Supplemental Figure 1

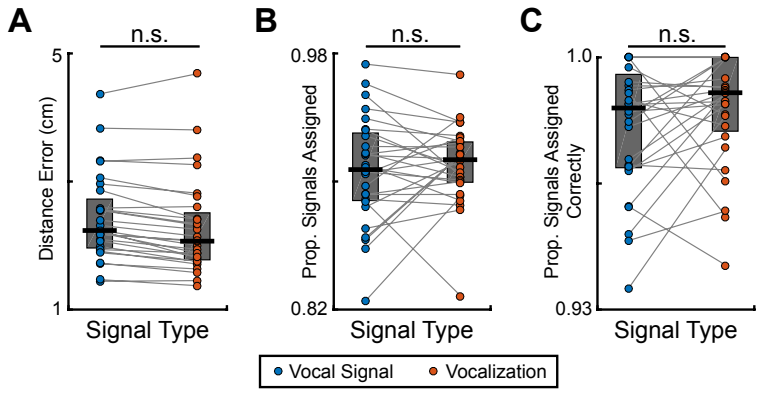

Figure S1: Sound-source localization accuracy is similar for vocal signals and vocalizations. We evaluated how accurately our sound-source localization system localized vocal signals and vocalizations from singly-recorded males that were vocally stimulated using female scent cues. A) Distance between the nose of the vocalizing mouse and the location where the system estimated the origin of the vocal signals (left; blue) and vocalizations (right; orange). Each dot is the median from a single male. B) Proportion of all extracted signals that were assigned to a mouse. C) Proportion of assigned signals attributed to the real mouse. For B and C, we generated random locations for three additional mice, then quantified the likelihood that each of the four animals (one real and three artificial) emitted each signal. A-C) Each dot is the median value from a single 10-minute recording of an isolated male (n = 29). Connected dots are from the same recording. Gray boxes represent IQR; thick horizontal black lines represent group medians. Stats = Mann-Whitney. * $p < 0.05$; ** $p < 0.01$. n.s. = non-significant.

