

# rain forest wisdom

what gorillas tell us about ourselves

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#### note to reader

There are references throughout this book to the various gorilla subspecies. For details on nomenclature, taxonomy and distinguishing characteristics of these subspecies, please consult chapter six, gorilla nomenclature and species characteristics.



## chapter one

# growing up

The nostalgia of childhood...cutting through the neighbor's yard to meet friends, coming home any time, as long as it's before dark. Times have changed, and so, too, have childhoods, with fences going up restricting kids from the freedoms we remember.

Field studies tell us that young gorillas are given the space to explore, and that they need that space to be tireless learners and spirited playmates. They jump into situations with little or no prodding or guidance by parents. A good hunch is that there's some connection between the confidence of young gorillas and an upbringing filled with the freedom to grow at one's own pace.

But growing up is never easy, especially in the wild. Roughly half of the wild mountain gorilla population does

not survive beyond the age of six. Young gorillas die early for a variety of reasons: they fall from trees, are attacked by predators, succumb to viruses, stillbirths, and poachers. There are still darker fates. Some mountain gorilla infant deaths are caused by infanticide perpetrated by males in order to “acquire” their mother, typically after she emigrates into a group with a child in tow.

Survivors are raised in a stable group, with loyal elders and an assemblage of kin, including half-siblings and even unrelated group members. By the time they can walk, most young gorillas have already absorbed—often through play—adult-like traits, behaviors and skills.

Mastering these skills doesn’t come through boot-camp discipline and training. It comes from learning with others. Together, gorillas learn everything from splitting a stem and removing the pith, to nest building, and grooming.

This chapter takes a close look at a very, *very* traditional upbringing that, in some ways, can seem strangely progressive to those who consider some parenting conventions.



from zero to three: high-octane learners

In the first few months, gorilla babies seem quite human. Soon after birth, infants cling to their mother's chest hairs. The mother shows the newborn to group members, who touch and sniff at their "oohs" and "ahhs".

With their little ones attached, mothers literally carry (or, rather, lumber) on with their lives. They first carry infants under the chest with one arm and hobble on three limbs. Eventually, babies hitch rides on their mothers' backs. Slowly, very slowly, the mothers resume some semblance of life as it was before kids.

“The adult world is being separated from the child’s world, and more children are feeling that childhood is a strange place. Just a generation ago, parents spent much more time including children in the everyday activities of their lives, which promotes confidence and a sense of independence.”

—Eileen Hayes, Parenting Advisor, National Society for the Prevention of Cruelty to Children

#### birth in the wild

Observations of gorilla births in the wild are extremely rare, but anthropologist Kelly Stewart saw one in Rwanda on December 3, 1975. She wrote:

*It was short (a couple of minutes), unaided, and didn’t appear that painful. The mother receded from her group of 12 members, who clustered around her when she went into labor in thick vegetation. She gave birth while squatting, then licked the newborn, chewed the placenta. Soon after birth, the infant was cleaned of mucus, and held closely to the mother’s chest—even*

*being gingerly groomed by the mother's index finger. The newborn was as white as "polished alabaster," but the skin later turned pink. The mother supported the infant with her arm—her hand supporting the head and snuggled and rocked. When the newborn squealed, the mother responded with a soothing belch vocalization, then nestled it to her chest.*

From six months on, infants gain skills at a swift clip. Primatologist George Schaller observed an infant, as young as eight months, attempting to build his own nest. Infants under the age of two craftily completed ground nests and also begin the far trickier task of building tree nests. By two years old, they are learning tactile and visual gestures, primarily for play and eating. One study even described two-year-old gorillas moving to break up fights between adult males.

Feeding progresses, too, so that by the age of three, mealtime is mainly self-service. Most three-year-olds have already mastered basic food processing techniques—splicing stems to reveal the preferred pith inside, stripping leaves



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from vines, and eating stinging nettle or thistle—according to Richard Byrne, of the Scottish Primate Research Group and St Andrews University, who has studied how infants and juveniles process foods. Byrne found that mountain gorillas learn multi-step food processing through “individual exploration,” which involves separating the preferred plant parts from non-nutritious, indigestible or even dangerous parts. They also learn how to gather fruit and to distinguish ripe from unripe fruits.

### young mediators

In a study by Pascale Sicotte, more than 40 percent of all bust-ups between fighting adult male mountain gorillas are made by gorillas between the ages of two to six. A typical gorilla referee will run between the battling males and screech in a high-pitched voice used only in this situation. Referee gorillas cling to one of the battling male’s chests, and might even be carried around for a few paces. These “interpositions” were not directed at any one male, and no

interfering animal was hurt or attacked in these episodes. Sicotte even observed gorillas younger than two years old making vocalizations as their mothers mediated arguments among other members—though it was unclear to her whether these vocalizations were attempts at refereeing or rather responses to a mother’s alarmed state.

