

Rozumíme řeči zvířat?

RNDr. Irena Schneiderová, Ph.D.



Katedra chovu zvířat a potravinářství v tropech
Fakulta tropického zemědělství
Česká zemědělská univerzita



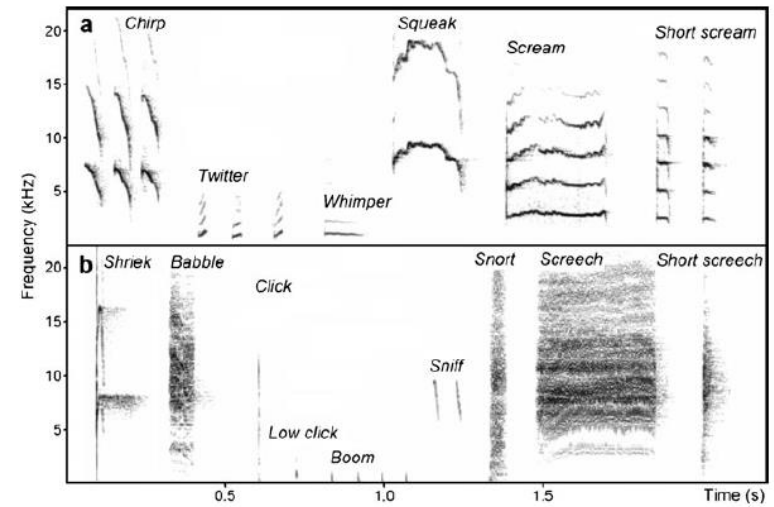
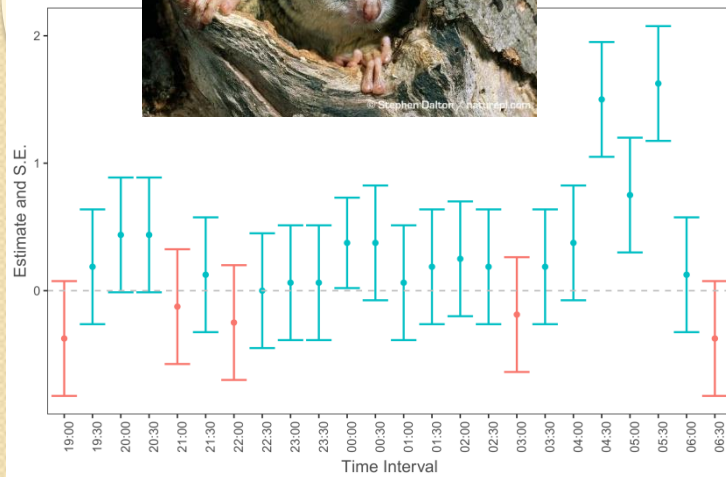
Zoologická zahrada hl. m. Prahy



Foto © Jan Hošek



Foto © Martina Marešová



Behavioural Processes 138 (2017) 73–81

Contents lists available at ScienceDirect

Behavioural Processes

journal homepage: www.elsevier.com/locate/behavproc



ELSEVIER



One plus one: Binary alarm calls retain individual signature for longer periods than single-note alarms in the European ground squirrel (*Spermophilus citellus*)

Irena Schneiderová^{a,*}, Elena V. Volodina^b, Vera A. Matrosova^c, Ilya A. Volodin^{b,d}



Foto © Jan Matějů

Foto © Martina Marešová

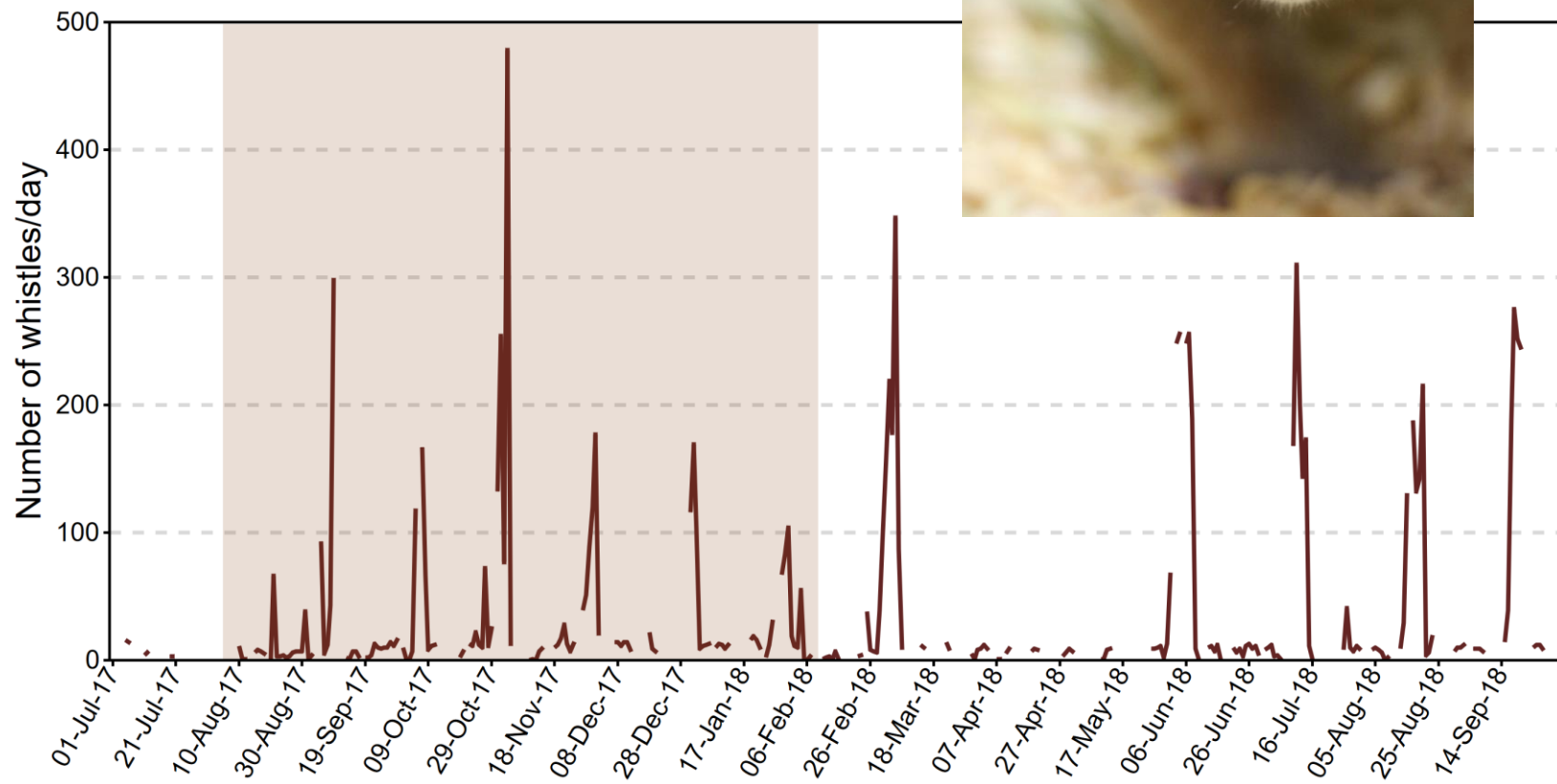
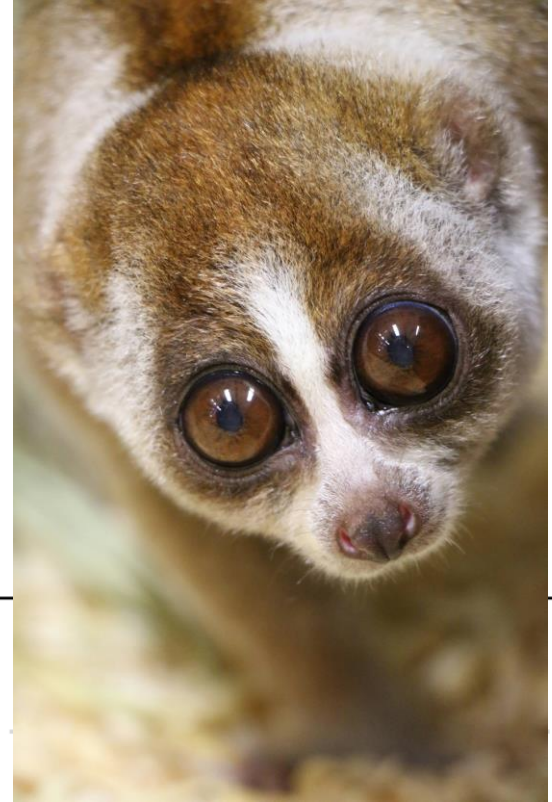


Foto © Česká televize



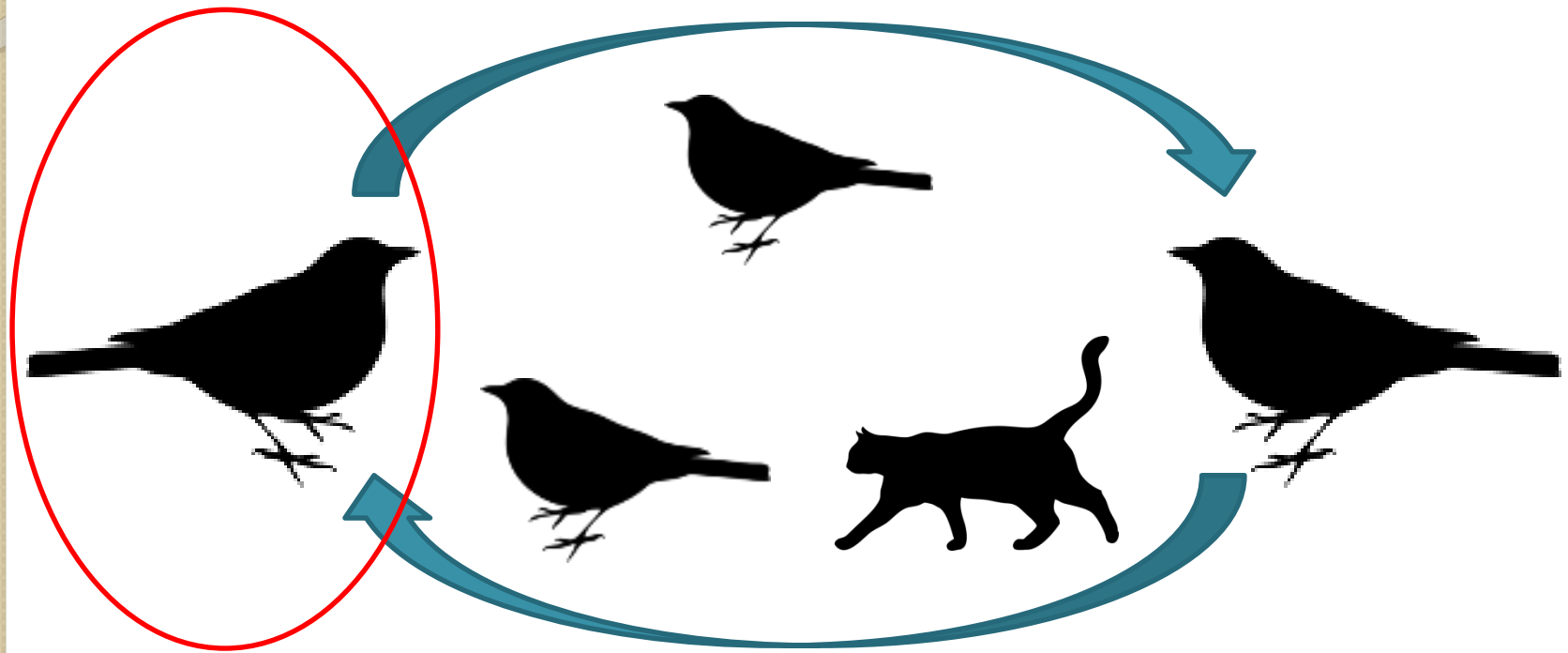


imitátoři





bioakustika

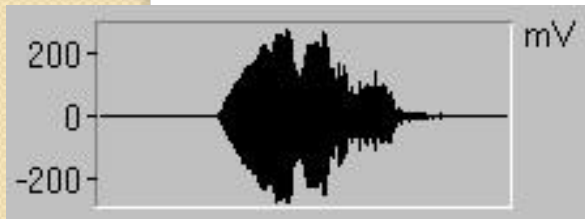


metody – zvířecí "slovník"

