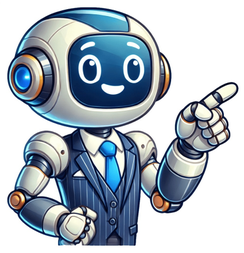
I'm not a bot



For many years, scientists and casual bird enthusiasts have been amazed by the intelligence of corvids. Crows possess exceptional problem-solving skills, can use tools, and even rival monkeys in cognitive abilities. Furthermore, they display an impressive capacity to understand numerical values. A recent study published in Science reveals that crows have more sophisticated counting abilities than previously thought, with behaviors strikingly similar to those of toddlers learning to count. The researchers discovered that crows can utilize vocalizations to communicate specific quantities, a trait never documented before outside the human species. In the experiment, trained crows employed a tallying approach to counting, mirroring how young children initially convey numbers. For instance, if there are three apples on a tree, a toddler might say "one, two, three" or "one, one, one," with the number of sounds matching the number of objects, even when the words don't necessarily match. According to Diana Liao, lead author of the study, crows exhibit similar behavior, which may be an evolutionary precursor to symbolic counting exclusive to humans. Other bird species have been observed using chirps to convey magnitude, but not with such precision as seen in crows. Inspired by earlier research on chickadees and their ability to indicate a large raptor's wingspan through additional syllables in their calls, Liao sought to investigate whether crows could actively control their vocalizations to express specific numeric values. To test this hypothesis, she trained three Carrion Crows over more than a year using visual cues and tones on a speaker. The crows learned to produce sequences of caws corresponding to each cue's number and peck a circle on a touchscreen when finished. While the crows generally performed well on these assignments, they paused for longer and made more errors as the numbers increased. According to Liao, it was remarkable to see the crows grasp the concept and make correct responses. The researchers also used recordings of the crows' responses to train an algorithm to predict the answers based solely on the first caw alone, highlighting the complexity of the crows' counting abilities. Crows' Counting Ability Revealed: Evidence of Mental Planning and Social Value According to research, crows are capable of making mental plans before vocalizing their responses, a behavior observed by John Marzluff, a University of Washington professor emeritus. The finding suggests that crows possess cognitive abilities similar to humans', which is remarkable considering the two species diverged 300 million years ago. Marzluff was impressed by the fact that crows took longer to initiate more complex sequences, indicating they may pause to collect their thoughts before communicating. This behavior mirrors human tendencies when asked to deliver complex statements. The study's lead author, Diana Liao, believes this ability might have social value, such as coordinating actions between avian pairs or groups. The researchers observed that crows use a tallying approach to count, similar to how young children first learn to communicate numbers. For example, if there are three apples on a tree, a child may say "one, one, one" with the number of sounds matching the number of objects. Crows exhibit this behavior as well. Liao notes that understanding the ecological relevance of crows' ability to control vocalizations is crucial for future research. The study's findings demonstrate the impressive cognitive abilities of corvids, which have been observed using tools, reasoning via analogies, and rivaling monkeys in cognitive capacity. Crows' advanced cognitive abilities may have evolutionary roots in symbolic counting, a skill unique to humans. While some bird species use chirps to convey magnitude, crows have been found to use a more precise approach. A study on crows and their ability to count has shown that they can actively control the number of caws to express specific numeric values. In a two-year experiment, Liao trained three Carrion Crows to associate numbers with corresponding tones and peck a touchscreen in response. The results indicate that the crows can make complex connections between cues and responses, suggesting advanced problem-solving abilities. Liao's team also developed an algorithm using recordings of the crows' initial caws to predict their responses. This success suggests that the crows mentally plan their actions before vocalizing them. Marzluff, a University of Washington professor emeritus, notes that the crows' slow onset for complex sequences is reminiscent of human thinking patterns. He believes this skill could provide survival benefits in the wild, such as recognizing predators or potential mates, and calculating the value of foraging efforts. If a crow's warning call is truly effective in the wild, it implies that other crows - and possibly even other bird species listening in - would need to comprehend its message. The fact that crows have mastered this form of communication may indicate that it serves a social purpose, such as facilitating coordination between pairs or groups. Future research could explore these possibilities, but for now, the study's focus remains on understanding this unique ability. Liao finds it remarkable that crow brains, despite their 300-million-year divergence from human lineages, exhibit cognitive similarities with humans. She notes that it's intriguing to consider how different brain structures can support analogous behaviors.

How intelligent are corvids. How smart are birds. How are corvids so smart. How smart are ravens. How smart are crows compared to humans. How smart are corvids compared to humans.