Born to Be Mild

ARE WE BORN KNOWING RIGHT FROM WRONG? NEW RESEARCH OFFERS SURPRISING ANSWERS TO THE AGE-OLD QUESTION OF WHERE MORALITY COMES FROM BY ABIGAIL TUCKER

PHOTOGRAPHS BY JILL GREENBERG

rber Tasimi is a 23-year-old researcher at Yale University's Infant Cognition Center, where he studies the moral inclinations of babies—how the littlest children understand right and wrong, before language and culture exert their deep influence. "What are we at our core, before anything, before everything?" he asks. His experiments draw on the work of Jean Piaget, Noam Chomsky, his own undergraduate thesis at the University of Pennsylvania and what happened to him in New Haven, Connecticut, one Friday night last February. ¶ It was about 9:45 p.m., and Tasimi and a friend were strolling home from dinner at Buffalo Wild Wings. Just a few hundred feet from his apartment building, he passed a group of young men in jeans and hoodies. Tasimi barely noticed them, until one landed a punch to the back of his head. ¶ There was no time to run. The teenagers, ignoring his friend, wordlessly surrounded Tasimi, who had crumpled to the brick sidewalk. "It was seven guys versus one aspiring PhD," he remembers. "I started counting punches, one, two, three, four, five, six, seven. Somewhere along the way, a knife came out." The blade slashed through his winter coat, just missing his skin. ¶ At last the attackers ran, leaving Tasimi prone and weeping on the sidewalk,

his left arm broken. Police later said he was likely the random victim of a gang initiation.

After surgeons inserted a metal rod in his arm, Tasimi moved back home with his parents in Waterbury, Connecticut, about 35 minutes from New Haven, and became a creature much like the babies whose social lives he studies. He couldn't shower on his own. His mom washed him and tied his shoes. His sister cut his meat.

Spring came. One beautiful afternoon, the temperature soared into the 70s and Tasimi, whose purple and yellow bruises were still healing, worked up the courage to stroll outside by himself for the first time. He went for a walk on a nearby jogging trail. He tried not to notice the two teenagers who seemed to be following him. "Stop catastrophizing," he told himself again and again, up until the moment the boys demanded his headphones.

The mugging wasn't violent but it broke his spirit. Now the whole world seemed menacing. When he at last resumed his morality studies at the Infant Cognition Center, he parked his car on the street, feeding the meter every few hours rather than risking a shadowy parking garage.

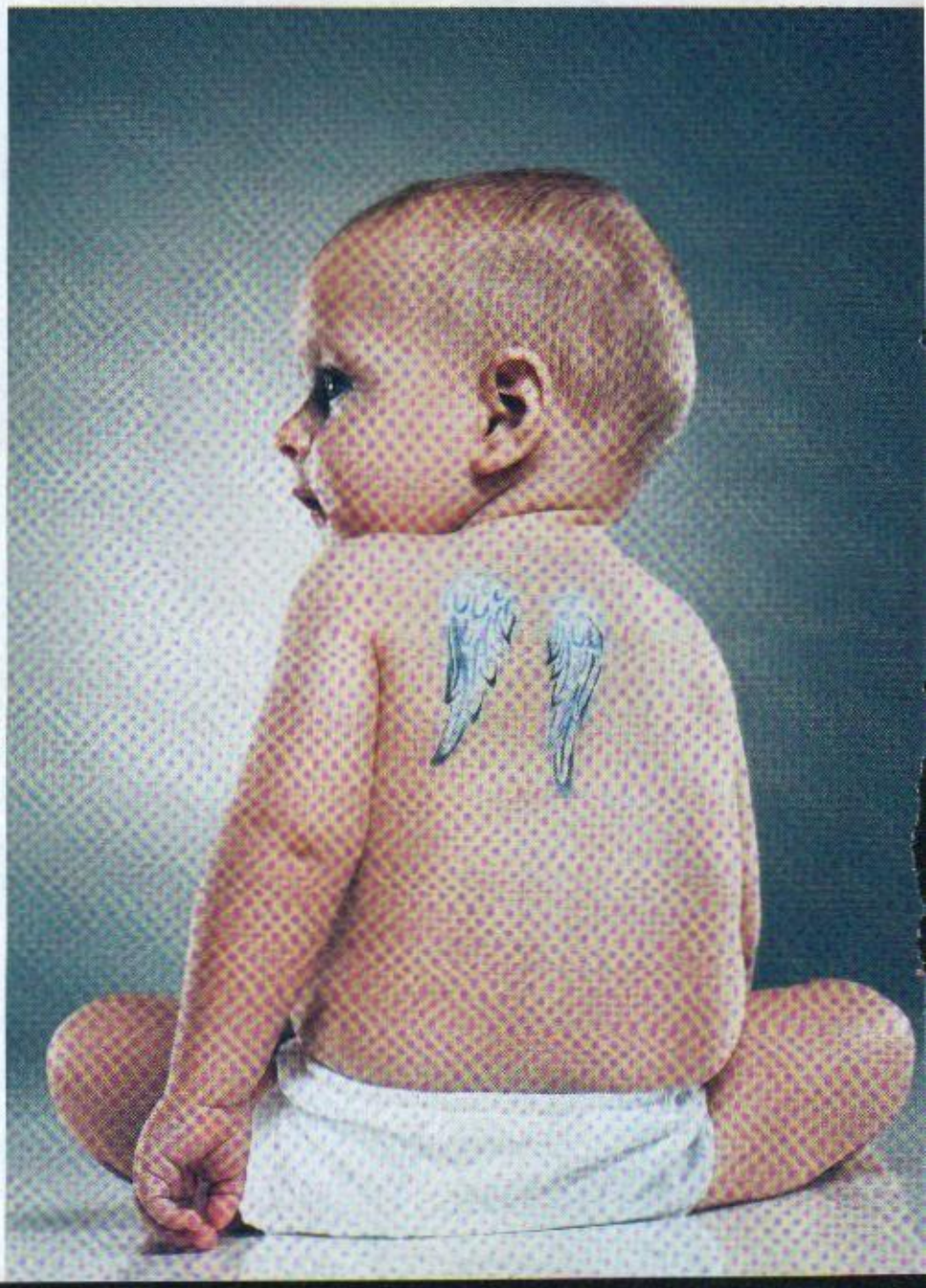
"I've never been this low in life," he told me when we first met at the baby lab a few weeks after the second crime. "You can't help wonder: Are we a failed species?"

