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A Primate's Memoir

Robert Sapolsky

Robert M. Sapolsky

A PRIMATE'S MEMOIR

Love, Death and Baboons
in East Africa

VINTAGE BOOKS

London

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To Benjamin and Rachel

Robert M. Sapolsky is Professor of Biology and Neurology at Stanford University, and a research associate with the Institute of Primate Research, National Museums of Kenya. He is the author of *The Trouble with Testosterone* and *Why Zebras Don't Get Ulcers*. He lives in San Francisco.

ALSO BY ROBERT M. SAPOLSKY

*The Trouble with Testosterone
And Other Essays on the Biology of the Human
Predicament*

*Why Zebras Don't Get Ulcers:
A Guide to Stress, Stress-Related Diseases, and Coping*

*Stress, the Ageing Brain, and the Mechanisms
of Neuron Death*

ACKNOWLEDGMENTS

This is a memoir of my more than twenty years spent working intermittently in a national park in East Africa. The stories are true but, as is often the case in such retellings, subject to a bit of literary license that I want to describe here. The story of Wilson Kipkoi is true in most details. However, names and some other details have been changed to protect anonymity. The final chapter, unfortunately, is true in all its devastating details; however, here, too, I have changed names and certain characteristics. The chronology of the various chapters has been expanded in some places, truncated in others. In a few cases, the sequence of some stories has been changed; the sequence of all events in the lives of the baboons, however, is unchanged. Finally, a number of humans, and a number of baboons, represent composites of a few members of their species. This was done to keep down the cast of characters coming and going—for example, within the human realm, a particular game-park ranger, British tour operator, or tourist-lodge waiter may be a composite of a few individuals. All of the major baboon figures are real individuals, as are the major human characters—Richard, Hudson, Laurence of the Hyenas, (the late) Rhoda, Samwelly, Soirowa, Jim Else, Mbarak Suleman, Ross Tarara, and, of course, Lisa are all real people. I, to the best of my knowledge, am not a composite.

A number of individuals helped me with fact checking, reading part or all of this book or, in the case of Soirowa, who cannot read, having sections in it related, in order to

confirm the accuracy of facts as they remember them. As such, I thank Jim Else, Laurence Frank, Richard Kones, Hudson Oyaro, and Soirowa. I also thank Colin Warner for some formal fact checking in the library, and John McLaughlin, Anne Meyer, Miranda Ip, and Mani Roy for help in proofreading the manuscript. Dan Greenwood and Carol Salem shared stories with me of their travels in East Africa, and I thank them for that. I thank Jonathan Cobb, Liz Ziemska, and Patricia Gadsby for their priceless editorial advice when reading what was a proto-version of this book, a number of years ago.

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should have learned back in Creative Writing 101. It has been a pleasure working with you all.

And finally, I thank my wife, Lisa, the love of my life, who has shared so many of these moments in Kenya with me.

A final note: The depredations and plunderings of colonialism in Africa are now a thing of the past. However, the West often continues to exploit Africa in far subtler ways, even on those occasions when intentions are the best. I have now spent more than half my life connected with Africa, and I have intense feelings of warmth, respect, and gratitude for the place and my friends there. I deeply hope that I have not inadvertently been exploitative in any way in these writings. This was the last thing I would have intended.

Part 1

The Adolescent Years: When I First Joined the Troop

1

The Baboons: The Generations of Israel

I joined the baboon troop during my twenty-first year. I had never planned to become a savanna baboon when I grew up; instead, I had always assumed I would become a mountain gorilla. As a child in New York, I endlessly begged and cajoled my mother into taking me to the Museum of Natural History, where I would spend hours looking at the African dioramas, wishing to live in one. Racing effortlessly across the grasslands as a zebra certainly had its appeal, and on some occasions, I could conceive of overcoming my childhood endomorphism and would aspire to giraffehood. During one period, I became enthused with the collectivist utopian rants of my elderly communist relatives and decided that I would someday grow up to be a social insect. A worker ant, of course. I made the miscalculation of putting this scheme into an elementary-school writing assignment about my plan for life, resulting in a worried note from the teacher to my mother.

