it would be successful in an unmoderated remote format. Key changes to creating the unmoderated version of the task included adding technology checks to ensure that audio could be heard and recorded as well as more detailed instructions featuring more visual depictions so that participants could understand what to do for the task when no researcher was available for questions. The task was conducted online using Gorilla Experiment Builder (Anwyl-Irvine et al., 2020).

The listening comprehension task included a series of instructional checks at the beginning of the task to ensure the participants could complete the task effectively. The instructional checks ensured audio, mouse clicks, and audio recording were working correctly. The task instructed the participants, through audio and text, to have an adult present to help with any issues that may arise. The first instructional check was to ensure the child knew how to select using the computer's mouse and that the audio was working correctly, the participants were instructed through audio only to click one of four images on the screen. Since no text was present on the screen, participants needed to hear the audio to know which image to select. If the child selected incorrectly or did not select an image after 10 seconds, the child was instructed to adjust their volume and audio settings and begin the check again. If they selected correctly, they proceeded to the recording check.

To ensure participants could be recorded through the computer's microphone, participants were first introduced to a red dot that meant they were being recorded and a timer that represented how much time they had left to answer the question. The children were asked, "What do you like to do when it's nice outside?" and were given seven seconds to record their answers. After recording, their answer was played back to them. They selected if they were able to hear their answer played back to them or not. If the child selected that they did not hear their recording, they were instructed to ensure their microphone was on and enabled in their browser and begin the recording check again. If the participants did not pass either the audio or recording checks on the second try, they were provided a link to a troubleshooting checklist to review and return to the task once troubleshooting was completed. If these checks were not successfully completed after two attempts for any check, the task was discontinued, and participants were instructed to contact the research team for further assistance. If these checks were successful, then the task proceeded to the instructions.

Reference

Anwyl-Irvine, A. L., Massonnié, J., Flitton, A., Kirkham, N., & Evershed, J. K. (2020). Gorilla in our midst: An online behavioral experiment builder. *Behavior Research Methods*, 52(1), 388–407. <https://doi.org/10.3758/s13428-019-01237-x>