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The features marked with a star (*) are based entirely on material taken straight from standard research (and other Official and Therefore Always Correct) literature. Many of the other articles are genuine, too, but we don't know which ones.

ANNALS OF

IMPROBABLE RESEARCH



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Coming Attraction:

The next issue (vol 29, no. 5) will be a special
Gulls, Crows, Pigeons, Woodpeckers issue

Where There's More

There's always new improbable — it's not what you expect! —
stuff on the **Improbable Research** blog at [IMPROBABLE.COM](https://improbable.com)

On the Front Cover

Fifteen (taxidermied)
European starlings
(*Sturnus vulgaris*) that
crashed in The Hague,
The Netherlands,
4 November 2018;
numbered NMR
9989006014-28 in the collection of the
Natural History Museum Rotterdam.
Photo: Kees Moeliker.



On the Back Cover

Work progress photos
from the "Taxidermy
Birds as Platform
for Flapping Wing
Drones" project
[see page 4]. Photo
courtesy of Mostafa
Hassanalain.



Some Coming Events

The Covid-19 pandemic has introduced
excitingly boundless uncertainty as to
whether, when, and where public activities
will happen in the near future. In 2023 some
will happen teledistantly.

(See [IMPROBABLE.COM](https://improbable.com) for details
of these and other events.)

Friday, September 8, 2023

— Quark Matter Conference,
Houston, Texas, USA

Thursday, September 14, 2023

— The 33rd First Annual
Ig Nobel Prize Ceremony

September 2023

— Italy

Saturday, October 14, 2023

— Ig Nobel Face-to-Face
Cambridge, Massachusetts, USA

November 2023

— Berlin Science Festival
Germany

Saturday, November 25, 2023

— Imperial College
London, UK



BIRD DINING AND DRINKING

Nutritional insights and observations

by Dexter Wright, Improbable Research staff

Birds Who Eat at Outdoor Cafes with Slow Plate-Clearing

"Ecology and Phylogeny of Birds Foraging at Outdoor Restaurants in Sweden," Paul D. Haemig, Sara Sjöstedt de Luna, Henrick Blank, and Henrik Lundqvist, *Biodiversity Data Journal*, vol. 3, 2015, e6360. The authors, at Umeå University and at the Nature Division of the Governing Board of Jönköping Province, Sweden, report:

[T]he authors conducted a basic study of birds at 80 outdoor restaurants in Sweden, identifying which species and taxonomic clades of birds visited the restaurants.... Only one of us (Haemig) gathered this data, and he sat at a table on the edge of each outdoor restaurant. Scan sampling was halted if a diner intentionally gave food to a bird, and restarted only after that diner left....

A total of 13 species of birds were observed visiting the outdoor serving areas of restaurants and foraging on food remains left by diners. The highest number of bird species recorded at a single restaurant was eight.... Only thirteen bird species were seen visiting the restaurants, and only eight bird species were predominant there. This low diversity of bird species is remarkable when one considers the large number of birds living in Sweden.

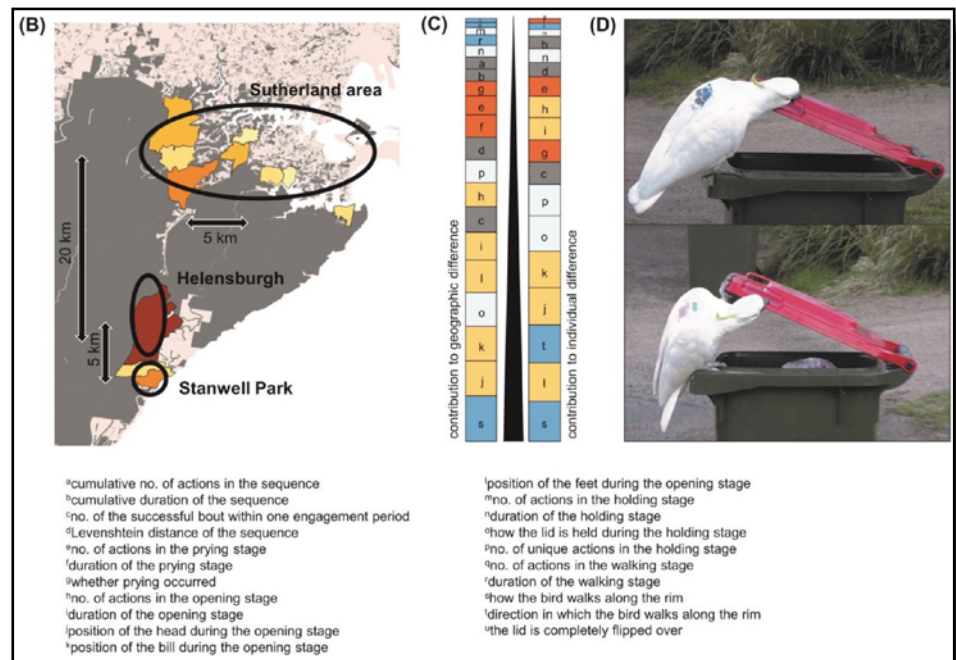


Sara Sjöstedt de Luna, co-author of the study "Ecology and Phylogeny of Birds Foraging at Outdoor Restaurants in Sweden." Drawing by Nan Swift.

