



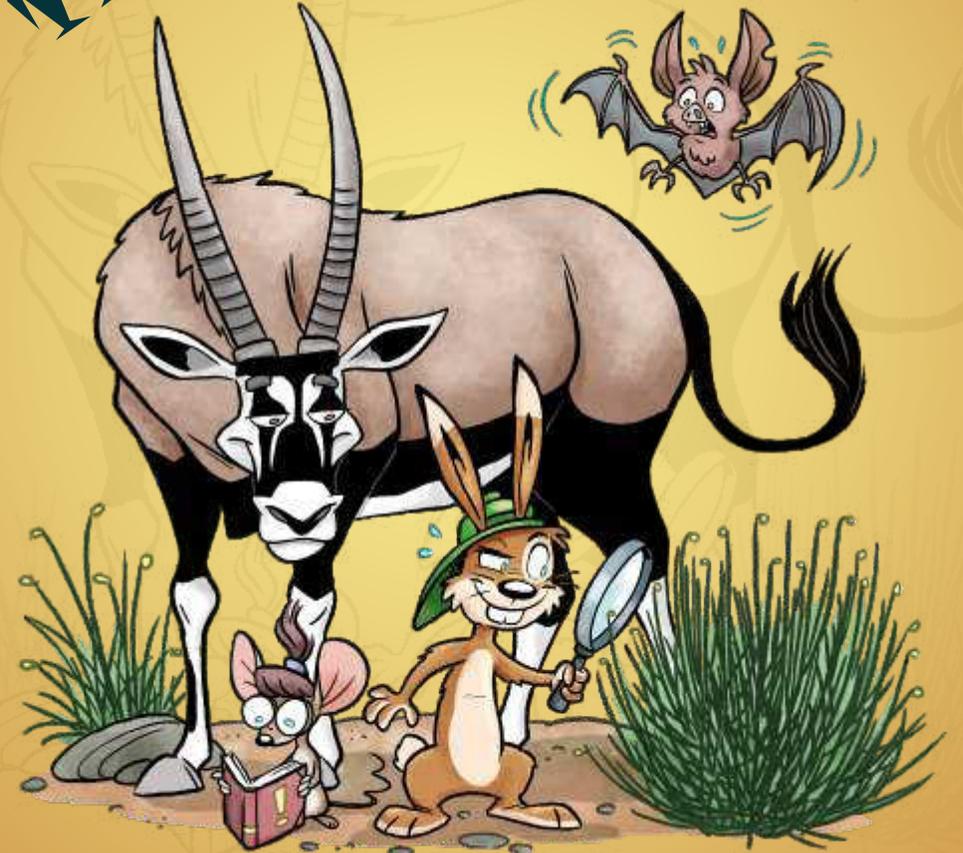
### **Bono, Jinny and Otto**

live under the hot African sun. One morning, a stranger comes to the desert. The three friends follow him and find they have embarked on quite an adventure ...

Read this exciting story through which we learn about oryx antelopes, life in the desert and how science works.



