



playing with the **BIG BOYS**

After almost 20 years of studying elephant communication, **Caitlin O'Connell** turned her attention to the dynamics between male elephants. Perched high in a research tower overlooking the Mushara waterhole in Namibia's Etosha National Park, she witnessed some startling interactions – and rewrote what we thought we knew about one of the world's best-studied mammals.

TEXT BY CAITLIN O'CONNELL
PHOTOGRAPHS BY CAITLIN O'CONNELL & TIM RODWELL

I woke to a cry in the night. My eyes flew open. The sound had come from right next to my tent platform. I froze and held my breath. Without making a noise, I lifted my head and pulled down my fleece hood so that I could listen with both ears. Nothing.

I exhaled. With Tim, my husband and research partner, having left Mushara waterhole in Etosha National Park earlier in the season, I sometimes felt as if I was in a world of my own inside my tent. Just me, the African night – and the predators. I listened for the rustling of sleeping bags from the other tents, a sign that one of my research assistants had also heard the noise. Silence. I looked through the front of my open tent and, despite the brilliant stars, the night was pitch black. I couldn't see a thing.

I inhaled slowly. It was late July 2005 and I was exhausted. There was so much night-time activity that it was hard to sleep, let alone want to sleep with so

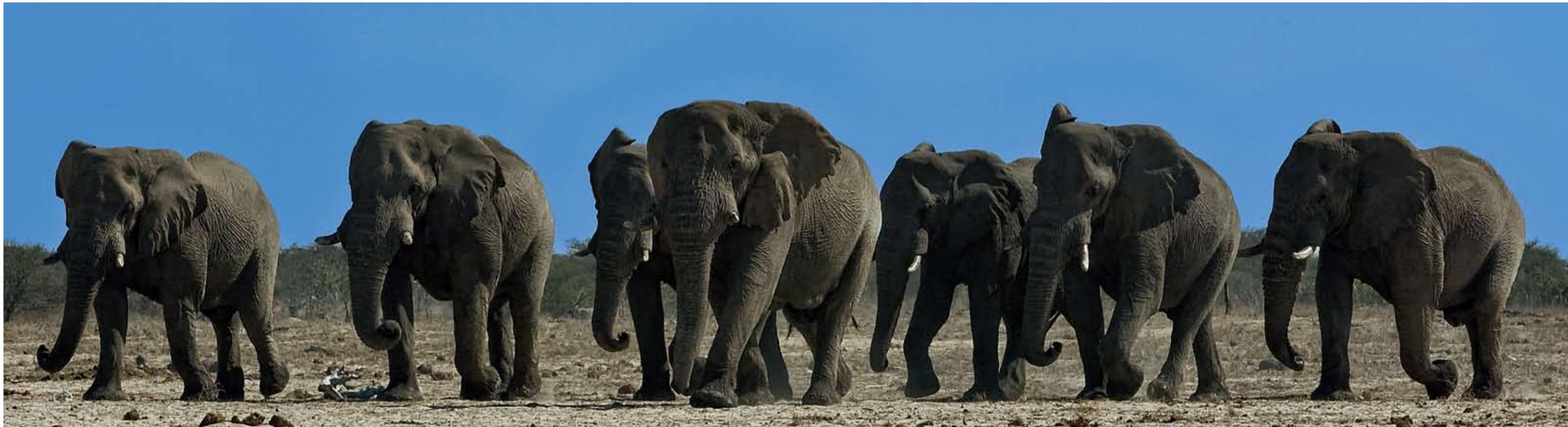
many great sounds to record. After almost 20 years of collecting data on elephant communication, I had shifted my focus in the past two years to include male elephant dynamics as well. This meant very busy days of identification work and behavioural observations, while still researching family group vocal communication at night.

Before long, the noise that had jolted me awake came again. First there was a sickly squeal at full volume, worse than fingernails on a chalkboard. It was followed by a high-pitched whine and finally the same eerie sound I had first heard. In the background, accompanying these hideous cries, was a strange rhythmic growling sound. It was deeply unsettling.

Then it came, the telltale whoop of a hyaena in trouble. I slowly reached for the night-vision scope, quietly pushed myself forward onto my elbows through the tent flap and looked down. Just metres below me was a male hyaena (or so I surmised

from his smaller size), tail tucked between legs and rump to the ground. He was surrounded by seven females and seemed to be begging forgiveness for some unknown transgression. The seven closed in, their heads held low and tails fluffed up and threatening. The male's face contorted into a terrible grimace as he emitted the most horrific screeching cries, teeth and eyes glowing a satanic green through my night-vision view. He crawled forward a few inches in a supplicating position, feet tucked under his belly, and then screeched again, starting high and holding it there.

And just when I thought I couldn't bear it any longer, he began a low whooping, his head facing the ground as he cried out. One of the accusers advanced, growling rhythmically, then lowered her head and also began whooping: that surreal, signature hyaena call that sounds like the scaling of an octave. The other hyaenas giggled uncontrollably. ▶



ABOVE The research station overlooking Mushara waterhole in Etosha National Park, Namibia.

