**Paternal care and litter size coevolution in mammals**

**Paula Stockley and Liane Hobson**

**SUPPLEMENTARY MATERIALS**

**Table S1** Mammalian species included in the comparative analyses, including classifications based on presence or absence of male care, presence or absence of male care that includes provisioning, and sources of classifications. See main text for definitions of male care and provisioning.

|  |  |  |  |
| --- | --- | --- | --- |
| **Species** | **Male care** | **Male provisioning** | **Sources** |
| Afrosoricida |  |  |  |
| *Hemicentetes semispinosus* | yes | no | 1 |
| *Tenrec ecaudatus* | yes | yes | 1 |
| Artiodactyla |  |  |  |
| *Cephalophus callipygus* | no | no | 2 |
| *Cephalophus dorsalis* | no | no | 2 |
| *Cephalophus natalensis* | no | no | 2 |
| *Damaliscus lunatus* | no | no | 3 |
| *Hyemoschus aquaticus* | no | no | 2 |
| *Kobus vardonii* | no | no | 3 |
| *Madoqua kirkii* | no | no | 2 |
| *Neotragus batesi* | no | no | 2 |
| *Neotragus pygmaeus* | no | no | 2 |
| *Okapia johnstoni* | no | no | 2 |
| *Oreotragus oreotragus* | no | no | 2 |
| *Redunca arundinum* | no | no | 2 |
| *Redunca redunca* | no | no | 2 |
| Carnivora |  |  |  |
| *Acinonyx jubatus* | no | no | 1, 2 |
| *Ailuropoda melanoleuca* | no | no | 4 |
| *Ailurus fulgens* | no | no | 4 |
| *Alopex lagopus* | yes | yes | 1 |
| *Arctictis binturong* | no | no | 4 |
| *Atilax paludinosus* | no | no | 4 |
| *Bassariscus astutus* | yes | yes | 1, 2 |
| *Canis adustus* | yes |  | 4 |
| *Canis aureus* | yes |  | 4 |
| *Canis latrans* | yes | yes | 1 |
| *Canis lupus* | yes | yes | 1 |
| *Canis mesomelas* | yes | yes | 1 |
| *Caracal caracal* | no | no | 4 |
| *Cerdocyon thous* | yes | yes | 1, 2 |
| *Chrysocyon brachyurus* | yes |  | 4 |
| *Civettictis civetta* | no | no | 1, 2 |
| *Crocuta crocuta* | no | no | 1, 2 |
| *Cryptoprocta ferox* | no | no | 1, 2 |
| *Cuon alpinus* | yes | yes | 1 |
| *Enhydra lutris* | no | no | 1 |
| *Eupleres goudotii* | no | no | 1 |
| *Felis nigripes* | yes | yes | 1 |
| *Felis silvestris* | no | no | 1, 2 |
| *Galerella pulverulenta* | no | no | 1 |
| *Galerella sanguinea* | no | no | 1, 2 |
| *Galidia elegans* | yes | yes | 1, 2 |
| *Genetta genetta* | no | no | 1 |
| *Genetta tigrina* | no | no | 1 |
| *Gulo gulo* | no | no | 1 |
| *Helogale parvula* | yes | yes | 1, 2 |
| *Hyaena hyaena* | no | no | 4 |
| *Ichneumia albicauda* | no | no | 1, 2 |
| *Ictonyx striatus* | no | no | 1, 2 |
| *Leptailurus serval* | no | no | 1, 2 |
| *Lontra canadensis* | no | no | 1 |
| *Lutra lutra* | no | no | 1 |
| *Lutra maculicollis* | no | no | 1 |
| *Lutrogale perspicillata* | yes | yes | 1 |
| *Lycaon pictus* | yes | yes | 1, 2 |
| *Lynx lynx* | no | no | 1, 2 |
| *Lynx rufus* | no | no | 2 |
| *Martes americana* | no | no | 1 |
| *Martes martes* | yes | yes | 1 |
| *Martes pennanti* | no | no | 4 |
| *Meles meles* | no | no | 1, 2 |
| *Melursus ursinus* | no | no | 4 |
| *Mephitis mephitis* | no | no | 1 |
| *Mungos mungo* | yes | yes | 1 |
| *Mustela altaica* | no | no | 4 |
| *Mustela erminea* | no | no | 1 |
| *Mustela frenata* | no | no | 4 |
| *Mustela lutreola* | no | no | 4 |