## *Bono's Adventure* **The Magic Trick**



GEFÖRDERT VOM



Bundesministerium  
für Bildung  
und Forschung

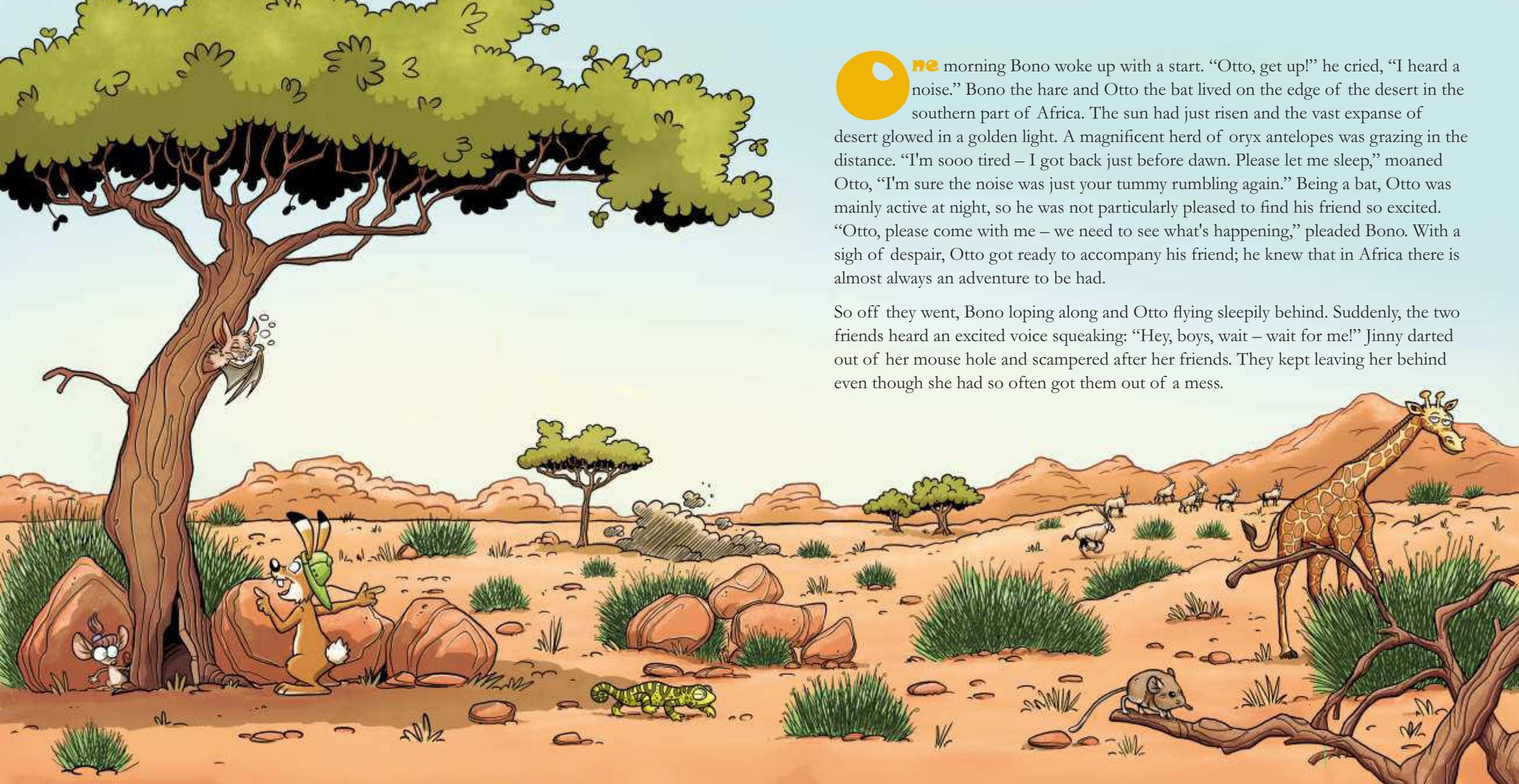
# Bono's Adventure **The Magic Trick**

How oryx antelopes survive in the desert

Story by Kathleen Röllig  
Illustrations by Steffen Gumpert



From the Leibniz Institute for Zoo and Wildlife Research  
Berlin, 2016



**O**ne morning Bono woke up with a start. “Otto, get up!” he cried, “I heard a noise.” Bono the hare and Otto the bat lived on the edge of the desert in the southern part of Africa. The sun had just risen and the vast expanse of desert glowed in a golden light. A magnificent herd of oryx antelopes was grazing in the distance. “I’m sooo tired – I got back just before dawn. Please let me sleep,” moaned Otto, “I’m sure the noise was just your tummy rumbling again.” Being a bat, Otto was mainly active at night, so he was not particularly pleased to find his friend so excited. “Otto, please come with me – we need to see what’s happening,” pleaded Bono. With a sigh of despair, Otto got ready to accompany his friend; he knew that in Africa there is almost always an adventure to be had.

So off they went, Bono loping along and Otto flying sleepily behind. Suddenly, the two friends heard an excited voice squeaking: “Hey, boys, wait – wait for me!” Jinny darted out of her mouse hole and scampered after her friends. They kept leaving her behind even though she had so often got them out of a mess.

**THE MAGIC TRICK** is based on a real-life research project – the Oryx Project – conducted by the Leibniz Institute for Zoo and Wildlife Research (IZW, Berlin) and its Namibian partners (The University of Namibia [UNAM], The Department of Biological Sciences, Windhoek; Torra Community-Based Conservancy Office, Kunene region; Wilderness Safaris Namibia, Windhoek) from 2010 to 2012 in the Kunene region of Namibia.

As part of its mission to conduct wildlife research for conservation, **the Leibniz Institute for Zoo and Wildlife Research** studies the wide range of lifestyles and adaptations that wildlife species have developed in the course of evolution and uses the results as a basis for new wildlife conservation strategies and methods.

**Evolution** is the process of gradual change in heritable traits over successive generations: individual organisms are born with varying traits, and those with traits that are more beneficial under the prevailing conditions are more likely to survive and reproduce. As a result, beneficial traits become more common over time, a concept that is referred to as **evolutionary adaptation**.

**The main characters in this story** – Bono the hare, Jinny the mouse and Otto the bat – are representative of wildlife species – hares, mice, bats – that are found all over the world except in the Antarctic and can thus tell stories from across the globe. In the Kunene region of Namibia, Bono would be a scrub hare (*Lepus saxatilis*), Jinny a pygmy rock mouse (*Petromyscus collinus*), and Otto a Namib long-eared bat (*Laephotis namibensis*).

**The Kunene region** is located in southern Africa in the far north-west of Namibia. The Kunene River – Namibia's only perennial river – crosses the extremely sparsely vegetated desert. It thus creates an oasis for wildlife and plants amidst the mountain ranges and the extreme aridity of the desert.

**The Oryx Project** investigated how two antelope species – oryx (*Oryx gazella gazella*) and springbok (*Antidorcas marsupialis*) – survive as herbivores under the extreme climatic conditions of the desert: it found that whereas the springbok fed on all the available plants during periods of drought, the oryx ate only a few species, including the poisonous Damara milk-bush.

**The method of “stable isotope analysis”** was used in this research. This scientific method relies on the fact that atoms, the building blocks of all matter, can occur in various states (isotopes). Their masses differ although they represent the same chemical element. There are rapidly decaying (radioactive) and stable (non-radioactive) isotopes. Carbon is one of the most important atoms present in biological life. It occurs in two stable isotopes – a “thicker and heavier” and a “thinner and lighter” variety. In stable isotope analysis, atoms are weighed using a specially designed device. The ratio of lighter to heavier atoms creates a “fingerprint” that can be used to determine the geographic region from which a plant or animal originates. Also, individual plant species exhibit different isotope ratios. When animals eat plants, this isotope ratio is found in the tissue of these animals, yielding information about what the animal has eaten.

