

***The Effects of Voice Pitch on Perceptions of Attractiveness:
Do You Sound Hot or Not?***

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Abstract

Past research has shown that voice characteristics such as pitch, affect, and dominance can influence perceptions of attractiveness. The present study explores the effect of vocal pitch on ratings of attractiveness and maturity. Maturity scores were used as a manipulation check on the pitch conditions. Participants viewed a slideshow of photographs of three men and three women with accompanying soundtracks of either a high pitched voice, low pitched voice, or no voice. The hypothesis is that participants will find men more attractive when paired with a low pitched voice and women more attractive when paired with a high pitched voice. Both men and women were perceived as more mature in the low pitch voice conditions, indicating that the pitch manipulation was effective. The study found that men were rated as more attractive when paired with a low pitched voice, and no significant pitch effect was found for pictures of women. Finally, when the results were separated by subject gender, there was some evidence that men found women with low pitched voices more attractive, and both genders found men with low pitched voices more attractive.

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Raines, Hechtman, and Rosenthal (1990) evaluated how affect in the voice and face affected judgments of attractiveness. The study found that participants rated submissive-affect voices and dominant-affect faces as more attractive. Also, female voices/faces were rated as more attractive when the affect was positive or dominant (rather than negative or submissive). Submissive and positive affect both tend to cause a higher pitch in the voice, leading to the hypothesis that higher pitched voices will be perceived as more attractive, at least in women.

Riding, Lonsdale, Brown (2006) evaluated the effects of male vocal fundamental frequency on females' ratings of male attractiveness. The researchers used nine male voices manipulated for frequency, and had 54 college-age women answer questions about the voices such as "Do you think this person would be physically attractive" (p. 58). The study found that women rated men with high voices as significantly less attractive than men with low or medium voices. The researchers speculated that women found the lower voices more attractive due to the evolutionary "marker of dominance and the ability to protect and provide" (p. 61).

Collins and Missing (2003) studied the attractiveness ratings made by men on both pictures and voice recordings of women. The voice recordings belonged to the actual women whose pictures they were paired with, and they were not manipulated. Collins and Missing found that the male

participants were in strong agreement that attractive female faces had attractive voices. The men found higher voices to be more attractive, and the authors state that higher voices tended to belong to younger women in general. They also found that larger women had lower voices and were found to be less attractive by the male participants. Finally, they speculated that measures of attractiveness, including voice, signal qualities such as “female age, body size, and possibly hormonal profile” (p. 997).

This study is attempting to demonstrate that voice pitch influences perceptions of attractiveness; the hypothesis is that males will be rated as more attractive when paired with a low male voice and females will be rated as more attractive when paired with a high female voice. Previous research suggests that low male voices will be judged as more attractive based on the associated perception of dominance and protection, whereas high female voices will be judged as more attractive based on the perception of youth and fertility.

Method

Participants

Participants were college students at Winona State University who volunteered to participate in a study. There were 48 participants, 39 of whom were females and 9 of whom were males. They were compensated for their participation by receiving extra credit points in a psychology course of their choosing. The exact amount of extra credit was determined by individual professors.

Materials

Materials consisted of six slideshows, headphones, four audio recordings, and a survey. Each slideshow was created with the PowerPoint program, was shown on a laptop, and consisted of 14 slides. The first slide instructed the participant to wait for instructions, and the last slide instructed the participant to inform the researcher that the study was finished. The 12 slides in between alternated between pictures of three men and three women (see figure 1) with accompanying audio recordings, and a blank slide with the instructions, “Please make your ratings for the person you just saw. Press the space bar when you are ready for the next picture.” The pictures were pre-tested by Winona State University students to ensure approximately equivalent attractiveness ratings. Both the slides and the audio recordings were counterbalanced to ensure that each picture was in each voice condition twice, and picture order was randomized to reduce order effects. The slides with pictures were on 15 second automatic timers, and the instruction slides were not timed to allow participants to make their ratings. Participants were supplied with headphones during the slideshow so that they could hear the audio clearly and to eliminate distractions.