| *Mustela nigripes* | no | no | 4 |
| *Mustela nivalis* | no | no | 1 |
| *Mustela putorius* | no | no | 4 |
| *Mustela sibirica* | no | no | 1 |
| *Mustela vison* | no | no | 2 |
| *Nandinia binotata* | no | no | 1, 2 |
| *Neofelis nebulosa* | yes | yes | 1 |
| *Nyctereutes procyonoides* | yes | yes | 1, 2 |
| *Otocyon megalotis* | yes | yes | 1, 2 |
| *Panthera leo* | yes | yes | 1, 2 |
| *Panthera onca* | no | no | 4 |
| *Panthera pardus* | no | no | 1, 2 |
| *Panthera tigris* | no | no | 4 |
| *Parahyaena brunnea* | yes | yes | 1, 2 |
| *Potos flavus* | no | no | 1 |
| *Prionailurus bengalensis* | yes | yes | 1, 5 |
| *Procyon lotor* | no | no | 1, 2 |
| *Proteles cristatus* | no | no | 1, 2 |
| *Puma concolor* | no | no | 1, 2 |
| *Pteromura brasiliensis* | yes | yes | 1 |
| *Speothos venaticus* | yes | yes | 1 |
| *Spilogale putorius* | no | no | 4 |
| *Suricata suricatta* | yes | no | 1 |
| *Taxidea taxus* | no | no | 4 |
| *Uncia uncia* | no | no | 1 |
| *Urocyon cinereoargenteus* | no | no | 4 |
| *Ursus americanus* | no | no | 1 |
| *Ursus arctos* | no | no | 1 |
| *Ursus maritimus* | no | no | 1, 2 |
| *Ursus thibetanus* | no | no | 4 |
| *Viverra zibetha* | no | no | 1 |
| *Vulpes velox* | yes | yes | 1 |
| *Vulpes vulpes* | yes | yes | 1, 2 |
| *Vulpes zerda* | yes | yes | 1 |
| Chiroptera |  |  |  |
| *Artibeus cinereus* | no | no | 6 |
| *Artibeus jamaicensis* | no | no | 6 |
| *Balantiopteryx plicata* | no | no | 6 |
| *Cardioderma cor* | no | no | 6 |
| *Carollia perspicillata* | no | no | 6 |
| *Coleura afra* | no | no | 6 |
| *Cynopterus brachyotis* | no | no | 6 |
| *Cynopterus horsfieldi* | no | no | 6 |
| *Cynopterus sphinx* | no | no | 6 |
| *Desmodus rotundus* | no | no | 6 |
| *Ectophylla alba* | no | no | 6 |
| *Hipposideros beatus* | no | no | 6 |
| *Hipposideros galeritus* | no | no | 6 |
| *Kerivoula lanosa* | no | no | 6 |
| *Kerivoula papillosa* | no | no | 6 |
| *Kerivoula picta* | no | no | 6 |
| *Lavia frons* | yes |  | 6 |
| *Macrotus californicus* | no | no | 6 |
| *Miniopterus australis* | no | no | 6 |
| *Miniopterus minor* | no | no | 6 |
| *Myotis adversus* | no | no | 6 |
| *Myotis bocagei* | no | no | 6 |
| *Myotis lucifugus* | no | no | 6 |
| *Myotis myotis* | no | no | 6 |
| *Noctilio leporinus* | no | no | 6 |
| *Nyctalus noctula* | no | no | 6 |
| *Nycteris arge* | no | no | 6 |
| *Nycteris hispida* | no | no | 6 |
| *Nycteris nana* | no | no | 6 |
| *Nycticeius humeralis* | no | no | 6 |
| *Otomops martiensseni* | no | no | 6 |
| *Peropteryx kappleri* | no | no | 6 |
| *Phyllostomus discolor* | yes | no | 1 |
| *Phyllostomus hastatus* | no | no | 6 |
| *Pipistrellus nanus* | no | no | 6 |
| *Pipistrellus nathusii* | no | no | 6 |
| *Pipistrellus pipistrellus* | no | no | 6 |
| *Plecotus auritus* | no | no | 6 |
| *Pteropus hypomelanus* | no | no | 6 |
| *Pteropus mariannus* | no | no | 6 |
| *Pteropus pumilus* | no | no | 6 |
| *Pteropus rodricensis* | no | no | 6 |
| *Pteropus samoensis* | no | no | 6 |
| *Pteropus seychellensis* | no | no | 6 |
| *Pteropus tonganus* | no | no | 6 |
| *Pteropus vampyrus* | no | no | 6 |
| *Rhinolophus ferrumequinum* | no | no | 6 |