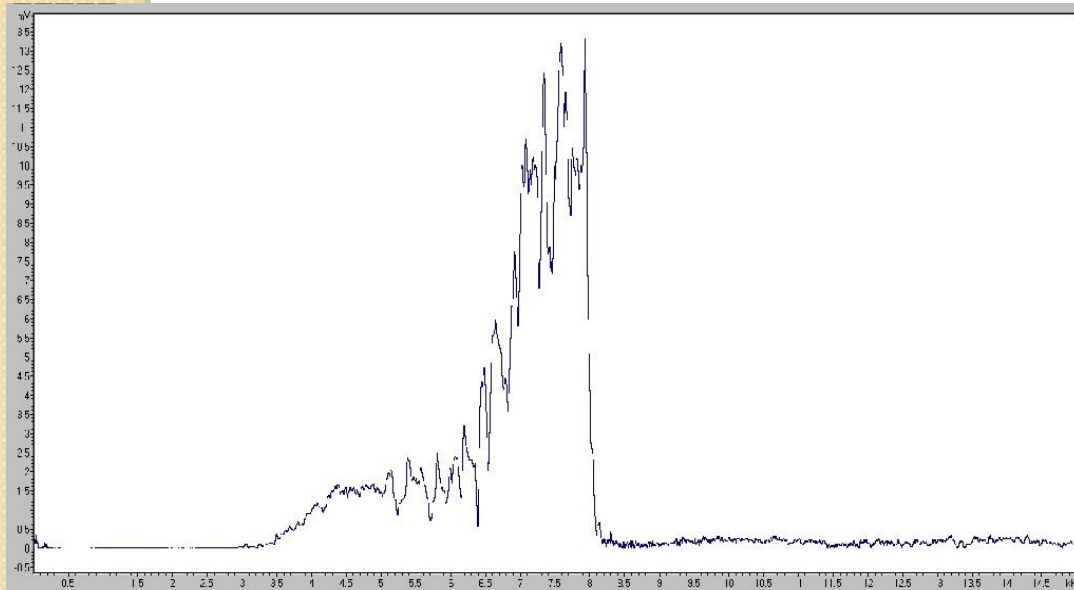


podívejme se na zvuk ...

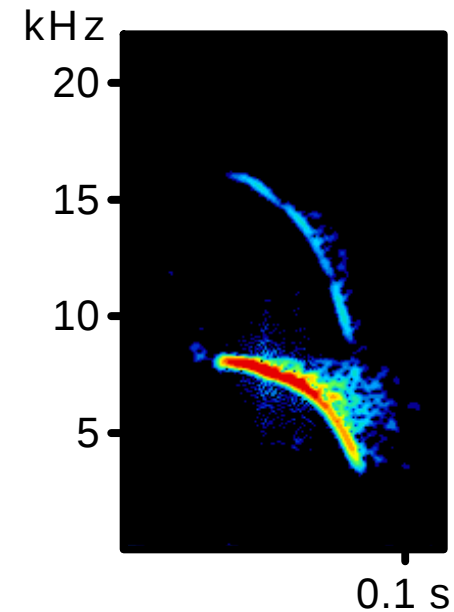
oscilogram



"power spectrum"

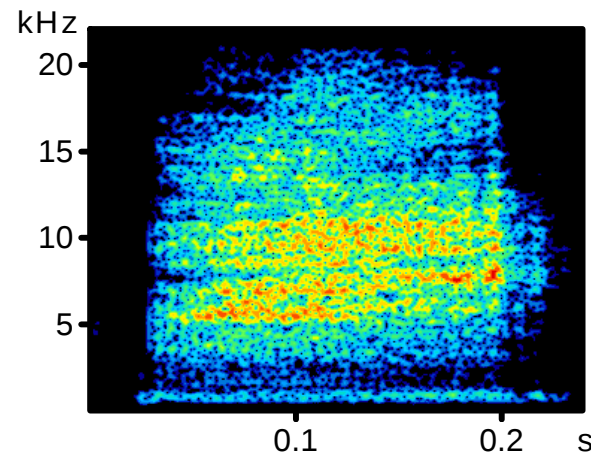
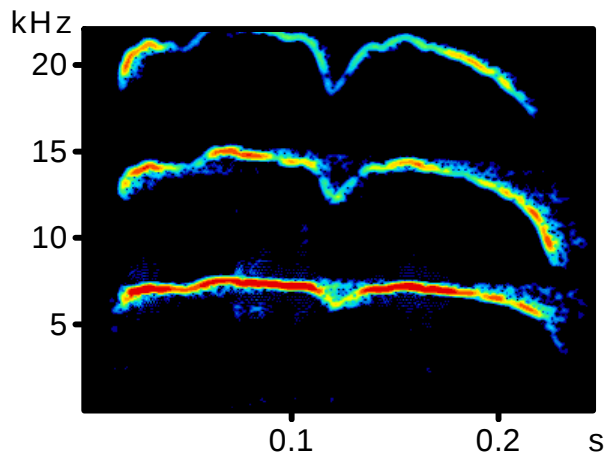


spektrogram

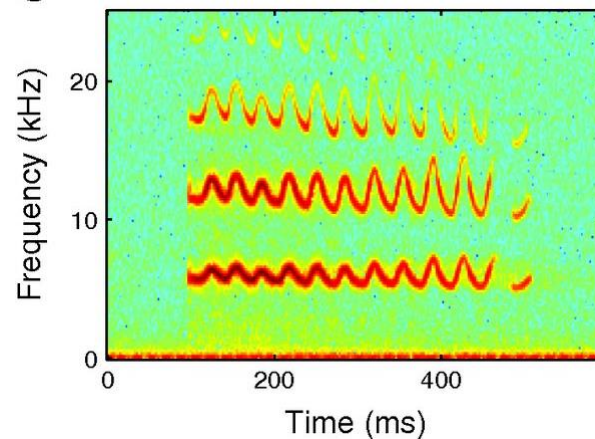
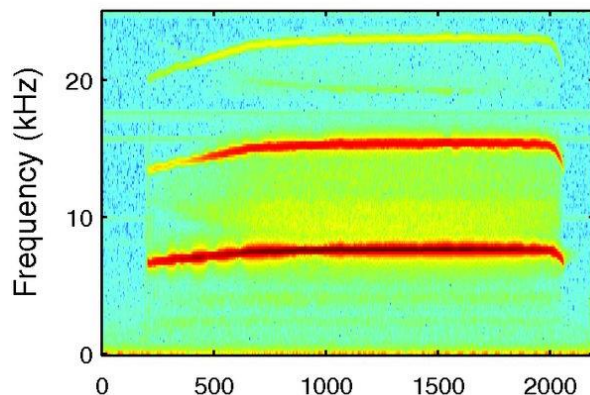


dělení z hlediska struktury

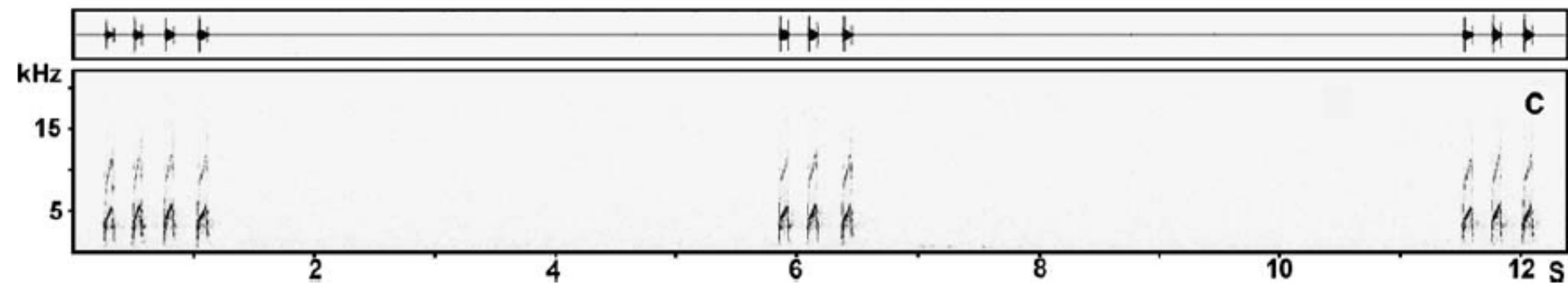
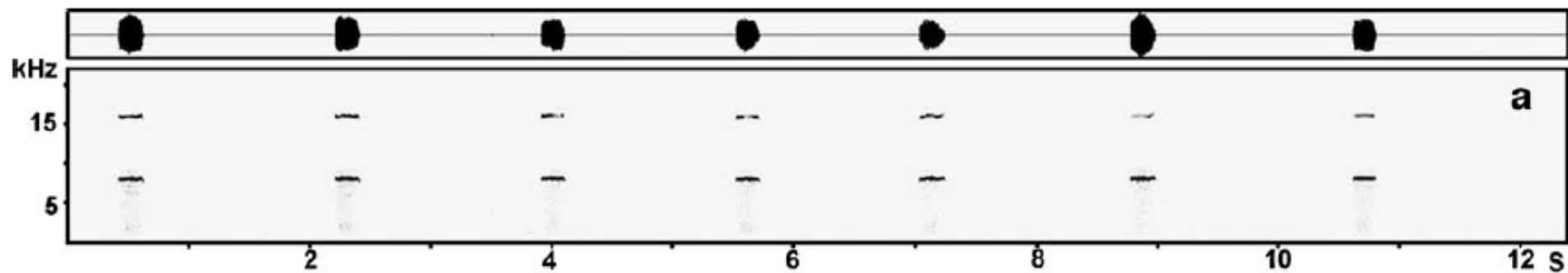
- tonální a atonální