Yet, whenever I wandered the Africa halls in the museum, I would invariably return to the mountain gorilla

diorama. Something primal had clicked the first time I stood in front of it. My grandfathers had died long before I was born. They were mythically distant enough that I would not be able to pick either out in a picture. Amid this grandfatherly vacuum, I decided that a real-life version of the massive, sheltering silverback male gorilla stuffed in the glass case would be a good substitute. A mountainous African rain forest amid a group of gorillas began to seem like the greatest refuge imaginable.

By age twelve, I was writing fan letters to primatologists. By fourteen, I was reading textbooks on the subject. Throughout high school, I finagled jobs in a primate lab at a medical school and, finally, sojourning to Mecca itself, volunteered in the primate wing of the museum. I even forced the chairman of my high school language department to find me a self-paced course in Swahili, in preparation for the fieldwork I planned to do in Africa. Eventually, I went off to college to study with one of the deans of primatology. Everything seemed to be falling into place.

But in college, some of my research interests shifted and I became focused on scientific questions that could not be answered with gorillas. I would need to study a species that lived out in the open in the grasslands, with a different type of social organization, a species that was not endangered. Savanna baboons, who had struck no particular chord in me before, became the logical species to study. You make compromises in life; not every kid can grow up to become president or a baseball star or a mountain gorilla. So I made plans to join the baboon troop.

I joined the troop in the last year of the reign of Solomon. In those days, the other central members of the troop were Leah, Devorah, Aaron, Isaac, Naomi, and Rachel. I didn't plan beforehand to give the baboons Old Testament names.

It just happened. A new adult male, leaving the troop he grew up in, would transfer into the troop, and during the few weeks when he'd vacillate about joining permanently, I would hesitate about giving him a name. I'd just refer to him in my notes as the new adult transfer, or NAT, or Nat, or, by the time he decided to stay forever, Nathaniel. Adam was first known as ATM, for adult transfer male. The small kid who was first abbreviated as the SML kid then turned into Samuel on me. At that point I just gave up and started handing out the prophets and patriarchs and judges left and right. I would still occasionally stick with a purely descriptive name—Gums or Limp, for example. And I was way too insecure in my science to publish technical papers using these names—everyone got a number then. But the rest of the time, I wallowed in biblical names.

I have always liked Old Testament names, but I would hesitate to inflict Obadiah or Ezekial on a child of mine, so I ran wild with the sixty baboons in the troop. Plus, clearly, I was still irritated by the years I spent toting my Time-Life books on evolution to show my Hebrew school teachers, having them blanch at such sacrilege and tell me to put them away; it felt like a pleasing revenge to hand out the names of the patriarchs to a bunch of baboons on the African plains. And, with some sort of perversity that I suspect powers a lot of what primatologists do, I couldn't wait for the inevitable day that I could record in my field notebook that Nebuchanezzar and Naomi were off screwing in the bushes.

What I wanted to study was stress-related disease and its relationship to behavior. Sixty years ago, a scientist named Selye discovered that your emotional life can affect your health. It struck the mainstream doctors as ludicrous—people were perfectly accustomed to the idea of viruses or bacteria or carcinogens or whatnot getting you sick, but your emotions? Selye found that if you got rats upset in all sorts of purely psychological ways, they got sick. They got

ulcers, their immune systems collapsed, their reproduction went to hell, they got high blood pressure. We know now exactly what was happening—this was the discovery of stress-related disease. Selye showed that stress was what you were undergoing when emotional or physical disturbances threw your body's balance out of whack. And if it went on for too long, you got sick.

That last piece has been hammered home with a vengeance—stress makes all sorts of things in the body go bad, and in the years since Selye, people have documented numerous diseases that can be worsened by stress. Adult onset diabetes, muscle atrophy, high blood pressure and atherosclerosis, arrested growth, impotency, amenorrhea, depression, decalcification of bones. You name it. In my laboratory work, I was studying how, on top of all that, stress can kill certain brain cells.

It seemed a miracle that any of us survived. But clearly we did. I decided that, in addition to my laboratory work on neurons, I wanted to study the optimistic side of it—how come some of us are more resistant to stress than others? Why are some bodies and some psyches better at coping? Does it have something to do with your rank in society? If you have lots of relatives, if you hang out with friends? If you play with kids? If you sulk when you're upset about something or if you find someone else to take it out on? I decided to go study this in wild baboons.

