

<http://www.forbes.com/2009/09/12/science-elephants-humans-opinions-contributors-neurobiology.html>



Kin Under Skin

G.A. Bradshaw

William is an executive at a Wall Street firm. He has three children, is on the arts board, and is easily the club's best tennis player. No one would guess that the pressed white shirt he wears every day hides cigarette burns and the ragged scars of abuse. William never knew a father's love or a secure home until his mother remarried. It was then he learned how to play tennis, laugh and watch television on the couch with a bowl of popcorn, a stepfather's arm around his shoulder and a mother's hand on his knee.

When William made partner, his wife booked him a ticket to Africa to celebrate his achievement. It was there he first met Kani. The safari guide had pointed out Kani in camp. Without words, there was a flash of recognition. Kani had also suffered as a child; he was orphaned after witnessing his family hacked to death by angry villagers. Fortunately, a loving family took him in. The first years were hard, but eventually he matured into an upstanding member of the community with children of his own.

Both William and Kani had brothers who were less fortunate. Brian and Mukiri never had the opportunity to heal from their violent wounds. Each grew up on his own, lacking the love and reassurance of a father figure who could guide him to manhood. At age 16, Brian was killed in a drug deal gone bad. At 14, Mukiri was gunned down by authorities. Standing beside the Land Rover, William gazed out over the savannah at the awesome bulk of an African bull elephant. The giant, Kani, turned his head and the two locked eyes. "We survived," they said. "We survived."

An elephant's brain is nearly four times the size of a human's. The added volume affords elephants the prodigious memory needed to store a vast knowledge of elephant society and the complexities of African life. Elephant matriarchs recognize over 100 different relatives and friends, and when conditions are harsh, they can navigate scores of miles to lead their families safely to food and water.

Despite the difference in size, human and elephant brains are surprisingly similar. Neuroscience reveals there are no appreciable differences in brain structures and mechanisms between humans and other animals. Even birds, with evolutionary history that took a separate path, have brain functions and capacities convergent with their mammalian counterparts.

This cerebral overlap accounts for the similarities between William and Kani. Though man and elephant grew up in different



skins and on different continents, they share similar stories and endings because of a common neurobiology. Brain science also explains why they became who they are today and their brothers did not. Mental receptivity and brain plasticity endow the elephant matriarch with wisdom--and allow human children to learn Japanese, Swahili and English simultaneously while adults stumble through their menus in Paris, trying to recall college French. Sadly, it is the same plasticity that makes humans and elephants vulnerable to suffering. Abuse and neglect leave enduring scars. What we experience in the outside world penetrates deep inside, even to the point of turning genes on and off.

Traumatic memories persist, but wrongs can be righted with love. For William, it came in the form of a stepfather he could trust. For lucky orphans like Kani, it is the David Sheldrick Wildlife Trust, outside Nairobi. There, from infancy to teenhood, orphaned elephants are nurtured and taught elephant ways and values by caregiving African men so that they are able to rejoin their pachyderm kin in the wild expanses of Kenya.

Science increasingly reveals that nature has a face. The stories of William and Kani suggest that what we do and how we treat each other can leave a long-lasting legacy on the neurons and synapses of the brain. A polar bear drowning in Arctic waters, a parrot alone in a metal cage and a child abandoned are variations on the same theme. Saving the elephant or the whale is a way to save ourselves and our children. We are kin under skin. *G.A. Bradshaw, Ph.D., is director of the [Kerulos Center](#) and the author of [Elephants on the Edge: What Animals Teach Us About Humanity](#), to be published Oct. 6, 2009 by Yale University Press.*

