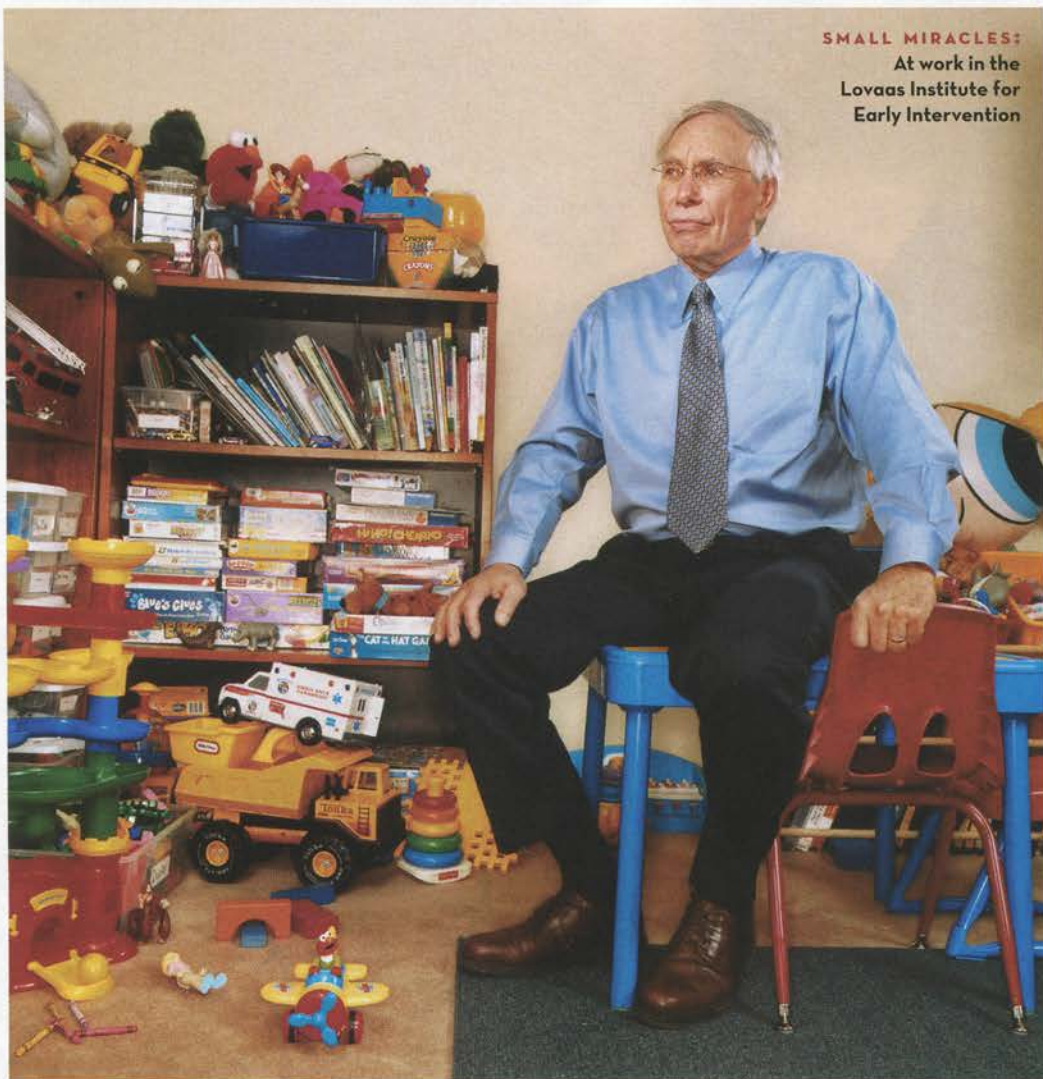




SMALL MIRACLES:
At work in the
Lovaas Institute for
Early Intervention



It is a hug, but it is something more. It is a restraint.

The professor freezes the image, the boy's face caught midhowl. "What is this?" he asks the class, breaking into a broad smile. What is this simple gesture, this *bug*?

Reinforcement, they answer in unison.