Four audio recordings were used in the presentation. The audio content lasted approximately 13 seconds and consisted of an excerpt from an introductory psychology textbook on a neutral topic. The recordings were from one male volunteer and one female volunteer and were digitally altered to create a high-pitch and a low-pitch condition for each gender. The original recordings were not used in the presentation.

The survey given to all participants consisted of 12 questions about certain characteristics of each person in the slideshow. Participants recorded their answers on a 1-9 rating scale, nine being the highest score for each characteristic. The characteristics of interest were how “good-looking,” “appealing,” “plain,” and “unattractive” the participants found each person in the slideshow. The survey also asked the participant to rate how mature, childish, smart, trustworthy, friendly, and aggressive the stimulus pictures were. All questions were worded “How _____ does this person seem?”

Figure 1. Examples of stimulus photos used in the PowerPoint presentations.



Procedure

Participants were randomly assigned to slideshows, with each slideshow completed by eight participants. They were told that they would be viewing pictures of men and women in a PowerPoint presentation, some with a voice and some without, and that they were to use the scale provided to rate each person. Participants were instructed to “Read the scale carefully, follow the instructions, and rate the people accordingly. After you have finished making the ratings for one person, follow the instructions on the computer.” Participants were then asked to put on the headphones and begin. After completing the survey for all six picture slides, the survey was collected and the participant was thanked for his or her time and dismissed with a debriefing.

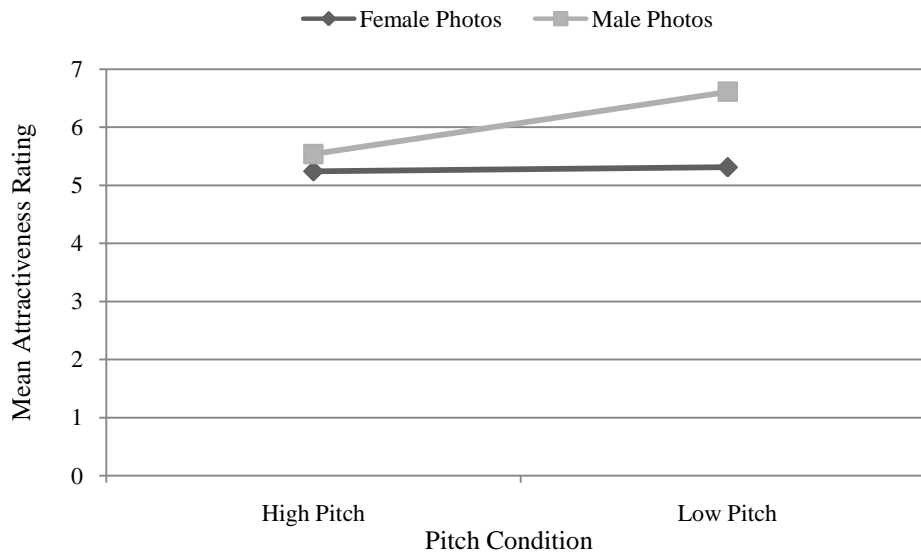
Results

Two participants were excluded from analysis because of technical problems with the audio recordings. In addition, the no voice condition was excluded from analysis because it provided no additional insight or significant information. A multivariate ANOVA indicated that the pictures had no main effect on the attractiveness or maturity ratings, $F = .383$, $p = .682$, and no interaction effects with the voice conditions, $F = .422$, $p = .792$. This allows us to focus solely on the effects of pitch condition on attractiveness and maturity ratings.

The maturity ratings were used as a manipulation check on the pitch conditions. The characteristics “mature” and “childish” (which was reverse-scored) from the survey were combined into one reliable maturity rating, $Alpha = .781$. A paired samples t-test indicated that males with low voices ($M = 6.51$) were rated as significantly more mature than males with high voices ($M = 5.54$), $t = -2.49$, $p = .016$, and females with low voices ($M = 7.35$) were rated as significantly more mature than females with high voices ($M = 6.59$), $t = -2.60$, $p = .013$. This confirms that the pitch was

sufficiently manipulated in the correct direction (lower pitched voices indicated greater maturity and higher pitched voices indicated less maturity).