They were perfect for it. Baboons live in big, complex social groups, and the population I went to study lived like kings. Great ecosystem, the Serengeti. Grass and trees and animals forever, Marlin Perkins country. The baboons work maybe four hours a day to feed themselves; hardly anyone is likely to eat them. Basically, baboons have about a half dozen solid hours of sunlight a day to devote to being rotten to each other. Just like our society—few of us are getting hypertensive from physical stressors, none of us are worrying about famines or locust plagues or the ax fight

we're going to have with the boss out in the parking lot at five o'clock. We live well enough to have the luxury to get ourselves sick with purely social, psychological stress. Just like these baboons.

So I would go out and study the behavior of baboons, see who was doing what with whom—fights, trysts and friendships, alliances and dalliances. Then I would dart them, anesthetize them, see how their bodies were doing—blood pressure, cholesterol levels, rate of wound healing, levels of stress hormones. What would individual differences in behavior and psychological patterns have to do with the individual differences in how their bodies were working? I wound up studying only the males. You wouldn't want to anesthetize females when they were pregnant, or when they had a dependent nursing kid, and that's most of the time for most of the females. Thus, I settled in with the males and planned to get to know them very well.

It was 1978; John Travolta was the most important human alive, white suits were sweeping our proud nation, and Solomon was in the final year of his rule. Solomon was good and wise and just. Actually, that's nonsense, but I was an impressionable young transfer male at the time. Nevertheless, he was a pretty imposing baboon. For years, the anthropology textbooks had been having a love affair with savanna baboons and their top-ranking male, the alpha male. According to the books, the baboons were complex social primates living in open grasslands; they had organized hunts, a hierarchical rank system, and at their core was the alpha male. He led the troop to food, spearheaded the hunts, defended against predators, kept the females in line, changed the lightbulbs, fixed the car, blah blah blah. Just like our human ancestors, the textbooks ached to say, and sometimes even did. Most of that turned out to be wrong, naturally. The hunts for food were disorganized free-for-alls. Furthermore, the alpha male couldn't lead the troop to food during a crisis, as he

wouldn't know where to go. The males transferred into the troops as adolescents, while the females spent their whole lives in the same troop. Thus, it would be the old females who remembered the grove of olive trees past the fourth hill. When predators attacked, the alpha male would be in the thick of it, defending an infant. But only if he was absolutely certain that it was his kid who was at risk of becoming someone's dinner. Otherwise, he had the highest, safest spot in the tree to watch the action. So much for Robert Ardrey and 1960s anthropology.

Nevertheless, within the small, parochial, self-interested, unreflective, petty world of male baboons, being alpha was hot stuff. You might not really be the troop leader, but you got to do about half the matings, sit in the shade when it was hot, enjoy the best food with a minimum of effort merely by ripping off someone else's lunch box. And Solomon excelled at all of this. He had been alpha male in the troop for three years, an inordinately long time for a male's tenure. The grad student who preceded me with the troop said that Solomon had been a ferocious and canny fighter back when he defeated his predecessor, but by the time I got there (and secretly instituted the name Solomon—his boring published identification number I will never divulge), he was in his silver years and resting on his laurels, persisting out of sheer psychological intimidation. He was damn good at it. He hadn't had a major fight in a year. He would just glance at someone, rouse himself from his regal setting and saunter over, at the most swat him, and that would settle things. Everyone was terrified of him. He swatted at me once, knocked me off a rock, shattered my going-away-to-Africa-gift binoculars, left me terrified of him as well. I immediately dropped any plans I might have had of challenging him for the alpha position.

Most of his days he spent lounging with the many infants who he felt certain were his kids (i.e., no one else went near the female baboon during the part of the cycle