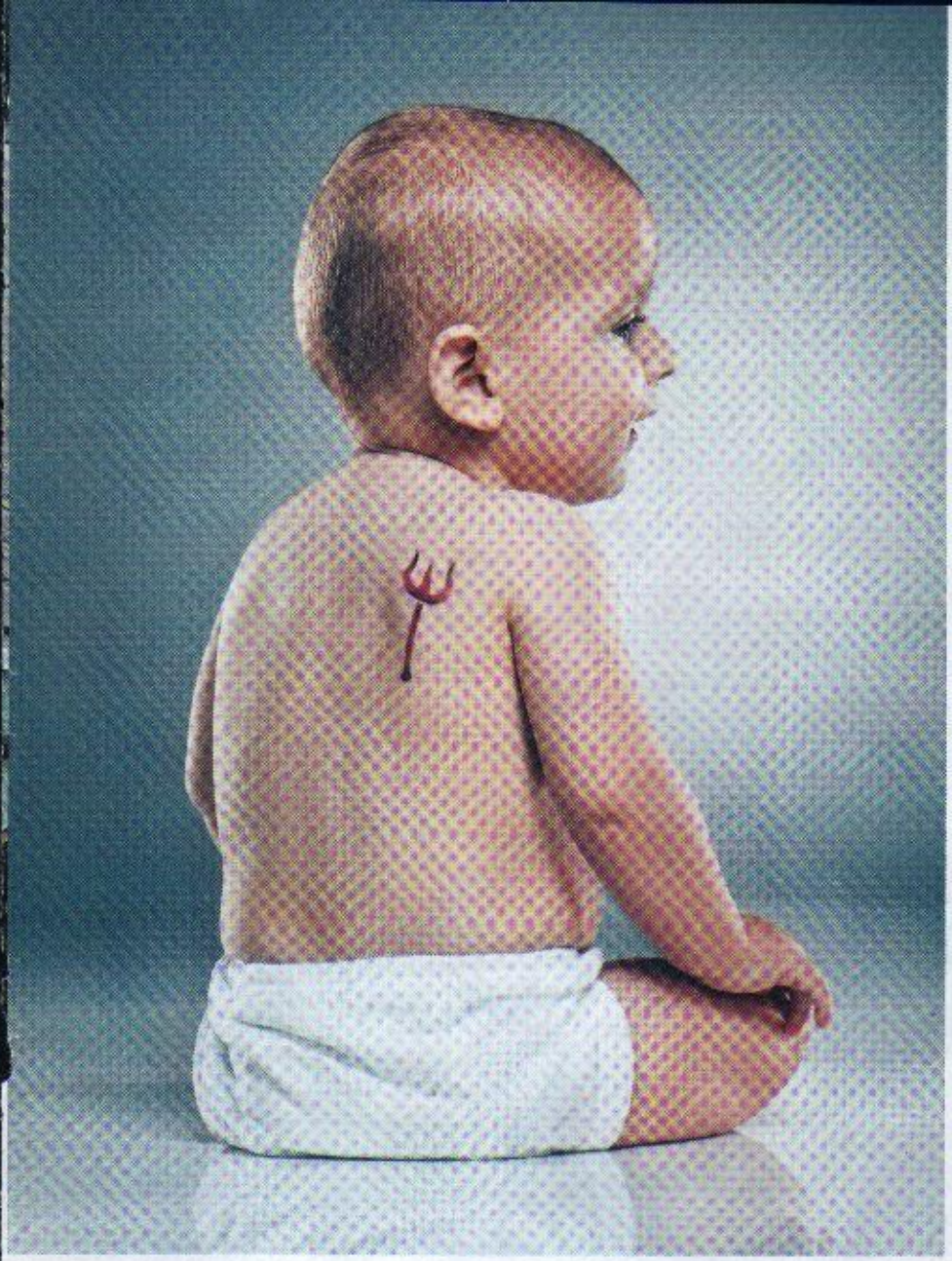
At times, he said, "only my research gives me hope."