| *Rhinolophus luctus* | no | no | 6 |
| *Rhinolophus sedulus* | no | no | 6 |
| *Rhynchonycteris naso* | no | no | 6 |
| *Rousettus amplexicaudatus* | yes | no | 1 |
| *Saccolaimus peli* | no | no | 6 |
| *Saccopteryx leptura* | no | no | 6 |
| *Tadarida brasiliensis* | no | no | 6 |
| *Tylonycteris pachypus* | no | no | 6 |
| *Tylonycteris robustula* | no | no | 6 |
| *Uroderma bilobatum* | no | no | 6 |
| *Vampyressa nymphaea* | no | no | 6 |
| *Vampyrum spectrum* | yes | yes | 1, 6 |
| Diprotodontia |  |  |  |
| *Aepyprymnus rufescens* | no | no | 7 |
| *Antechinomys laniger* | no | no | 7 |
| *Antechinus flavipes* | no | no | 7 |
| *Antechinus minimus* | no | no | 7 |
| *Antechinus stuartii* | no | no | 7 |
| *Antechinus swainsonii* | no | no | 7 |
| *Bettongia gaimardi* | no | no | 7 |
| *Bettongia lesueur* | no | no | 7 |
| *Bettongia penicillata* | no | no | 7 |
| *Bettongia tropica* | no | no | 7 |
| *Burramys parvus* | no | no | 7 |
| *Caluromys derbianus* | no | no | 7 |
| *Caluromys philander* | no | no | 7 |
| *Cercartetus caudatus* | no | no | 7 |
| *Cercartetus nanus* | no | no | 7 |
| *Dactylopsila trivirgata* | no | no | 7 |
| *Dasycercus cristicauda* | no | no | 7 |
| *Dasykaluta rosamondae* | no | no | 7 |
| *Dasyuroides byrnei* | no | no | 7 |
| *Dasyurus geoffroii* | no | no | 7 |
| *Dasyurus hallucatus* | no | no | 7 |
| *Dasyurus viverrinus* | no | no | 7 |
| *Dendrolagus bennettianus* | no | no | 7 |
| *Dendrolagus lumholtzi* | no | no | 7 |
| *Didelphis marsupialis* | no | no | 7 |
| *Didelphis virginiana* | no | no | 7 |
| *Dorcopsis muelleri* | no | no | 7 |
| *Dromiciops gliroides* | no | no | 7 |
| *Echymipera rufescens* | no | no | 7 |
| *Isoodon macrourus* | no | no | 7 |
| *Isoodon obesulus* | no | no | 7 |
| *Lagorchestes conspicillatus* | no | no | 7 |
| *Lagorchestes hirsutus* | no | no | 7 |
| *Lagostrophus fasciatus* | no | no | 7 |
| *Lasiorhinus latifrons* | no | no | 7 |
| *Macropus agilis* | no | no | 7 |
| *Macropus antilopinus* | no | no | 7 |
| *Macropus dorsalis* | no | no | 7 |
| *Macropus eugenii* | no | no | 7 |
| *Macropus fuliginosus* | no | no | 7 |
| *Macropus giganteus* | no | no | 7 |
| *Macropus irma* | no | no | 7 |
| *Macropus parma* | no | no | 7 |
| *Macropus parryi* | no | no | 7 |
| *Macropus robustus* | no | no | 7 |
| *Macropus rufogriseus* | no | no | 7 |
| *Macropus rufus* | no | no | 7 |
| *Macrotis lagotis* | no | no | 7 |
| *Myrmecobius fasciatus* | no | no | 7 |
| *Ningaui ridei* | no | no | 7 |
| *Ningaui yvonnae* | no | no | 7 |
| *Notoryctes typhlops* | no | no | 7 |
| *Onychogalea fraenata* | no | no | 7 |
| *Onychogalea unguifera* | no | no | 7 |
| *Parantechinus apicalis* | no | no | 7 |
| *Perameles bougainville* | no | no | 7 |
| *Perameles gunnii* | no | no | 7 |
| *Perameles nasuta* | no | no | 7 |
| *Petaurus breviceps* | yes | no | 8, 9 |
| *Petaurus gracilis* | yes |  | 10 |
| *Petropseudes dahli* | yes | no | 11 |
| *Petrogale assimilis* | no | no | 7 |
| *Petrogale concinna* | no | no | 7 |
| *Petrogale penicillata* | no | no | 7 |
| *Petrogale xanthopus* | no | no | 7 |
| *Phalanger mimicus* | no | no | 7 |
| *Phascogale calura* | no | no | 7 |
