

b43 Tool makers < use or purposeful >

(- -) Everything made by the hand of man | is either ug^oly | or (/) be^oautiful;
 (- -) and it might as well be beautiful as (/) ug^oly. (- -)

— Oscar Wilde [notation of accenting, and pausing, by Helen Potter, 1891].¹

Stone tools are easily preserved and evidenced by them is a long history of applied intelligence.

Humans are known to purposefully and artfully shape raw materials (stone, bone, antler, shells, native copper) at hand, or sought for, into objets d'art and tools (as say, Cro-Magnon, fragile, laurel-leaf shaped Solutrean industry flint blades and post-industrial revolution gunflints).²

In the wild, of the four extant great apes, three: humans, chimpanzees (famously so for Jane Goodall's observations),³ and orangutans, have been observed to use tools; gorillas have not. Chimpanzees, as do modern human foragers (and evidently early hominins did too),⁴ use a number of tools, including sticks to get termites out of nests, and stones to crack open nuts. They also tailor these tools to fit a particular job.⁵ The last common ancestor of chimpanzees and humans lived 6 million years ago. Gorillas split off from the ancestor of chimpanzees and humans 8 million years ago, and while gorillas sometimes play with tools in captivity, they never use them in the wild. However, gorillas' easy diet of leaves and nettles would have made and makes tool-use pointless. Orangutans branched away from the other apes 14 to 16 million years ago. In the wild, they do not use tools habitually where there would seem to be no advantage but the environmentally stressed Suaq orangutans, as reported to by Carel P. van Schaik, do use twig tools consistently and for a variety of purposes.⁶ One "will break off a branch about a foot long, snap off the twigs, fray one end, and put the other end in its mouth. Holding on to a tree trunk with its arms and legs, it rams the stick into a hole containing a termite nest. It then flicks out broken-up chunks—full of delectable [when spared the yuck factor] larvae and pupae—and eats them." For honey, they poke a stick into a cavity that has the bees nest and move it around to catch honey, pull it out, turn it around and stick the other end in their mouth, and then go back in. If the stick is too long to use comfortably, they snap off one end. The edible seeds of the *Neesia* fruit are exposed when the hard-ridged husk softens and falls to break open. Before eating these seeds, a Suaq orangutan will select a five inch stick, strip off its bark, and then carefully use it to remove fiberglass-like injurious hairs that otherwise still protect.⁷

In captivity, all the great apes have shown the capacity to use tools. "He [*sic*] is frightful & painfully and disagreeably human" said Queen Victoria upon witnessing in 1843 the orangutan, Jenny, at the Royal Zoological Gardens at Regents Park, England, make and drink a cup of tea.⁸ Captive orangutans have even been taught to make stone-flake knives. But copying is not inventing.

Culture, Charles McGrath remind us, "is not exactly a museum or concert-hall accomplishment. It's behavior that's not genetically determined but, rather, learned by watching others [who have made serendipitous discoveries that they value]; certain styles of tool use, for example, or systems of social signaling. The theory is that if animals in one place do something a certain way, for no particular reason, and the same animals someplace else do not, then chances are that [the] behavior is cultural [as William McGrew and Caroline Tutin found in 1978 for wild chimpanzees⁹], not instinctive.

"In the wild, orangutans tend to be loners, and therefore it was believed that they lacked a 'system of socially transmitted behavior.' But after studying various orangutan populations in Borneo and Sumatra, Carel P. van Schaik with others concluded that some of them did indeed show signs of having taught each other stuff. They had learned how to masturbate with sticks, for example—male and female alike—and to make ritual 'raspberry' noises at bedtime before scaling into their nests.¹⁰ They had also mastered the art of creating funny sounds by blowing into leaves, and of catching rides in Robert Frost fashion, by swinging on bent-over tree snags. This is all it takes—a few useless but highly amusing tricks to promote you into the highest rank of primates."¹¹ □