The study of babies and young toddlers is a perplexing business. Even the most perceptive observers can be tempted to see what isn't there. "When our infant was only four months old I thought that he tried to imitate sounds; but I may have deceived myself," Charles Darwin wrote in "A Biographical Sketch of an Infant," his classic study of his own son. Babies don't reliably control their bodies or communicate well, if at all, so their opinions can't be solicited through ordinary means. Instead, researchers outfit them with miniature wire skullcaps to monitor their brain waves, scrutinize them like shoplifters through video cameras and two-way mirrors, and conduct exceedingly clever and tightly controlled experiments, which a good portion of their subjects will refuse to sit through anyway. Even well-behaved babies are notoriously tough to read: Their most meditative expressions are often the sign of an impending bowel movement.

But tiny children are also some of psychology's most powerful muses. Because they have barely been exposed to the world, with its convoluted cultures and social norms, they represent the raw materials of humanity: who we are when we're born, rather than who we become. Benjamin Spock's famous book, *Dr. Spock's Baby and Child Care*, "starts out with the sentence 'You know more than you think you do,'" says Melvin Konner, an Emory University anthropologist and physician and the author of *The Evolution of Childhood*. "There's another point that needs to be made to parents: Your baby knows more than you think she knows. That's what's coming out of this kind of research."

The 1980s and '90s brought a series of revelations about very young babies' sophisticated perceptions of the physical world, suggesting that we come to life equipped with quite an extensive tool kit. (Can 5-month-olds count? Ab-





solutely. Do they understand simple physics? Yes.) Recently, some labs have turned to studying infants' inborn social skills, and how babies perceive and assess other people's goals and intentions. Scrutinizing these functions, scientists hope, will reveal some innate features of our minds—"the nutshell of our nature," says Karen Wynn, director of the Yale lab.

"People who've spent their whole careers studying perception are now turning toward social life, because that's where the bio-behavioral rubber meets the evolutionary road," Konner says. "Natural selection has operated as much or more on social behavior as on more basic things like perception. In our evolution, survival and reproduction depended more and more on social competence as you went from basic mammals to primates to human ancestors to humans."

The Yale Infant Cognition Center is particularly interested in one of the most exalted social functions: ethical judgments, and whether babies are hard-wired to make them. The lab's initial study along these lines, published in 2007 in the journal *Nature*, startled the scientific world by showing that in a series of simple morality plays, 6- and 10-month-olds overwhelmingly preferred "good guys" to "bad guys." "This capacity may serve as the foundation for moral thought and action," the authors wrote. It "may form an essential basis for . . . more abstract concepts of right and wrong."

The last few years produced a spate of related studies hinting that, far from being born a "perfect idiot," as Jean-Jacques Rousseau argued, or a selfish brute, as Thomas Hobbes feared, a child arrives in the world provisioned with rich, broadly pro-social tendencies and seems predisposed to care about other people. Children can tell, to an extent, what is good and bad, and often act in an altruistic fashion. "Giving Leads to Happiness in Young Children," a study of under-2-year-olds concluded. "Babies Know What's Fair" was the upshot of another study, of 19- and 21-month-olds. Toddlers, the new literature suggests, are particularly equitable. They are natural helpers, aiding distressed others at a cost to themselves, growing concerned if someone shreds another person's artwork and divvying up earnings after a shared task, whether the spoils take the form of detested rye bread or precious Gummy Bears.

This all sounds like cheering news for humanity, especially parents who nervously chant "share, share, share" as their children navigate the communal toy box. Indeed, some of these studies suggest that children's positive social inclinations are so deeply ingrained that it doesn't matter what parents say or do: A Harvard experiment, nicknamed "The Big Mother Study" (as in Big Mother Is Watching You), showed that small children helped others whether or not a parent commanded them to help or was even present.

These findings may seem counterintuitive to anyone who has seen toddlers pull hair in a playground tunnel or pistol-whip one another with a plastic triceratops. Day to day, babies can seem unfeeling and primitive, or at the very least unfathomably bizarre, afraid of donkeys one minute and the moon the next, their prismatic minds beaming nonsense and non sequiturs instead of the secrets of our higher nature. No seasoned parent can believe that nurture doesn't make a difference, or that nature trumps all. The question is where the balance lies.

"Where morality comes from is a really hard problem," says Alison Gopnik, a developmental psychologist at the

University of California at Berkeley. "There isn't a moral module that is there innately. But the elements that underpin morality—altruism, sympathy for others, the understanding of other people's goals—are in place much earlier than we thought, and clearly in place before children turn 2."