Birds Who Open Bins

"Innovation and Geographic Spread of a Complex Foraging Culture in an Urban Parrot," Barbara C. Klump, John M. Martin, Sonja Wild, Jana K. Hörsch, Richard E. Major, and Lucy M. Aplin, *Science*, vol. 373, no. 6553, 2021, pp. 456-460. (Thanks to Jenny White for bringing this to our attention.) The authors, at Max Planck Institute of Animal Behavior at the University of Konstanz, Germany, and at the Taronga Institute of Science and Learning, Australia, and at the Australian Museum, report:

We describe a putative case of the development of a cultural adaptation to urban environments: opening of household waste bins by wild sulphur-crested cockatoos. A spatial network analysis of community science reports revealed the geographic spread of bin opening from three suburbs to 44 in Sydney, Australia, by means of social learning.... We describe a full pathway from the spread of innovation to emergence of geographic variation, evidencing foraging cultures in parrots and indicating the existence of cultural complexity in parrots.



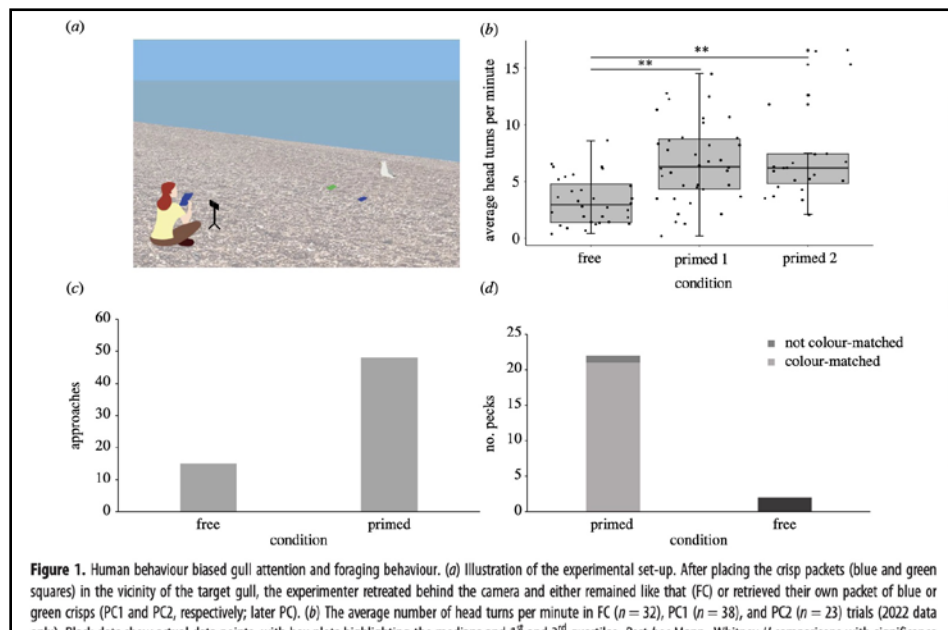
Detail from the study "Innovation and Geographic Spread of a Complex Foraging Culture in an Urban Parrot."

BIRD DINING AND DRINKING [CONTINUED]

Gulls Watch Humans for Food Foraging Tips

"Inter-Species Stimulus Enhancement: Herring Gulls (*Larus argentatus*) Mimic Human Food Choice During Foraging," Franziska Feist, Kiera Smith, and Paul Graham, *Biology Letters*, vol. 19, May 2023, article 52023. The authors, at the University of Sussex, UK, report:

Herring gulls were given free choice of two differently coloured anthropogenic food items in the presence of a demonstrator, who was either sitting still or eating food from an item that matched one of the presented ones. We found that a demonstrator eating significantly increased the likelihood of a gull pecking one of the presented items. Furthermore, 95% of pecks were directed toward the presented food item that colour-matched the demonstrator's food item. The results showed gulls were able to use human cues for stimulus enhancement and foraging decisions.



Detail from the study "Inter-Species Stimulus Enhancement: Herring Gulls (*Larus argentatus*) Mimic Human Food Choice During Foraging"

Birds Who Open Milk Bottles (1)

"The Opening of Milk Bottles by Birds," James Fisher and R.A. Hinde, *British Birds*, vol. 42, no. 11, 1949, pp. 347-357.

In 1921 birds described as tits were observed to prise open the wax-board tops of milk bottles on the doorsteps in Swaythling, near Stoneham, Southampton, and drink the milk. This is the first known record of an act which has now become a widespread habit in many parts of England and some parts of Wales, Scotland, and Ireland, and which has to date been practised by at least eleven species of birds...

