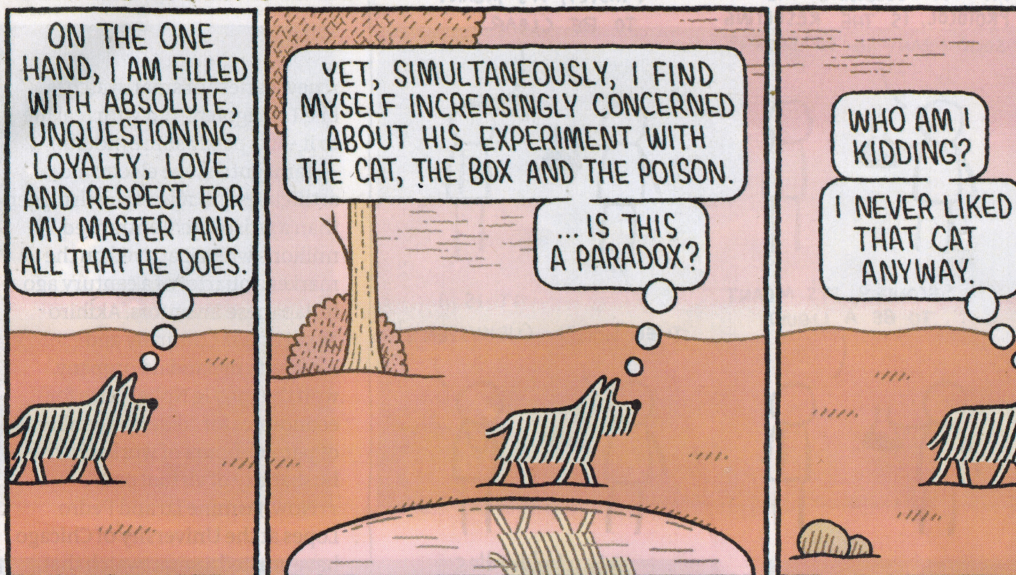


**Tom Gauld**  
for *New Scientist*

## SCHRÖDINGER'S DOG



**Nick Baker**  
Colchester, Essex, UK  
Cold weather is often associated with a temperature inversion where the temperature is lowest at ground level. Sound travels faster in warmer air and this leads to refraction, or a bending of the sound waves. According to the relative position of the source and the listener, this creates a focusing effect, making the noise louder on the ground.

**Frank Dempsey**  
Pickering, Ontario, Canada  
In my experience, louder, crisper noise from aircraft occurs when cold Arctic air linked with strong, high-pressure weather patterns moves overhead.

The very low humidity in the cold air allows better propagation of sound, since moisture attenuates its transmission.

As well as this, the high pressure is associated with a sinking layer of dense, cold air, causing what is known as a subsidence inversion.

This acts as a low-level, horizontal boundary between

**"Most birds are socially monogamous, but most are also sexually polygamous and have sex with multiple partners"**

cold air (in contact with the cold ground) and warmer air above it. The boundary reflects distant sounds to the observer, resulting in louder noise from an airport than normal, as sounds that would usually radiate upward as well as horizontally get reflected back down to ground level and seem louder.

These atmospheric conditions allow me to hear noise from distant trains and road traffic, as well as other sounds not normally heard in the absence of an inversion.

### Divided loyalty

**Why is it that less than 5 per cent of mammal species are monogamous, compared with about 90 per cent of bird species? (continued)**

**Herman D'Hondt**  
Sydney, New South Wales, Australia  
One thing that previous answers overlooked is that there is a difference between social and sexual monogamy.

Most birds are socially monogamous. This means that a pair will work together to raise the offspring. That pairing may last for a year or for a lifetime. The reason for this is that most bird species are born helpless and require a lot of care from both parents. That makes it evolutionarily beneficial for the parents to stay together.

But the vast majority of birds are sexually polygamous. In other words, both males and females have sex with multiple partners, all while building a nest with their social partner. The eggs they sit on can have multiple fathers.

While this had been noticed in a few bird species several decades ago, those were considered to be aberrations. It is only with modern DNA testing that the full extent has become obvious, and we now know that some 90 per cent of birds are sexually polygamous. ■

## Answers

### Quick quiz #192

#### Answers

- 1 Hyphae
- 2 In vitro fertilisation, or IVF
- 3 Aphids
- 4 In the eye: it is a condition where there is a fissure in one of the structures of the eye, such as the iris
- 5 Plutinos

### Cryptic crossword #104 Answers

**ACROSS** 7 Antihistamine, 8 Analemma, 9 Oboe, 10 Acetone, 12 Phone, 14 Ulnae, 16 Mantrap, 20 Relishes, 22 Gamma ray burst

**DOWN** 1 Anon, 2 Millet, 3 Siamang, 4 Stray, 5/19 Smooth newt, 6 Insomnia, 11 Calderas, 13 Walleye, 15 Asthma, 17 Tissue, 18 Crore, 21 Ease

### #211 Cross purposes Solution

Debbie crosses out 33, forcing Hoi to cross out 3, and Debbie wins with 51.