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| **Abstract title** | h |
| **Abstract text** Introduction:   Although studies have described the significance of mouse vocalizations from the sender’s perspective, fewer have investigated effects of these vocal signals on the receiver. Here, we report playback experiments using natural vocal sequences from two behavioral contexts: mating and restraint. We examined whether these sequences altered the behavior of listening mice and whether male and female mice responded in the same manner.  Method:   Vocalizations and behavior of CBA/CaJ mice (n=12; ages p90-p180) were recorded during the contexts of mating and restraint. We selected five exemplars of natural vocal sequences from restraint and from a higher arousal state of mating (behaviorally defined). Mating sequences included both male and female’s vocalizations. These sequences were conditioned for use in playback experiments. Both male and female were used in behavioral tests. Only females in estrous were included in final data analysis. Prior to testing, mice experienced the behaviors of mating and restraint in a counterbalanced order on two consecutive days. On a subsequent test day, animals habituated to the test chamber for 3 hours, then were presented with either the mating or restraint vocalizations for 20 minutes. We video-recorded and analyzed 19 different behaviors before, during, and after stimulus presentation.  Results:   Mating and restraint vocal sequences both increased attending and head orientation toward the speaker (p<0.0005). In response to playback of vocal sequences linked to a high arousal stage of mating, females decreased locomotion, adopted an alert posture and escape behavior from the speaker; Males, however, increased exploratory behaviors (locomotion and rearing) in response to mating sequences and explored the speaker side more than females (p<0.05). In response to restraint vocal sequences, however, both males and females frequently approached the speaker area but not the speaker itself (p<0.05). Exposure to these sequences in both males and females resulted in escape behavior from the speaker (for both sexes, p<0.0005).   Conclusion:   Vocal sequences linked to mating change the behavior of listening male and female mice but do so in different ways consistent with their behaviors during mating: males are more exploratory, while females display reduced locomotion and more escape or alert behavior. Vocalizations linked to restraint context, however, result in an increase in escape behavior from the speaker for both sexes, as well as twitching and lung and sniff that are linked to the negative affect of these vocalizations. Overall, our findings show that the valence of mating but not restraint vocal sequences differs based on the sex of the listening animals. | |
| **Please indicate the animal model in the abstract** | CBA/CaJ mouse |
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