

#IMPORTANCE

Why Is This Simple Saree on Display at the World's Largest Museum?

This saree belonged to Indian scientist Dr. Nandini Harinath, one of the key minds behind India’s historic Mars Orbiter Mission (Mangalyaan)



At first glance, it doesn't look extraordinary. It isn't woven with gold threads. It isn't centuries old. It isn't a rare heirloom or an expensive designer creation. In fact, by museum standards, it seems surprisingly ordinary. So, why is this saree on display at the Smithsonian Institution, the world's largest museum, education, and research complex, home to over 150 museums and galleries across Washington, D.C.?

Because sometimes, history isn't made by the object. It's made by the person who wore it. This saree belonged to Indian scientist Dr. Nandini Harinath, one of the key minds behind India's historic Mars Orbiter Mission (Mangalyaan). As the mission's Deputy Operations Director, she helped steer one of the most remarkable achievements in space exploration: India becoming the first nation in the world to successfully reach Mars orbit on its very first attempt.

When images of ISRO's women scientists celebrating the success of the Mars mission spread across the globe, they challenged long-held stereotypes. Here were engineers and scientists in sarees, solving some of the most complex problems in space science.

The Smithsonian recognized that moment. Today, Harinath's saree is part of the Smithsonian's collection, where it represents far more than a piece of clothing. The institution has described Nandini Harinath as one of India's "Rocket Women," preserving her story to inspire future generations, particularly young women considering careers in science, technology, engineering, and mathematics (STEM). The display sends a powerful message:

The saree is a reminder that culture and cutting-edge science can coexist. One can embrace tradition while helping humanity explore another planet. That is why this seemingly ordinary saree deserves its place in one of the world's most important museums. Not because it is expensive. But because the woman who wore it helped make history, and inspired countless others to believe that they could do the same.



• Verna Mohon

Intelligence runs in the crow family, a diverse group of more than 120 bird species. And, as with most geniuses, crows and their relatives tend to be misunderstood.

Known as corvids, this family of birds includes crows, ravens, rooks, jays, jackdaws, magpies, treepies, nutcrackers, and choughs. They range from the 1-ounce dwarf jay, a small forest bird found only in Mexico, to the 3-pound common raven, a wily opportunist found across the Northern Hemisphere. Now that is a family.

But what is special about them is that Corvids are incredibly clever overall, with the largest brain-to-body-size ratio of any bird, but those in the genus Corvus tend to be especially brainy. This genus includes the crows, ravens, rooks, and jackdaws, accounting for about a third of all corvid species. Many of these have a brain-to-body-size ratio (or "encephalization quotient") you'd expect from an ape, not a bird. In fact, according to a study published in the journal *Current Biology*, "the crow brain is the same relative size as the chimpanzee brain."

Humans have long recognized the craftiness of crows and ravens, as seen in centuries of folklore casting the birds as thieves, tricksters, problem-solvers, wise advisors to gods, or even deities themselves. Yet, we also tend to stereotype these

birds, overlooking many of their complexities to brand them as spooky, troublesome, or outright nefarious. Fortunately, our appreciation of their intelligence has soared in recent years, thanks to research exploring what corvids can do with all that brainpower.

Crows Have Shrewd Ways to Get Food

Crows tend to be opportunistic and creative, commonly exploiting new food sources or adopting new feeding strategies to make their lives easier. The American crow is known to catch its own fish, for example, in some cases, even using bread or other food as bait to lure fish closer. They don't go hungry.

At the same time, they often steal food from other animals, sometimes even secretly following victims back to their nests or food caches. In one case, a group of American crows was seen distracting a river otter so that they could steal its fish, according to the Cornell Lab of Ornithology. Another group followed common mergansers to intercept minnows the ducks had been chasing into shallow water.

Many crows use gravity and the ground by dropping snails and hard-shelled nuts from the air while flying. This is done by other birds, too, but some crows seem to have taken this a few steps further. Crows in Japan, for instance, place walnuts on roads so that cars will crush the shells, wait for the traffic light to change, and then safely collect the opened nuts.