| *Phascogale tapoatafa* | no | no | 7 |
| *Phascolarctos cinereus* | no | no | 7 |
| *Philander opossum* | no | no | 7 |
| *Planigale gilesi* | no | no | 7 |
| *Planigale ingrami* | no | no | 7 |
| *Planigale maculata* | no | no | 7 |
| *Planigale tenuirostris* | no | no | 7 |
| *Potorous tridactylus* | no | no | 7 |
| *Pseudantechinus bilarni* | no | no | 7 |
| *Pseudantechinus macdonnellensis* | no | no | 7 |
| *Sarcophilus harrisii* | no | no | 7 |
| *Setonix brachyurus* | no | no | 7 |
| *Sminthopsis griseoventer* | no | no | 7 |
| *Sminthopsis leucopus* | no | no | 7 |
| *Spilocuscus maculatus* | no | no | 7 |
| *Tarsipes rostratus* | no | no | 7 |
| *Thylogale billardierii* | no | no | 7 |
| *Thylogale stigmatica* | no | no | 7 |
| *Thylogale thetis* | no | no | 7 |
| *Trachypithecus pileatus* | no | no | 7 |
| *Trichosurus caninus* | no | no | 7 |
| *Trichosurus vulpecula* | no | no | 7 |
| *Vombatus ursinus* | no | no | 7 |
| *Wallabia bicolor* | no | no | 7 |
| *Wyulda squamicaudata* | no | no | 7 |
| Lagomorpha |  |  |  |
| *Lepus timidus* | no | no | 2 |
| *Ochotona curzoniae* | no | no | 2 |
| *Oryctolagus cuniculus* | no | no | 1 |
| *Sylvilagus aquaticus* | no | no | 2 |
| *Sylvilagus floridanus* | no | no | 2 |
| Macroscelidea |  |  |  |
| *Elephantulus intufi* | no | no | 12 |
| *Elephantulus rufescens* | yes | no | 12 |
| *Macroscelides proboscideus* | no | no | 2 |
| *Rhynchocyon chrysopygus* | no | no | 2 |
| Primates |  |  |  |
| *Alouatta palliata* | no | no | 13 |
| *Alouatta pigra* | yes | no | 14 |
| *Alouatta seniculus* | no | no | 5 |
| *Aotus azarai* | yes | yes | 14,15 |
| *Aotus nancymaae* | yes | yes | 16 |
| *Aotus trivirgatus* | yes | yes | 1, 2, 5, 15 |
| *Ateles fusciceps* | yes |  | 13 |
| *Ateles geoffroyi* | yes |  | 13 |
| *Callicebus cupreus* | yes |  | 17 |
| *Callicebus moloch* | yes | yes | 1, 2, 5, 14 |
| *Callicebus torquatus* | yes | yes | 5 |
| *Callimico goeldii* | yes | yes | 14,17 |
| *Callithrix jacchus* | yes | yes | 1, 2, 5 |
| *Callithrix pygmaea* | yes | no | 1, 2, 5 |
| *Cebus albifrons* | yes | no | 1, 2, 5 |
| *Cebus apella* | yes | no | 14 |
| *Cercopithecus ascanius* | no | no | 13 |
| *Cercopithecus mitis* | no | no | 13 |
| *Cercopithecus neglectus* | no | no | 2, 5 |
| *Cheirogaleus medius* | yes | no | 14, 18, 19 |
| *Chlorocebus aethiops* | no | no | 13 |
| *Colobus polykomos* | no | no | 13 |
| *Erythrocebus patas* | no | no | 1, 2 |
| *Eulemur fulvus* | no | no | 5, 14 |
| *Eulemur macaco* | no | no | 2, 5 |
| *Eulemur mongoz* | yes | no | 20 |
| *Galago senegalensis* | no | no | 14 |
| *Gorilla gorilla* | no | no | 13 |
| *Hapalemur griseus* | yes | no | 2, 14 |
| *Homo sapiens* | yes | yes | 5, 14 |
| *Hylobates agilis* | no | no | 21 |
| *Hylobates concolor* | no | no | 21 |
| *Hylobates gabriellae* | no | no | 21 |
| *Hylobates hoolock* | no | no | 21 |
| *Hylobates klossii* | no | no | 21 |
| *Hylobates lar* | no | no | 21 |
| *Hylobates leucogenys* | no | no | 21 |
| *Hylobates moloch* | no | no | 21 |
| *Hylobates muelleri* | no | no | 21 |
| *Hylobates pileatus* | no | no | 21 |
| *Hylobates syndactylus* | yes | yes | 21 |
