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APE TRADITIONS: USING LATENT SOLUTION EXPERIMENTS TO DETERMINE UNDERLYING LEARNING MECHANISMS

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We explore the reasons why human cultures, but not ape traditions, accumulate over time. The “zone of proximal development” ensures that human children are raised to be eventually on par with their culture (Vygotsky 1978). We propose that apes learn socially within the “space” created by physical cognitive skills at the individual level. We call this space “zone of latent solutions” (ZLS; Tennie et al. 2009). Within the ZLS, observational learning (mostly emulation) enables individuals to (re-)invent processes leading to (otherwise dormant) solutions. Great ape ‘inventors’ thus act as catalysts for others’ individual learning rather than as demonstrators or teachers in a strict sense. Both inventions and re-inventions of the ZLS are ultimately fuelled by the evolved physical cognitive ability of the species (and these skills will also vary between individuals – so that some individuals are more likely than others to become the first inventors). Additionally, some behaviours are more likely to occur than others. We expect many proposed “cultures” in great apes to turn out to be “latent solutions” instead - even some that are relatively difficult to invent and which seem locally restricted. We are currently undertaking the “latent solutions project”, in which we test behaviours described as cultural in the wild for spontaneous discovery under controlled captive conditions. Our results both from this project as well as from other studies indicate that neither cumulative culture nor process copying (i.e., imitation) are likely to underlie the spread of these behaviours in the wild.

Keywords: imitation, cumulative culture, emulation, zone of latent solutions