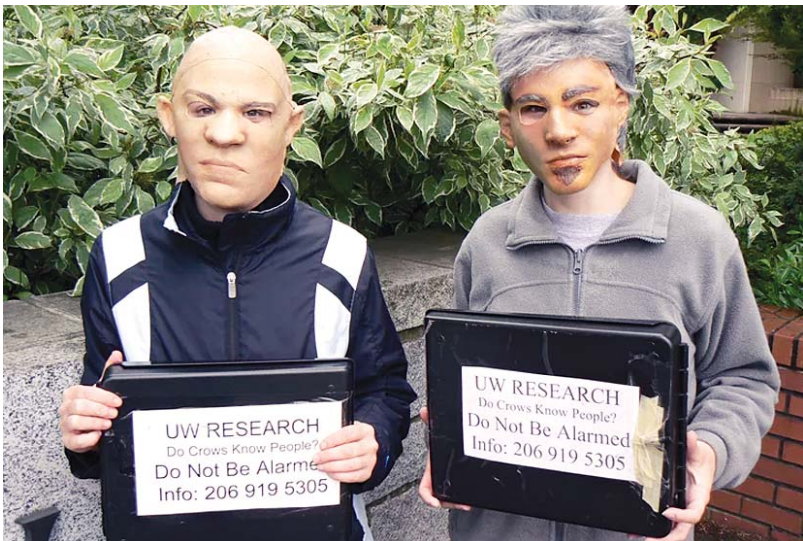


Crows Are Really Smart

Many corvids use tools, but New Caledonian crows are especially advanced. Like chimps, they use sticks or other plant matter to fish insects out of crevices. That alone is impressive, especially without hands, but it's just one of many tricks up their sleeves. In addition to choosing tools that are naturally well-shaped for a particular task, New Caledonian crows also manufacture tools in the wild, which is much rarer than only using found objects. This ranges from trimming the leaves off a stick to creating their own hook-shaped tools from twigs, leaves, and thorns.



#NOT WILD AT ALL



When wearing masks to test crows, researchers also carry signs that explain what they're doing for any curious (or nervous) human bystanders.



a variety of other convoluted tests, too. The BBC even showed a crow solving an eight-step puzzle in its series *Inside the Animal Mind*. Crows can also plan their tool use, according to one study in the journal *Current Biology*, which found that crows could solve a metatool problem when each step was out of sight of the others, planning three behaviours into the future. The birds showed an ability to "mentally represent the goals and sub-goals of meta-tool problems," the researchers wrote, and even successfully ignored an extra tool planted in their path to distract them.

Crows Hold Funerals for Their Dead

Crows are famous for holding "funerals" when one of their kind has died. It might be a lone individual or a group of crows, known as a murder, of course, and it may be solemnly quiet or cacophonous. In some cases, the crows may keep a vigil over the fallen bird for days. Could they be mourning?

Maybe, explains Kaeli Swift, a postdoctoral researcher and corvid expert at the University of Washington. There is "little doubt that they have emotional intelligence," testing this possibility remains scientifically problematic,

since "there's still no way we can truly know what's happening on an emotional level in an animal's head," she says.

So, without necessarily ruling out grief, Swift and other researchers have focused more on "danger learning" as a likely motivator for corvid funerals. "If I were to find a dead person in the woods, I might be feeling sad, but I'd also be alarmed and likely looking for the cause of death to make sure I'm not next," Swift writes. "Perhaps, the crows are doing the same thing, looking for the source of danger and remembering key elements of the experience that will help keep them safe in the future."

Crows Gossip, Hold Grudges, and Know Who You Are

Several kinds of corvids have demonstrated a knack for recognizing human faces. Magpies and ravens, for example, are known to solicit specific researchers who have gotten too close to their nests in the past, regardless of what the researchers wear. Some of the best evidence of this ability comes from crows in Washington state, where Swift and her colleagues have extensively tested the birds' reactions to human faces they've learned to distrust.

Led by John Marzluff, a professor of wildlife science at the University of Washington, the testing was born from the realization that crows seem to hold grudges against specific people who'd netted and banded them for research. Researchers began wearing rubber caveman masks when they did this, revealing how the crows were identifying their enemies. Crows scolded and mobbed anyone who wore the caveman mask regardless of who was underneath. In later tests, researchers achieved a similar effect by wearing masks while holding a dead (taxidermied) crow, which resulted in crows pestering future wearers of those same masks. "The interesting part was that not a whole lot mattered except the face," Marzluff told the National Wildlife Federation (NWF).

Lots of other animals can also recognize human faces but crows still stand apart, both for the length of their memories and for how they share information among themselves. Years after the study began, crows "continue to harangue the banding mask," the NWF explains, "even though they see it only twice a year for a few hours at a time."

This animosity isn't just from crows who saw the original banding event. The percentage of birds scolding and mobbing the caveman

crows. According to ornithologist John M. Marzluff and author Tony Angell, who co-wrote the book "In the Company of Crows and Ravens," the sounds "vary regionally, like human dialects that can vary from valley to valley."

And should a crow change its crowd, it'll adapt its noises to fit into the new group. "When crows join a new flock," Marzluff and Angell wrote, "they learn the flock's dialect by mimicking the calls of dominant flock members."