These students, most of them psych majors, know reinforcement. It is one of the fundamental principles of behavioral theory, the idea that one's actions can be explained in terms of positive responses to external stimuli. We do things, behaviorists believe, because we get rewards for doing them. These rewards are called reinforcers. In the early 1930s, B.F. Skinner, the father of behaviorism, discovered that rats could be taught to push levers if they were rewarded with a pellet of food. For the hungry rat, food was the reinforcer. For the boy in the film, the hug was the reinforcer, but a harmful one. The boy was being rewarded, however inadvertently, for punching himself in the face.

Lovaas's class, "Psychology 170A: Behavior Modification," has long been one of the most popular in the department. Students love the class and love Lovaas, because he tells amusing stories about things like the mating habits of the stickleback or about his childhood in Norway. They think he is funny.

Few seem to know that the kids in this old, grainy film are *his* kids, in a sense, or were. Beth and John were patients of his in the early 1960s, when the young researcher was doing work with autistic children at UCLA's Neuropsychiatric Institute.

Even fewer know that these early experiments led to Lovaas's announcement in 1987 of a groundbreaking treatment for autism. Under his care, children who had seemed unreachable began to speak and read and inter-

The Phantom Chaser

FOR IVAR LOVAAS, UCLA'S CONTROVERSIAL AUTISM PIONEER,
A LIFE'S WORK IS NOW FACING A CRUCIAL TEST **BY ROBERT ITO**

PSYCHOLOGY PROFESSOR Ivar Lovaas stands at the front of the auditorium in UCLA's Franz Hall and signals his assistant to start the film. There is no sound. The footage is blurry, with the overexposed, bleached-out look of a home movie. A grainy image of a plump girl with dirty brown curls, seated at a low table, fills the screen. The students crane forward in their seats. Suddenly, the girl slams her forehead against the edge of the table.

The scene shifts to a little blond boy who is punching his face with both fists. His cheeks are two bright red ovals. In the next scene the boy's hands are covered with padding, but he continues to pummel himself, the gloves moving in steady arcs toward his face. There is no narration, and the quick cuts give the footage a surreal, dreamlike quality. How long has he been beating himself? Minutes? Hours? Finally, a figure in a white lab coat steps into the frame and holds the young child against his body.



act with others. IQ scores shot up. The results stunned the psychiatric community. For the first time in history a clinician had produced evidence that not only was autism treatable but in some cases its symptoms could be virtually eliminated.

Today the Lovaas method—consisting of repetitive drills and hours of one-on-one training—is followed in scores of clinics and schools around the world. Variations of his programs have made his brand of behavior modification the preferred method of autism treatment in the state. Lovaas himself has received awards from institutions including the California Senate and the American Psychological Association.

Ron Huff, senior psychologist at California's Department of Developmental Services, considers Lovaas the father of autism treatment. "If it weren't for his efforts beginning 40 years ago," says Huff, "we wouldn't be anywhere today."

With incidence rates skyrocketing in California—they have doubled over the last four years, making autism the fastest-growing disability served by the department—Lovaas's work has never been more important. Parents across the country have filed lawsuits against their school districts to get their children into Lovaas programs, where waiting lists can be months long.

This spring, two clinics assigned to reproduce the results of his 1987 study, one in Modesto, California, the other in Madison, Wisconsin, will release their findings. It is a crucial moment for Lovaas. Without scientific replication, an experiment's findings are always suspect, its very validity up for debate. Without replication, Lovaas's critics will continue to brand his experiment a fluke, an anomaly—or worse.

Most of the time Lovaas is full of confidence. "If I had gotten Hitler here at UCLA at the age of four or five," he says, "I could have raised him to be a nice person. A humanitarian!"

Lovaas tells his assistant to start the film again. John, the boy who hits himself, continues to struggle against his doctor's embrace. "He loved to be put in restraints," Lovaas says with a big grin, which raises another round of questions from his class. What did he like about it? Were the restraints just another bad reinforcer? Lovaas seems to delight in the questions, his raucous laughter echoing through the

large hall. John liked the restraints, Lovaas explains, because he really didn't like to hit himself. Who would? "He just wanted some attention," says Lovaas. "Like all of us."

