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Substrate Manipulation by *Alouatta guariba clamitans* in Solving a Locomotor Problem

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Primates are distinguished from other groups of animals by having large brains, enhanced manipulative abilities, and more complex cognitive skills (Garber, 2004). These traits allow nonhuman primates to perform complex behaviors such as tool use, a behavior previously considered to be limited to humans (Panger, 1998). Most instances of manipulating objects as tools have been recorded in apes (Beck, 1975; Goodall, 1964). There are some records for Old World monkeys, including baboons (*Papio*) and macaques (*Macaca*) (Van Lawick-Goodall *et al.*, 1973; Tomasello and Call, 1997; Westergaard, 1992); in New World monkeys, tool use has been observed in capuchin monkeys (*Cebus*) (Beck, 1972, 1975; Chevalier-Skolnikoff, 1989; Fragaszy *et al.*, 2004; Ottoni and Mannu, 2001; Phillips, 1998; Struhsaker, 1977; Vauclair and Anderson, 1994; Visalberghi, 1990; Westergaard, 1988).

Beck (1975) defined tool use as "the manipulation of an unattached environmental object, the tool (not part of the user's body), to alter more efficiently the form or position of a separate object, when the user holds or carries the tool *in toto* during or just prior to use and is responsible for the critical connection between tool and incentive" (p.414). Urbani and Garber (2002), however, warned that several reports of tool use cited in the scientific literature are better classified as "proto tool-use or object manipulation." True tool use involves the detachment and manipulation of both the object of change and the agent of change (the tool), whereas in proto tool-use, only the object of change is detached and manipulated (Panger, 1998; Parker and Gibson, 1977).

Here we report a case of substrate manipulation by a brown howler monkey (*Alouatta guariba clamitans* Cabrera, 1940). It was recorded by F. Koch during a study of the ecology and behavior of a group of brown howlers at the Morro da Extrema (30°12'S, 51°04'W), Porto Alegre, Rio Grande do Sul, Brazil. On 16 October 2002, around 15:00 h, the sky became overcast and the wind picked up, signaling an approaching rainstorm. The study group began moving away. At 15:20 h, the group came to a gap in the canopy of about 2 m. All successfully leaped across the gap to the next tree except an infant (in the process of becoming independent from its mother). The branches were blowing about vigorously because of the high winds, and the infant stopped and vocalized (cried) while holding onto the end of the branch. The group members did not return to help the infant, which made no attempt to jump but continued vocalizing loudly, until eventually its mother went back to rescue it. In order to help her infant, the mother manipulated a nearby branch (without detaching it) of the tree she was in until it was positioned close to the infant. The infant immediately used this branch as a bridge to traverse the gap. Once safely across, it quickly climbed onto its mother's back. Given the configuration of the arboreal canopy, the only way for group members to cross the gap was by leaping from one tree to the other. A similar situation involving the same mother-infant pair was observed on a second occasion when there was a strong wind but a clear sky.

This note reports the observation of a complex behavior performed by a howler monkey to solve a problem commonly faced by arboreal primates. This is the first record of the manipulation of an object to help an infant howler monkey travel across a gap in the canopy. Previous reports indicate that adult howler monkeys may use their bodies to form a "bridge" in order to help immatures cross such gaps. According to the definition proposed by Beck (1975), this behavior cannot be considered as true tool use because the animal (mother) did not detach the branch used as a bridge from the tree. This use of the substrate as an object, however, can be classified as proto-tool-use or object substrate manipulation (*sensu* Parker and Gibson, 1977).

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Novos Registros de Muriqui-do-Norte (*Brachyteles hypoxanthus*) no Vale do Rio Jequitinhonha, Minas Gerais e Bahia

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Introdução

O muriqui-do-norte (*Brachyteles hypoxanthus*) é considerado uma das 25 espécies de primatas mais ameaçadas do planeta. Tem sua ocorrência restrita à Mata Atlântica e suas populações se encontram ameaçadas pela destruição e fragmentação do habitat e também pela atividade de caça (Mittermeier *et al.*, 2005). Essa situação é considerada ainda mais crítica se levarmos em conta que a área de distribuição geográfica original da espécie se encontra localizada na região Leste do Brasil, onde as ações antrópicas foram mais severas (Mittermeier *et al.*, 1989). Como se não bastasse, o muriqui é um dos mamíferos mais caçados nesta região, conforme relatos de caça recentes para o muriqui-do-sul (*Brachyteles arachnoides*, em Mittermeier *et al.*, 1982; 1987; 1989; Mittermeier e Konstant, 1990; Auricchio, 1997) e para o próprio muriqui-do-norte (*B. hypoxanthus*, em Cosenza e Melo, 1998).

Apesar de ter ampla distribuição no leste brasileiro, são conhecidas populações de muriqui-do-norte apenas para Minas Gerais e Espírito Santo (Strier e Fonseca, 1996-1997). No estado da Bahia, os últimos registros feitos por Aguirre (1971) remontam à década de 60. Desde essa data, nenhuma população de muriquis foi confirmada no estado baiano, até o ano de 2004.

Desde 1999, o Instituto Estadual de Florestas de Minas Gerais e a Universidade Federal de Minas Gerais vêm desenvolvendo trabalhos de reconhecimento da fauna de mamíferos, considerando o grupo de primatas como indicador de novas áreas, nos vales do rio Jequitinhonha e Doce, visando preservar essa rica biodiversidade (Hirsch, 2003; Melo *et al.*, 2002; Melo, 2004). Este estudo concentrado trouxe detalhes sobre os principais fragmentos florestais existentes nas referidas bacias e permite, hoje, direcionar recursos e esforços conservacionistas nas áreas apontadas como de importância para a conservação dessa fauna de primatas diagnosticada e, conseqüentemente, dos demais mamíferos e das demais espécies tipicamente florestais.

Concomitante a essas iniciativas, o Ministério do Meio Ambiente abriu um edital, em 2002, convocando instituições de pesquisa e ensino na tentativa de melhorar nosso conhecimento biológico acerca dos principais biomas brasileiros, baseado nos diversos *workshops* nacionais que foram realizados na última década e no início dessa (Brasil, MMA, 2002). A Conservação Internacional do Brasil associou-se às principais instituições de ensino de nível superior do Estado