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Introduction

This child has two parents. Please alternate calls. It's his father's turn.

—JUSTICE RUTH BADER GINSBURG TO HER SON'S SCHOOL COUNSELOR, MORE THAN HALF A CENTURY AGO

Fathers today are more likely than in the past to find themselves encouraged, permitted, sometimes wanting, at other times compelled, to take on new roles caring for babies and very young children. Some even become primary caretakers of newborns with no mother involved at all. These nurturing men may be bottle-feeding rather than breastfeeding, yet they respond to babies as sensitively as the most caring mother does. Given social science's well-documented finding that everywhere "Fatherhood is culturally defined,"[1] and given the rate at which culture is changing, should anyone be surprised?

Behavioral flexibility, after all, is a human specialty. Why shouldn't paternal behavior morph right along with new socioeconomic and cultural circumstances like women working, lapsing patriarchies, and novel methods for conceiving or feeding babies? Aren't such transformations exactly what we would expect?

Well, actually, no, not if we thought culture alone could produce them. Radiant new fathers deeply involved in the care of their offspring do not appear to be going sullenly "against nature." In fact, their responses are profoundly biological, with more than culture at play, as

scientists discovered when they began to examine what happens in the bodies and brains of men intimately involved with babies. Endocrinologists documented changes in hormone levels that resembled those in mothers, and as neuroscientists started to scan the brains of primary-caretaking men, they found that *their brains as well responded the same way a mother's would*.

On learning this, a mother who gave birth in the twentieth century might well respond with an expletive and an exasperated "Why didn't we know this sooner?" As a mother and a grandmother, and also a primatologist and evolutionary anthropologist, however, I was more than surprised. I was profoundly puzzled. How on Darwin's earth can this be?

I have written whole books about maternal love and ambivalence, with emphasis on the former. Few people could be more aware than I that we humans are mammals whose females invest heavily in their young, gestating, birthing, and then suckling them. Such processes prime mothers to respond to and passionately care about little creatures that need nurturing. Maternal brains are wired to ensure we do so. According to the standard Darwinian script, while females were nurturing babies, males were otherwise occupied, mostly competing for status and mates, often violently or coercively. While a mother's top priority is likely to be the well-being of her children, a male's will be siring more of them. In line with such Darwinian preconceptions, across cultures and through historical time there are few, if any, records of men turning their lives over to babies the way women do. Instead, what we find is a near-universal expectation that baby care is women's work.

Volume after volume chronicling human evolution, conquests, and the history of civilization features the exploits of men, usually men in opposition to or in concert with other men. Pair men with babies, and the search comes up blank. Yet now comes evidence that men who never underwent gestation, never gave birth, much less lactated—men who through most of human evolution and history did not tend babies—respond to them as sensitively as mothers do. When primarily responsible for an infant's care right from birth, men undergo remarkably similar endocrinological and neurological transformations.

Brain networks concentrated in the frontal cortex, areas implicated in conscious planning and decision-making, are activated when a man assists a mother in caring for a baby. This is the same brain region that so dramatically expanded among bipedal apes on their way to becoming (by 300,000 years ago) anatomically modern *Homo sapiens*. But in men for whatever reason taking primary responsibility for an infant right from birth—not simply assisting a mother—something else happens. Evolutionarily far-more-ancient areas of the vertebrate brain are reflexively activated as well.

How could this come about? As Darwin surmised over a century ago, and geneticists have since confirmed, humans evolved from African apes resembling today's chimpanzees and gorillas. But in none of these other great apes do males engage in direct care of babies. In fact, where babies are concerned they often behave in dreadful ways. From my own research I learned that infanticidal tendencies in primate males date back to the earliest members of the order Primates, tens of millions of years ago. Statistically speaking, male great apes are more nearly existential threats to new babies than reliable caretakers. How could such profoundly biological responses emerge as if *de novo,* in a line of apes with so little prior history of paternal care?

No one knows for sure. In fact, until recently, no one was even asking. This book traces my quest to learn when and how nurturing emotions arose in males and to identify what it takes for them to be expressed. It is a story covering millions of years of vertebrate, mammalian, and particularly primate evolution, followed by thousands of years of human evolution and history, punctuated by numerous social transitions, cultural shifts, and innovations. My unexpected finding is that inside every man there lurk ancient caretaking tendencies that render a man every bit as protective and nurturing as the most committed mother.

It is a journey that has forced me to rethink long-held assumptions about man's innately selfish, competitive, and violent nature, what Darwin described as his "natural and unfortunate birthright."[2] I had to expand my understanding of what "man's birthright" actually entails. I needed, as best I could, to reconstruct what must have happened over the six or so million years since we humans last shared a common ancestor

with other apes, near relations like chimpanzees and bonobos. I would need to pay special attention to what happened in the Pleistocene, when humans were developing their distinctive capacities to care about what others think, including what others think about them. This would turn out to be important for the emergence of such hyper-social apes as humans became, interested in coordinating their behavior and sharing with others. Such interdependence helped set the stage for men to spend more time near babies.

