

DESCRIPTION FOR THE GENERAL PUBLIC (IN ENGLISH)

Is culture, ‘behavior that is transmitted repeatedly through social or observational learning to become a population-level characteristic’ (Whiten et al. 2001), a uniquely human phenomenon? Or does the phenomenon exist in nonhumans? Chimpanzees (*Pan troglodytes*), together with bonobos (*Pan paniscus*), as humankind’s closest living relatives, stand at the center of this debate (Hicks 2010), and display the largest number of traditions of any non-human studied (Whiten et al. 2001), including both subsistence-oriented material culture and gestural ‘dialects’ (McGrew & Tutin 1978; Nakamura 2002). Putative culture in nonhuman primates was originally suggested for Japanese macaques (*Macaca fuscata*) (Kawai, 1965), and later for chimpanzees (Goodall, 1973; McGrew et al. 1979; Boesch & Boesch-Achermann 2000). Captive chimpanzees are capable of transmitting seeded ‘traditions’ to ‘naïve’ neighboring colonies (Whiten et al. 2007). Chimpanzee behavioral diversity is characterized by a high degree of variability between populations, even between neighboring communities, both in tool use techniques (Tai Forest: Luncz et al. 2012) and insect prey choice (Mahale Forest: McGrew 1992). Few large-scale ‘cultural complexes’ have been proposed: nut-hammering in West Africa (Boesch & Boesch-Achermann 2000) and termite-perforators (Sugiyama 1985; Sanz et al. 2004) and honey-pounding clubs in Central Africa (see Hicks et al., 2005; Estienne et al. 2017). These represent single behaviors, however, not ‘cultural complexes’ (i.e. multiple traditions distributed together across a large geographical area). Have any wild chimpanzee populations developed such cultural complexes as have been documented in captivity (Whiten et al. 2007)? When postulating cultural explanations of behaviors in chimpanzees and even humans, other, simpler explanations must be considered (McGrew, 1992), such as ecological and resource availability factors (Collins & McGrew 1987). Langergraber et al. (2010) pointed out the difficulty of disentangling genetic influences on behavior from cultural ones [but see Marshall-Pescini & Whiten (2008)]. Over the course of a decade-long research project in Northern Democratic Republic of the Congo (DRC), I documented a large and interconnected population of chimpanzees (Hicks et al. 2014), along with evidence of large-scale behavioral continuity across a 50,000 km² region, comprised of frequent ground-nesting (otherwise a rare behavior in chimpanzees), ant-dipping for *Dorylus* and ponerine ants, honey-digging and the pounding open of termite mounds, fruits and giant snails against substrates (Hicks 2010; Hicks et al. in preparation a). These behaviors are found even on both sides of a major river, the Uele, in both savanna woodland (north) and moist tropical forest (south). The Bili-Uéré behavioral complex may represent the most widespread nonhuman cultural complex yet known to science. Our surveys of 12 sites across Northern DRC shows no link between chimpanzee tool sites and availability of the targeted ant species (Hicks et al. in preparation b), both for ponerines (Generalized Linear Model, N=12 sites, $p=0.91$) and for epigaic *Dorylus* (Generalized Linear Model, N=12 sites, $p=0.39$). In addition, *Macrotermes* termites, a species preyed on elsewhere by chimpanzees with tools, were ignored across the entire area, despite being abundant. Instead, they pound open the mounds of two termite species not targeted by the chimpanzees elsewhere. Gruber (2009) demonstrated with field experiments in Uganda that chimpanzee behavior may be shaped and even constrained by a phenomenon previously considered unique to humans: cultural override (Gruber et al. 2011). The mechanism lying behind such behavioral uniformity is not yet understood. Some possibilities include interconnectivity of populations and a recent divergence from an ancestral population (Hicks 2010; Gruber et al. 2011). A sizeable lacuna exists in our knowledge of chimpanzee behavior between the Bili region and Uganda. In order to test my ‘Megaculture’ hypothesis (Hicks 2010), I will conduct a systematic material culture survey of the Ituri Forest which lies roughly halfway between Bili and Uganda. The Ituri Forest lies about 400 km southeast of the Bili-Uéré area and appears to be connected to it via relatively intact primary rainforest. Little is known about the behavior of the Ituri chimpanzees, but what we do know (ground nesting, honey digging, and in a nearby forest, termite pounding) allows us to postulate that this represents a continuous spread of behaviors across an enormous geographic range (Hicks 2010). At some point between Ituri and Uganda there is a drastic change in chimpanzee material culture, with the latter chimpanzees making few ground nests and using very few or no stick tools. This study will help us to not only pinpoint the degree of this difference, but understand just how it has come about.