| *Leontopithecus rosalia* | yes | yes | 1, 2, 5 |
| *Lepilemur ruficaudatus* | no | no | 22 |
| *Lophocebus albigena* | yes | no | 5 |
| *Macaca arctoides* | yes | yes | 1, 2, 5, 13 |
| *Macaca fascicularis* | no | no | 5 |
| *Macaca fuscata* | no | no | 13 |
| *Macaca mulatta* | no | no | 13 |
| *Macaca nemestrina* | no | no | 1, 2, 5, 14 |
| *Macaca radiata* | no | no | 13 |
| *Macaca sylvanus* | yes | no | 1, 5, 14 |
| *Macaca thibetana* | yes |  | 23 |
| *Miopithecus talapoin* | no | no | 13 |
| *Nasalis concolor* | no | no | 5 |
| *Pan troglodytes* | no | no | 13, 14 |
| *Papio anubis* | yes | yes | 1, 2, 5 |
| *Pithecia pithecia* | yes |  | 13 |
| *Pongo pygmaeus* | no | no | 1, 2, 14 |
| *Presbytis melalophos* | no | no | 5 |
| *Presbytis potenziani* | no | no | 5 |
| *Propithecus verreauxi* | no | no | 14 |
| *Pygathrix bieti* | yes | no | 24 |
| *Saguinus fuscicollis* | yes | yes | 1, 2, 5, 14 |
| *Saguinus labiatus* | yes |  | 13 |
| *Saguinus nigricollis* | no | no | 5 |
| *Saguinus oedipus* | yes | yes | 1, 2, 5 |
| *Saimiri sciureus* | no | no | 2, 5, 14 |
| *Semnopithecus entellus* | no | no | 1, 5 |
| *Tarsius bancanus* | no | no | 25 |
| *Tarsius syrichta* | yes | no | 1 |
| *Theropithecus gelada* | no | no | 13 |
| *Trachypithecus johnii* | no | no | 1 |
| *Trachypithecus obscurus* | no | no | 5 |
| *Varecia variegata* | no | no | 5 |
| Rodentia |  |  |  |
| *Acomys cahirinus* | yes | no | 26 |
| *Agouti paca* | yes | no | 1, 27 |
| *Akodon azarae* | no | no | 28 |
| *Apodemus sylvaticus* | no | no | 5 |
| *Baiomys taylori* | yes | no | 1, 26 |
| *Calomys laucha* | yes | no | 28, 29 |
| *Calomys musculinus* | no | no | 28, 29 |
| *Castor canadensis* | yes | yes | 2, 26 |
| *Castor fiber* | yes | yes | 1, 26 |
| *Cavia aperea* | no | no | 30 |
| *Chinchilla lanigera* | yes | no | 1 |
| *Clethrionomys gapperi* | no | no | 31 |
| *Clethrionomys glareolus* | no | no | 32 |
| *Clethrionomys rutilus* | no | no | 31 |
| *Coendou prehensilis* | no | no | 2 |
| *Cricetulus migratorius* | no | no | 31 |
| *Dasyprocta punctata* | yes | no | 26 |
| *Dicrostonyx richardsoni* | yes | no | 33,34 |
| *Dolichotis patagonum* | yes | no | 1, 26 |
| *Erethizon dorsatum* | no | no | 2 |
| *Galea musteloides* | no | no | 30 |
| *Galea spixii* | no | no | 30 |
| *Heterocephalus glaber* | yes | yes | 1, 26 |
| *Hystrix africaeaustralis* | yes | no | 1, 2, 26 |
| *Kannabateomys amblyonyx* | yes | yes | 35 |
| *Kerodon rupestris* | yes | no | 26, 30 |
| *Lasiopodomys brandtii* | yes | no | 31 |
| *Lasiopodomys mandarinus* | yes | no | 36 |
| *Marmota caligata* | no | no | 26 |
| *Meriones crassus* | no | no | 1, 26 |
| *Meriones tamariscinus* | yes | no | 1, 26 |
| *Meriones unguiculatus* | yes | no | 1, 2, 26 |
| *Mesocricetus auratus* | no | no | 27, 31 |
| *Microcavia australis* | no | no | 2, 26 |
| *Microtus agrestis* | no | no | 37 |
| *Microtus californicus* | yes | no | 1, 2, 26 |
| *Microtus montanus* | no | no | 37, 38 |
| *Microtus ochrogaster* | yes | no | 1, 2, 26 |
| *Microtus oeconomus* | yes | no | 39 |
| *Microtus pennsylvanicus* | no | no | 27, 37 |
| *Microtus pinetorum* | yes |  | 37 |
| *Microtus richardsoni* | no | no | 37 |