she conceived), stealing the occasional tuber or root that someone else had dug up, being groomed, consorting with new females in heat. As of late, the hot number in the troop was Devorah, daughter of Leah, who was probably the oldest member of the troop, the alpha female, and one incredibly tough cookie. Male baboon ranks shift over time; as someone grows into his prime, someone else snaps a canine and is out of business. Females, on the other hand, inherit their rank from their mothers; they get the rank below mom, kid sister gets one below that, and so on, until the next lower-ranking family starts. So Leah had been sitting on top of that pile for at least a quarter of a century. Leah would harass Naomi, around her age and the matriarch of a much lower-ranking family. Old Naomi would sit down to a midday rest in some nice spot in the shade, and Leah would bash on over and boot her out. Naomi, unruffled, would find someplace else to sit, and, unable to resist, Leah would do it again and again. I would marvel at the antiquity of it. Some years before, Jimmy Carter was jogging at the White House, people were buying Pet Rocks and trying to look like Farrah Fawcett-Majors, and the aging Leah was giving Naomi grief. Even further back, the My Lai massacre occurred, people were wearing cranberry bell-bottoms and dancing on waterbeds, and the prime-aged Leah was forcing Naomi to groom her. Further back, Lyndon Johnson was showing off his gallbladder scar while the adolescent Leah was waiting for Naomi to fall asleep during her midday nap before hassling her. And way back when people were still protesting the Rosenbergs' being executed and I was positioned in my grandmother's lap in her nursing home for us to be photographed with the Brownie camera, Naomi, the toddler, had to give the branch she was playing with to Leah. And now they were two decrepit old ladies still playing musical chairs in the savanna.

Leah had given birth to a whole line of strapping, confident sons. In various social species of animals, either males or females pick up and move to a different social group around puberty—one of those incest avoidance deals. Among baboons, it's the males who get this undefined itch of wanderlust, and Leah's sons were raising havoc far and wide throughout the troops of the northeast Serengeti. Devorah was her first daughter in quite some time, maybe even ever. She was just hitting puberty, and Solomon was going wild about her. Devorah was highly desirable by any male baboon's standards. She was well fed, in good health, and thus very likely to conceive and carry through her pregnancy. And once the kid was born, no one was going to mess with it; it would survive. From the standpoint of evolutionary theory, of leaving as many copies of your genes in future generations as possible, all that jazz, this was one highly desirable young primate. I never thought that Devorah was a big deal (unlike Bathsheeba, whom I had a crush on, and who was soon to meet a tragic end at the canines of that bastard Nebuchanezzar), but she certainly did not lack for confidence. When male baboons who are getting along well run into each other and want to say howdy, they yank on each other's penises. I think it is, in effect, their way of saying, "We're getting along so well, I trust you so much for this one second, that I'm gonna let you yank on me." Like dogs rolling on their backs to let each other sniff at their crotches. Among male primates, this means trust. All the guys did it to the other guys that they were pals with. And in addition, Leah and Devorah would do penis-grab greetings on males. Only females I ever saw do it. I saw Devorah pull this off on Nebuchanezzar, around the time he first joined the troop. He comes sauntering along, having just spent the morning causing trouble and feeling pretty good about himself, passes this little ol' lady and her young daughter, Leah and Devorah, coming the other way, don't reckon he knows

them yet, but he does the male baboon equivalent of tipping his hat—flashing his eyebrows—and this young thing reaches over, and, well, she just yanks his balls, good solid heft, and goes walking on with the old biddy. Nebuchanezzar actually crouched to get a better view of her departing rear end, perhaps to be certain that she wasn't really some fella who just came past.

Thus, Devorah was sailing through puberty without a care, without a hint of acned insecurities, Solomon just waiting for her to smell a little sexier, get a slightly larger estrus swelling, perhaps, before starting to squire her around. Such was not the destiny, however, of poor Ruth, also going through puberty at that time. Hers was the more usual adolescence. She was from an obscure, low-ranking lineage and had the constant, swiveling, nervous movements of someone who gets dumped on a lot. Years later, in middle age, she would still have an anxious hyperadrenal look, and her umpteen kids would have the same frazzled edge to them. But this year, her major problem was that she was slowly being driven mad by estrogen. Puberty had hit, and she was getting estrus swellings and steroids were poisoning her brain, and all she could think of was male baboons—but no one was interested in her. For about the first six months when they start cycling and getting estrus swellings, female baboons are probably not yet really ovulating; the system's just warming up. Almost certainly, to the males, this translates as the female just not quite yet smelling sexy enough, the estrus swelling on her rear not quite yet having that irresistible glint in the African twilight.

Meanwhile, poor Ruthie was in hormonal limbo and going bonkers. She was after all the big guys, and no one would even look at her. Solomon would step from out of the bushes and sit down in the field, and Ruth would be up in a flash, scurrying over from whatever she was doing to stick her tush in his face, as per the custom of female baboons in

estrus, in the hope that he would do something more than sniff. No dice. Or ol' Aaron, another adult male, would be trying to accomplish the simple task of walking over to the fig tree, and Ruth would be all over him, running two steps ahead to stop and present; he'd pass, she'd spring again and try it from a different angle. How I remember Ruth best is from the summer of 1978: standing, preening, presenting her behind, arching her back every which way, looking back over her shoulder to gauge the effect, trying to get that perfect irresistible pose, panting with the sheer pleasure of the proximity to Solomon, who sits there, the thug, distractedly picking his nose and ignoring her.