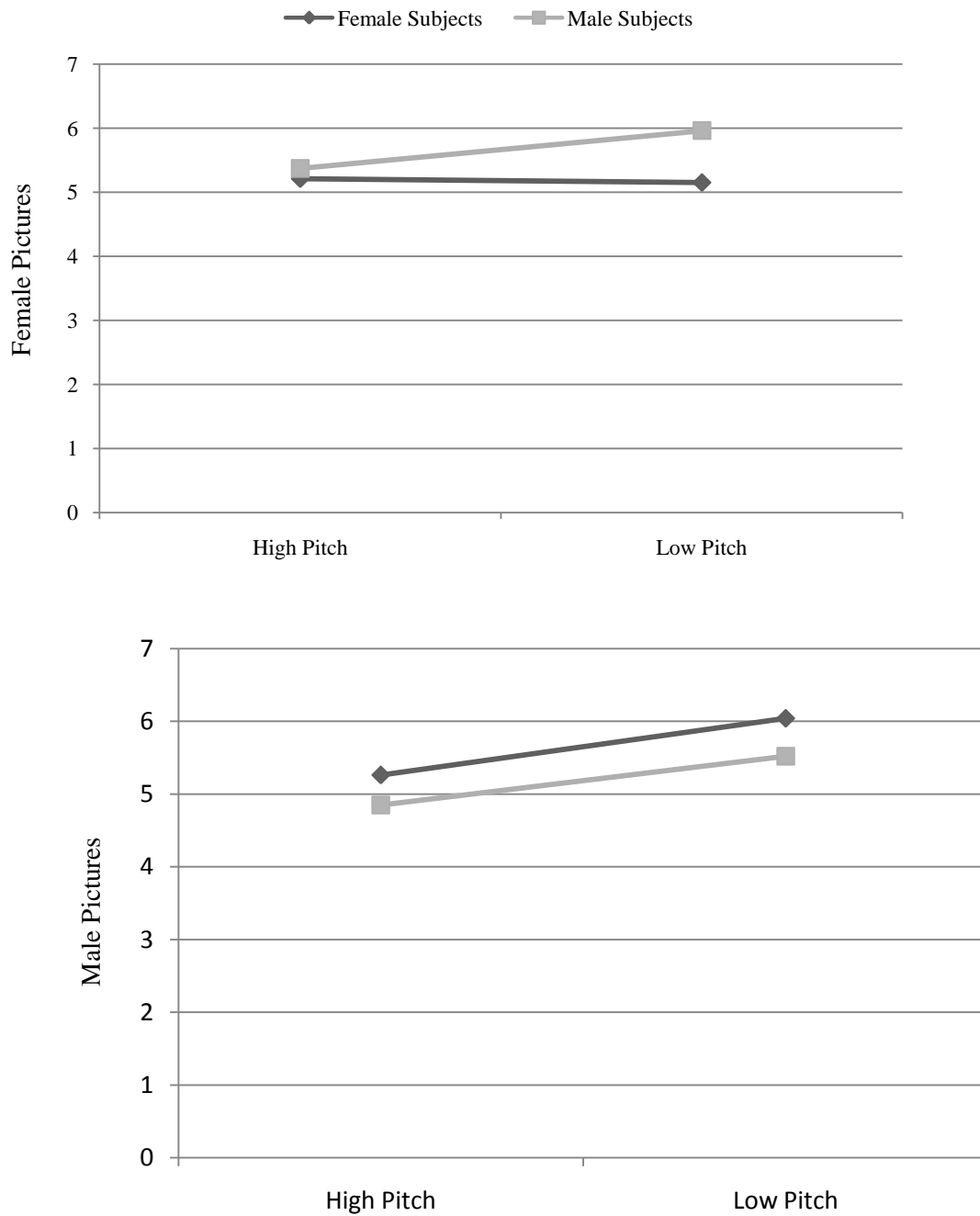
Figure 2. Mean attractiveness rating of male and female stimulus photos in either the low pitch condition or high pitch condition.