AFTER 40 YEARS spent studying and treating autistic children, 40 years of 12-hour days spent pleading and prodding and testing, Lovaas admits that he is chasing a phantom. He is the first to tell you that nobody really even knows what autism is. Autism doesn't exist, he says. It is a theory, he tells his students, a hypothesis. *A guess.*

The history of autism research has included many guesses, several of which have proved wrong. Victor of Aveyron, a young French boy who is now considered to be the first documented case of autism, was labeled a "feral child" when he was first examined in 1799. At that time, autistic children were often diagnosed as schizophrenic or mentally retarded. Many were institutionalized for life.

It wasn't until 1943 that Johns Hopkins psychiatrist Leo Kanner conducted the first detailed study of the disorder. Kanner described 11 children who were fascinated with manipulating objects and repetitive play but showed little interest in interacting with other people. He called the children "autistic," using a term coined by Swiss psychiatrist Eugen Bleuler to describe schizophrenic patients who shut themselves off from human contact.

In the 1950s and 1960s, Freudian psychologists blamed the disorder on cold, unloving "refrigerator mothers." Child psychologist Bruno Bettelheim recommended that autistic children be separated from their parents. The theory has since been discredited, but it created misery for entire families.

Autism has been frustratingly difficult to classify. Although there are several common traits—oversensitivity to certain stimuli, impairments in social interaction—no two autistic children share the exact same characteristics. Today psychologists use the blanket term "autistic spectrum disorder" to cover everything from full-blown autism to milder, "non-autistic pervasive developmental disorders" like Asperger's syndrome. Most believe that there is a genetic component, while some have blamed the recent rise in autism on factors including vaccines, consumer products, and diet.

What causes autism? Lovaas never gave it much thought. When he began his work,



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treating the immediate problem seemed to be the most pressing goal. Four decades after Lovaas first came to UCLA, scientists are still examining how and why autism manifests itself. Lovaas has a few theories but is happy to leave that research to others. Every one of us, after all, has autistic tendencies. "Just look around here at UCLA! The mathematicians? They depend on their wives to dress them properly," he says. "We all rock. We all self-stimulate. It's just a matter of degree."

LOVAAS WAS BORN in 1927 in Lier, Norway, a small agricultural village outside of Oslo. His father was a journalist at the local newspaper, his mother the daughter of a poor tenant farmer. When the Nazis invaded Norway in 1940, the family was forced to work as farm laborers. Lovaas would cut cabbages and turnips for ten hours a day, until his arms and legs were numb with cold. After the war ended, Lovaas received a violin scholarship to Luther College, a liberal arts school in Decorah, Iowa. In 1951, he began working on his doctorate in psychology at the University of Washington.

As part of his predoctoral studies, Lovaas worked as a psychiatric aide at the Pinel Institute, a private mental hospital for the children and grandchildren of Seattle's elite. Most of the patients suffered from schizophrenia. Lovaas would take them for walks through the tree-lined grounds or comfort them when they became agitated.

One summer there were two suicides at Pinel, an unusually high number for a small, 20-bed facility. Both patients killed themselves by jumping headfirst from the second floor onto the pavement below. "I knew them, and I knew they weren't that crazy," says Lovaas. The clinic's doctors struggled for answers. "The doctors were all medically oriented, so they called it a 'suicide epidemic,' like it was a contagious disease," says Lovaas.

The experience began to push Lovaas away from Freud and toward Skinner and the other behaviorists. The allure of behavior therapy was understandable for a man who had lived through the horrors of the Nazi occupation and seen many of its evils firsthand. The behaviorists seemed to hold the answer to the question of human evil: People were not inherently bad but merely conditioned to act badly by their environments. Using basic clinical procedures, doctors found that



the negative results of this conditioning could be controlled.

In 1961, Lovaas accepted a position as an assistant professor at UCLA. It was the era of Kennedy and Johnson, when the federal government was funneling huge amounts of money into programs designed to combat a host of social ills. Lovaas got an entire ward at UCLA's Neuropsychiatric Institute.

At that time, most people had never even heard the word *autism*. Lovaas studied several autistic kids at UCLA and at the nearby Camarillo State Hospital. These children would not speak or play or smile. Instead, they rocked back and forth for hours. They stared at lights or spun in circles.

Like most other psychologists of the time, Lovaas believed the "refrigerator mother" theory. If the root cause of autism was a lack of love, psychologists reasoned, then the cure must be an infusion of love. It was a simple solution, perhaps the simplest: They would love these children, even when they screamed and scratched and bit. Six-year-old Marty would spin a silver top over and over, entranced by

the shifts in light and color. Lovaas would tell him, in a quiet, soothing tone, It's fun to spin, isn't it? He would love these kids, even if their mothers did not.