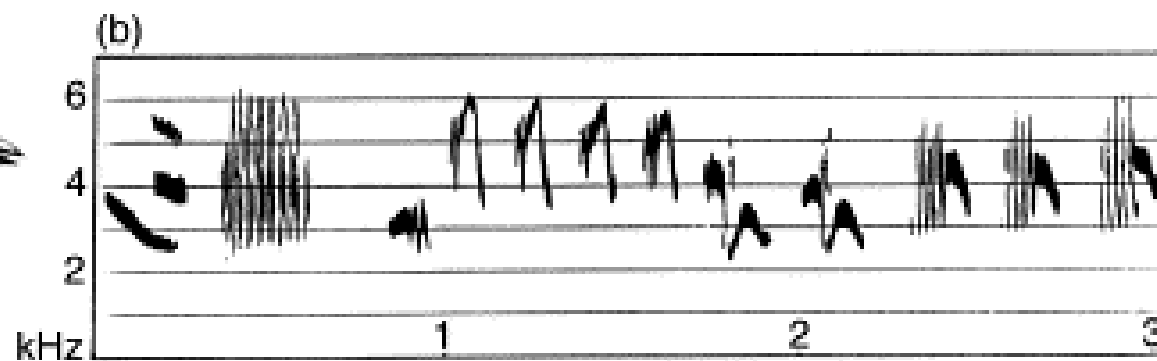
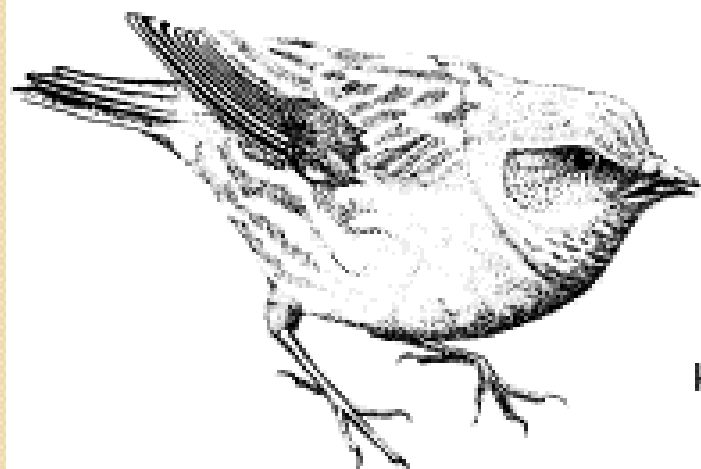
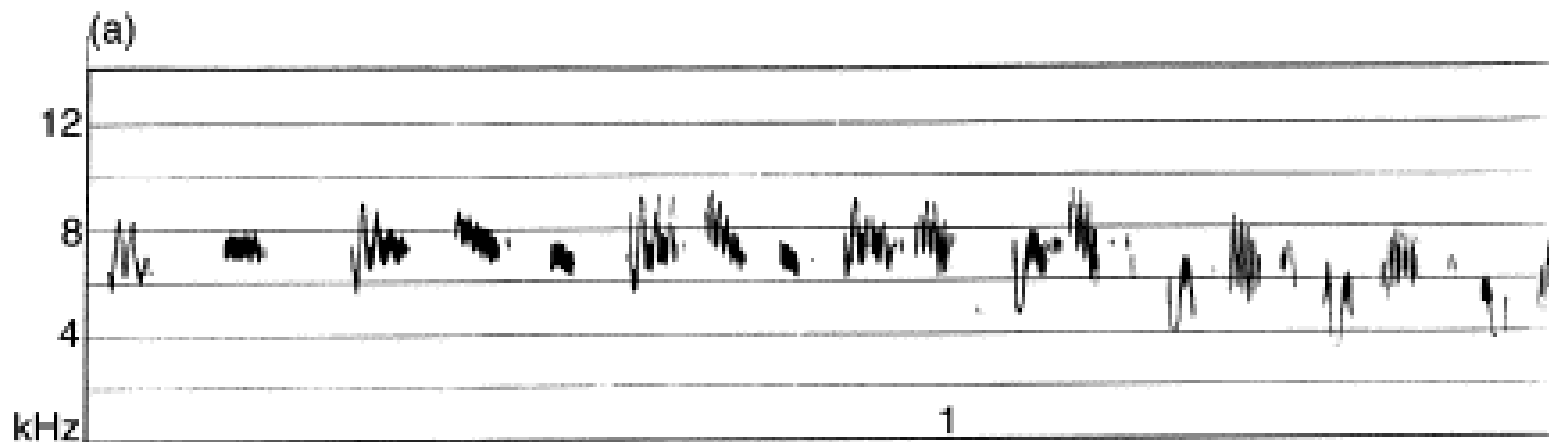
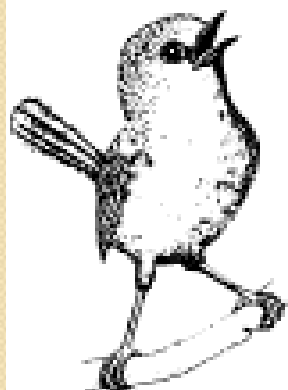
- konstantní nebo modulovaná frekvence



- vydávané jednotlivě nebo v klastrech



zpěv

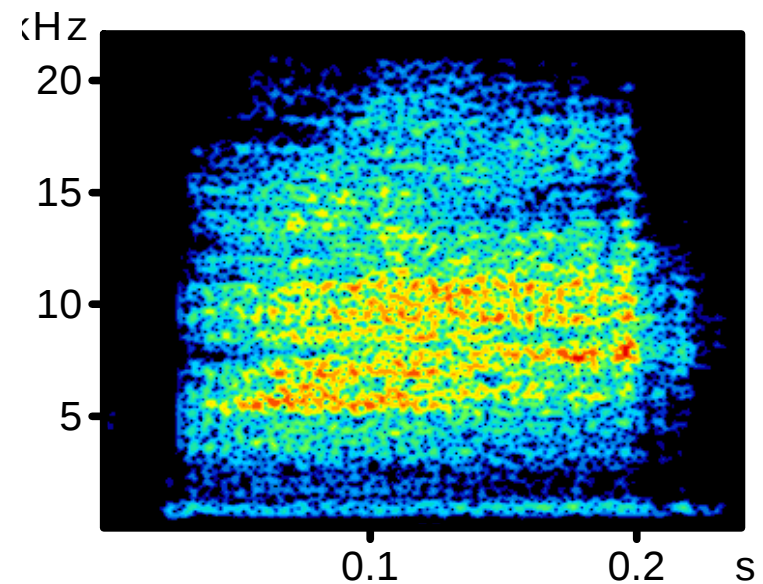
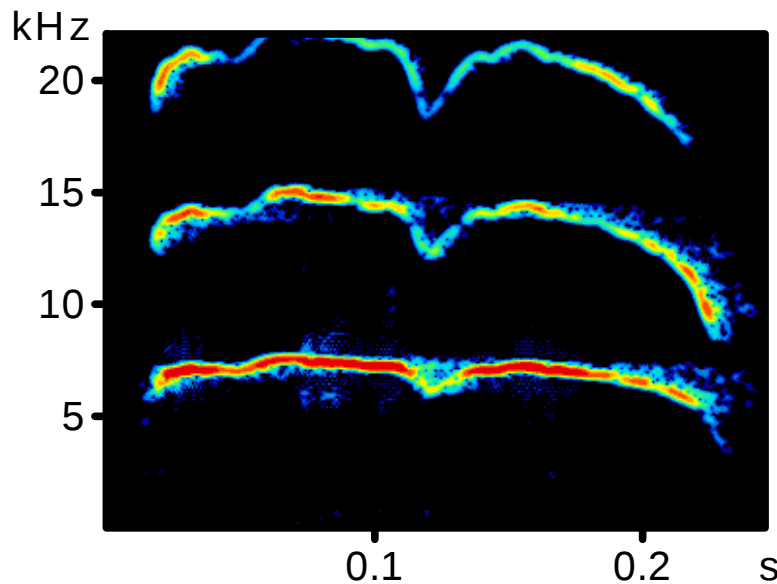


Time (seconds)

"Motivation-structural rule" (Morton, 1977)

V jakém kontextu je hlas vydáván?

- a) Zvíře je agresivní, má obranný postoj.
- b) Zvíře je vyděšené, má podřízený postoj.

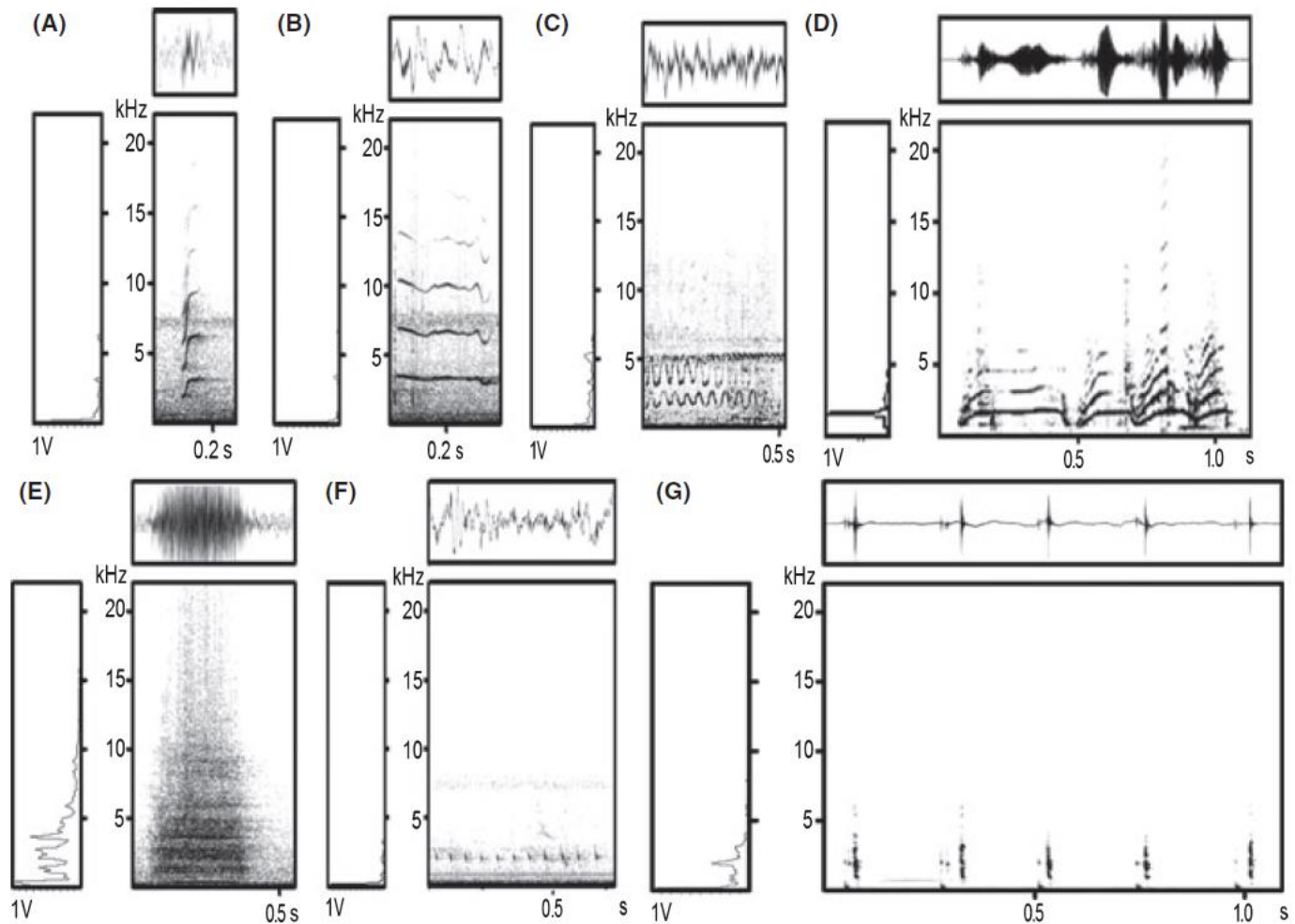


dělení z hlediska kontextu

- kontaktní hlasy
- agonistické hlasy
- teritoriální hlasy
- vábící hlasy
- hlasy vydávané během "mobbingu"
- varovné hlasy
- stresové hlasy
- kopulační hlasy
- hlasy vydávané při kontaktu s potravou
- ...