Though housed in a stern stone edifice on the Yale campus, the baby cognition lab is a happy nest of an office with a comfy couch, meant to be torn apart by one tornado of a toddler after another, and huge, sunlight-streaming windows, through which researchers spy on approaching strollers. Ranging in age from 3 months to 2 years, the visiting infants are elaborately received by staff members who crawl around on the floor with them while parents sign consent forms. (A little-known expense of this line of research is the cost of new pants: The knees wear out fast.) In the back room, the atmosphere is less cozy. There's lots of weird stuff lying around: plastic molds of Cheerios, houseplants that have been spray-painted silver.

Infant morality studies are so new that the field's grand dame is 29-year-old J. Kiley Hamlin, who was a graduate student at the Yale lab in the mid-2000s. She was spinning her wheels for a thesis project when she stumbled on animated presentations that one of her predecessors had made, in which a "climber" (say, a red circle with goggle eyes) attempted to mount a hill, and a "helper" (a triangle in some trials) assisted him, or a "hinderer" (a square) knocked him down. Previous infant research had focused on other aspects of the interaction, but Hamlin wondered if a baby observing the climber's plight would prefer one interfering character over another.

"As adults, we like the helper and don't like the hinderer," says Hamlin, now an assistant professor at the University of British Columbia. "We didn't think babies would do that too. It was just like, 'Let's give it a try because Kiley's a first-year graduate student and she doesn't know what she's doing.'"

Wynn and her husband, the psychologist Paul Bloom, collaborated on much of Hamlin's research, and Wynn remembers being a bit more optimistic: "Do babies have attitudes, render judgments? I just found that to be a very intuitively gripping question," she says. "If we tend to think of babies being born and developing attitudes in the world as a result of their own experiences, then babies shouldn't be responding [to the scenarios]. But maybe we are built to identify in the world that some things are good and some things are not, and some helpful and positive social interaction is to be approved of and admired."

In fact, 6- and 10-month-old babies did seem to have strong natural opinions about the climbing scenarios: They passionately preferred the helper to the hinderer, as assessed by the amount of time they spent looking at the characters. This result "was totally surreal," Hamlin says—so revolutionary that the researchers themselves didn't quite trust it. They designed additional experiments with plush animal puppets helping and hindering each other; at the end babies got the chance to reach for the puppet of their choice. "Basically every single baby chose the nice puppet," Hamlin remembers.

Then they tested 3-month-old infants. The researchers couldn't ask the infants to reach for the puppets, because 3-month-olds can't reliably reach, so they tracked the subjects' eye movements instead. These infants, too, showed an aversion to the hinderer.

When I visited, Tasimi was recreating versions of Hamlin's puppet shows as background work for a new project.

The son of Albanian restaurateurs, Tasimi likes to say that his parents would "prefer that I merely produce babies, instead of study them." Friends joke that he attends Yale to be a puppeteer. Though it's decidedly unfashionable in the developmental field to admit that one enjoys the company of babies, Tasimi clearly does. He'd only been back at work for a few days, and he often looked agonized when we walked outside, but in the lab he grinned broadly. When one of his subjects blew a blizzard of raspberries, he whispered: "The best/worst thing about this job is you want to laugh, but you can't."

He needed 16 compliant 12- or 13-month-olds to complete a preliminary study, and I happened to have one handy, so I brought her along.

The experiment was called "Crackerz." My OshKosh-clad daughter sat on her dad's lap; his eyes were closed, so he wouldn't influence her decisions. I was watching behind the scenes alongside three other adults: one who worked the puppet show curtain and squeaked a rubber toy to get the baby's attention, one who tracked the baby's focus so a bell sounded when it drifted, and Tasimi, the puppeteer, who managed to make the plush characters dance around winsomely despite the metal rod in his ulna. The whole production had the avant-garde feel of black-box theater: intentionally primitive, yet hyperprofessional.

First, two identical stuffed bunnies, one in a green shirt and the other in orange, appeared on stage with plates of graham crackers. "Mmmm, yum!" they said. The curtain fell. This was the equivalent of the opening sonnet in a Shakespeare play, a sort of framing device for what followed.

The curtain rose again. A lamb puppet appeared onstage, struggling to open a plastic box with a toy inside. The orange bunny flounced over and slammed the lid shut. My child flinched at this, though it was hard to say if it was the sound of the slamming or the rabbit's nastiness that spooked her. Her brow furrowed. Then she got bored. A bell dinged after she looked away from the scene for two seconds, and the curtain fell.

It soon rose again: Cue the green bunny. Instead of foiling the lamb's

Watch some of Warneken's studies with infants at Smithsonian.com/babies

plans, he helped lift the lid of the toy box. The baby stared, drummed plump fingers on the table for a moment, then looked away. The curtain fell.

This scenario was repeated six times, so the baby would grasp what she was seeing, but the green bunny was always nice and the orange bunny was always mean. At the curtain call, the lab manager emerged with the two puppets. Each offered the baby a graham cracker. I was about to tell the experimenters that my daughter had never even seen a graham cracker and was an extremely picky eater when she grabbed the treat from the nice bunny, as most of the previous babies had done. I felt an unwarranted surge of parental pride. I was not alone in my delight.