But love didn't help. The kids continued to rock and spin and stare at lights. Others would scratch and bite Lovaas, or scratch and bite themselves. If anything, all the hugs and words of encouragement seemed only to make the children worse. Lovaas continued to doubt the Freudian theorists, his professors and department heads, who created theories but—as he would later complain—could show no data to support them.

Lovaas believed that Skinner's system of rewards and punishments—or reinforcers and aversives—might have applications for autistic kids. Billy was one of his first patients at UCLA. "Touch nose," Lovaas would tell him. If Billy touched his nose, Lovaas would give him an M&M. Lovaas would repeat the command. If Billy touched his nose again, he would get another M&M. If Billy touched his ear, or simply ignored the command, Lovaas would bark out a loud, angry "No!" Then Lovaas

would ask Billy, again, to touch his nose. Billy would touch his nose. Touch nose. Touch mouth. Touch ear. In many ways, it looked like a man training a dog.

The most controversial aspect of Lovaas's experiments was his use of aversives. There were the shouts, of course, but there was also corporal punishment for some of the most difficult patients. Staffers would sometimes slap a child; in extreme cases, shock treatment was administered.

In 1965, *Life* magazine sent reporters and a photographer to UCLA. The result was a nine-page photo-essay titled "Screams, Slaps and Love" that described Lovaas's work as "a surprising, shocking treatment [that] helps far-gone mental cripples." Patients "had turned their homes into hells"; the institute was described as an "appalling gallery of madness." If the prose was purple, many of the photos were heartbreaking: a staffer slapping a boy in the face for not paying attention to his lesson; Pamela, a nine-year-old girl, jerking in pain when a jolt of current from an electrified floor hits her bare feet.

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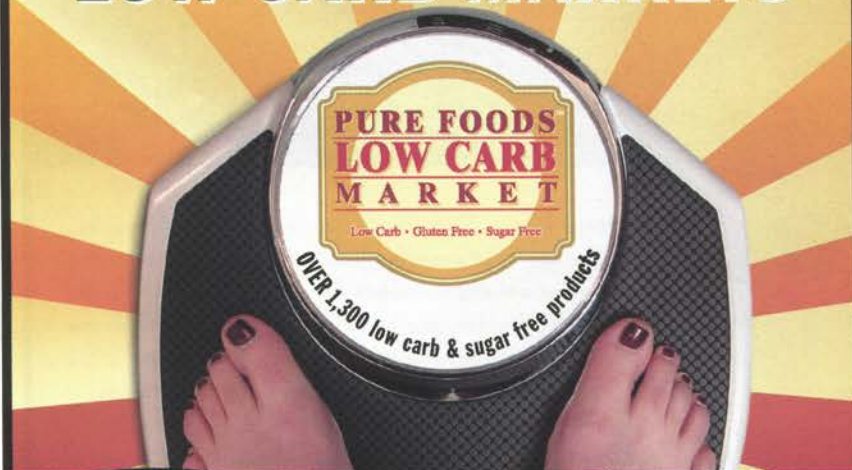
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Bernard Rimland, director of the Autism Research Institute in San Diego, remembers the article. Rimland was founding the Autism Society of America at the time, traveling the country giving talks about the benefits of behavioral therapy. "People in the audience would just sit there waiting for a break," he says, "just so they could say, 'Isn't that the stuff they do at UCLA, where they beat up the children?'"

Lovaas's funding grant from the National Institute of Mental Health stipulated that the treatment for each child would last only one year. Following treatment, some of the children went back to their homes, where Lovaas could help with their continued care, but many stayed at Camarillo, where there were no educational programs. IQ levels plummeted; many children lost their ability to speak and returned to self-destructive behaviors. Lovaas went to the hospital's director to ask permission to continue treating the children. The director refused.

Lovaas is still bitter about the snub. "He was so sure he was right!" he says. "Never think you're right. Never. Because chances are, you aren't."