Crows Mate for Life, But They're Also 'Monogamish'

Crows are social birds and are more family-oriented than many people realize. Crows mate for life, meaning a mated pair will typically stay together for the rest of their lives, but their family lives may also be a little more complicated than that suggests. Crows are "monogamish," Swift writes, adding a more scientific clarification that they're considered "socially monogamous but genetically promiscuous." This means they generally stay with one partner for life, but genetic analyses show that male crows only father about 80% of their family's offspring.

Some crows also lead a "double life," according to the Cornell Lab of Ornithology. They can split time between families and big communal roosts. American crows maintain a territory year-round, where their extended family lives and forages together. "But during much of the year, individual crows leave the home territory to join large flocks at dumps and agricultural fields, and to sleep in large roosts in winter. Family members go together to the flocks, but do not stay together in the crowd. A crow may spend part of the day at home with its family in town and the rest with a flock feeding on waste grain out in the country."

Clever Crows Use the Best Stick for the Job

American crows start to nest in early spring, building their nests from sticks and lining them with soft materials like grass, fur, or feathers. (They may also build decoy nests if they think someone suspicious is watching them.) Young crows will remain dependent on their parents for a couple of months after they fledge, but they

also tend to stay near their family for a while longer, even after moving out of the nest. These chicks are still fiercely defended by their parents, Swift writes, creating a sort of extended adolescence that allows them time and energy for play behaviours, which might be important for their development and cultural learning.

Young crows will eventually start spending less time with their parents and more time with larger flocks, and face a decision as fall and winter set in. "They can either take off to 'float' before finding a mate and establishing a territory of their own," Swift writes, "or remain on their home turf and act as a 'helper' for next year's brood." The latter is cooperative breeding, in which more than two individuals help care for offspring in a single brood.

In most American crow populations, older offspring continue to help their parents raise new chicks for a few years, according to the Cornell Lab. A crow family may include as many as 15 individuals, with offspring from five different years all pitching in to help. It's unclear why this evolved, Swift writes, but it may help delay the dispersal of young crows when there isn't enough open territory nearby for them to claim. ("See," she adds, "millennials are just doing what comes naturally.")

Crows Are Intelligent, But Not Invincible

It's common for people to vilify crows, often focusing on unwanted

behaviour but overlooking more reliable or redeeming qualities. The American crow, for one, has been the subject of extermination attempts in the past, including the use of dynamite on large winter roosts. Those efforts ultimately failed, however, and thanks largely to its intelligence and adaptability, the American crow is now more common than ever across a range of habitats, including farms, towns, and big cities.

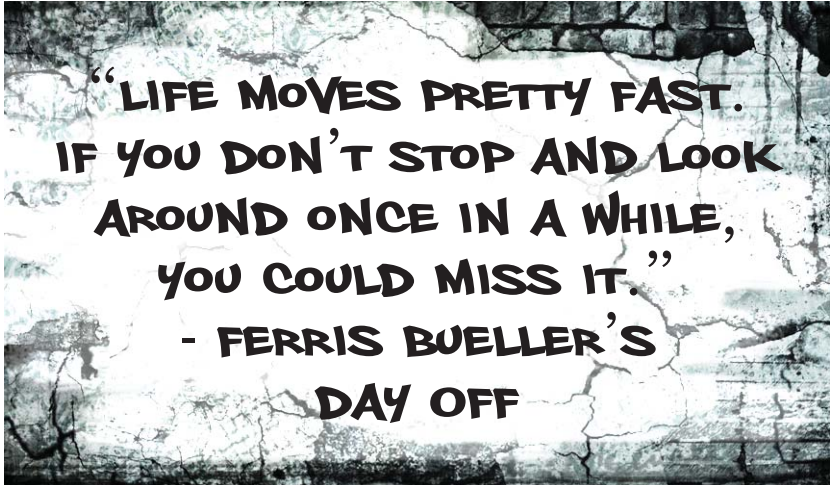
Other corvids have similarly adjusted to or even capitalized on civilization, but being intelligent is no guarantee that these birds are safe from us. The Hawaiian crow, for instance, is a smart corvid with a penchant for tool use, yet, it was declared extinct in the wild in 2002 after being wiped out by a combo of disease, invasive predators, habitat loss, and human persecution. Fortunately, scientists saved enough birds to start a successful captive-breeding program and reintroduced the species into the wild.

Crows sometimes raid farms and gardens, but any damage they cause may be offset by ecological benefits like seed dispersal and eating pest insects. Plus, while any species has an inherent right to exist, we're lucky to have brainiacs like corvids living among us. They help us learn more about our own intelligence and remind us how much we still have in common with wildlife around us.

rajeshsharma1049@gmail.com



THE WALL



BABY BLUES



By Rick Kirkman & Jerry Scott

ZITS



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