By age three, gorillas have already mastered most of the complex food-prepping skills, like separating pith from stems and eating nettles without getting stung, according to primate researcher Richard Byrne.

old-school ties

Gorillas as young as two or three months old start reaching out to others. Because the mother is usually in the silverback’s vicinity, it is the silverback (the principal of a group) that the infant gets to know first. Older infants (around the age of three) tend to spend more time near the silverback than do older members of the group.

Interestingly, orphans tend to have unusually close relationships with the silverback throughout their childhoods,



grooming him more than they groom others. It is thought that creating a bond with a silverback might provide a safer fate for an orphan than creating one with a mother substitute (who might transfer into a strange, new group).

Even at a young age, the benefits of getting along with the silverback are clearly evident, but relationships with other group members are crucial, too. These relationships create options for play and companionship. Later, these childhood relationships often evolve into important social alliances, which, ultimately, form a solid political base gorillas will need as they mature. Consider how young males, for example, pick up the art of protecting the group as “sentries” from older males, an important rung on the group’s hierarchical ladder. Likewise, females observe the importance of grooming by watching their mothers, from whom they also learn the importance of keeping relations with the silverback strong.

what is family?

Gorilla groups are referred to as “groups,” not “families”. Though most, or even all, may be related, the groups change constantly, and can be composed of a jumble of closely related, remotely related or completely unrelated members. They are almost always led by a silverback who will dictate to the group—until he dies or is replaced by a successor, often his son (especially in mountain gorilla groups). Populations within groups change by the addition of new members through births, or migration either into or out of the group.

While a typical infant will spend at least the first few years with its mother and father, this “nuclear” arrangement obviously alters if the mother leaves the group (which is the case with the majority of females) or if the father dies. When a mother and infant join a new group, they must learn to form new ties quickly with non-kin or unrelated adults. Single mothers—and their kids—can face uphill struggles in creating such bonds with members of a new host group.

For gorillas, the larger the groups (generally), the better. More offspring means greater opportunities for all younger members to learn survival skills more quickly. Gorillas with older siblings and peers tend to break bonds of

proximity and contact with adults earlier than those without older siblings and peers. Interestingly, during play, infants prefer to be around juveniles, but at rest, they prefer to be around other infants.

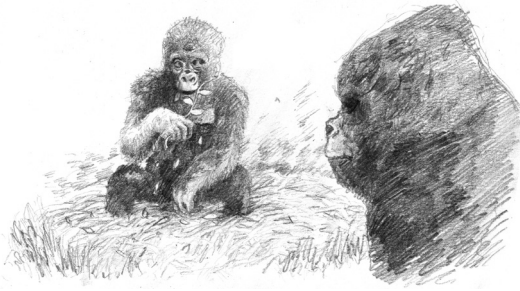
While siblings play an important role, bonds with the mother persist long after the mother is needed for milk or constant vigilance. Even at the age of four, gorillas can still have strong ties with their mothers, either as a source of protection and social support (such as acting as a trusted ally in a dispute with another group member) or as an important mentor in securing strong relationships and kinships.

The closeness between gorilla mothers and their young says a lot about the importance of the connections we make with our children during their formative years. “Nurturing mutual respect between parent and child helps children to socialize with peers and adults,” says Eileen Hayes, author and parenting advisor for the National Society for the Prevention of Cruelty to Children (UK). “Most parents don’t realize that kids actually like taking part in adult activities—like picking up, or dusting, or loading the washing machine. It makes them feel like part of the family. Mutual respect also comes by speaking to children with the patience and

politeness that you show when speaking with a friend,” says Hayes. “Ordering children around abruptly and rudely will only show the child that rude manners are acceptable, and is another way of excluding them and eroding mutual respect,” she added.

the importance of play

Play is a sign of well-being, a platform for learning to communicate, a chance to improve coordination, and to assert independence. Although adult gorillas can accommodate play, they don’t initiate it. There are exceptions, however. Mothers tickle infants and sometimes roll on the ground with them. Some silverbacks have been observed playing with infants.



Typically, active and prolonged play among gorillas starts when the infant is about five months old and begins to taper off around the age of six years. Primatologist George Schaller noted that gorillas might play any time of day, but that it is typical for infants and juveniles to take off on their own and play after midday rests.

After gorillas hit puberty, play is rare. Young and older adults tolerate play around them—and on top of them—but are seldom seen initiating or taking part in play.



