Possible Ordering Effects and Likely Covariates

To complement the analyses in the presented paper, we performed tests to check for possible ordering effects as well as other important covariates such as age. To augment the story in the manuscript's body, we include a brief discussion of our related findings here.

We considered the possibility that as participants watch subsequent videos, they may acclimate to the experience of watching the robot failures and responses. Accordingly, we used repeated measures analysis of variance (rANOVA) tests with an $\alpha = 0.05$ significance level to check for differences in ratings for stimuli viewed first vs. second vs. third (regardless of content) for both online studies. This precautionary test did not reveal any significant effects. We had wanted to perform this analysis in case (for example) the impact of the first profane robot utterance had a much stronger impact than subsequent curses. We were reassured by the lack of significant differences for this test.

We also wondered whether age in particular would be an important covariate, since acceptability of cursing and types of acceptable curses can vary generationally. We performed a repeated measures ANCOVA test considering the three study conditions plus age as a covariate for both the first and second online studies. For the first online study, which was administered via a university student pool, we found only one scale that age was significantly impacting: the RoSAS robot competence scale ($p = 0.038$). For the second online study, which was administered via Prolific, there were no significant effects of age as a covariate. We did not run this analysis for the in-person deployment since this third effort was more exploratory and yielded a relatively smaller dataset. Overall, these results hint that age was not as major of a driving factor in participant responses as one might think, although there would still be benefits of expanding the age range included in future experiments of this type, as mentioned in the limitations section of our manuscript.