

Fish-eating killer whales (*Orcinus orca*) increase vocal activity after playback of biphonic discrete calls of their dialect



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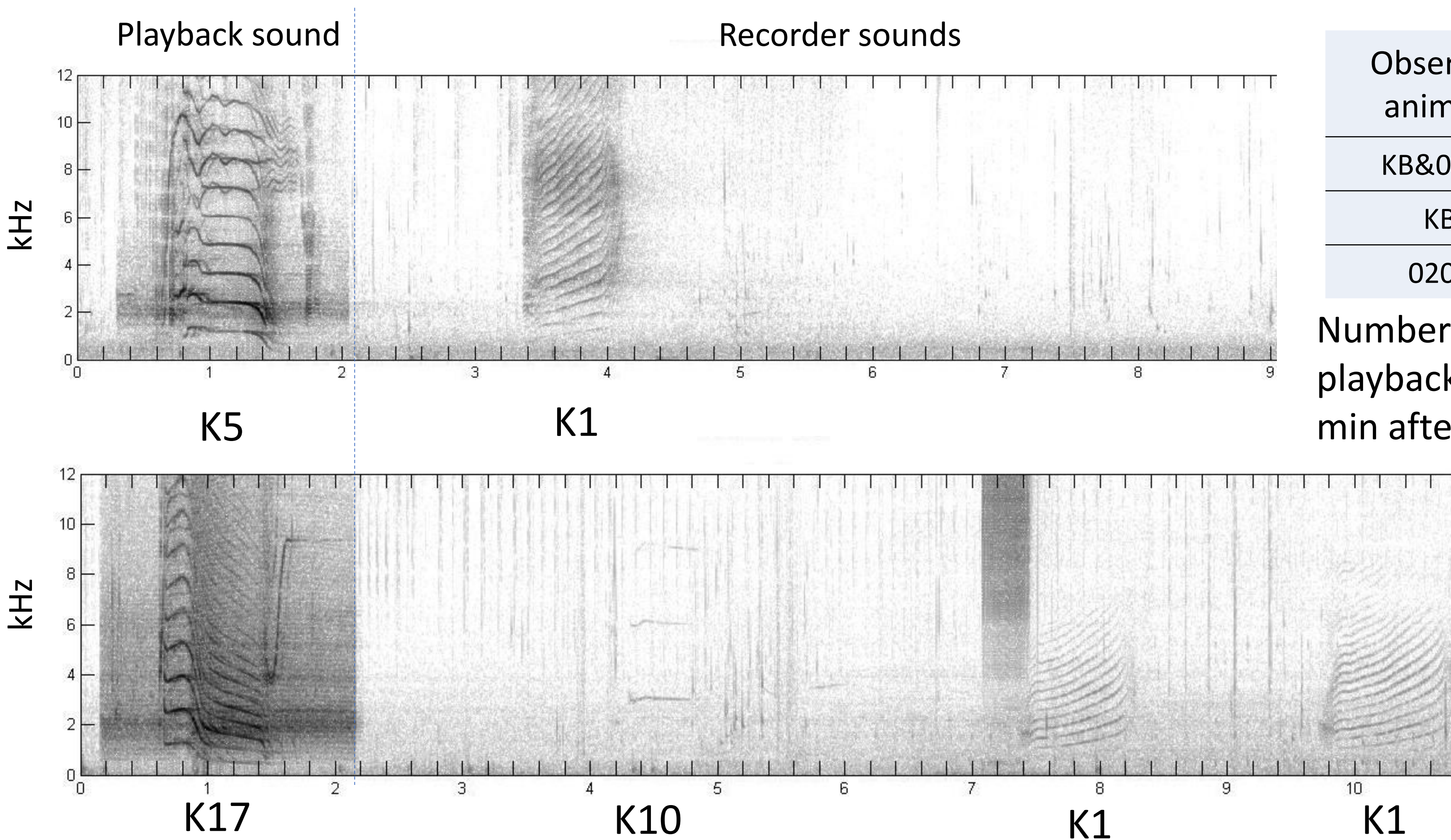
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Background

Fish-eating killer whales use discrete calls specific for family or group of families (pod) for communication. The use pattern of biphonic and monophonic calls differs depending on behavior or social context. However, it remains unclear which sounds are used primarily for communication between members of the same family, and which ones for communication between families. To answer this question, we carried out the playback experiment of family specific biphonic discrete calls.