TOP Greg (middle) leads his tightly knit group. For a young male leaving his family, the protection and mentorship offered by joining such a group is hugely beneficial.

OPPOSITE A bull in musth. Males in this temporary state of heightened testosterone are thought to rise to the top of the hierarchy to out-compete other males for the right to mate. At Mushara, however, researchers have witnessed the dominant bull within a bonded group defeat a high-ranking musth bull.

PAGE 42 The don. Researchers believe that Greg's leadership style, which combines compassion and aggression, may be a key factor in his successful tenure as top dog.

This demonic ritual and hideous be-seeching went on for some time before the offender was finally released from the circle. I couldn't tell what had caused the dominant hyaenas to relent, but almost immediately afterwards two lionesses closed in on the scene and the pack scattered. Perhaps the hyaenas had smelled the lions' approach, and that had saved

After almost 20 years of collecting data on elephant communication, I had shifted my focus to include male elephant dynamics

the young male from what looked like certain physical injury? I wished that I had had the presence of mind to film the interaction, but I was too stricken with the power of the moment to do anything except watch in fascination.

Lion and hyaena populations at Mushara seemed to follow a cyclical pattern of expansion and collapse, accompanied by certain patterns of dominance. At the time of this particular confrontation, a hyaena den was expanding and, as it grew in size and power, it began to show signs of internal strife. Although my most recent goal was to understand dominance in the world of male elephants, I couldn't help noticing the pecking orders that existed within and between other species at Mushara.

One of the burning questions that intrigues researchers studying hierarchies is how dominance is established and held within a society. In order to investigate this in elephants, we designed a method of logging the behaviour of males at the waterhole, which enabled us to determine the ranking of individuals based on the ability of one to displace another from its preferred drinking spot. Over time, we established that an elephant we called 'Greg' was the dominant bull among a large group of residents nicknamed the 'boys' club'.

Now that we had identified our don, I was interested in how long he would maintain his reign. Among primates, retaining the top position in the hierarchy varies from a couple of months in some species to three years in the olive



baboon, with the dominant individual usually overthrown by being killed or wounded beyond the ability to challenge his successor. When opposed, a human leader might surrender peacefully, negotiate a truce, flee or fight to the death. Elephant bulls have been known to engage in mortal combat, so it could be that they too remain in power until they are no longer physically fit enough to defend their position. Then again, the length of reign could also be character-dependent, as is the case in some human societies.

From our data analysis, we started to see that Greg was both firm with bullies, to whom he often exhibited aggressive behaviour, and kinder to the youngsters, with whom he would engage in more affiliative or affectionate interactions. In fact, when we analysed his data across six seasons (2005–10), he always scored highest in terms of assertive actions, which indicates that aggression is an important feature of maintaining dominance.

Yet he was very patient with the younger bulls, always ready for a gentle spar or a trunk over the head. On one occasion, we even witnessed him allowing a youngster to suck on his tusks, a behaviour I had never seen and one in stark contrast to that shown by other middle-aged males, which were quick to

jab at young bulls when they'd had enough of their playful provocations. This combination of toughness and gentleness suggested that Greg knew how to wield the carrot and stick among his constituents, and it seemed to keep him at the top of the hierarchy.

I couldn't help but wonder whether a longer reign by a don would foster social stability in this bull population. This is not a purely academic question. Stability is crucial for survival in highly social and long-lived species, from primates to killer

We started to see that Greg was both firm with bullies, to whom he often exhibited aggressive behaviour, and kinder to the youngsters, with whom he would engage in more affiliative interactions

whales to elephants. And, as it turns out, the dry environmental conditions of 2005 and 2007 did help to foster a stable dominance hierarchy. Under Greg's leadership, in these years, elephant A always won challenges with B who always defeated C – and never the reverse. This situation differed from that of the very wet years of 2006 and 2008, when the increase in water availability coincided with a lack of linearity in the dominance hierarchy and an increase in aggression within our study group, particularly between the younger bulls.



ABOVE The moment of reckoning. In what may be the first recorded instance of a coalition of male elephants, four bulls – hitherto friends and allies of Mike – face off against their second-in-command. The switch in allegiance appeared to have been instigated by Kevin (second from the left) as a way of elevating himself within the hierarchy.

OPPOSITE The trunk-to-mouth greeting ritual, similar to a handshake, is an important sign of respect and is learned at a young age.

Despite the stability of the hierarchy in 2005, however, I learned one day that there were some unexpected exceptions. The day started out just like any other for a small contingent of the boys' club gathered at the waterhole. Kevin, Stoly, Jack and Abe were having a fairly peaceful drink when I noticed Mike, a gentle giant and the second-ranking bull, making his way along south-west elephant trail. He sauntered along with his habitual slow gait, but when he got to the edge of the clearing

There they stood, four very large elephants forming a grey brick wall, staring Mike down aggressively

he stopped short, as if suddenly aware of the presence of an elephant he hadn't expected to find.

Mike froze in place for a long time, seemingly uncertain whether to approach the water or wait until the others had departed. This was a strange turn of events, since these bulls had always been Mike's allies. And even though Kevin, the

third-ranking bull at the time, was a bully and had clearly been working hard to exhaust Mike during the course of the season, the second-in-command always seemed able to keep him at bay. Perhaps Kevin had finally worn Mike down?

