

Who's a Good Boy? Gendered Patterns in Dog-Directed Speech Prosody

Human speech is highly adaptive. Dog-directed speech (DDS) offers a striking example of such adaptability by showing stylistic and prosodic modifications across diverse contexts. DDS is characterised by simplified syntax, few declarative sentences and many imperatives and questions, a predominance of present-tense verbs, a higher proportion of repetitions, higher pitch, and expanded pitch range, and has been reported to share some similarities with child-directed speech [1, 2]. While studies on child-directed speech have been extensive, empirical work on DDS prosodic structure remains limited, with studies focusing only on overall pitch and overlooking other prosodic properties. Prior findings also suggest gender differences in pitch use in DDS with women raising pitch level more than men [3, 4]. Whether such gendered difference extends to other prosodic features remained unexplored.

This study examines how gender shapes prosodic features in DDS, investigating multifaceted variables including global pitch measurements and beyond: local pitch excursions, voice quality, intensity, temporal aspects, and perceived mode of speech. Seventeen women and seven men (monolingual speakers of American or British English) interacted with a college welfare dog and with a researcher, producing DDS and adult-directed speech (ADS). Audio and video recordings were annotated, and auditory and acoustic analyses were conducted in ELAN and Praat. Prosodic data were analysed using Bayesian regression models, given the nature and size of the datasets.

Both genders showed clear DDS-ADS shifts, but women displayed a greater range and degree of prosodic feature modification. Women's DDS involved localised instances of high pitch, expanded pitch contour, breathy voice, whisper voice, soft voice, marked syllable lengthening, comparatively lively event, more frequent uses of questions and imperatives, and was perceived to use more affectionate and excited mode of speech. Men used only a subset of these features, primarily localised high pitch, breathy/whisper voice, imperatives, and affectionate mode, with little evidence of intensity or temporal variation. Of the features shared by both genders, women exhibited larger increases in high pitch, imperatives, and affectionate speech, whereas men showed stronger increases in breathy and whisper voice. Men also showed greater inter-speaker variability. There were no features used uniquely by the men in this study, which suggests they employed a smaller repertoire, rather than a qualitatively different one. There are various possible interpretations of this. Perhaps women display a greater degree of engagement with the dog, or perhaps a greater degree of comfort in doing so. However, it alternatively, or additionally, could stem from a greater wish to signal to possible overhearers that they are more engaged.

Contrary to previous work, men in this study raised their overall pitch more than women (4.72 vs 3.34 in semitones) and showed significant increases in maximum pitch. Women may have hit the physiological 'ceiling' of their maximum pitch earlier.

Overall, the findings highlight a complex interplay between prosody, social indexicality, registers, and physiology, and illustrate how style-shifting extends beyond human-human interaction into cross-species communication.

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[2] Burnham, D., Kitamura, C., Vollmer-Conna, U. (2002). What's new, pussycat? On talking to babies and animals. *Science*, 296, 1435.

[3] Gergely, A., Faragó, T., Galambos, Á., Topál, J. (2017). Differential effects of speech situations on mothers' and fathers' infant-directed and DDS: An acoustic analysis. *Scientific Reports*, 7: 13739.

[4] Koós-Hutás, É., Afrin, S., Kovács, A. B., Faragó, T., Filep, L. A., Topál, J., & Gergely, A. (2025). More than just a happy talk? Evidence for functional pitch and utterance length modifications in infant-, spouse-, and dog-directed communication. *Journal of Child Language*, 1–17.