**ROLE PLAY** Roleplay offers younger gorillas the chance to practice skills they need later on, such as jumping, swinging, and somersaulting. It also lets them stretch the boundaries

of communication in a non-threatening environment, such as trying out vocalizations of other group members or non-vocal forms of communication (i.e., tactile, auditory, and visual signals). Through role play, they learn to gauge the effect of these new behaviors on others.

**LONE PLAY** Examples of lone play include: climbing, swinging from vines, walking on fallen trees, hitting vegetation, tumbling, jumping, pulling limbs, sliding down vines, doing somersaults, and running back and forth with hands in exaggerated gestures. About half of primatologist George Schaller's observations were of gorillas playing alone. An usually "human" moment of play he encountered was of a gorilla infant placing a huge leaf on its head and standing motionless—in the same way a child may disguise himself with a paper bag.

Allison Fletcher, a researcher of gorilla social development, found that lone play in mountain gorillas peaks by the time they are 18 months old. At this stage, some infants might engage in lone play for periods up to nine minutes an hour. "[Infants] like to play with leaves, swirl and twirl their bodies, and roll in the vegetation," says Fletcher.

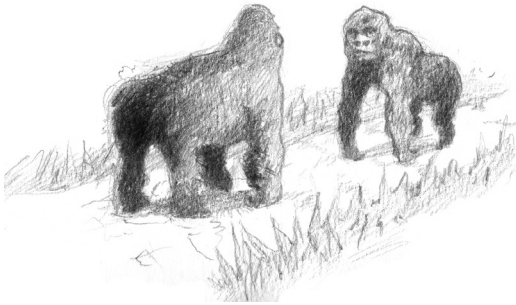


As the infant ages, lone play steadily decreases until it has almost disappeared by the age of 30 months.

**SOCIAL PLAY** Social play can involve wrestling, chasing one another, playing king-of-the-mountain, follow-the-leader, and even doing the conga. Sometimes youngsters wave their hands slowly over their heads while facing or approaching one another.

Play can also be a practice ground for asserting dominance and communicating subordination or passivity. Young gorillas overwhelmed by rough play, for example, do what's called the "submissive crouch," which might be compared to their human cousins crying "Uncle!" The submissive crouch is a surrender gesture and is the opposite of the threat gesture used by young gorillas when playing. When they play, young gorillas practice elements of dominant behavior: direct eye contact, lip tucking, standing on two legs, walking with stiff legs, strutting about, and chest beating. Young males try out menacing facial expressions like the "threat face" in which they open their mouths wide and display their teeth.

Playing infants have also been observed nipping softly at the nape of the neck, like the "mock biting" of mothers.



Young females spend time near mothers with infants, preparing for their future role in adult gorilla society.

Another adult domain—reproduction—s even explored by the young through play. Infants as young as around two years old start what’s called “play copulations.”

#### learning through play

Simone Pika of the Max Planck Institute for Evolutionary Anthropology in Leipzig, Germany, found that captive lowland gorillas aged one to six used 33 distinctive gestures. Interestingly, the three- and four-year-olds used more gestures than the five- and six-year-olds. All 33 gestures were used in the context of play but less than half were used while traveling, suggesting that gorillas use play to try out new gestures and communication strategies.

### leaving the nest

When gorillas reach puberty, adult pressures escalate. The “teen” years, even among gorillas, are awkward for the entire group. During this stage, young males assert themselves, sometimes even competing with the silverback for access to females. Males either remain group members as subordinates to the silverback, or they leave. Childhood, for the gorilla, ends on one message: be my ally or leave.

Adolescent males receive the most aggression from the silverback. There’s a practical reason for this. By puberty—reached around the age eight or nine—almost half of a group’s males will be old enough to venture off to start a new life outside their home or “natal” group, either by pairing up with a female acquaintance from another group, or as a sole male on the lookout for a new group.

Females will make a “transfer” to another group, preferably led by a competent silverback, who will welcome her in. Alternatively, a female might transfer to a new group with a sole male. In order for emigrating gorillas to start a new life in this way, they will have had to master basic survival skills—chief among these being parenting, group collaboration, and foraging.

Experiences in the formative years determine whether they become leaders, followers, loners or family

Some males never settle down and wander as “lone males.” Others may experience a period of solitude but, eventually, take up a partnership with an emigrating female in a similar situation, or join an all-male group.

The course of a gorilla’s life is fairly well set by adolescence. Experiences in the formative years determine whether they become leaders, followers, loners, or family types. Could insufficient playface practice as an infant later cost a lone male when courting? Could poor grooming skills come back to haunt the female who never gets the silverback? Maybe.