

Voice Cues of Ovulation

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“Recent research has documented a variety of ovulatory cues in humans, and in many nonhuman species, the vocal channel provides cues of reproductive state. We collected two sets of vocal samples from 69 normally ovulating women: one set during the follicular (high-fertility) phase of the cycle and one set during the luteal (low-fertility) phase, with ovulation confirmed by luteinizing hormone tests. In these samples we measured fundamental frequency (pitch), formant dispersion, jitter, shimmer, harmonics-to-noise ratio and speech rate. When speaking a simple introductory sentence, women's pitch increased during high- as compared with low-fertility, and this difference was the greatest for women whose voices were recorded on the two highest fertility days within the fertile window (the 2 days just before ovulation). This pattern did not occur when the same women produced vowels. The high- versus low-fertility difference in pitch was associated with the approach of ovulation and not menstrual onset, thus representing, to our knowledge, the first research to show a specific cyclic fertility cue in the human voice. We interpret this finding as evidence of a fertility-related enhancement of femininity consistent with other research documenting attractiveness-related changes associated with ovulation.”

Method

Initial Screening

- 69 women from the UCLA campus
- Ages 18-39
- Regular menstrual cycles and not on hormonal contraceptives

Follow-Up session

- 2 sets of vocal samples were taken
- Women were scheduled in 1 of 2 groups
 - Low fertility session (4-10 days prior to the next menstrual onset)
 - High fertility session (15-17 days prior to next menstrual onset)

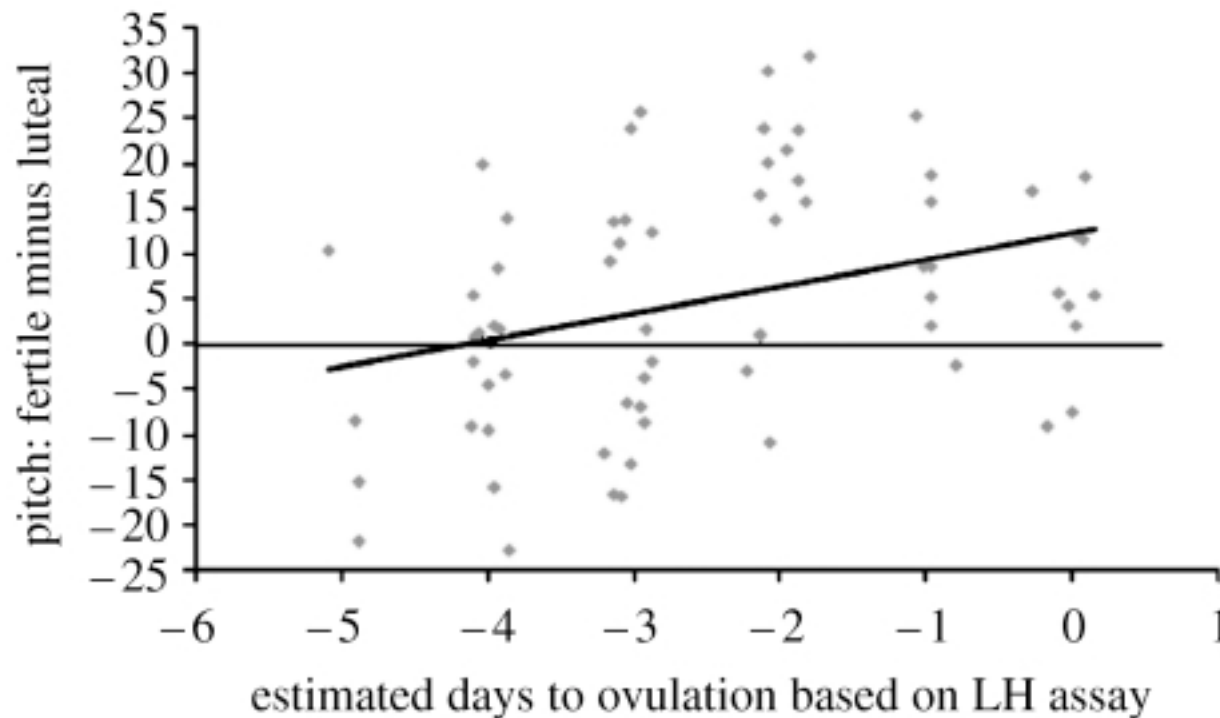
Participants produced the sentence, ‘Hi, I’m a student at UCLA,” as well as the five vowels (eh, ee, ah, oh, oo)

Samples analyzed for:

- Pitch
- Formant Dispersion
- Jitter
- Shimmer
- Harmonics-to noise ratio
- Speech rate

Results

- For the spoken sentence, high-fertility recordings were significantly higher in pitch than low-fertility recordings



Correlation between increased pitch and high fertility;