"She chose the good guy!" Tasimi said. "After all that, she chose the good guy."

When babies at the Yale lab turn 2, their parents are tactfully invited to return to the university after the child's third birthday. Researchers tend to avoid that event horizon of toddlerhood, the terrible twos. Renowned for their tantrums, 2-year-olds are tough to test. They speak, but not well, and while active they're not particularly coordinated.

But not all researchers shun 2-year-olds. The next lab I visited was at Harvard University in Cambridge, Massachusetts, and it has made this age group something of a specialty, through work on toddler altruism (a phrase that, admittedly, rings rather hollow in parental ears).

One advantage of testing slightly older babies and children is that they are able to perform relatively complicated tasks. In the Laboratory for Developmental Studies, the toddlers don't watch puppets help: They themselves are asked to help.

The chief scientist is Felix Warneken, another young researcher, though not one whose appearance initially telegraphs *baby scientist*. He stands 6-foot-6. He usually greets children from the floor, playing with them before standing up at the last possible moment. "Only then do they realize they've been dealing with a giant," Warneken says. He usually wore the same red sweater in all his experiments, because he thinks kids like it. In addition to designing groundbreaking studies, he has also dreamed up several toys to reward or distract subjects, including an ingenious device he calls a jingle box: An angled xylophone concealed in a cardboard container, it makes a thrilling sound when wooden blocks are dropped inside.

Warneken was initially interested in how little children read the intentions of others, and the question of whether toddlers would assist others in reaching their goals. He wanted to sound out these behaviors in novel helping experiments—"accidentally" dropping a hat, for instance, and seeing if the kids would return it.

But while this was an interesting idea in principle, his advisers at the Max Planck Institute for Evolutionary Anthropology in Germany said it was quite impossible in practice. Once toddlers got their hot little hands on a desirable object, Warneken was told, "they'll just hold onto it, and there's no way they'll give it back." Besides, prominent psychologists had previously argued that children are selfish until they are socialized; they acquire altruistic behaviors only as childhood progresses and they are rewarded for following civilization's rules, or punished for breaking them.

Warneken put the notion on hold while he studied other aspects of toddler cooperation. One day he and a toddler were bouncing a ball together. Truly by accident, the ball rolled away—"the moment of serendipity," as Warneken now calls it. His first impulse was to retrieve the toy and carry on, but he stopped himself. Instead, he stayed where he was, pretending to strain for the ball, though he was barely extending his incredibly long arms. The little boy watched him struggle, then after a moment heaved himself up, waddled over to the toy and—defying the scientific community's uncharitable expectations—stretched out his own chubby little arm to hand the ball to his gigantic playmate.

In the following months, Warneken designed experiments for 18-month-olds, in which a hapless adult (often played by him) attempted to perform a variety of tasks, to no avail, as the toddlers looked on. The toddlers gallantly rescued Warneken's dropped teaspoons and clothespins, stacked his books and pried open stubborn cabinet doors so he could reach inside.

"Eighteen-month-old children would help across these different situations, and do it very spontaneously," he says. "They are clever helpers. It is not something that's been trained, and they readily come to help without prompting or without being rewarded."

The children even help when it's a personal burden. Warneken showed me a videotaped experiment of a toddler wallowing in a wading pool full of plastic balls. It was clear that he was having the time of his life. Then a klutzy experimenter seated at a nearby desk dropped her pen on the floor. She

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seemed to have great trouble recovering it and made unhappy sounds. The child shot her a woebegone look before dutifully hauling himself out of the ball pit, picking up the pen and returning it to the researcher. At last he felt free to belly flop into the ball pit once more, unaware that, by helping another at a cost to himself, he had met the formal definition of altruism.