Observed animals	N encounters	N Playbacks	
		K5 from KB pod	K17 from 0209 pod
KB&0209	2	9/7	4/2
KB	2	3/3	2/0
0209	1	3/0	1/1

Number of encounters and playbacks/number of playbacks with more than 5 discrete calls at 1-st min after PB

Material and methods

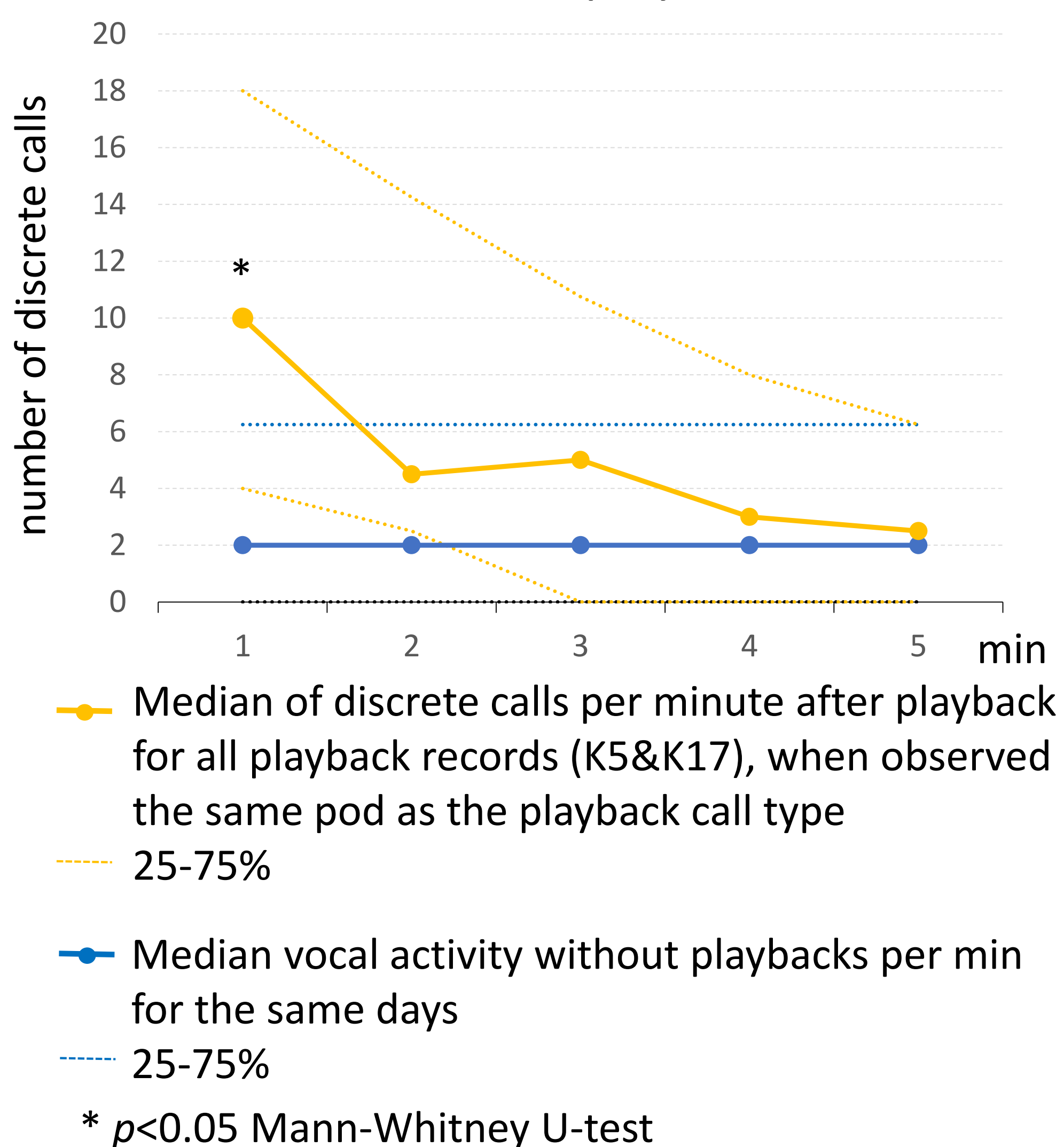
The playbacks were carried out with killer whales of two pods (KB; 0209) of the Avachensky acoustic clan.