As Mike stood there, he suddenly reminded me of the Cowardly Lion in *The Wizard of Oz*, a formidable beast holding his tail (or, in this case, sucking his trunk) and shuddering in fear. Clearly, something had happened to change the social dynamic of the boys' club. Mike's confidence appeared completely shattered.

The bull cowered at the edge of the clearing for an hour with his trunk hanging over one tusk. Having been familiar with his social habits, we couldn't figure out the cause of his hesitancy.

His buddies were all drinking and he seemed more than anxious to join them, but it was as if some mysterious force was holding him back. We waited to see what would happen next.

Finally, after much deliberation, Mike made his move. As soon as he took a step forward, however, Kevin stopped drinking and positioned himself at the head of the

waterhole. He held his head up and ears out, his eyes fixed on the intruder. Mike seemed to brace himself for a confrontation and continued walking.

At this point, we witnessed something extraordinary. Kevin's behaviour appeared to stimulate a cascade of similar behaviours in the other three bulls. Stoly, Jack and Abe looked up at Mike and immediately stopped drinking. Stepping away from the water, they formed a line with Kevin at the helm. All four elephants now stood with their heads up and ears held out, challenging Mike.

Kevin appeared to have orchestrated this coalition. I couldn't figure out how he had done it, and I could only guess that he was attempting to finally grab power and secure the spot as second-in-command in the boys' club pecking order – a position Mike had held for the past two seasons.

There they stood, four very large elephants forming a grey brick wall, staring Mike down aggressively. Mike went back to sucking on his trunk and looked at the others for some time, as if waiting for them to stand down and greet him. But his



erstwhile friends showed no signs of backing off. Eventually Mike relented and slowly headed down to the end of the trough where he drank quietly on his own at the lowest-ranking position.

Up in the tower we shook our heads in amazement. Clearly, some drama had played itself out away from our observation tower. What had happened in the bush to generate such tension between these former allies? What had we missed?

I was fairly certain that none of the other bulls would have behaved this way on their own. How had Kevin succeeded in rallying the trio to his side? And what advantage, if any, did Stoly, Jack and Abe gain by switching their allegiance? For Kevin, the benefit seemed obvious. He

Clearly, some drama had played itself out away from our observation tower. What had happened in the bush to generate such tension between these former allies?

was now one step away from taking over from Greg and becoming the don himself. Kevin had succeeded by forming a coalition.

This kind of manoeuvring is well known in primate societies, where an upwardly mobile individual will gather some cronies in order to topple a dominant animal. The behaviour has been documented in baboons, chimpanzees and gorillas – and humans have been at it throughout our history. To my knowledge, though, I had just witnessed the first recorded instance of a male coalition in elephant society. ▶





As a scientist, I couldn't know the state of Mike's psyche, but I felt certain that his chances of regaining the spot near the top of the hierarchy were over

So, here was evidence that coalition behaviour could be a real force in the boys' club. But how lasting were its effects? Was this a permanent dethroning of the prince? Did this mean that Kevin would eventually take on Greg? He had not prevailed in a challenge to Greg when he was in musth at the beginning of the season, but perhaps with some formidable allies in tow he'd be more successful in the future.

For the rest of the season after the coup we observed that Mike took well over an hour to break cover and enter the perimeter of the waterhole. When he eventually started his approach it was with the slowest gait I had ever seen, almost as if his feet were too heavy to lift. As a scientist, I couldn't know the state of Mike's psyche, but I felt certain that his chances of regaining the spot near the top of the hierarchy were over. And when I saw him a year later, at the beginning of 2006, it was clear that this was the case.

He appeared on the scene with one of his magnificent tusks broken, carrying himself as if painfully aware of his new lowly rank. And there was no sign of any allies to give a comforting trunk-to-mouth



ABOVE Full contact combat. Fights such as these are rare, but can result in mortal injuries.

LEFT The author.

OPPOSITE Luke (left) and Jack (right) engage in a trunk wrap. Only highly bonded individuals exhibit such vulnerability and seemingly affectionate (or affiliative) behaviour.

greeting or body contact. It was hard to watch this totally dispirited animal. It reminded me of the painful hyaena cries that had woken me on that earlier night – another brother had fallen from grace. **AG**

Caitlin O'Connell and her husband, Tim Rodwell, run Utopia Scientific, a non-profit organisation created to promote elephant conservation and scientific understanding. If you'd like to get involved, O'Connell accepts a small number of contributing volunteers to help with her research. E-mail ceoconnell@utopiascientific.org or visit www.utopiascientific.org for more details.



Caitlin O'Connell is the author of *The Elephant's Secret Sense*. Her most recent book, *An Elephant's Life*, is a large-format, full-colour volume of photo essays that provides a uniquely rich understanding of what it's like to grow up and live within the complexities of elephant society. Her third release, *The Elephant Scientist*, is aimed at high-school students and chronicles O'Connell's interest in and discoveries about elephants. All are available from www.amazon.com