| *Microtus xanthognathus* | no | no | 37 |
| *Mus musculus* | no | no | 40 |
| *Mus spicilegus* | yes | no | 41 |
| *Mus spretus* | yes | no | 42 |
| *Myoprocta acouchy* | yes | no | 1, 26 |
| *Neotoma albigula* | no | no | 27 |
| *Neotoma floridana* | no | no | 2 |
| *Neotoma fuscipes* | no | no | 2 |
| *Neotoma lepida* | no | no | 2 |
| *Neotoma micropus* | no | no | 27 |
| *Neotomodon alstoni* | yes | no | 43 |
| *Notomys alexis* | yes | no | 1, 26 |
| *Octodon degus* | yes | no | 1, 26 |
| *Octodontomys gliroides* | yes | no | 1, 26 |
| *Ondatra zibethicus* | yes | yes | 44 |
| *Onychomys leucogaster* | yes | yes | 1, 2, 26 |
| *Onychomys torridus* | yes | no | 1, 26 |
| *Peromyscus boylii* | no | no | 27 |
| *Peromyscus californicus* | yes | no | 1, 2, 26 |
| *Peromyscus crinitus* | no | no | 27 |
| *Peromyscus eremicus* | yes | no | 26 |
| *Peromyscus leucopus* | yes | no | 1, 2, 26 |
| *Peromyscus maniculatus* | yes | no | 1, 2, 26 |
| *Peromyscus melanocarpus* | yes | no | 1, 26 |
| *Peromyscus melanophrys* | no | no | 45 |
| *Peromyscus mexicanus* | yes | no | 1, 26 |
| *Peromyscus polionotus* | yes | no | 1, 26 |
| *Peromyscus truei* | no | no | 27 |
| *Petromus typicus* | yes | no | 46 |
| *Phodopus campbelli* | yes | yes | 47 |
| *Phodopus sungorus* | no | no | 27 |
| *Pseudomys albocinereus* | yes | no | 1, 26 |
| *Pseudomys desertor* | no | no | 26 |
| *Rattus fuscipes* | yes | no | 1, 26 |
| *Rattus norvegicus* | no | no | 27 |
| *Rattus rattus* | yes | no | 27 |
| *Reithrodontomys humulis* | yes | no | 1, 26 |
| *Rhabdomys pumilio* | yes | no | 48 |
| *Sciurus carolinensis* | no | no | 2 |
| *Sciurus niger* | no | no | 2 |
| *Sigmodon hispidus* | no | no | 27 |
| *Spermophilus parryii* | no | no | 26 |
| *Tamias striatus* | no | no | 2 |
| *Tamiasciurus hudsonicus* | no | no | 2 |
| Soricomorpha |  |  |  |
| *Crocidura russula* | yes | no | 49, 50 |
| *Cryptotis parva* | yes | no | 1 |
| *Sorex araneus* | no | no | 2 |
| *Sorex minutus* | no | no | 2 |
| *Sorex unguiculatus* | no | no | 2 |
| *Suncus etruscus* | yes | no | 1 |

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**Table S2.** Most frequently observed models for coevolution between male care with provisioning and large litter size relative to teat number in mammals, using a Markov Chain Monte Carlo (MCMC) sampling algorithm and reversible jump (RJ) procedure in BayesTraits (see main text for further details). The table shows the top 10 and 50th most frequently observed models of evolution, in the post-convergence portion of the run with the median likelihood value. Values in the model string represent each transition rate in the dependent model (trait order: q12, q13, q21, q24, q31, q34, q42, q43). A value of “Z” for a given transition rate indicates that it is predicted to be zero (i.e. the transition is not predicted to occur). Transition rates represented by the same numerical value are predicted to be not significantly different from one another. The top 10 most frequently observed models are models of correlated / dependent evolution. This is consistent with results of maximum likelihood tests reported in the main text.