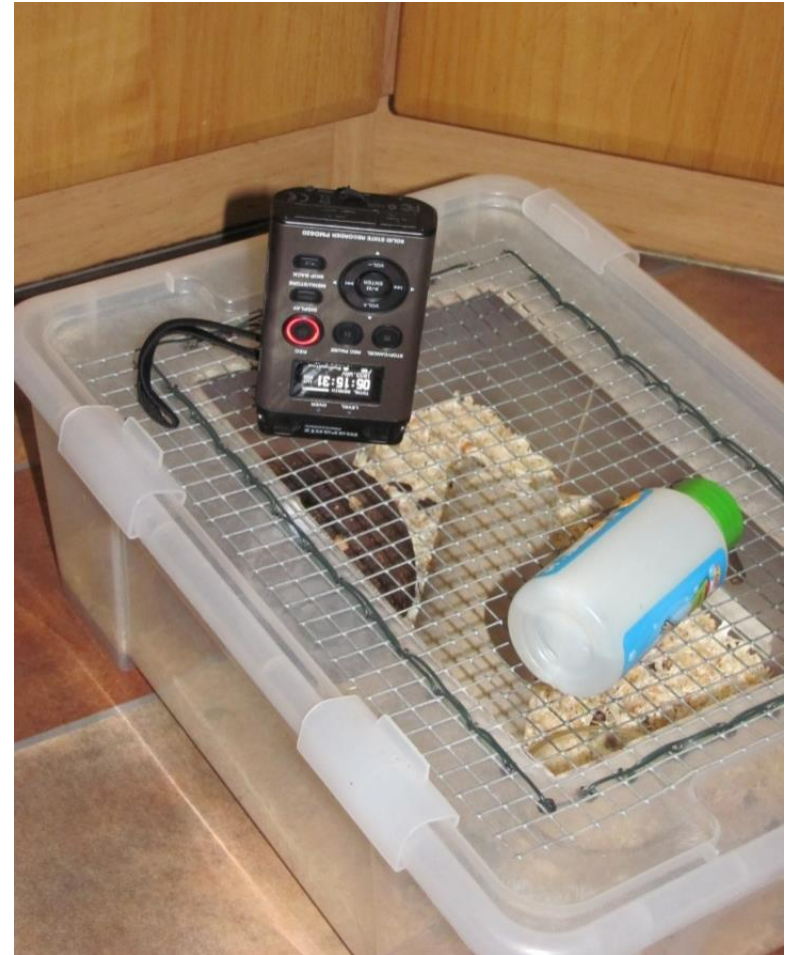


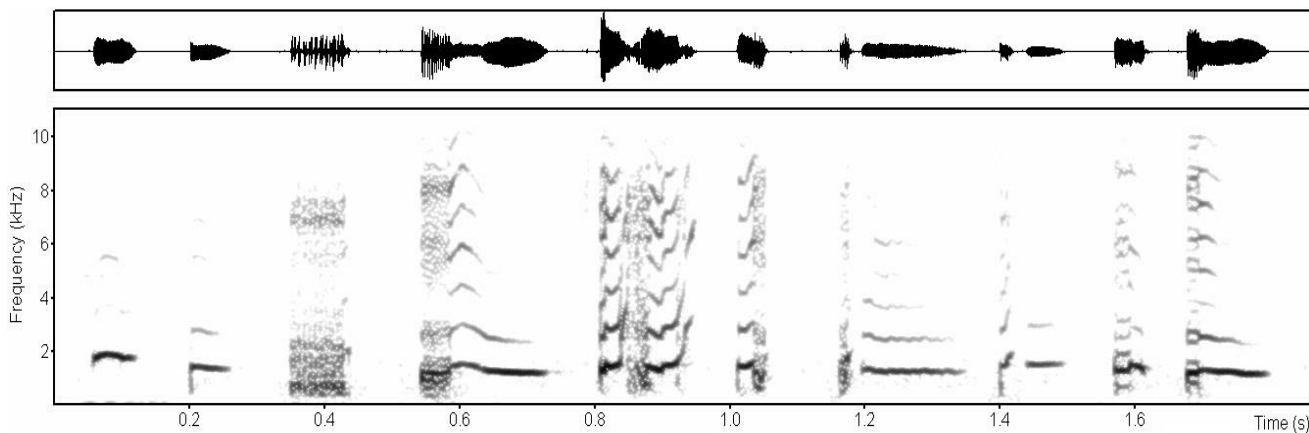
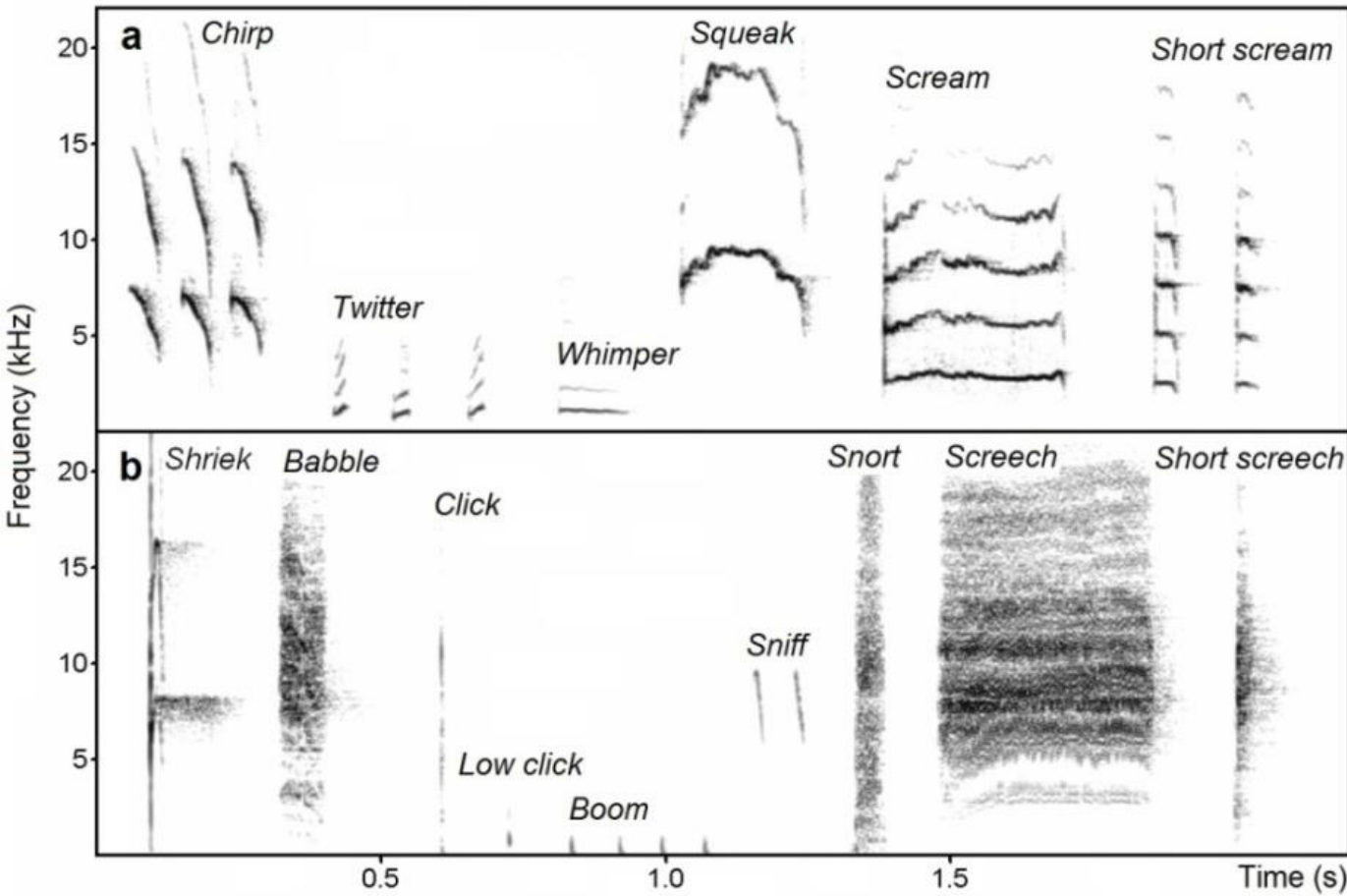
Hlasový repertoár kapybary (*Hydrochoerus hydrochaeris*)



Barros et al. 2010

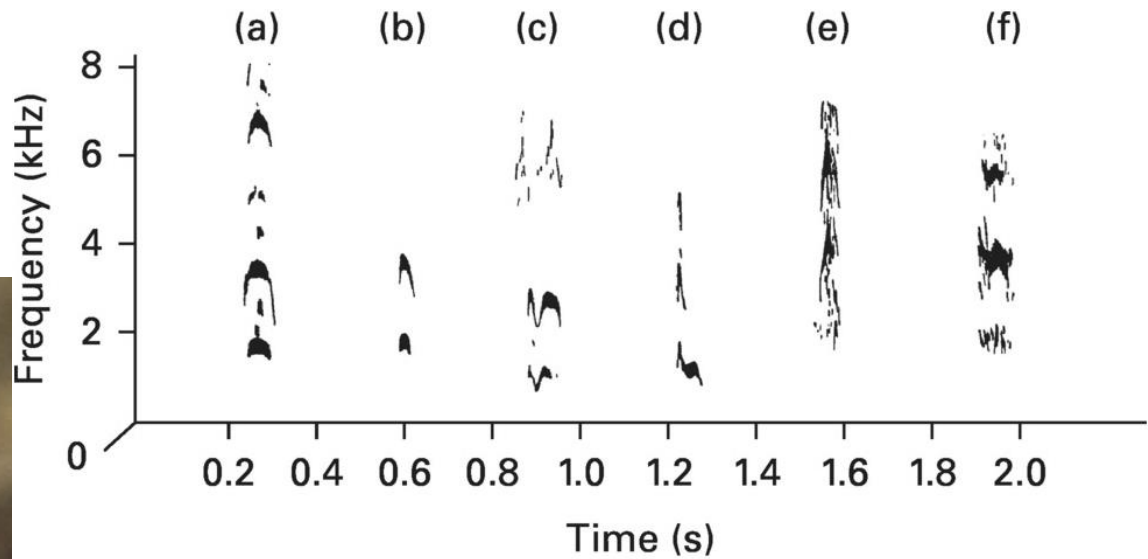
Hlasový repertoár bělozubky hnědé (*Suncus murinus*)