- 5 independent encounters
- 22 playbacks
- 348 min recorded
- 1300 discrete calls recorded

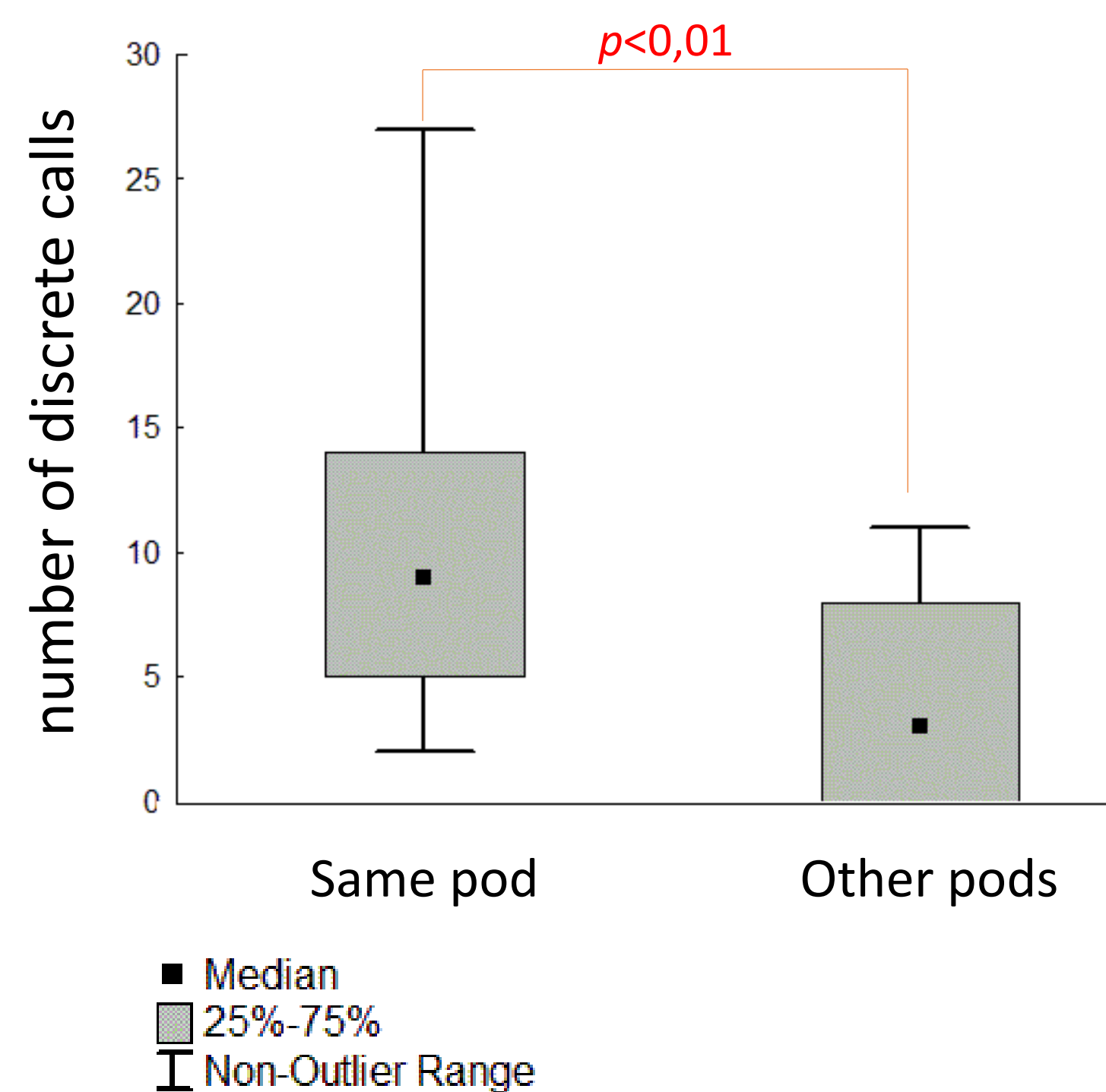
Behavior conditions for playbacks: animals did not form large groups, the distance between animals was more than 10 body lengths, the vocal activity of killer whales remained low for at least 10 minutes before the playbacks (less than one call per minute).