|  |  |  |
| --- | --- | --- |
| **Rank** | **Model string** | **Frequency** |
| 1 | 'Z 1 1 Z 1 0 2 0  | 174 |
| 2 | 'Z 1 1 Z 1 0 0 1  | 93 |
| 3 | 'Z 1 1 Z 1 0 0 Z  | 79 |
| 4 | 'Z 1 1 Z 2 0 2 0  | 56 |
| 5 | 'Z 1 1 Z Z 0 0 Z  | 54 |
| 6 | 'Z 1 1 Z Z 0 2 0  | 50 |
| 7 | 'Z 1 1 Z Z 0 0 1  | 42 |
| 8 | 'Z 0 0 Z 0 1 1 Z  | 36 |
| 9 | 'Z 1 1 1 1 0 0 1  | 35 |
| 10 | 'Z 0 0 Z 0 1 1 0  | 32 |
| 50 | 'Z 0 0 0 0 1 1 1  | 1 |

**Table S3.** Phylogenetically controlled PGLS models of the relationships between paternal care and offspring production in polytocous mammals, with cooperatively breeding species excluded (see main text for further details). Models test for relationships with average: a) litter size and b) offspring number per teat, linked to paternal care that includes provisioning of offspring. Body mass is included as a covariate in both models. Significant values (P<0.05) are presented in bold text. For the phylogenetic scaling parameter **λ**,superscripts indicate if values are significantly different from 0 or 1 respectively (where ns = not significantly different, and \* = significantly different at P<0.05) in likelihood ratio tests.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Trait** | **λ** | **d.f.** | **Predictor** | **Slope ± SE** | ***t*** | ***P*** |
| a) Litter size | 0.92\*,\* | 207 | Body mass | -0.03±0.02 | -1.96 | 0.051 |
|  |  |  | Paternal provisioning | **0.05±0.02** | **2.16** | **0.048** |
|  |  |  |  |  |  |  |
| b) Offspring per teat | 0.69\*,\* | 131 | Body mass | -0.04±0.02 | -1.74 | 0.084 |
|  |  |  | Paternal provisioning | 0.10±0.05 | 1.92 | 0.056 |
|  |  |  |  |  |  |  |

**Figure S1.** Distribution of offspring to teat ratios for all mammalian species with data available in Jones et al. (2009) (ref 30 in main text), including both polytocous and monotocous mammals (n=523). Consistent with the ‘one half rule’ for mammals, the median offspring to teat ratio is 0.50.

**Figure S2.** Distribution of offspring to teat ratios for mammalian species included in the main dataset (Table S1). For analyses based on binary traits, species were split according to whether offspring per teat ratios are relatively high (greater than or equal to 0.55) or relatively low (less than 0.55). The red dotted line on the figure indicates where this division falls within the overall distribution of ratios. The median offspring to teat ratio for species in this dataset is 0.51 (n=230). Species classed as having relatively high offspring to teat ratios (n=118) were found in diverse orders, including Afrosoricida, Carnivora, Diprodontia, Lagomorpha, Macroscelidea, Primates, Rodentia, and Soricomorpha, and were not found exclusively among mammalian lineages where male provisioning occurs (Afrosoricida, Carnivora, Primates, Rodentia, Chiroptera). Among species with relatively high offspring to teat ratios, 16% (n=19) were also classed as having paternal care that includes male provisioning (the full dataset is available in Dryad).