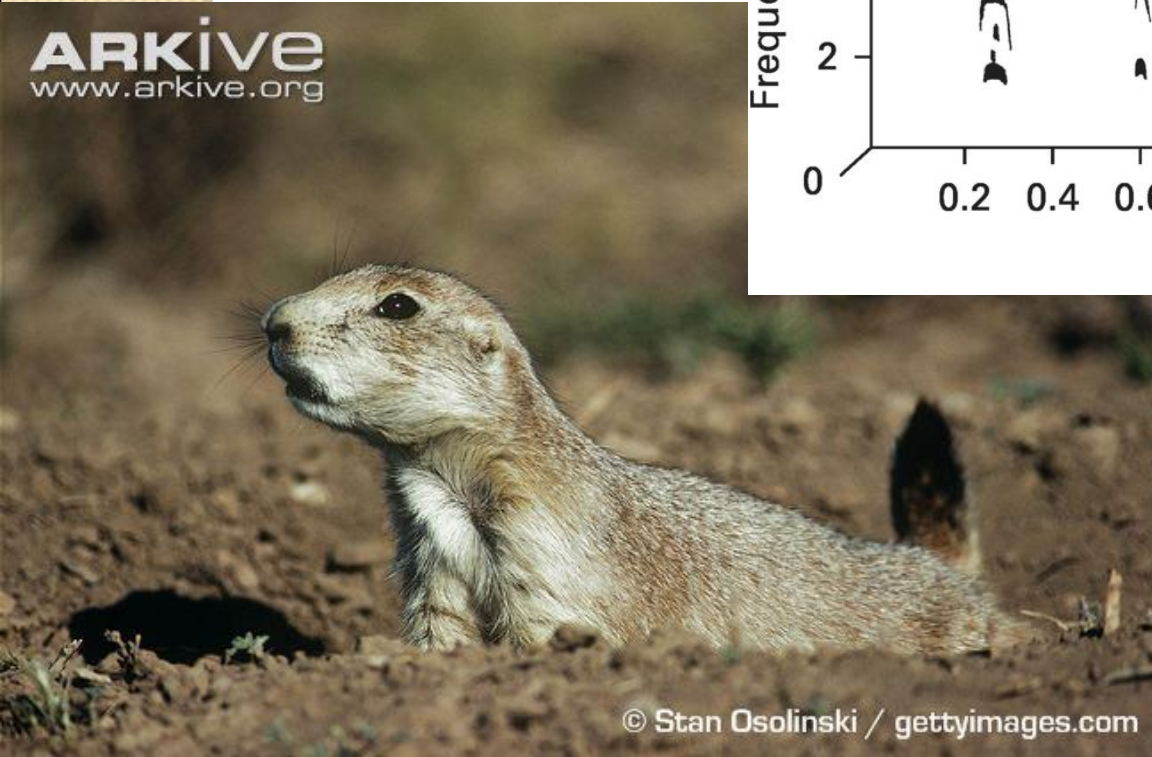


Schneiderová 2014
Schneiderová a Zouhar 2014

Jeden příklad za všechny: největší "drbna" mezi zvířaty

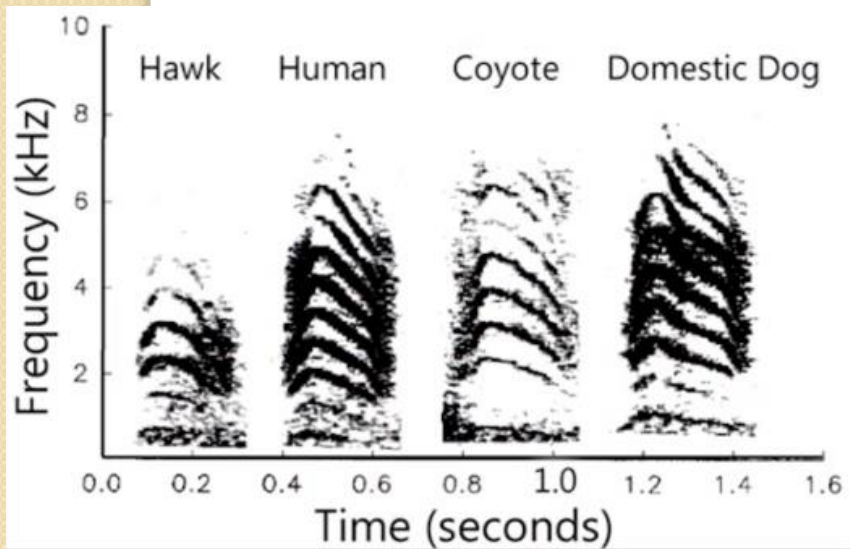


ARKive
www.arkive.org

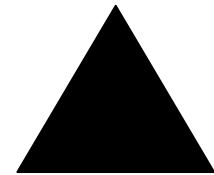
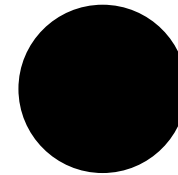


© Stan Osolinski / gettyimages.com

Owings a Morton 1998



Kiriazis and Slobodchikoff 2006



Individual Differences Of Humans

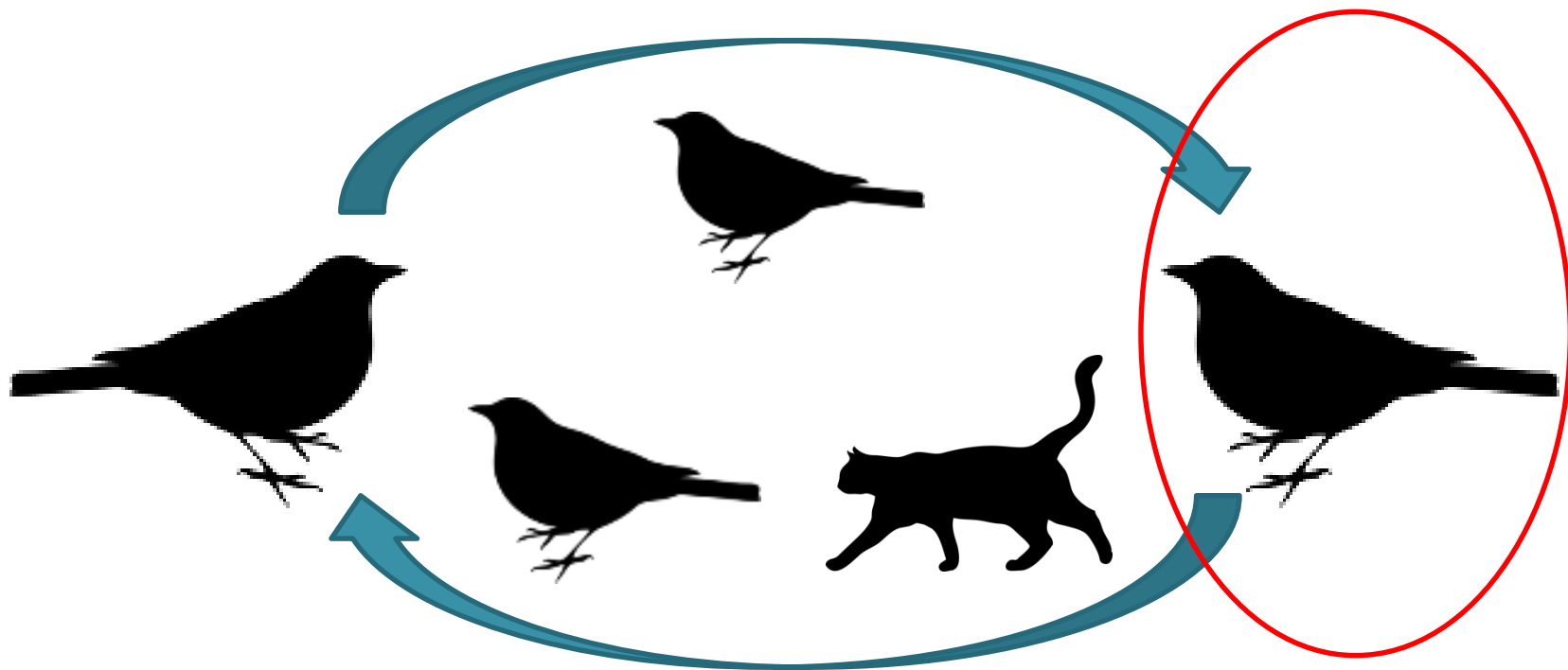


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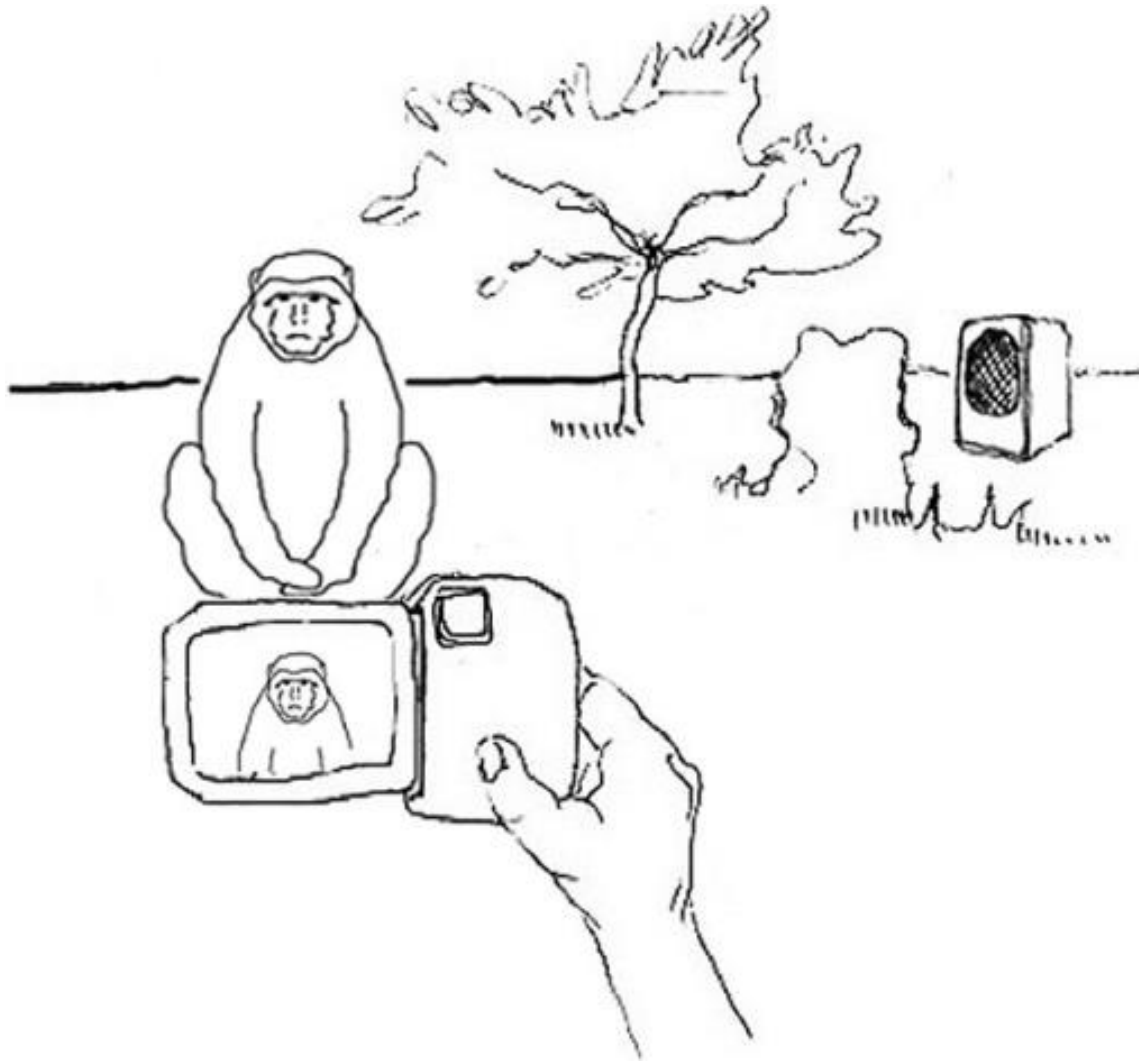


