Talker gender effects in the Ferguson Clear Speech Database

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YNH listener data
- Vowel identification in noise
  - Ferguson (2004)
    - 7 young adults with normal hearing (YNH listeners)
    - 7/bVd/ words (2 tokens per vowel per style per talker)
    - 70 dB SPL
    - Mixed with 12-talker babble; SNR: -10 dB
    - Analyzed using mixed ANOVA:
      - Significant style and talker gender effects, significant interaction
      - Larger clear speech effect for females than males (11 vs. 6 percentage points)
      - Females more intelligible than males, but only in clear speech

Perceived clarity
- Ferguson & Morgan (in preparation)
  - 21 YNH listeners
  - CID Everyday Sentences (14 in each style from each talker)
  - Comfortable presentation level
  - Rated clarity on a Likert scale from 1-7
  - Analyzed using mixed-effects ordered logistic regression models with listener and talker as random effects:
    - Significant style and gender effects, significant interaction
    - Style effect was significant for both men and women
    - Females were rated clearer than males, in both styles

References
- Bradlow et al. (1996)
  - Harvard sentences, quiet;
  - F: ~90%, M: ~85%
- Hazan and Markham (2004)
  - CVC words, 20-talker babble, +6 dB SNR
  - F: ~96 RAU, M: ~93 RAU

Discussion
- The results for YNH listeners (superior vowel intelligibility and perceived clarity for female talkers) are consistent with other studies:
  - Ferguson et al. (2003)
    - Harvard sentences, quiet;
    - F: ~90%, M: ~85%
  - Hazan and Markham (2004)
    - CVC words, 20-talker babble, +6 dB SNR
    - F: ~96 RAU, M: ~93 RAU

In contrast, for OHI listeners, male and female talkers are similarly intelligible and clear
- Something about age and/or hearing loss seems to be nullifying the factors that make women more intelligible and clearer for YNH listeners

This similarity between male and female talkers differs from audiology patients' frequent complaints of particular difficulty understanding female talkers. What explains these complaints? Some thoughts:
1. Female talkers may be quieter “in the wild” than male talkers
2. Experimental materials were all scaled to the same amplitude
3. When our patients were young, they developed a habit of using less effort when listening to female talkers, a strategy which no longer works for them
4. Test blocks in experiments always contained talkers of one gender
5. The complaints we’re hearing aren’t general to all audiology patients but primarily to our male patients AND
6. The complaints aren’t about women generally but about wives

What do you think?