Questionnaires were distributed therefore to members of the British Trust for Ornithology. These were filled in by 126 members, giving 141 records of bottle-opening by species of tits.... [It] is true to say that once the habit has been recorded by one (cont'd next page)

observer in a given district it usually becomes nearly universal there within a few years.... In part of Llanelly the habit was first noted in 1939 at one house only amongst a group of about three hundred near a wooded area. By 1946, and possibly earlier, all these houses had had milk taken....

ADDENDUM — Since this was written Drs. N. and L. Tinbergen have informed us that the habit of opening milk bottles by birds is unknown to them in Holland, where the use of milk bottles with metal foil stoppers is widespread.

THE OPENING OF MILK BOTTLES BY BIRDS.*

BY

JAMES FISHER AND R. A. HINDE.

IN 1921 birds described as tits were observed to prise open the wax-board tops of milk bottles on the doorsteps in Swaythling, near Stoneham, Southampton, and drink the milk. This is the first known record of an act which has now become a widespread habit in many parts of England and some parts of Wales, Scotland, and Ireland, and which has to date been practised by at least eleven species of birds.

The spread of the habit is interesting, because of the problems

BIRD DINING AND DRINKING [CONTINUED]

Birds Who Open Milk Bottles (2)

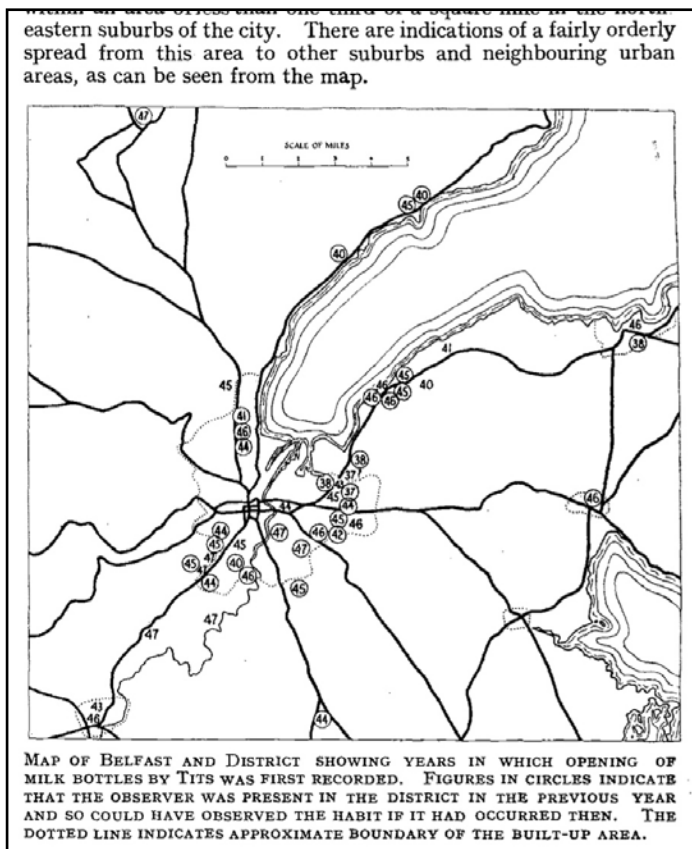
"Further Observations on the Opening of Milk Bottles by Birds,"
James Fisher and R.A. Hinde, *British Birds*, vol. 44, no. 12,
1951, pp. 392-396.

In the present paper the foreign records are summarized,
and the processes involved in the spread of the habit are
discussed....

Sweden. Mrs. I. Kramer recorded Blue Tits (*Parus
caeruleus*) opening milk bottles at Goteborg. Inquiries
made by her among the local milk distributors revealed
that the habit was widespread there, and that "Magpies and
Blackbirds" also raided the bottles. M.M. Rundstrom has
recorded tits opening coffee cream bottles at Vendelso....

Denmark. F. Salomonsen states that the habit is well known,
and "in suburban villa-quarters, almost a pest"....

France. N. Mayaud made some enquiries in France, but was
unable to discover any records —apparently milk bottles are
scarce....



Detail from the study "The Opening of Milk Bottles by Birds."



AIR Teachers' Guide

Three out of five teachers agree: curiosity is a dangerous thing, especially in students. If you are one of the other two teachers, AIR and mini-AIR can be powerful tools. Choose your favorite hAIR-raising article and give copies to your students. The approach is simple. The scientist thinks that he (or she, or whatever), of all people, has discovered something about how the universe behaves. So:

- Is this scientist right—and what does “right” mean, anyway?
- Can you think of even one different explanation that works as well or better?
- Did the test really, really, truly, unquestionably, completely test what the author thought he was testing?
- Is the scientist ruthlessly honest with himself about how well his idea explains everything, or could he be suffering from wishful thinking?
- Some people might say this is foolish. Should you take their word for it?
- Other people might say this is absolutely correct and important. Should you take their word for it?

Kids are naturally good scientists. Help them stay that way.