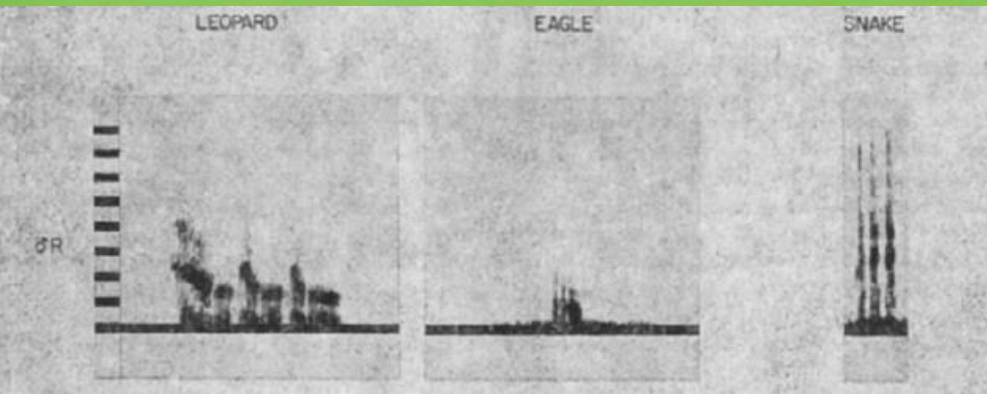
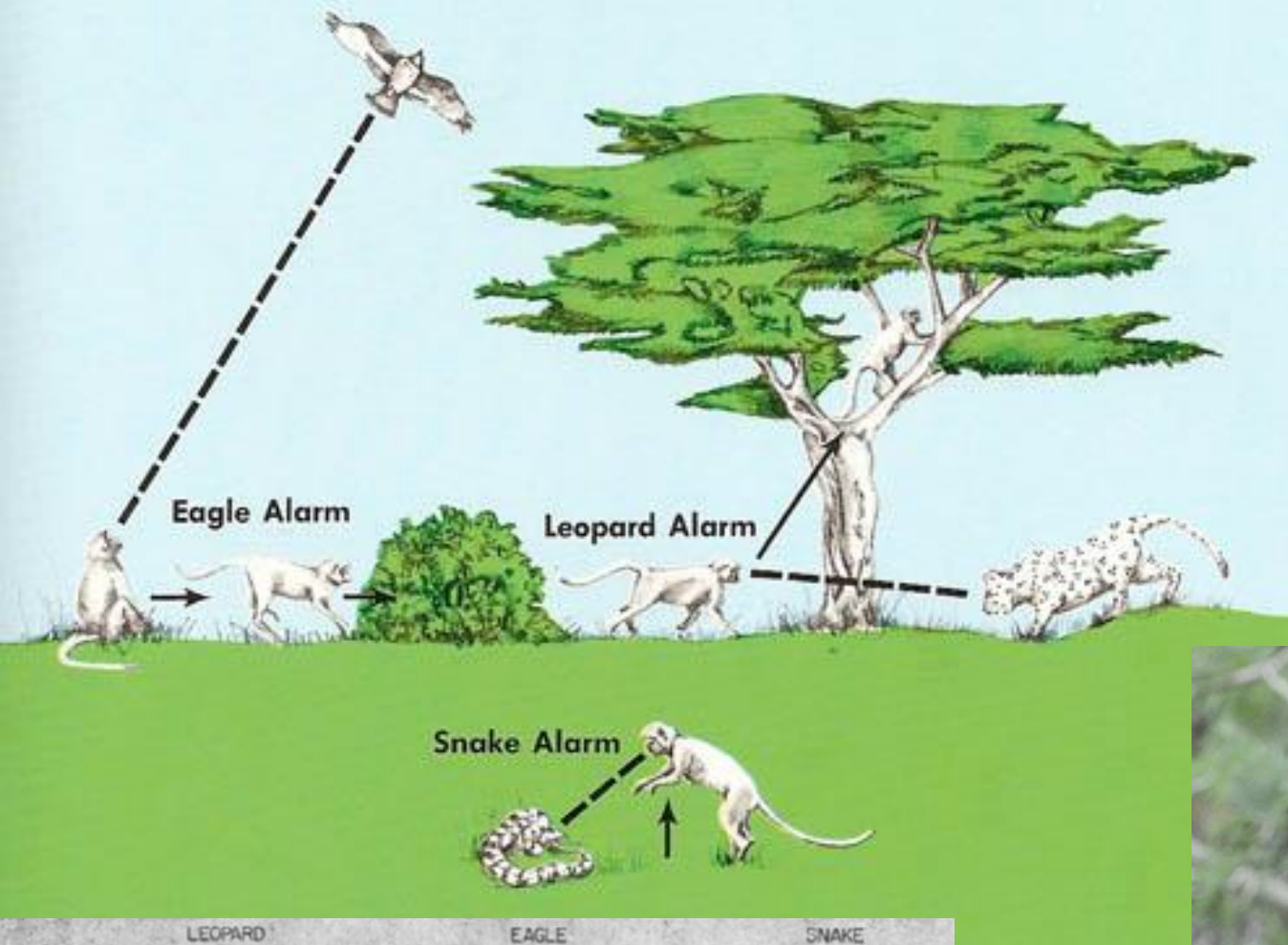
Dog + Medium + Rectangle + Yellow
 species + size + shape + color

metody – porozumění informaci



playbackové experimenty



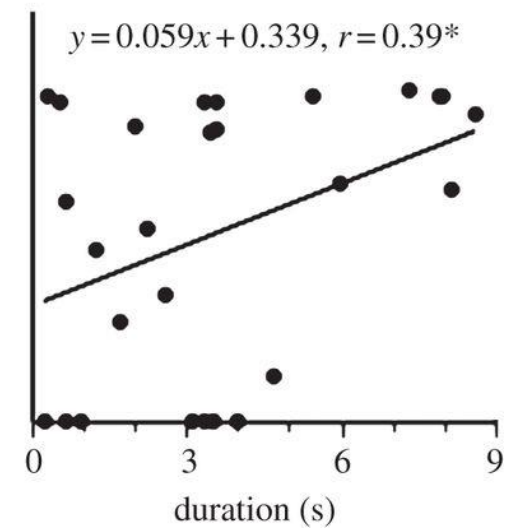
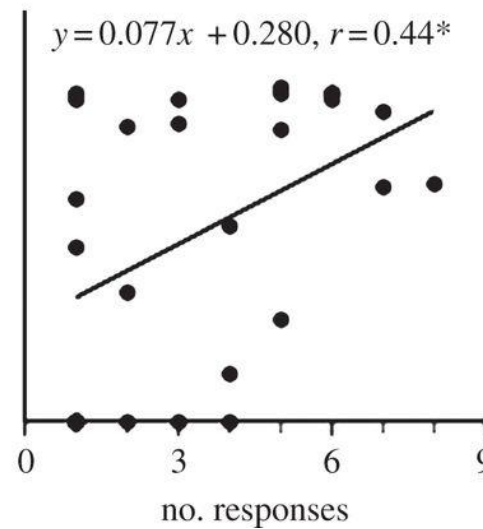
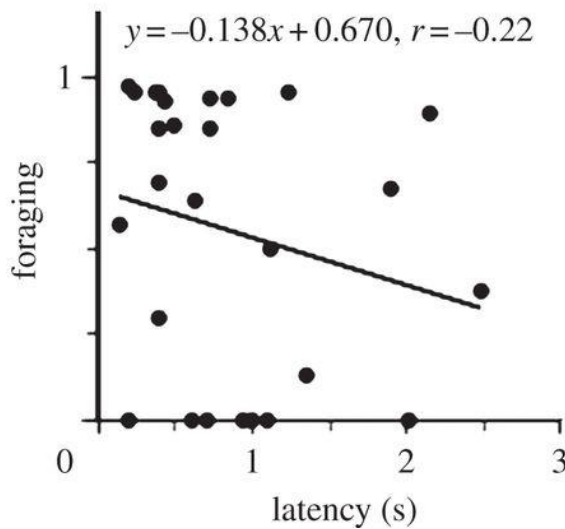
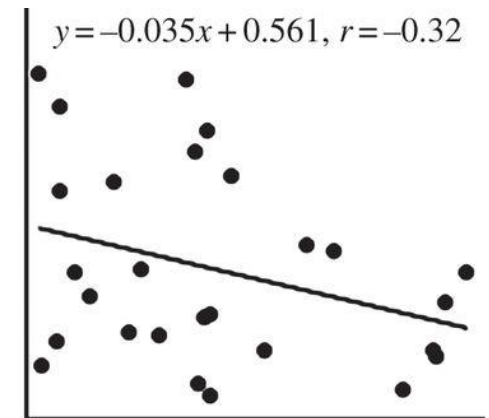
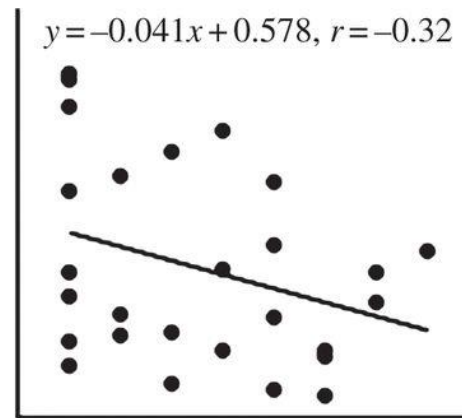
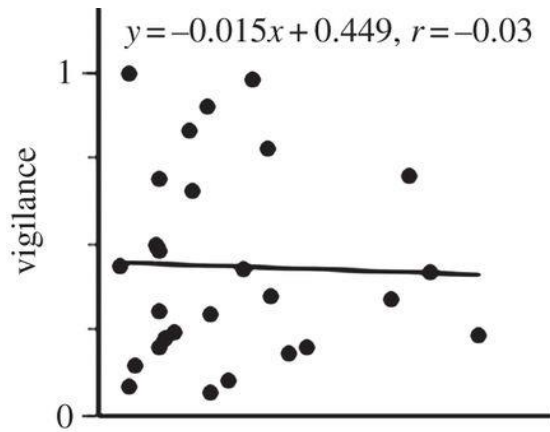


