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**BANCO ESPÍRITO SANTO**

# Discrete vocal traits in tame and aggressive strains of silver foxes and in crosses between them

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Fox strains, selected for tameness or aggressiveness toward people, represent a single currently available model for testing the genetic base for production of calls, representing vocal indicators of tameness and aggressiveness toward humans in canids. Silver foxes (*Vulpes vulpes*) produce eight call types toward humans. Tame foxes use *cackle* and *pant*, while Aggressive *cough* and *snort*. We compared vocalization of Tame and Aggressive foxes and of three kinds of hybrids between them (125 adult females, 25 per strain or hybrid group). Calls were recorded in July-August 2005-2006 during five-minute human approaches. Earlier, each study fox has been tested for behaviour to humans and received a behaviour score ranged of -4 (maximum aggressiveness) to +4 (maximum tameness). We classified each call (25527 calls in total) according to the eight types. Calls of a type *whine* we additionally checked for articulation effects and nonlinear phenomena. Two articulation effects and one nonlinear phenomenon correlated negatively with a behaviour score. We did not find any individual fox, producing both *cackle/pant* and *snort/cough*, suggesting that call types indicative of tameness (*cackle/pant*) and those indicative of aggressiveness (*snort/cough*) appear as discrete phenotypic traits. Supported by RFBR grant 09-04-00416 (for S.G., I.V., E.V.), NIH grants R03TW008098, R01MH077811, and the Programs of Basic Research of the RAS Presidium "Biodiversity and gene pool dynamics" and "Molecular and Cell Biology" (for A.K., L.T.).

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