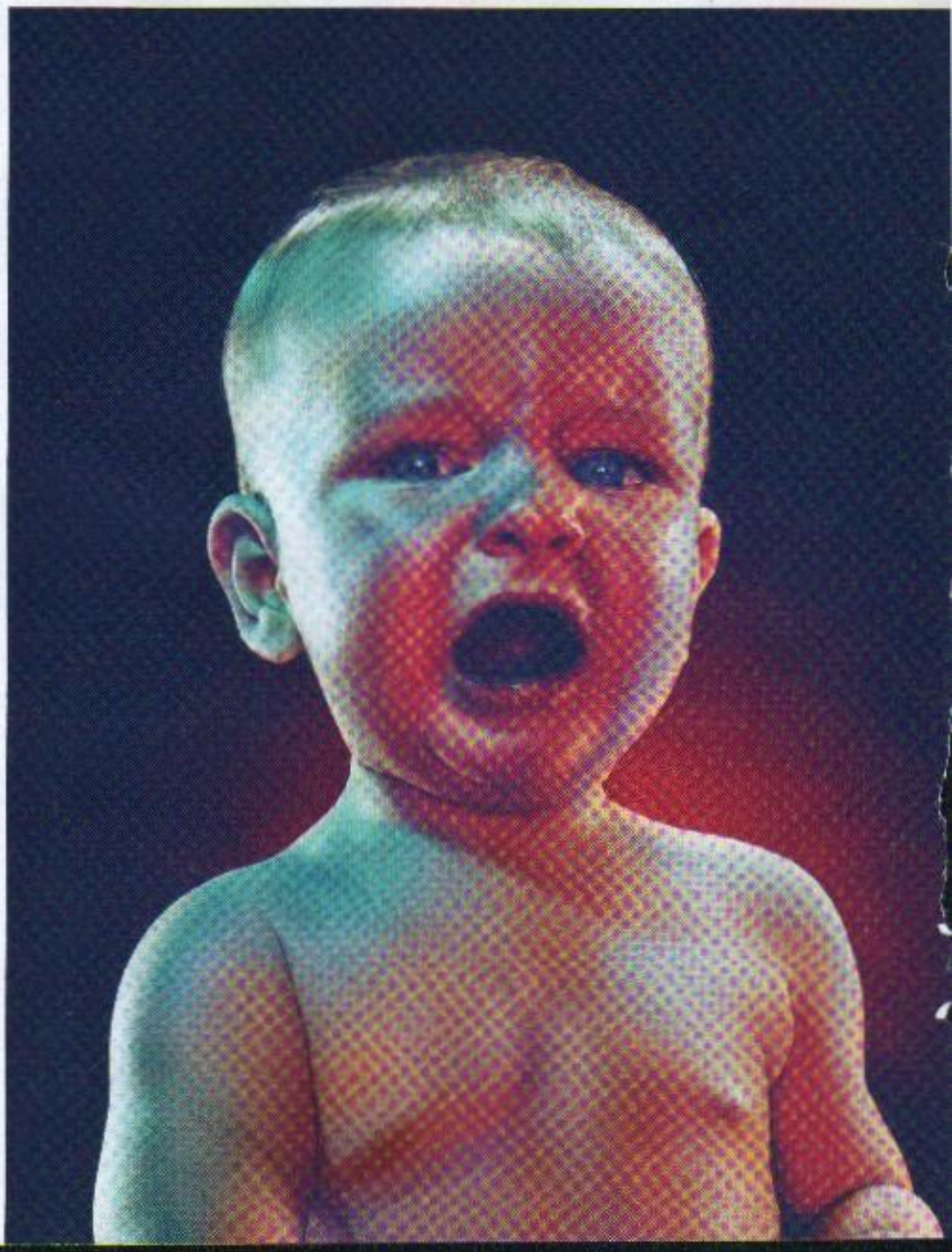
Because they were manifested in 18-month-olds, Warneken believed that the helping behaviors might be innate, not taught or imitated. To test his assumption, he turned to one of our two nearest primate relatives, the chimpanzee. Intellectually, an adult chimp and a 2-year-old are evenly matched: They have roughly equivalent tool-using skills and memories and perform the same in causal learning tests.

