

Abstract

Tool use has been observed in many bird taxa, mostly in parrots and songbirds. Tools are primarily used for a purpose of food acquisition and food preparation and physical maintenance. Spontaneous tool manufacture or tool use has been observed in species, which do not use tools in the wild. Tool using is actively performed only by those birds, whose natural environment has a reduced food availability, food is difficult to extract and handle. Tool manufacturing and tool using requires a considerable degree of cognitive abilities, which are experimentally tested in tasks involving use of tools. Differences between species that use tools in the wild, and those that do not are manifested not only in solving experimental tasks, but also in how birds acquire the ability to use tools. While tool users often solve tasks successfully by using causal reasoning, non-tool users are not always capable of solving complex tasks and understanding of the physical properties of the situation. Negative results of these species do not necessarily imply a lack of understanding, but they can also be caused by morphological or environmental constraints, which make tool use more difficult. Tool users also have inherited behavioral patterns, which are further strengthened by individual learning and can be influenced by social learning, while other birds acquire tool use probably through the operant conditioning and this ability may be further disseminated through social learning.

Key words: birds, tool use, tool manufacture, trap-tube task, avian cognition, learning in birds, avian intelligence