But understanding why being near babies affects men the way it does, and particularly why prolonged intimate proximity with little babies in their charge renders men so nurturing, would require me to travel even further back in evolutionary time, into terra even-less-cognita than hominins in the Pleistocene, early primates in the Eocene, or the first mammals in the later Triassic. I would need to travel back far before mammals, to the earliest vertebrates more than 400 million years ago. I needed to learn about ancient molecules left over from when our vertebrate ancestors swam in watery worlds, as well as the neural circuits that have lingered on in Mother Nature's* cupboard, not always used but ready to be activated and repurposed should circumstances call on them. But what circumstances? And what concatenation of chance events, evolutionary processes, historical transitions, more recent social movements, cultural transformations, and technological innovations set the stage for this to be possible today? What accounts for the unprecedented convergence of men and babies underway in pockets of humanity around the world and in my own family right now?

My quest has taken me outside my areas of expertise. I've had to make do with skimpy records and delve in unfamiliar places. Interpreting new, often preliminary, and swiftly changing findings from the emerging field of social neuroscience proved especially challenging. Meanwhile, the kinds of contacts with offspring that ethnographers and animal behaviorists were likely to record and include in published records compelled me to focus on situations where males

* Here and throughout this book, "Mother Nature" is my personal metaphor for Darwinian selection.

protected, groomed, huddled near, or slept with babies, or provided food for nearly weaned infants. Relations between males and older or grown offspring must await a later project. When I talk about human babies, I will mostly mean immatures in the first thousand or so days of their lives.

Of necessity, what follows is frequently punctuated by "possibly," "maybe," and frank admissions that "we don't know." Over more than half a century spent researching primate reproductive strategies, relations between the sexes and especially between mothers and infants, no topic has proved tougher for me to wrap my brain around, as in, "Can this possibly be right?" I was plagued with sleepless nights and incapacitating migraines, yet at the same time no project has left me more hopeful about human possibilities.

Simone de Beauvoir made no bones about the challenge when, in *The Second Sex*, she opined that "The problem of woman has always been a problem of men." True gender equity, she believed, would only be possible if fathers take on their fair share of childcare. Meanwhile, if Virginia Woolf was right about the merits of an "androgynous" mind capable of the "creative, incandescent and undivided" insights of a Shakespeare, as she wrote in *A Room of One's Own*, men have a lot to gain as well. And so of course might society and the world.

There are sound reasons to think that on average women tend to be more empathetic and other-regarding than men. After all, mammalian mothers evolved to tend and keep safe, and nourish with life-sustaining milk, little creatures they gave birth to. Theirs is an age-old legacy prompting mothers to proceed more cautiously than males. If they are less foolhardy and prioritize safer environments, it's because they need to stay alive in order to care for helpless and highly dependent young. This helps explain why women today are more likely than men to vote for social programs targeting child well-being, and to take the lead in environmental protection. No wonder political commentators are convinced that nations are better off with women leaders when caution, tact, or a conciliatory mindset is called for. It helps explain why, once women get the vote in a democratic country, that country is less likely to initiate war.

Meanwhile, assumptions about males having evolved to compete with other males for status and mates help explain why men are more likely to take risks, often egged on by a testosterone-fueled overconfidence. Such hubristic inclinations to "deceive up" all too often lure male stockbrokers to trade impulsively, or team captains and military leaders to imagine that they can win a contest or war whose outcome they can't actually foresee. All this is consistent with Darwin's original assessment of male competitiveness paired with women's gentler, more prosocial, other-regarding proclivities.

But if men caring for babies undergo the same neurological transformations, the same increases in prolactin levels and oxytocin-infused sensual pleasure as mothers do; if their testosterone drops and men become as fixated on infant well-being as mothers; if their brains undergo shape-shifting similar to that in mothers, wouldn't men's psychological preferences change as well? Might men's priorities come to more nearly resemble the more prosocial ones mothers are assumed to have? Might such men also be more likely to opt for safer and more sustainable courses of action?

Anthropologists have long been aware that societies where men spend more time in contact with mothers and children are less bellicose and exhibit lower rates of violence. Social psychologists tell us that men exposed to cues from babies tend to be more other-regarding and generous. Might baby-exposed men also come to prioritize the well-being of children—and the planet—above their own social status or, in the case of politicians, their electability? Yet I doubt that even the most visionary commentators on the "problem of men" could have foreseen the fully fleshed-out, hormonally prompted, neuronally charged potentials being revealed today—potentials lying latent for a peculiarly twenty-first-century convergence of circumstances to kiss awake. I certainly didn't.

None of this could have happened without a prior loosening of gender straitjackets, permitting men greater flexibility in what it means to be a man, including what it means to be a father. Men first needed to be able to imagine themselves as nurturers as well as protectors and providers. Women's expanding educational and economic opportunities were part of the story that contributed to transformations in Western genderscapes,

among them the inclusion of more women in science. This meant that an influx of researchers interested in parental care, aware of just how costly human babies are and how much help their primary caregivers need, began studying what happens in the bodies and brains of men engaged in infant care. Without these and other cultural and economic transformations discussed in this book, it's entirely possible that we would have continued to overlook unexpected facets of men's nature that are only now coming to light.

Given our species' all-too-human tendency to see mostly what we expect to see, it's worth considering: Where did the biases that blinkered us for so long come from? My own background, a highly privileged, upper-middle-class white American upbringing and a Harvard education, not only influenced my expectations, but also the information I would be most familiar with. In spite of my best efforts, this will probably continue to be so in many areas covered in this book. Sources of my own biases, then, are probably where I should begin.

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