zvířata umí také lhát

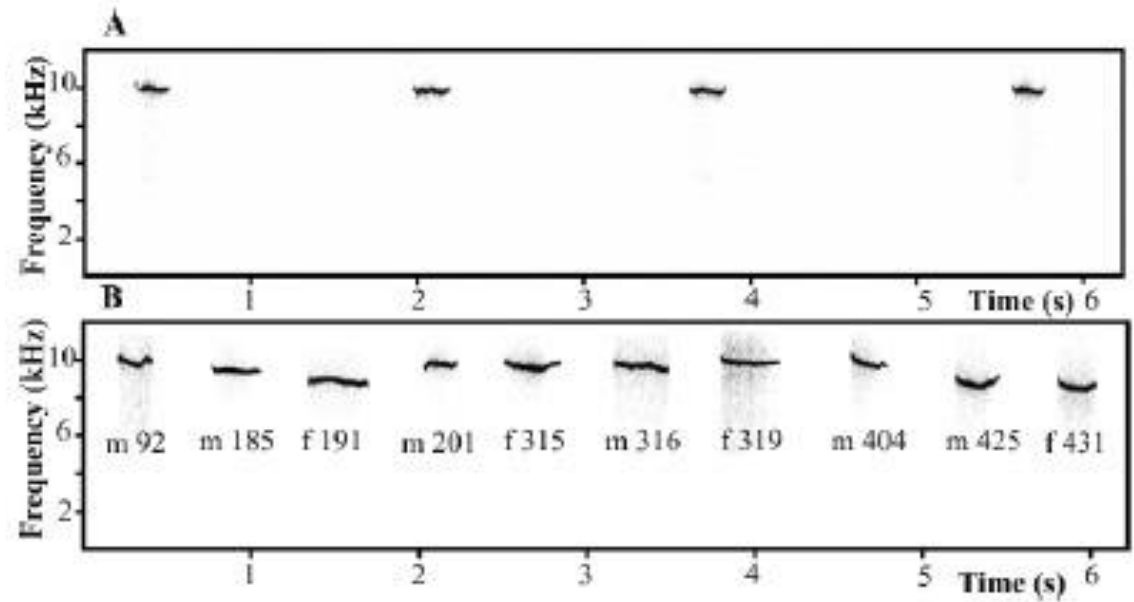


na vlně vytváříme hypotézy





individuální rozdíly v hlasech



Matrosova et al. 2009



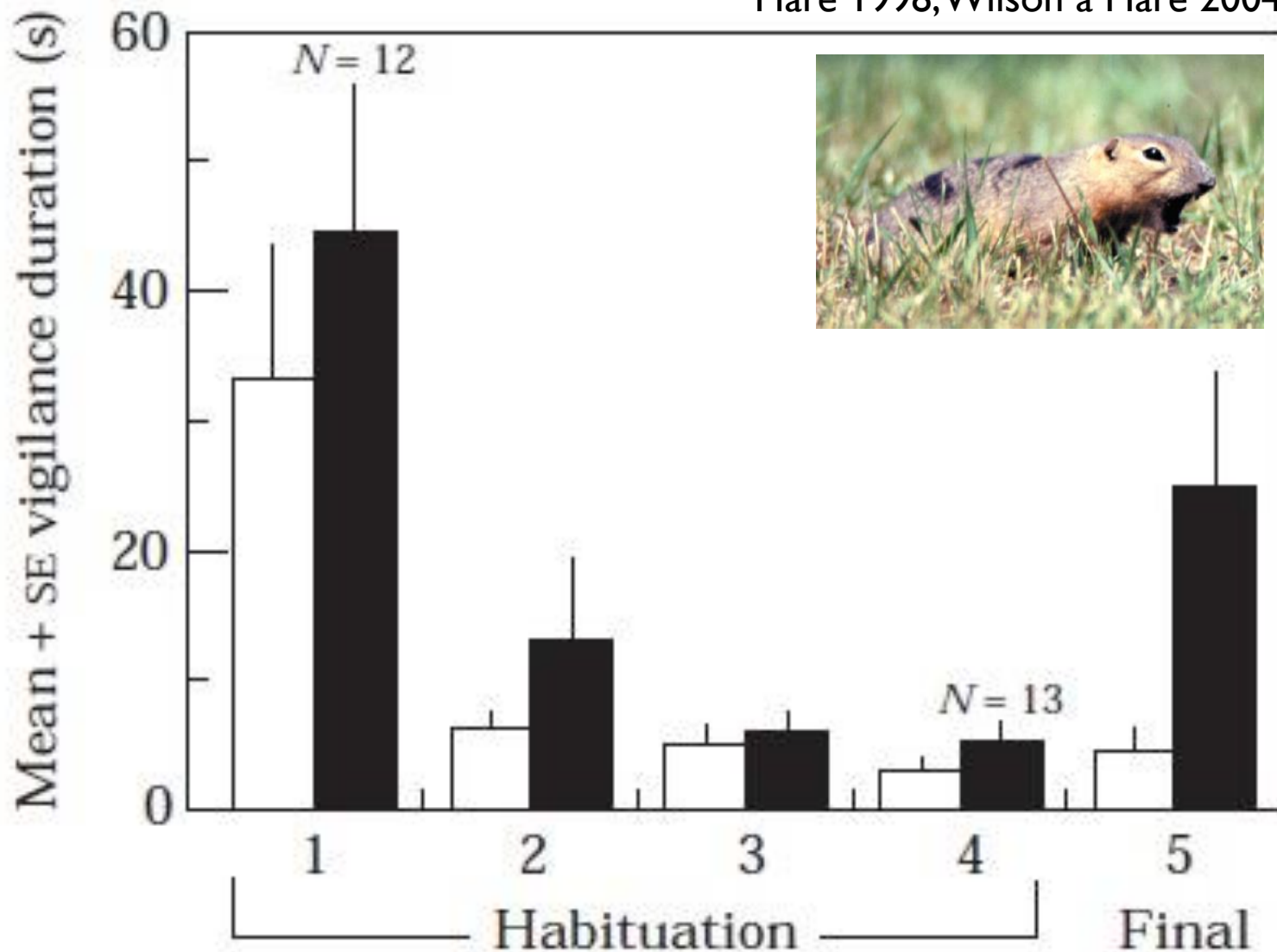
Foto © Ilya Volodin

www.bioacoustica.org



Ale jak prokázat, že se rozpoznávají?

Hare 1998, Wilson a Hare 2004

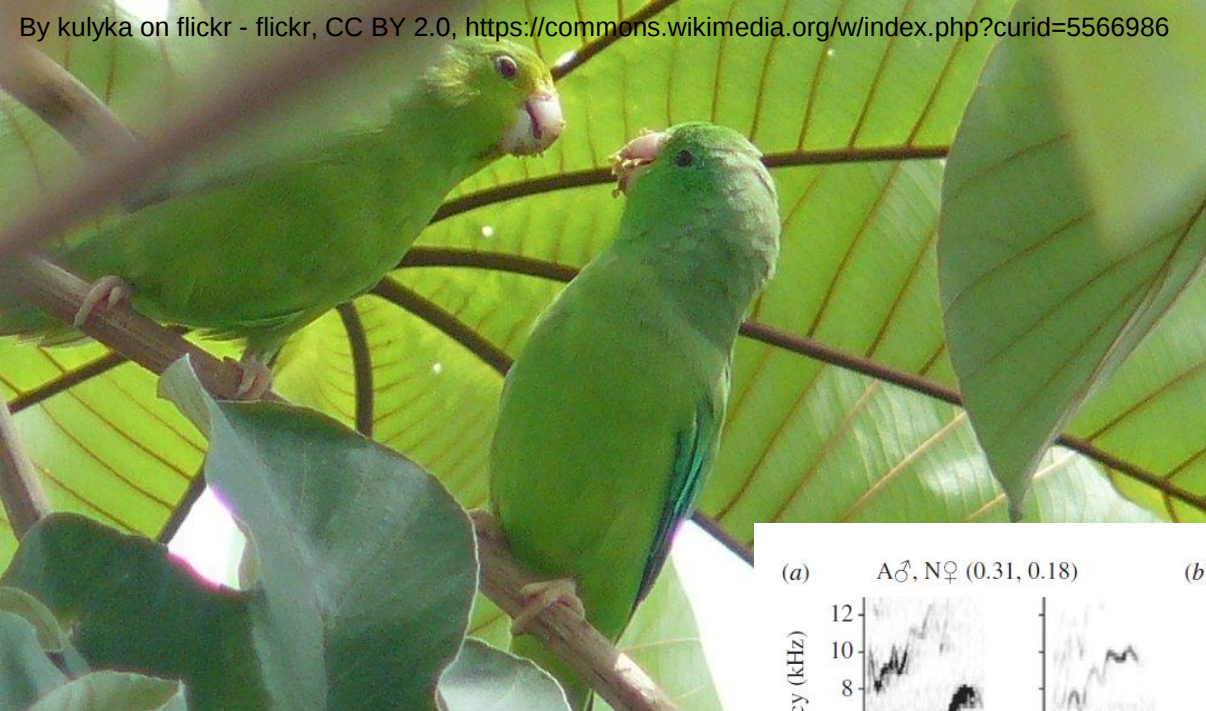


neuvěřitelná paměť

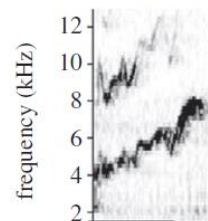


Irena, těší mě!

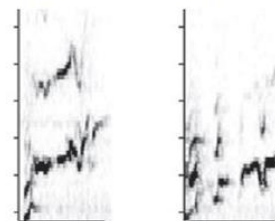




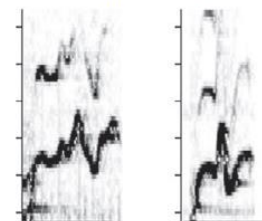
(a) A♂, N♀ (0.31, 0.18)



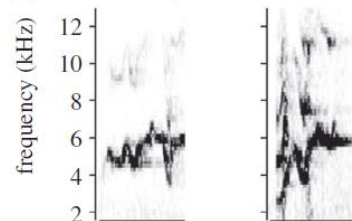
(b) A♂, N♂ (0.26, 0.32)



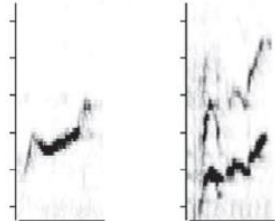
(c) mother, daughter (0.46)



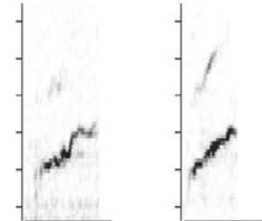
(d) A♂, N♀ (0.42, 0.18)



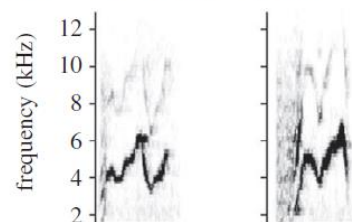
(e) A♂, N♀ (0.22, 0.42)



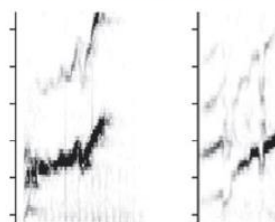
(f) father, son (0.60)



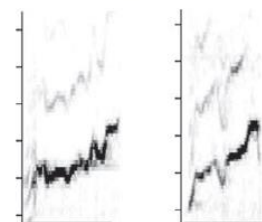
(g) A♂, N♂ (0.35, 0.24)



(h) A♀, N♂ (0.41, 0.36)



(i) mother, daughter (0.20)