Eventually, Ruth had to settle for Joshua, a young lanky kid who had transferred into the troop the year before. Quiet kid, didn't make trouble, had a serious, unflappable look about him. Masturbated a lot in the bushes. By October 1978, Joshua had developed a crush on Ruth, who was none too pleased. For two months he pursued her ardently. He'd lope after her and she'd run away with her adrenaline twitches. He'd sit next to her and she'd get up. He'd groom her carefully, pulling ticks off of her, and she'd scoot off the second he'd stop, to go moon around some hunk male. Once, while she preened and presented to Aaron, Joshua sat watching and got an erection.

Such shows of male devotion occasionally do move even the most crazed of adolescent female baboons, and by December, Joshua was with her constantly during her estrus swellings. They were not particularly adept at the whole business, and even years later, Ruth's incredible nervousness when any male actually did attempt to approach her had probably cut into her reproductive success considerably. Nevertheless, in May, she gave birth to Obadiah.

This was one weird-looking kid. He had a narrow head and long stringy hair that formed an elongated wing in the rear; he looked like a dissipated fin de siècle Viennese

neurotic. Ruth was a nervous wreck of a mother, retrieving him when he got two steps from her, scampering off with him whenever another female approached. Joshua turned out to be a rarity among male baboons, a superb, devoted father. This actually makes sense to people who worry about such things. Your average female—more desirable than Ruth but less so than Devorah—will mate with perhaps five or six different males over the week of her estrus. A low-ranking guy on the first day, when she is least likely to be ovulating. By a day later, he's forced away by someone higher ranking, and so on, until a very high ranking male (perhaps the alpha) is with her on her peak day. Thus, five months later if a kid shows up, all anyone can do is get out his calculator and decide that he has a 38 percent chance of being the father. Expect no help from him in that case. In the case of Joshua, however, the sole suitor of Ruth for her months of young, blushing estrus swellings, he was 100 percent sure. To use the harsh economic terms of sociobiologists, it was in his evolutionary interests to parentally invest in the kid.

He carried Obadiah around when Ruth was tired, helped him climb up trees, nervously stood by him when lions were spotted. There was a hint of over-protection, perhaps; Joshua clearly didn't understand child play. Obadiah would be in there wrassling with his buddies, having a fine time, when Joshua would suddenly pounce into the center, defending his child from his menacing playmates, bowl the kids over, tossing them every which way. Obadiah would look confused, perhaps the nonhuman equivalent of the excruciating embarrassment kids feel when parents prove how lame they are. The kids would run screaming to their moms, who'd give Joshua grief, even chase him at times. But he never learned. Years later, when he was the alpha male, Joshua would still be breaking up Obadiah's adolescent wrestling matches with his friends.

Around the same time that Joshua joined the troop, Benjamin showed up. They were contemporaries, although Joshua came from the troop on the eastern mountain, and Benjamin came from the troop on the Tanzanian border. Still just emerging from my own festering adolescent insecurities, I had a difficult time not identifying utterly with Benjamin and his foibles. His hair was beserko. Unkempt, shocks of it sticking out all over his head, weird clumps on his shoulders instead of a manly cape that is supposed to intimidate your rivals. He stumbled over his feet a lot, always sat on the stinging ants. He had something odd going on with his jaw so that every time he yawned, which was often, he had to adjust his mouth manually, pull his lips and cheeks back over his canines. He didn't have a chance with the females, and if anyone on earth had lost a fight and was in a bad mood, Benjamin would invariably be the one stumbling onto the scene at the worst possible moment. One day, early in that first year in the troop, I was observing Benjamin. When collecting behavioral data, you pick someone randomly (so as not to bias the data by picking only those who are doing something exciting), and follow him for an hour, recording every behavior. It was midday, and two minutes into the sample, Benjamin took a nap under a bush. An hour later, at the end of that riveting sample, everyone had moved off. When he awoke, he didn't know where the troop was, and neither did I. We were lost together. I stood on the roof of the Jeep and scanned with my binoculars. We looked at each other. I finally spotted them, little black specks a few hills over. I drove off slowly, he ran after me, happy ending. After that, he would sit next to me when I worked on foot, sit on the bonnet of the Jeep when I worked out of the vehicle. It was around then that I decided he was my favorite baboon and bestowed upon him my favorite name, and everything he ever did subsequently reinforced that

feeling. Many years later, long after he is gone, I still keep his picture with me.