Results

5 min after playback

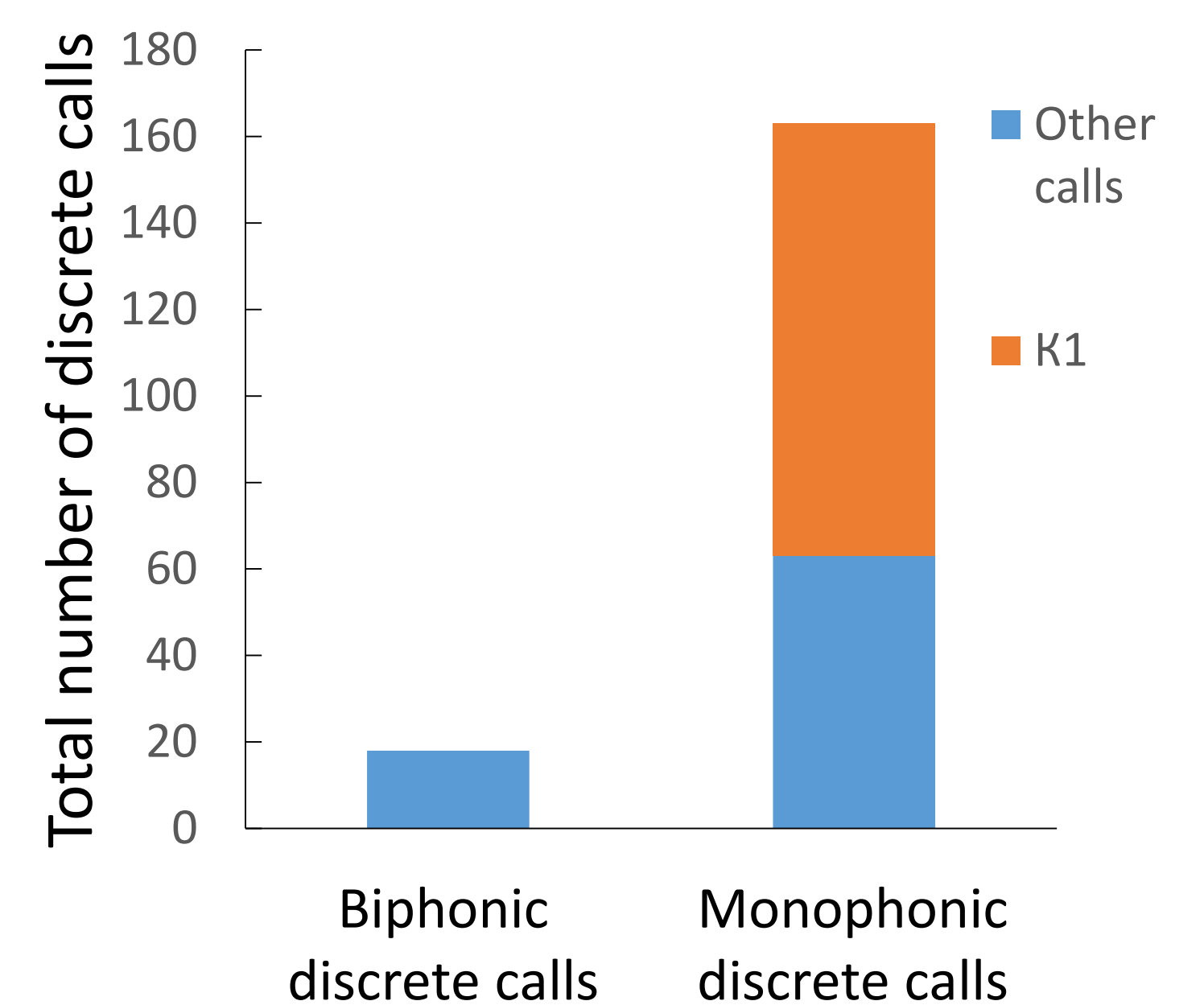


A discrete calls in the first minute after the playback during two encounters with both pods



p - Wilcoxon Rank-Sum Test

All calls recorded in the first minute after playback



Conclusion:

Selected by us for playbacks biphonic calls (K5; K17) predominantly affect the vocal behavior of animals from the family that use it. Therefore, they may be used for intrafamily communication, at least in this behavioral context. At the same time, the monophonic call type K1 predominated in the response vocalization.