

Breaking the code on chicken clucks

A certain “took, took, took” that male chickens make functions like the cry “Hey, buffet’s open!”—the first such call to food to be fully documented in animals, claim Australian researchers.

That assertion catapults a chicken cluck into the domain of animal sounds arguably at the fringe of language. The researchers, Chris Evans and Linda Evans of Macquarie University in Sydney, aren’t going so far as to say that chickens have a fully developed language. Yet the clucks “do have many languagelike properties,” Chris Evans says.

The property they discuss in the August *ANIMAL BEHAVIOUR* is called functional reference. It’s what allows one person to say “chicken” and evoke an image of a feathered barnyard creature in the mind of the hearer. The notion may sound simple, but demonstrating that an animal does it has been anything but. Some people inclined to accept the chicken evidence are likely to debate whether clucks are the first animal calls shown to function as references to food.

Not a decade ago, Chris Evans notes, several theorists declared that there was no convincing evidence for functionally referential food calls. However, data have been building for other kinds of referential calls, mostly alarms, in primates and chickens (SN: 9/12/98, p. 174).

Just in case anyone’s inclined to snicker at chicken science, Chris Evans points out that these wonderful creatures make some 20 distinct sounds, can recognize each other, learn from their mothers, and perform “spectacular” displays such as a courtship waltz.

Earlier chicken studies proved part of the case for referential food calls. They showed that males make the “took” sound specifically around food. Males give the call when alone with food but “took” more when a hen appears near the feast. She typically struts over to feed, often picking a tidbit from his beak.

To study the hen’s reaction, Chris Evans and Linda Evans played record-

ed calls while videotaping 22 Sebright bantams. When the hens heard the “took,” they spent extra time peering at the ground, a behavior unique to feeding. Chris Evans says, “It’s like a myopic person who’s lost a contact lens.”

The chickens, however, did not search when they heard a similar “took, took” with a lower pitch or listened to a singing whistle that mates often make in turn. Comparing the reactions convinced Chris Evans and Linda Evans that “took” does not just jolt the hens into extra activity or invite social contact.

The work also persuaded Marc D. Hauser of Harvard University that “took,

took, took” functions as a reference to food. What he predicts will be especially controversial is the report’s remarks about other animals. His own playback experiments with rhesus monkeys turned up signs of referential food calls, he says.

Hauser also cites reports that a specific call often sends toque macaques running to feed while giving the same call. “This seems to me at least as strong a response as the chicken’s head orientation,” he says.

Chris Evans notes that the whole debate jangles human nerves because of its implications for “the nature and extent of human uniqueness.” In some ways, the discussion is “a narcissistic enterprise,” he says. —S. Milius

Drastic measures combat heart attack shock

Heart attack victims who survive the initial hit and land in a hospital might think that they are out of danger. During the first hours in intensive care, however, roughly 1 in 10 goes into cardiogenic shock, in which the body grows listless and the heart struggles to pump adequate blood to vital organs. This condition is fatal 80 percent of the time.

Physicians usually treat cardiogenic shock with massive doses of drugs designed to stabilize the patient and restore blood flow to the heart muscle. Less often, doctors use angioplasty—in which they open a coronary blockage by threading a balloon-tipped cable through an artery—or bypass surgery, which routes blood around the stoppage.

For heart attack patients under age 75, these invasive measures may save more lives than medicine alone, a new study shows.

Between 1993 and 1998, researchers tracked the progress of such patients with cardiogenic shock who were assigned to get only medication or both surgical treatment and drugs. Of 118 patients on medicine alone, 57 percent died within a month of their heart attack, while only 41 percent of 128 people treated promptly with both drugs and either angioplasty or bypass surgery died in that time, according to a study in the Aug. 26 *NEW ENGLAND JOURNAL OF MEDICINE*.

During the 6 months after a heart attack, 65 percent of patients who had gotten only the drugs died, as did 45 percent of those who received medicine with emergency angioplasty or surgery.

The survival numbers don’t match the typical 80 percent mortality rate for cardiogenic shock because by the time patients could be enrolled in the study, they had already survived the critical first hour or two of shock, says coauthor Judith S. Hochman, a cardiologist at St. Luke’s-Roosevelt Hospital Center and Columbia University, both in New York.

Indeed, an earlier study showed that

roughly 40 percent of patients with cardiogenic shock die within the first hour of its onset. This fragility has left doctors loath to attempt invasive procedures early in such shock, says Eric R. Bates, a cardiologist at the University of Michigan in Ann Arbor. Nationwide, only about 13 percent of heart attack patients receive prompt angioplasty in response to cardiogenic shock, and even fewer get bypass surgery, Hochman says.

Some doctors may not have the expertise to perform these procedures, Bates says. “The other concern is that the patient has a high risk of dying whatever you do. There’s a hesitation to attempt to do these procedures . . . in an era of scorecard medicine when mortality rates [for doctors] are published,” he says.

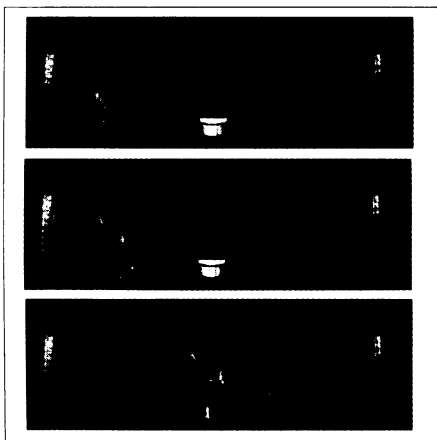
Angioplasty and bypass surgery carry risk, says Hochman. “The surgeon will lose a lot of patients, but if you look at the long-term survival, it’s [risk] worth taking.”

“This is the largest randomized trial ever done in cardiogenic shock patients,” says cardiologist Eric J. Topol of the Cleveland Clinic Foundation. “This group [of researchers] deserves a lot of credit.” While the findings aren’t as clear-cut as some researchers had hoped to see, he says, the data do indicate that “the more aggressive approach is providing some benefit.”

Most small hospitals can’t provide bypass surgery or even angioplasty. Nonetheless, Hochman believes the new data may lead more physicians to consider these measures, “even if it means that the transfer of an unstable patient is required to another facility.”

The study also included 56 patients age 75 or older. In contrast to the younger group, these patients generally fared worse if they received angioplasty or surgery. “Older patients have [suffered] more wear and tear,” Bates says, adding that as with any stress, a younger person is better able to tolerate the invasive procedures. —N. Seppa

Evans



A hen hears a recorded call and peers down as if hunting for food.