The attractiveness rating was a combined rating of “good-looking,” “appealing,” and “unattractive” (which was reverse-scored) from the survey, $\text{Alpha} = .855$. “Plain” was excluded from this combination because it failed to correlate with the other characteristics. A paired samples t-test indicated that while males with low voices were rated as significantly more attractive than males with high voices ($t = -2.93, p = .005$), attractiveness ratings of females did not significantly differ based on pitch condition ($t = -.256, p = .799$). This supports the hypothesis for the male photos, but does not support the hypothesis for the female photos. See figure 2.

Although only the portion of the hypothesis pertaining to males was supported in the attractiveness rating analysis, a different pattern emerged when the data was analyzed by subject gender. However, because of the significantly unbalanced number of participants of each gender (9 males and 39 females), significance testing is not appropriate, although the means are suggestive. Male participants rated females with low pitched voices ($M = 5.96$) as more attractive than females with high pitched voices ($M = 5.37$). This is contrary to our hypothesis and previous research on this topic. Females did not tend to vary their ratings of attractiveness between pictures of the same sex in either the low pitch ($M = 5.15$) or high pitch ($M = 5.21$) conditions. Males, however, did find pictures of the same sex more attractive in the low pitch condition ($M = 5.52$) than in the high pitch condition ($M = 4.85$). Females also found pictures of males more attractive in the low pitch condition ($M = 6.04$) than in the high pitch condition ($M = 5.26$). See figure 3.

Figure 3. Mean attractiveness ratings made by male and female subjects of male and female stimulus photos in either the low pitch condition or high pitch condition.



Discussion

The hypothesis was that participants will find men more attractive when paired with a low pitched voice and women more attractive when paired with a high pitched voice. The data supported that men were rated as more attractive when paired with a low pitched voice rather than a high pitched

voice, but did not support the prediction for women. Both men and women were perceived as more mature in the low pitch voice conditions, indicating that the pitch manipulation was effective.

In addition, when the results were separated by subject gender, there was some evidence that men found women with low pitched voices more attractive than women with high pitched voices, contrary to both previous research and my prediction. Some explanations for this pattern are that perhaps the demographic of college aged males prefers more mature women, or perhaps recent media portrayals of more mature women as beautiful has influenced males to find older women more attractive. Another explanation is that the increased fertility rates of older women have reduced the biological need to be attracted to younger (and therefore more fertile) women. Or more simply, maybe the high pitch female recording was simply too high or childish to see the predicted effect. However, because of the small sample size of male participants, further research on this pattern of results is warranted.

Finally, while female participants did not change their ratings of other females' attractiveness based on pitch, male participants *did* change their ratings of other males' attractiveness based on pitch. Further research on the reason behind these differences may be enlightening. It may have to do with masculine competitiveness causing males to judge other males more closely, or perhaps women are indifferent to the voices of other women as a means for judging attractiveness.

Several problems encountered during the running of this study should be corrected if it were to be replicated. First, the headphones used were sometimes too quiet for hard-of-hearing participants. Headphones with better volume control would have been better suited to the experiment. Second, the stimulus photos should be more equivalent in terms of composition and content. Some photos used were only headshots, whereas others were taken from the waist up; likewise, some had props, such as a musical instrument, and some were in black and white rather than color. These variables should be eliminated in similar studies. Third, due to the possible differences between male and female subjects, a concerted effort should be made to test a similar number of subjects of each gender.

The implications of this research are surprisingly diverse. Not only is it revealing of gender differences in perceptions of attractiveness, it gives a greater understanding of the role voice plays in human interactions. Attraction is a powerful motivator, and knowledge about all aspects of attractiveness, including voice, could be used in business or marketing, or even such ordinary situations as attempting to get out of a traffic ticket or improving one's dating prospects. If some of the aforementioned explanations of this study's findings are correct, it may even help researchers understand how media trends affect perceptions of attractiveness, or how evolutionary habits are changed in today's medically advanced, communication influenced culture.

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