Supplemental Figure 2

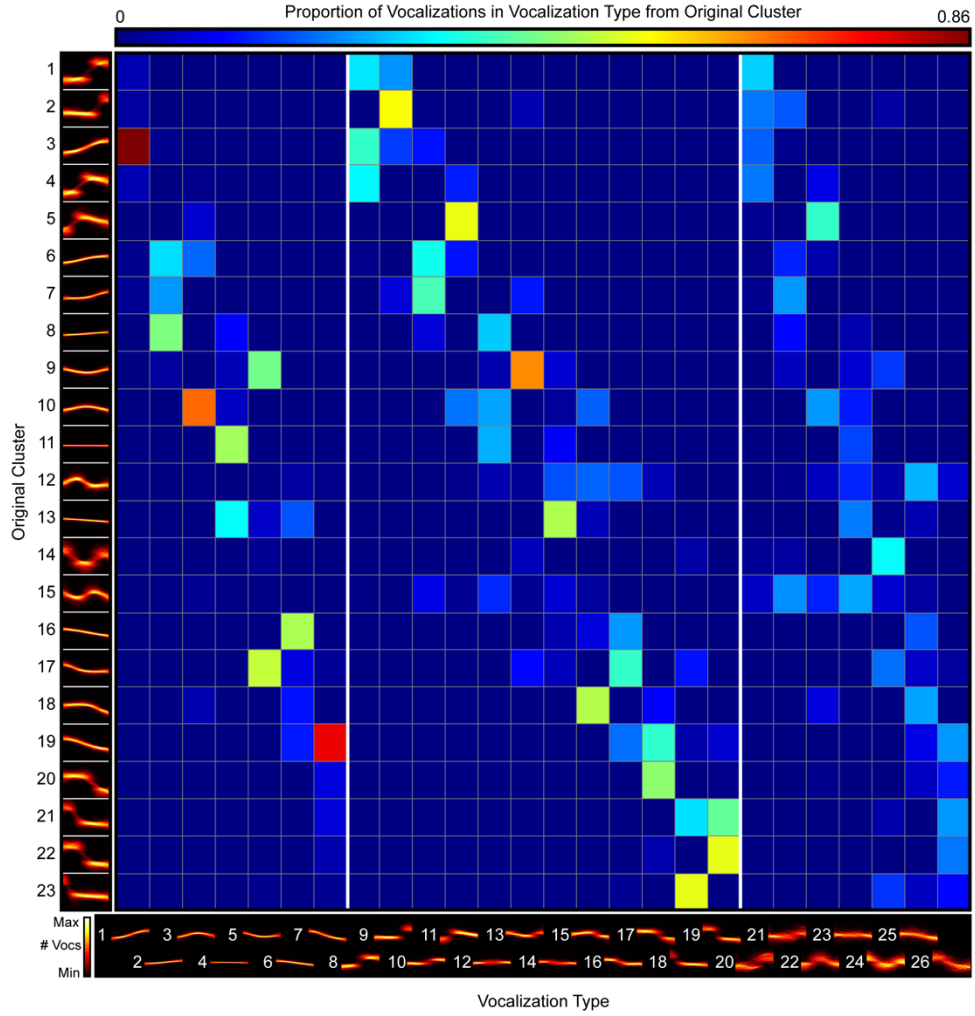

Figure S2: Vocalizations were organized into 26 unique vocalization types. Using a k-means clustering program, all vocalizations (n = 46,649) were partitioned into 23 clusters (left – cumulative plots). To dissociate vocalizations based on acoustic complexity, we then separated vocalizations within each cluster into three groups: continuous, single jump, and multiple jumps. Then, across all 23 clusters of vocalizations from each group, we applied an elbow function to determine the optimal number of vocalization types to represent the variability within the group. There were 7 types of continuous vocalizations (types 1-7), 12 types of vocalizations with a single jump (types 8-19), and 7 types of vocalizations with multiple jumps (types 20-26). The color of each box indicates the proportion of vocalizations in each of the 26 types that originated from each of the 23 original clusters. Cumulative plots for each of the 26 vocalization types are staggered below the heatmap (odd- and even-numbered vocalization types in the top and bottom rows, respectively). The right edge of each vocalization type is right-aligned to the corresponding column.

Supplemental Figure 3

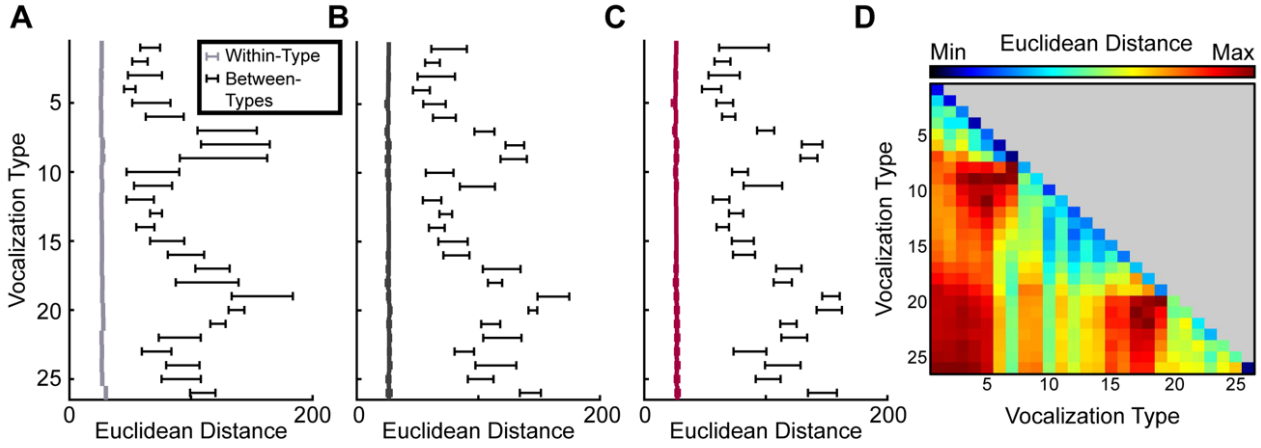

Figure S3: Vocalizations were accurately clustered across all three social contexts. A-C) Interquartile range of Euclidean distance between vocalizations within a Vocalization Type (colored lines) compared to other vocalization types (black lines) for A) 1-mouse, B) 2-mouse, or C) 4-mouse contexts. Thick colored line represents median distance within a vocalization type. D) Mean Euclidian distance between vocalization types and contexts. The identity line shows comparisons of the same vocalization types emitted in different social contexts. Off-diagonal boxes show comparisons of different vocalization types that were emitted during the same context. See Methods for details about quantification.