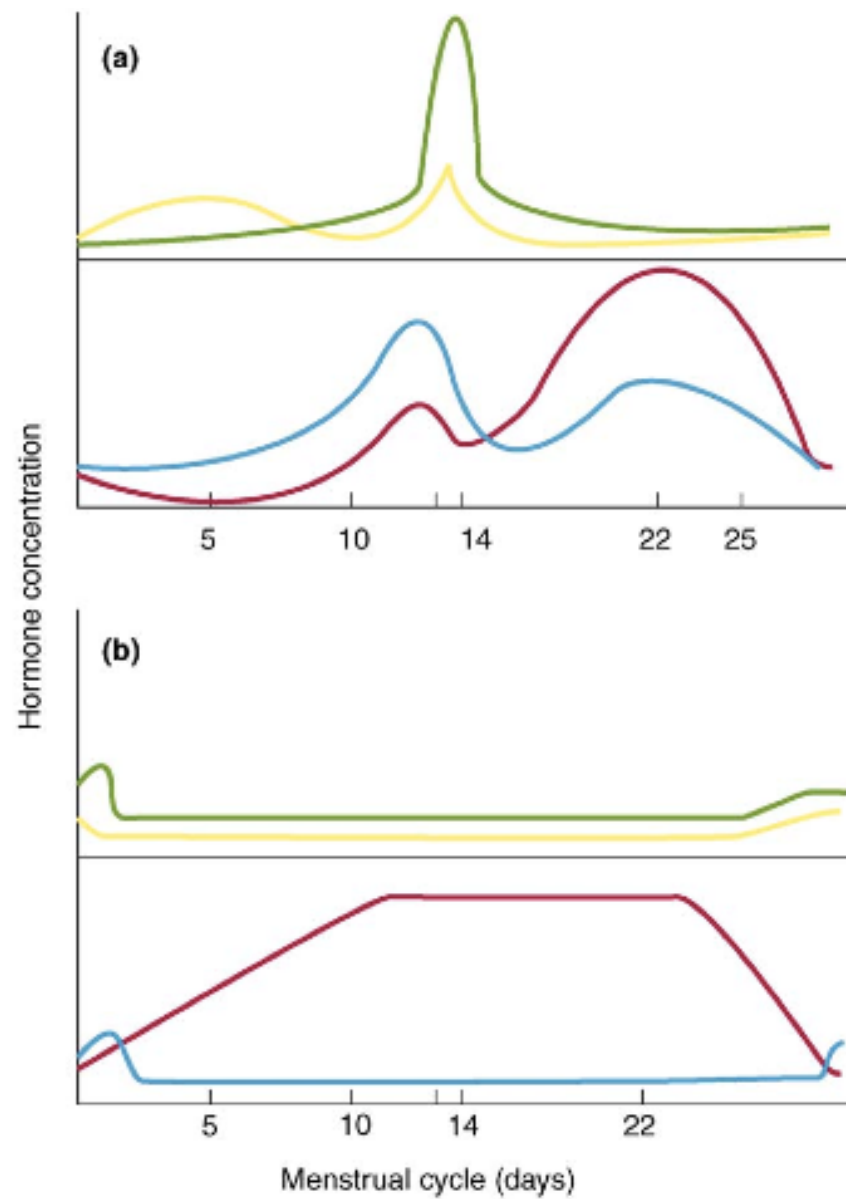
Limitation? Lack of correlation in other measures; lack of diversity in subjects; lack of evidence in a social setting;

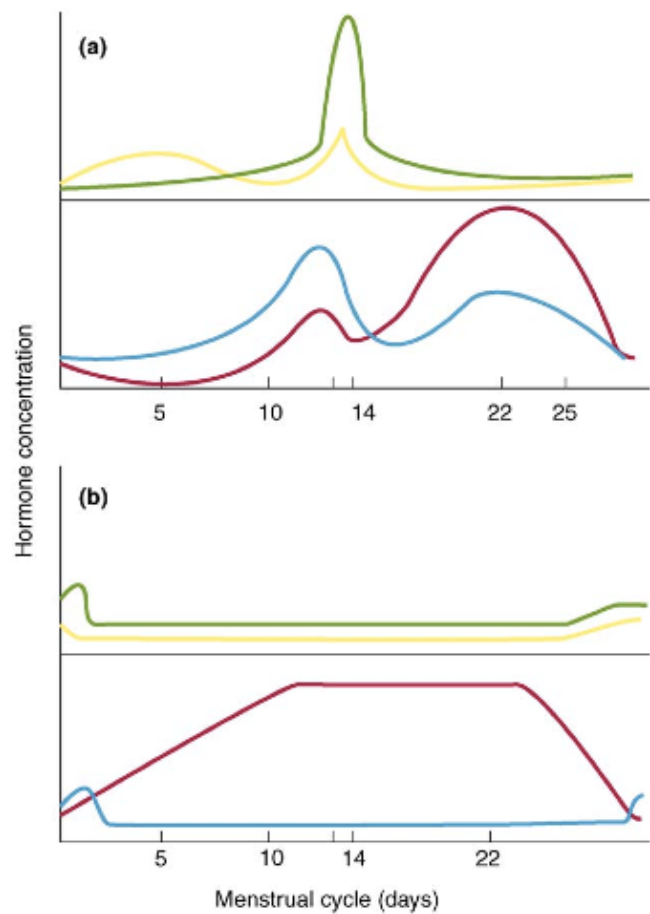
Other Articles:

- 1) Association between birth control pills and voice quality.**
- 2) Hormones and temporal components of speech: sex differences and effects of menstrual cyclicity on speech.**
- 3) Ovulatory shifts in human female ornamentation: near ovulation, women dress to impress.**
- 4) Integrating cues of social interest and voice pitch in men's preferences for women's voices**

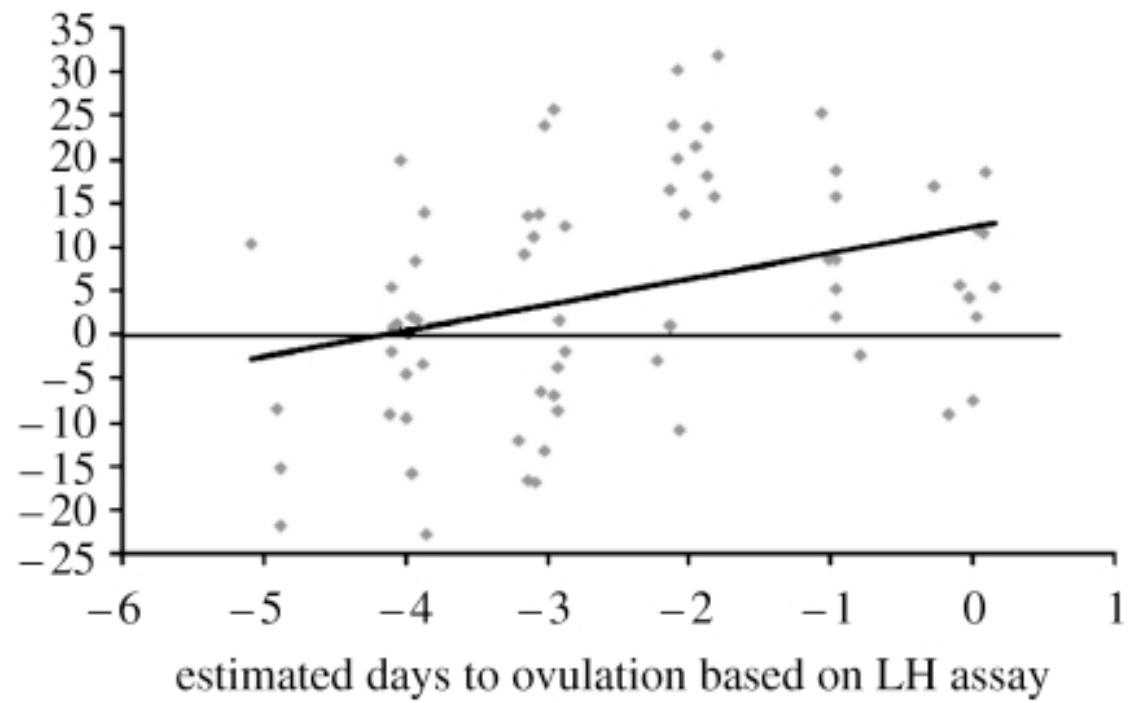
Relevance

- “Whether the pill presents a real evolutionary problem is likely to depend on the social context in which preferences are disrupted.”
- **Raises a Question:** Do cues of ovulation appear more during social interactions and serve a communicative function?
- Sexual Motivation and Dual Sexuality





pitch: fertile minus luteal



Articles Referenced

- Vocal cues of ovulation in human females
By Gregory A. Bryant and Martie G. Haselton
- Does the contraceptive pill alter mate choice in humans?
By Alexandra Alvergne and Virpi Lummaa
- Association between birth control pills and voice quality.
By Amir O, and Kishon-Rabin L.
- Hormones and temporal components of speech: sex differences and effects of menstrual cyclicity on speech.
By Whiteside SP, Hanson A, Cowell PE
- Ovulatory shifts in human female ornamentation: near ovulation, women dress to impress.
By Haselton MG, Mortezaie M, Pillsworth EG, Bleske-Rechek A, Frederick DA
- Integrating cues of social interest and voice pitch in men's preferences for women's voices
By Benedict C Jones, David R Feinberg, Lisa M DeBruine, Antony C Little, and Jovana Vukovic