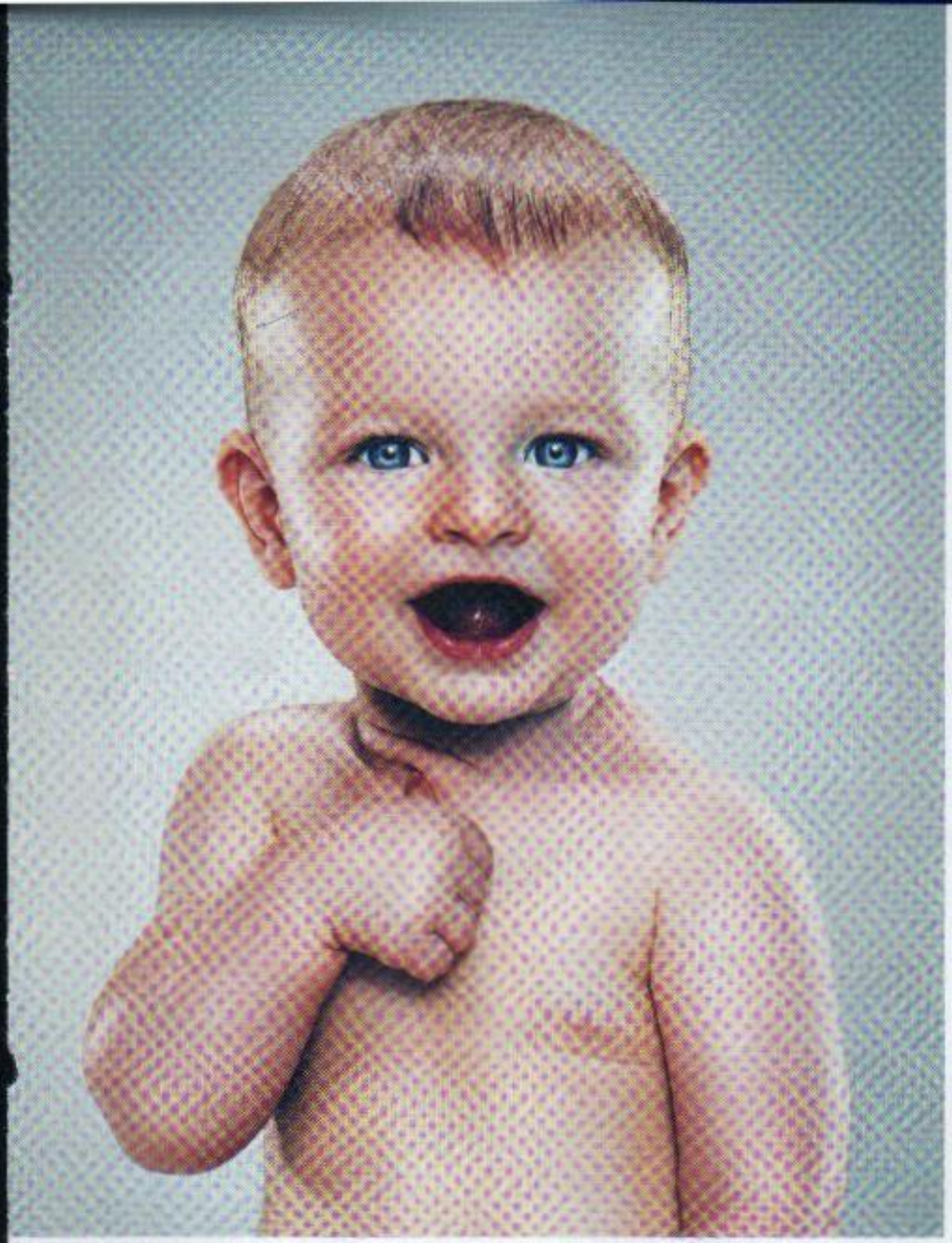
The first chimps Warneken studied, nursery-raised in a German zoo, were comfortable with select people. He replaced objects alien to chimps (such as pens) with familiar materials like the sponges that caretakers use to clean the facilities. Warneken waited in the hallway, watching through a camera, as the caretaker dropped the first object: As if on cue, the chimp bounded over and breezily handed it back. "I was freaking out!" Warneken remembers. "I couldn't believe my eyes, that they would do that. I was going crazy!"

Once the euphoria faded, Warneken wondered if perhaps human-reared chimps had been conditioned to be helpful to their food providers. So he arranged for others to conduct a version of the test at the Ngamba Island Chimpanzee Sanctuary in Uganda, where semi-wild chimps live. In the experiment, two researchers appeared to argue fiercely over a stick: The winner of the fight puts the stick out of the loser's reach, and he pines for it as a chimp watches. The chimp has to decide whether to hand the prized possession through the bars of the cage to the vanquished party. Many did.

"The expectation was that initially the chimps might help, but when they don't receive a reward the helping should drop off over time," Warneken says. "But there was no such pattern. They would consistently help when the person was reaching for the object," even in the absence of any payoff.

Maybe the animals would aid people under any circumstances, assuming a reward would come their way down the line. The final step was to see if chimps would assist each other. So Warneken rigged apparatuses where one caged chimp could help a neighbor reach an inaccessible banana or piece of water-





melon. There was no hope of getting a bite for themselves, yet the empowered chimps fed their fellow apes regardless.

Warneken's chimp work makes the case that human altruism is a trait that evolution has apparently endowed us with at birth. But under what circumstances are toddlers altruistic? Some recent chimp studies suggest that chimps won't help others unless they witness the dismay of the creature in need. Are human children likewise "reactive" helpers, or can they come to another's assistance without social cues? Warneken created a scenario in which a clueless experimenter fools around with a bunch of milk cans at a table as a 2-year-old looks on. Unbeknown to the adult, some cans start to roll off the edge.

The experimenter doesn't ask the toddler for help: She doesn't even realize that a problem exists. Yet many of the children tested read the situation correctly and rushed to her aid, often yelling "Your can fell!" with great alacrity before handing it back. "You can see the birth of this proactive helping behavior from around 1.5 to 2.5 years of age," Warneken explains. "The children don't need solicitation for helping. They do it voluntarily." Proactive helping may be a uniquely human skill.

Criticisms of the "nice baby" research are varied, and the work with the youngest kids is perhaps the most controversial. Over the summer, a group of New Zealand scientists challenged Kiley Hamlin's watershed "helper/hinderer" study, making international headlines of their own.

They charged that Hamlin and her co-workers had misidentified the key stimuli: Rather than making nuanced moral judgments about kindly triangles and antisocial squares (or vice versa, since the researchers had also switched the roles assigned to each shape), Hamlin's subjects were merely reacting to simple physical events in the experimental setup. The babies liked the bouncing motion of the triumphant circle at the top of the hill after the triangle helped it reach the summit, and they didn't like the way the circle occasionally collided with the other shapes.