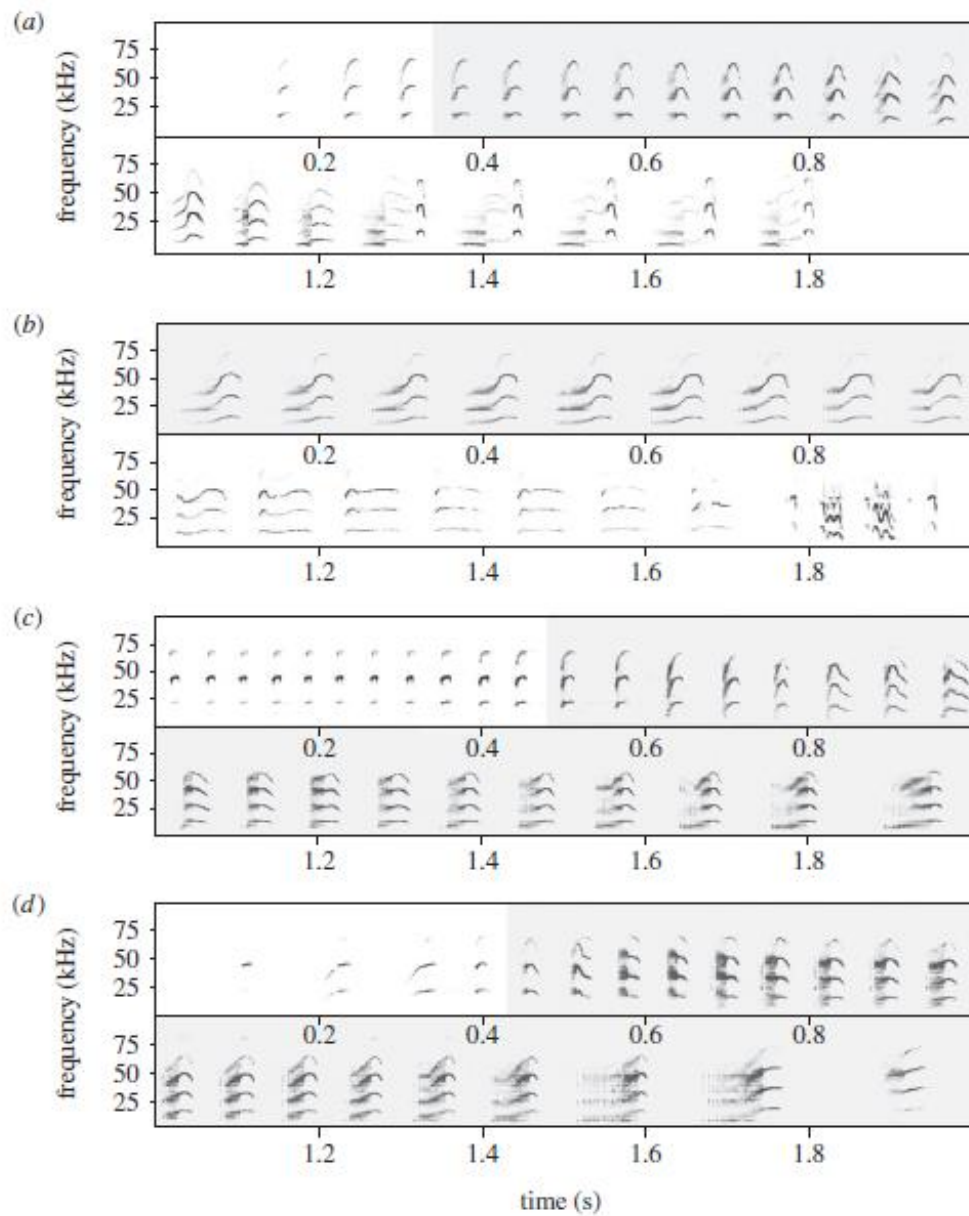


Berg et al. 2012

100

time (ms)

Knörnschild et al. 2010



www.mirjam-knoernschild.org



Rafael de Souza Laurindo

A kdo se postará?



FRIDAY | Sept 11th 11.40 – 12.00

Vignal, Clementine

Boucaud, I.C.A.

Mariette, M. M.

Université Jean Monnet, Saint-Etienne, France

**Vocal negotiation over parental care?
Partners adjust their time spent incubating
based on their acoustic exchanges at the nest**

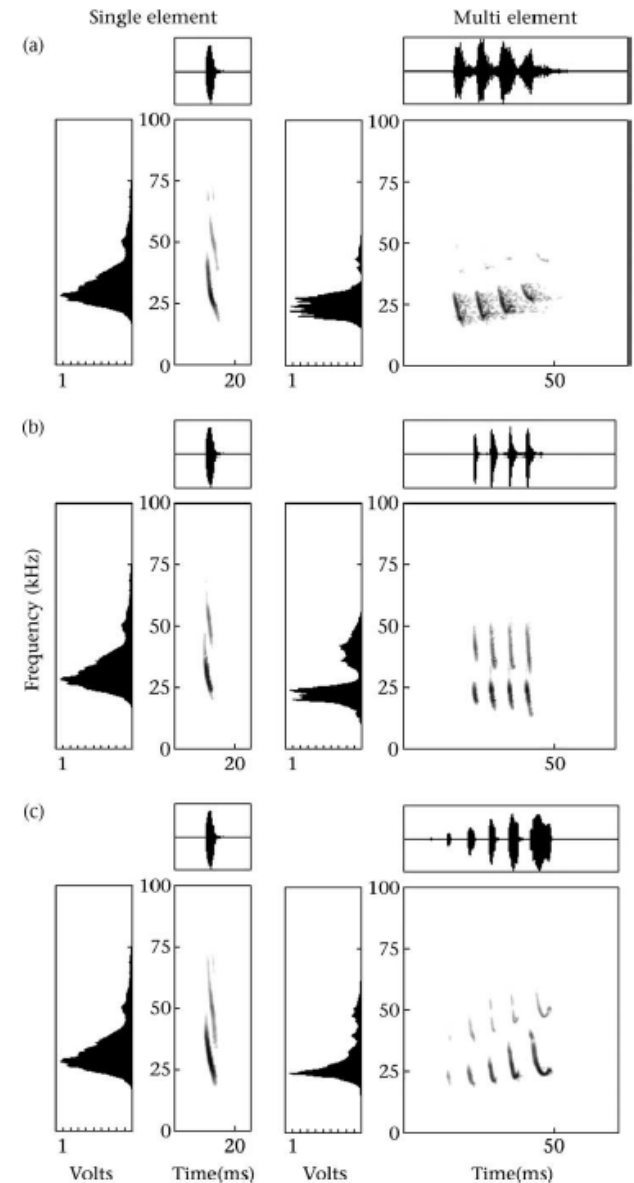
ABSTRACT Bi-parental care in birds occurs throughout an individual's adjustment of its workload to that of its partner. Communication within a pair might be crucial to achieve this adjustment. Zebra finches, *Taeniopygia guttata*, form life-long monogamous pair bonds, in which partners are highly coordinated and both incubate eggs. When relieving each other during incubation, partners perform a structured call duet at the nest. If this duet functions to coordinate incubation workload, disrupting the pair's usual nest-relief pattern by delaying the male's return to the nest should affect the structure of the duet. Using domesticated birds breeding in a large aviary, we found that delaying the male's return induced shorter duets with higher call rate. In addition, we tracked individuals' location with a transponder at the nest and the feeder, and showed that these accelerated duets were associated with increased haste of the partners to take turns incubating and foraging. Females also spent less time incubating during their subsequent shift, and females' time off-nest was best predicted by their mates' calling behaviour in the previous duet. Taken together, these results suggest that duets may function as 'vocal negotiation' over parental care.

By Keith Gerstung from McHenry, IL, United States - Niagara Falls
AviaryUploaded by Snowmanradio, CC BY 2.0,
<https://commons.wikimedia.org/w/index.php?curid=12814136>



Rozumějí si?

Russ et al. 2004



Zachraň se, kdo můžeš!



ethology international journal of behavioural biology



Ethology

RESEARCH PAPER

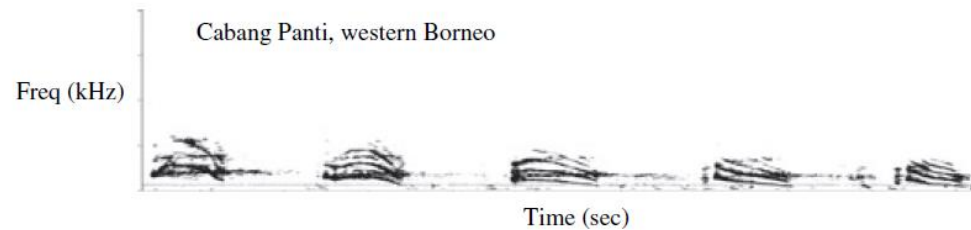
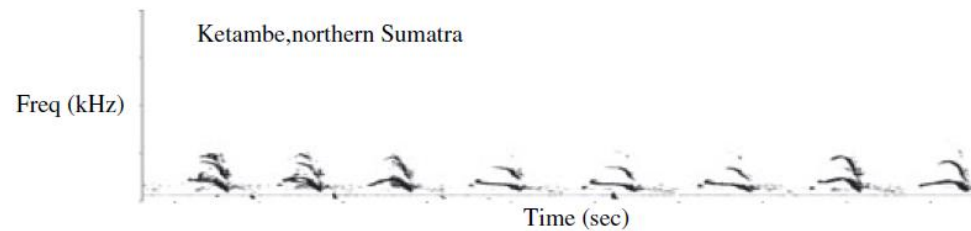
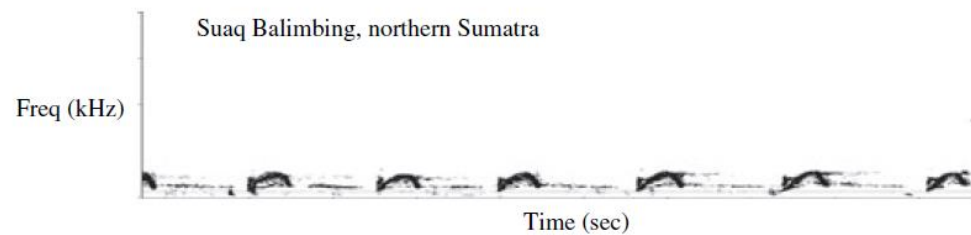
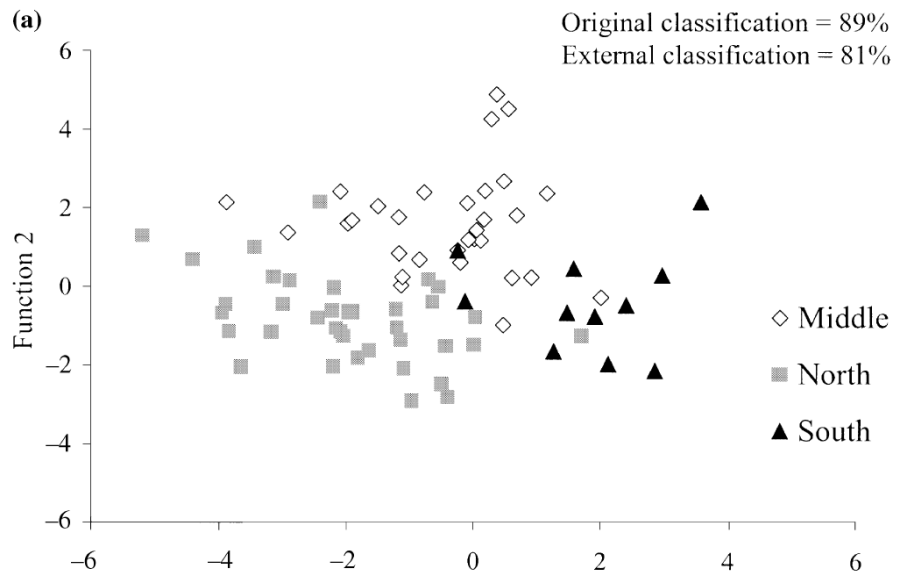
Mule deer (*Odocoileus hemionus*) respond to yellow-bellied marmot (*Marmota flaviventris*) alarm calls

Malle F. Carrasco* & Daniel T. Blumstein*†

* Rocky Mountain Biological Laboratory, Crested Butte, CO, USA

† Department of Ecology and Evolutionary Biology, University of California, Los Angeles, CA, USA

zvířecí nářečí



Děkuji za pozornost!



Foto © Martina Marešová