Even younger than Joshua and Benjamin were David and Daniel. They had just joined the troop, still seemed frazzled by the trauma of their first transfer, the months of being outsiders in a new troop, away from friends and family, amid hassling strangers, on the edge of the troop and exposed to predators. They hadn't come from the same natal troop, but they were lucky enough to have shown up at the same time, and lucky enough to have temperaments that caused them to cling to each other instead of harass each other. They were inseparable, little more than kids, and spent their time playing and wrestling. One afternoon, I discovered the two of them off in the field near the forest, managing to panic an entire nursery herd of baby giraffes, stampeding them back and forth across the savanna. Each giraffe probably weighed fifty times as much as Daniel or David and could have stomped them easily. Instead, the disconcerted baby giraffes ran away from these strange tiny furball devils yapping at their feet.

There was one adult male who I felt certain had grown up in the troop, had never transferred out. Of the hundreds of baboons I would eventually know, Job had to have been dealt the worst set of cards. Savanna baboons are gorgeous animals; muscled, contoured woolly bears. Job was rail thin and had far too large a head for his body. He had tremors and spasms and palsies and seizures. His hair fell out intermittently, and each rainy season, his orifices would bloom with fungi. He had long fragile limbs and mange on his tail. As far as I could tell, he'd never hit puberty: undescended testes, no secondary sexual characteristics like large canines or cape hair or a deep voice or muscles. He was no idiot, though, and went about life with the alert canny vigilance of someone honed by constant fear. I had all sorts of theories as to what was wrong with him, gleaned from endocrinology textbooks that swam with

disturbing pictures of glandular disasters, people standing naked in front of height charts, their eyes blacked out with a rectangle. Hypothyroid cretins and acromegalic freaks, exophthalmic nightmares and card-carrying hermaphrodites. Klinefelter syndrome was my leading guess for Job, but I never found out. He was undiagnosed, beyond being certifiably weird and sad.

Predictably, he was tortured, chased, harassed, beaten, mauled, slashed, and terrorized by every male in the troop who needed an outlet (and more than once by both Leah and Devorah). New transfer males, pipsqueak adolescents, would be shocked and pleased to find that there was at least one individual lower ranking than they in their new troop. In the years that I knew him, I never saw him win a single dominance interaction. His only solace was Naomi's family—old Naomi, daughter Rachel, and grandkid Sarah. To use technical lingo, Naomi's family were mensches, and they soon became my favorite lineage. There was no mistaking them or their relatedness. They all had short bowlegs and little round tugboat torsos, and these crazy muffy faces that made them look like a family of barn owls. They were a middle-ranking lineage, had many friends, and helped each other. And helped Job. I could never prove it, but I felt sure that Job was Naomi's son, the troubled sick one who could never have survived a transfer to another troop and never had the androgenic drive to try, that adolescent male itch to pick up and try one's luck in the New World of another baboon troop. Naomi fretted over him, Rachel would ferociously defend him from harassing juvenile males, Sarah groomed him. One morning, Job, on the periphery of the troop, was cut off from the rest when he was surrounded by a herd of grazing female impalas. Nearly Bambi, for god's sake, innocuous as you can get, things that baboons *hunt*. But Job became frightened of them, started giving alarm barks until old Naomi and

Rachel waded through the impalas to sit with him till they had gone and he felt safe.

In addition to matriarchs such as Naomi, the troop had some august older males as well. For example, there was Aaron, definitely past his prime, but still a force to be reckoned with. He was decent, quiet, had a lot of affiliative friendships with the females, didn't beat up on anyone too much. He still walked with a limp resulting from his moment with destiny. A few years earlier, Solomon was number 3 in the hierarchy, a young kid on the way up. Aaron was number 2, great shape, on the edge of his primacy, breathing down the neck of the then alpha, someone merely recorded in the archives as Male 203. One memorable morning, Aaron and 203 had their showdown, a stupendous fight that seesawed for hours. And at a critical moment, showing the strategic brilliance that would serve him in good stead for years to come, Solomon entered the fight, ably taking on both while they were preoccupied and exhausted. Result: number 203 dead, Aaron badly injured, Solomon settling in to his reign.