Hamlin and her colleagues responded that the New Zealanders' recreation of their experiment was flawed (for one thing, they let the circle's goggle eyes look down instead of pointing at the summit, confusing the babies' sense of the goal). Plus, the Yale team had replicated its results through the puppet shows, evidence that the critics didn't address.

Though Hamlin persuasively dismissed their objections, such methodological worries are never far from baby researchers' minds. For instance, Tasimi had a sneaking suspicion that in some versions of his puppet shows, the babies were choosing orange puppets over green ones not because they had sided with good over evil but simply because they liked the color orange. (Still, the babies' preference for helpful bunnies persisted even when the researchers switched the shirt colors.)

Other critics, meanwhile, fault the developmental philosophy behind the experiments. Babies may look like they're endowed with robust social skills, these researchers argue, but actually they start from scratch with only senses and reflexes, and, largely through interaction with their mothers, learn about the social world in an astonishingly short period of time. "I don't think they are born with knowledge," says Jeremy Carpendale, a psychologist at Simon Fraser University. A toddler's moral perspective, he says, is not a given.

And still other scientists think the baby studies un- CONTINUED ON PAGE 76

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derestimate the power of regional culture. Joe Henrich, a University of British Columbia psychologist, says qualities like altruism and moral logic cannot be exclusively genetic, as evinced by the wide variety of helping behaviors in hunter-gatherer and small-scale horticulturist groups across the world, especially compared with Western norms. Ideas of the public good and appropriate punishment, for instance, are not fixed across societies: Among the Matsigenka people of the Peruvian Amazon, where Henrich works, helping rarely occurs outside of the immediate household, if only because members of the tribe tend to live with relatives.

"There are biological effects that people think are genetic, but culture affects them," he says, adding: "Culture changes your brain." He points to variations in fMRI brain scans of people from diverse backgrounds.

Baby researchers themselves have produced interesting critiques of their work. In 2009, Warneken wrote that "children start out as rather indiscriminate altruists who become more selective as they grow older." Today, however, he feels that the picture is more complicated, with broadly prosocial impulses competing with, rather than developmentally predating, selfish ones.

Plenty of bleak observations complicate the discovery of children's nobler impulses. Kids are intensely tribal: 3-month-olds like people of their own race more than others, experiments have shown, and 1-year-olds prefer native speakers to those of another tongue. Yes, a baby prefers the good guy—unless the bad one, like the baby, eats graham crackers. If the good guy is a green-bean eater, forget it. Babies, in addition, are big fans of punishment. Hamlin likes to show a video of a young vigilante who doesn't just choose between the good and bad puppets; he whacks the bad guy over the head. In the spontaneous responses of the newest humans, "We're seeing the underbelly of judgments we

make as adults but try not to," she says.

Wynn, the Yale scientist, has also questioned the deepest motives of Warneken's tiny altruists, noting that seemingly selfless actions may actually be adaptive. As any parent of an 18-month-old knows, babies' helping isn't all that, well, helpful. Try as they might, they can't really stir the cupcake mix or pack the suitcase when asked to do so (and parents, to be fair to the tots, don't expect them to succeed but, rather, to occupy themselves). Perhaps babies are not really trying to help in a particular moment, per se, as much as they are expressing their obliging nature to the powerful adults who control their worlds—behaving less like Mother Teresa, in a sense, than a Renaissance courtier. Maybe parents really would invest more in a helpful child, who as an adult might contribute to the family's welfare, than they would in a selfish loafer—or so the evolutionary logic goes.

A different interpretation, Warneken says, is that in a simpler world maybe toddlers really *could* help, pitching in to the productivity of a hunter-gatherer group in proportion to their relatively meager calorie intake. "Maybe the smallest kid has the smallest water bucket, the medium kid has the medium bucket and the adult women carry the big bucket," he says. On a recent visit to Kinshasa, in Congo, where he was conducting more primate studies, "I saw this family walking around, and it was exactly like that. Everyone had firewood on their heads, and it was all proportional to body size."

For many researchers, these complexities and contradictions make baby studies all the more worthwhile.

I spoke with Arber Tasimi again recently. The metal rod is out of his arm and he's back to having evening beers with friends. Though he still finds babies to be inspiring subjects, their more sinister inclinations also intrigue him. Tasimi watched a lot of "Sopranos" reruns during his convalescence and wonders about designing a baby experiment based on Hammurabi's code, to determine whether infants think, like Tony Soprano, that an eye for an eye is a fair trade when it comes to revenge. That's not all.

"I'm trying to think of a lesser-of-two evils study," he says. "Yes, we have our categories of good and bad, but those categories involve many different things—stealing $20 versus raping versus killing. Clearly I can't use those sorts of cases with, you know, 13-month-olds. But you can come up with morality plays along a continuum to see . . . whether they form preferences about whether they like the guy who wasn't as bad as the other bad guy."

Likewise, the Crackerz experiment that my daughter participated in is headed for a dark turn. Yes, babies prefer to accept a snack from the good guy, but what if the bad guy offered them three graham crackers, or ten?

For a grant proposal, Tasimi put a working title on this query: "What Price Do Babies Set to Deal With the Devil?" O