Comparative analysis of isolation-induced pup ultrasonic calls of five gerbil species

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Gerbils inhabiting arid areas of Asia and Africa, display different ecological specializations and sociality. Adults primarily use ultrasound, but some species produce also audible vocalizations. Pup vocal behaviour is poorly known.

AIM
Comparing ultrasonic isolation calls of captive 6-10-day pups between five species: Gerbillus campestris (1), Gerbillus perpallidus (2), Meriones unguiculatus (3), Meriones vinogradovi (4), Sekeetamys calulus (5)

METHODS
- 5 pups from 5 litters for each of the 5 species
- 10 calls per pup
- 2-min isolation test at 22°C
- Call recording with Pettersson D1000X (384 kHz, 16 bit), weighting and measuring for body variables

RESULTS

<table>
<thead>
<tr>
<th>Species</th>
<th>Weight (g)</th>
<th>Length (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>G.c. 1</td>
<td>5.02±1.49</td>
<td>40.1±7.82</td>
</tr>
<tr>
<td>G.p. 2</td>
<td>8.82±2.99</td>
<td>49.2±7.01</td>
</tr>
<tr>
<td>M.u. 3</td>
<td>6.93±1.04</td>
<td>44.4±3.01</td>
</tr>
<tr>
<td>M.v. 4</td>
<td>9.04±1.52</td>
<td>47.1±5.70</td>
</tr>
<tr>
<td>S.c. 5</td>
<td>7.34±0.51</td>
<td>45.6±2.56</td>
</tr>
</tbody>
</table>

Types of frequency contours

CONCLUSION
Ultrasonic isolation calls differed prominently between species, the differences in fundamental frequency were stronger between two Gerbillus species than between pups of other species. This could be an effect of large differences in body size.

The maximum fundamental frequency was the highest in G.c. (77.5±6.34 kHz) and ranged of 47.9-53.2 kHz in other species.

The shortest calls were produced by G.c. (85±52 ms) and G.p. (89±32 ms). The longest calls were produced by M.v. (184±37 ms)

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