While the troop consisted of sixty-three members in 1979, these were the ones around whom the central events swirled. There were others, of course. Isaac, a young adult male a few years from his prime who was already having the good style to hang out with Rachel's family. Poor bedraggled Miriam, who had an endless string of colicky kids. The young sisters Boopsie and Afghan, who were so slinky and hypersexual, so salacious in the way that they would present to males by sticking their left foot over the guy's face, that I couldn't bring myself to give them matriarchal names from the Good Book.

It was during my first season in the troop that time no longer stood still for Solomon, that the inevitable shadow of mortality finally took form as Uriah. Uriah was a young kid, big as a barn, who transferred into the troop that spring and without any regard for precedent, for history, for the

powers of intimidation, went about overthrowing Solomon. I've always suspected that Uriah was simply too dim to be intimidated by a stylist like Solomon, to appreciate the almost Oriental minimalism with which Solomon sent waves of nervous displacements, controlled the flow of tubers, matings, groomings. Uriah bowled over Joshua and Benjamin, quickly defeated Aaron, Isaac, some of the other big males. On one audacious morning while Solomon was consorting with the estrual Deborah, Uriah stepped between them and attempted to mate with her. Solomon had his first fight in years. Solomon trashed Uriah, gave him a deep canine slash to the shoulder, ripped his upper lip, sent him running with a fear grimace and his tail up in the air (the baboon equivalent of the tail between the legs). And then the next morning, Uriah challenged Solomon all over again.

Over and over it went throughout the spring, Uriah repeatedly being defeated and, apparently incapable of detecting a pattern, coming back again and again. He'd threat-yawn in Solomon's face, fight him over a carcass, scare away females when they groomed Solomon. Getting thrashed repeatedly. And slowly, he was wearing Solomon down. The latter was losing weight, looking more punchy in each fight. When male baboons fight, they lunge at each other openmouthed, flailing with the knife-sharp canines that are longer than those of adult lions. One morning, for the first time, Solomon backed up as the two fenced in this way. This was the first time he had ever given up ground, even for an instant. He ultimately won the fight, but got a facial slash in the process. More challenges, more time spent looking over his shoulder. Uriah was the nightmare of those who age—an opponent too young to know yet what fatigue feels like. One afternoon, between fights with Uriah, Solomon was challenged by another high-ranking male, who, two months earlier, shrank before Solomon's gaze. Solomon won, but it involved more fencing and a

sustained chase where the male reversed on him a few times. The threads were unraveling.

The next morning, Solomon sat next to Devorah, who was not in estrus that week, not sexually receptive. Obadiah had just taken his first few steps; Rachel was sitting near Job; Miriam, two months pregnant, was grooming her youngest kid, who was throwing a tantrum. A quiet, small-town morning. Uriah appeared and stood a dozen yards from Solomon, staring, town no longer big enough for the two of them. And Solomon, like the script specified, looking neither left nor right, walked toward Uriah, turned around, and groveled, belly in the grass, rear end stuck in the air, a male gesture of submission. The transition had occurred.

During that day, Uriah sat and groomed with Leah, Naomi, some of the other females. Solomon, without provocation, attacked Benjamin, mauled Job repeatedly, broke up the play of Daniel and David, chased the terrified Ruth and Obadiah. I would come to recognize this as the typical behavior of a male baboon with problems who wants someone else to pay for them. And Solomon did something else, a behavior I would see only once afterward, again on the day that an alpha male lost his primacy. Debates rage among animal behaviorists as to the appropriateness of using emotionally laden human terms to describe animal behaviors. Debates as to whether ants really have "castes" and make "slaves," whether chimps carry out "wars." One group says the terms are a convenient shorthand for lengthier descriptions. One group says they are the same thing as human examples of these behaviors. Another group says that they are very different, and that by saying that all sorts of species take "slaves," for example, one is subtly saying that it is a natural, widespread phenomenon. My bias is to agree somewhat with this final group. Nevertheless, Solomon did something that day that I think merits the emotion-laden term that is typically used to