The '60s and '70s were busy times for Lovaas, who was receiving numerous scientific grants. He did research on childhood schizophrenia and assisted in a controversial study on "childhood gender problems"—dubbed "the sissy boy syndrome" by co-researcher Richard Green—that sparked protests on the UCLA campus and an article in *The National Enquirer*. (Lovaas has since distanced himself from that work and insists he only took part in the research to help a colleague.) In 1970, Lovaas started the Young Autism Project, which stressed early intervention—the kids in the study were between the ages of two and four—and rigorous, eight-hour-a-day training sessions. Over time, Lovaas eliminated the program's use of aversives because of public pressure and the discovery of other, more effective training methods.

In 1987, after 17 years of testing and research, Lovaas published the astounding results of his study: 47 percent of the patients achieved "normal functioning" and were able to attend mainstream schools. Children who participated in the program for two years made average IQ gains of 30 points. Perhaps most important, many of the children maintained their gains into adolescence.



Psychologists hailed the study. "It was our first breakthrough where kids could be brought back to normal function," says Bryna Siegel, director of UCSF's Autism Clinic and author of two books on autism.

Others attacked the findings. Psychologists, it seemed, had always attacked Lovaas's findings: In 1967, Bruno Bettelheim wrote that behavioral therapy "reduced [autistic children] to the level of Pavlovian dogs." Shock treatment, he continued, "strip[s] the patients of whatever humanity they still have." In 1987, critics blasted just about every aspect of Lovaas's methodology and research, from the high treatment costs and the selection of patients to the "close relationships" that developed between therapists and parents.

"If I had gotten Hitler here at UCLA at the age of four or five," Lovaas says, "I could have raised him to be a nice person. A humanitarian!"

According to several of his most vehement foes, Lovaas had deliberately chosen test subjects who were apt to respond favorably to his brand of behavior modification. Others criticized Lovaas's implication that the students had been completely "cured" of the disorder.

One of the most persistent criticisms was that Lovaas's 40-hour-a-week treatments and repetitive trials didn't allow children to learn in a natural setting. "You'll see our kids doing something one time in the context of where it would occur rather than ten times in a row," says Gary Mesibov, director of Division TEACCH, a rival therapy at the University of North Carolina. "Touch red? I don't think that touching red is a meaningful activity."

Of course, many of the criticisms will evaporate if a replication of Lovaas's results is achieved. There are currently 150 children in treatment at replication sites around the world, from England to Spain to Japan to the United States, each site working on multiyear projects trying to match the results of Lovaas's 1987 study. "This is not easy research, so I don't mean to trivialize it or minimize it," says Mesibov. "But I think with most people, with a finding that important to them and to others in the field, you would expect a replication by now."

THE LOVAAS INSTITUTE for Early Intervention in West L.A. looks much like any day care center. A plastic tub full of children's videos—*Disney Sing Along Songs*, *The Best of Ernie and Bert*—sits in the lobby. In a large treatment room, where four-year-old Louis, his parents, and ten therapists and project directors are holding a weekly review session, picture books and toys litter the floor. The adults sit in a circle, all watching as Louis goes through his routine.

Every time he performs a task—sit, touch red, touch monkey, push train—the room explodes with praise. "Good sitting!" they all squeal. "Wow!" After performing five tasks in a row, he is rewarded with a song from an electronic teddy bear, a favorite toy. Louis dances with glee as the bear sings.

Unlike in the earlier sessions recorded in the *Life* article, there are no screams, no slaps, only love. For Louis, that may be enough—as long as it

is love accompanied by years of rigorous, often mind-numbingly tedious tasks. Louis turns around to find his parents' faces amid the crowd of directors and therapists and flashes them a quick smile. Then the training begins again.

Nobody in the room—not the parents, not the training directors or the therapists—expects a breakthrough moment, an instant of clarity when something deep within the brain clicks into action. That never happens, Lovaas says. "People tell you that they had a kid in treatment and they suddenly changed," he says. "They're complete liars!" he yells, then erupts in laughter.

So they wait for the small miracles. Louis is getting better at his vowel sounds. He is getting better at stacking blocks.

There may never be big breakthroughs, but there are moments when a child will do something he hasn't done before, something the therapists or the parents never taught him. Like putting a doll to bed. "That's pretty complicated stuff, put the doll in the bed, putting a cover over," says Lovaas. "He's seen something, and he's imitating it. Now, putting a doll to bed isn't going to help him go to preschool. But something is going on." **LA**



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