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Dear Loren,

I enjoyed recently hosting a group at your museum. The adults were as excited and fascinated as the group of gifted youngsters I had brought down. I am so glad to have found your museum! I look forward to bringing another group of students during this school year.

Enclosed please find an article my mother sent me for you. You've changed people's lives by sharing your expertise with them. I can't imagine that before my mother attended your museum her eye would have been caught by an article dealing with holography.

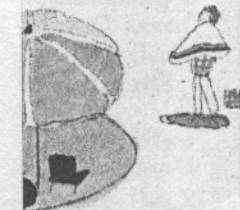
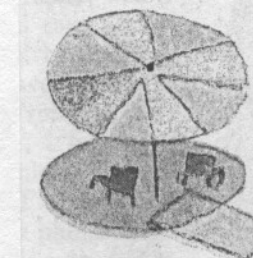
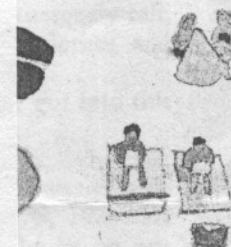
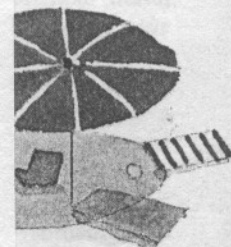
Again, many thanks for the fine tour and lecture. I've received only favorable comments from those in attendance.

Sincerely,

Wendy Kotrba

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NEW YORKER



Athletics, Inc.) The service was held in the rotunda of San Francisco's City Hall, and in the course of it Dr. Waddell's wife, Sara Lewinstein, announced that the U.S.O.C. had officially removed a lien it had placed on Dr. Waddell's house to defray its legal costs in pursuing its case. Evidently, the house, which Dr. Waddell had renovated himself, was his major asset, and he'd wanted to pass it on to his four-year-old daughter, Jessica. He died not knowing for certain whether he would be able to do so.

The sad irony in all this is that Dr. Waddell was an Olympian—even Congress and the Olympic Committee would have had to allow him access to the noun, by virtue of his participation in the Mexico City Games, in 1968, as a member of the United States decathlon team. He finished a much-more-than-respectable sixth, within shouting distance of the gold medallist, Bill Toomey. At the Mexico City Games, Dr. Waddell supported the American sprinters John Carlos and Tommie Smith after they gave clenched-fist Black Power salutes during the medal ceremony, and his conduct made the U.S.O.C. angry. And as a physician in the Army, in the sixties, Dr. Waddell openly criticized this country's involvement in the Vietnam War; he came close to being court-martialled for his anti-war statements. Ultimately, Dr. Waddell became a tireless fighter for gay rights and gay pride. He was, it seems clear, a man with the courage of his convictions, and by all accounts he was a gentle, intelligent, and charming person. It's unlikely that he would ever have threatened to take away a dying man's legacy to his daughter.

The one bright light among these gloomy events was Dr. Waddell's bravery in facing his illness. Everyone around him was awed and inspired by his will and humor and strength of character. His last words were "Well, this should be interesting."

Holography

"Holography is like a siren," Ana Maria Nicholson said the other morning as she and her assistant, Tim Schmidt, prepared her equipment in the basement of the Museum of Holography, on Mercer Street. "It lures you and lures you, and then you are in deep water. You take Jonathan, for example. For years, he's been saying that he must get out of holo-

graphy, but now he's building his own studio."

"In my garage, in New Jersey," Jonathan Klempner, her colleague, volunteered.

It sounded to us like an expensive undertaking, and we said so.

"I just concluded that I'm spending sixty per cent of my income on holographic equipment," Mr. Klempner said.

"What does your wife call you?" Ms. Nicholson asked.

"A photon surfer," Mr. Klempner said. "That's what she calls all holographers."

"It's this incredible insane fraternity all over the world," Ms. Nicholson said.

"It's a very small fraternity," Mr. Klempner said. "If you dropped a bomb here this morning, three-tenths of the profession would be wiped out—a slight exaggeration."

Here's how Ms. Nicholson explains holography (please imagine an excited voice and a Spanish accent): "A hologram is really two wave fronts interfering with each other. The laser beam comes out, and you split the beam in two. Then one part becomes what we call the reference beam, which covers the emulsion plate with an even light. The other beam we call the object beam. It's more adventurous: it explores what it finds and becomes all helter-skelter, and in a sense it tells the story of what it sees to the reference beam. Of course, I'm being silly."

Here's how *we* would have explained holography before we met Ms. Nicholson (please imagine the lofty tone of one who has generally racked up better grades in English than in science, though he has been to Forty-seventh Street Photo in his time): The modern world presents for our perusal

all kinds of remarkable phenomena. Some, having appeared, become our constant companions, and require, in some degree, our understanding. Others, mercifully, have no sooner shot over the horizon than they disappear into a long parabolic orbit around our consciousness, remaining invisible for such long intervals that, when they eventually reappear, if we merely relax, breathe deeply, and nod hello, who will suspect *we really haven't the foggiest idea what they're all talking about?* Of course, we're being silly.

If you had asked us to imagine a holographer, we might have pictured someone in the computer-programmer mode: young, male, floppy of hair, dress, and deportment—someone, in short, like Mr. Klempner (who turns out to be a computer programmer as well as a holographer). We would certainly not have pictured Ms. Nicholson, a former model from Spain, now into her forties, statuesquely tall, blond, and smart about clothes and jewelry.

We asked her how she got into this line.

"My husband is an artist," she said, "and his work at one time was very illusionistic. This was 1973, 1974. He thought holograms might be an answer to his artistic problem, so he did a lot of work with holography, and I helped. Then he decided that his art could be better expressed by painting and sculpture, and he gave up holography. But I loved it. From the moment I saw a hologram, I loved the medium and the technology. There are many difficulties. The slightest disturbance—perhaps the phone ringing—and the hologram is ruined. But the experience of three-dimensionality is so enriching that we must all have faith that it will take off. I think that within the next year holography will be considered an art form."

That hope, we learned, has lately been nourished by advances in pulse-laser holography, a technique that makes it possible to do portraits of people (or animate objects) without requiring them to hold still for several seconds or more. "There are two kinds of lasers—the continuous-wave and the pulse," Ms. Nicholson said. "With the C.W., you plug it in and the laser beam just comes on. This is a pulse laser." She pointed to a long boxlike appliance on a table—a sixty-thousand-dollar item, we learned later. "You gather the energy and then it explodes in a burst."

The Museum of Holography has



mounted an exhibit of pulse-laser holograms, some largely of aesthetic interest (Boy George, an homage to Marcel Duchamp, an exploding cocktail glass) and others of scientific interest (the core of a nuclear reactor, the tracks of subatomic particles, the peat-preserved remains of a two-thousand-year-old man who, it has been theorized, was the victim of a ritual axe murder). In addition, the museum is offering to let members of the ordinary public sit for pulse-laser portraits, at fifteen hundred dollars a shot. As of our visit, only three customers had taken the plunge, and the museum, by way of getting the ball rolling, had invited several members of the not so ordinary public to sit for complimentary portraits. On this particular morning, Ms. Nicholson, Mr. Klempner, and Mr. Schmidt were awaiting the arrival of the first of the free customers—David Byrne, the lead singer of the Talking Heads.

"What I'm doing now is checking the reference beam and the object beam," Ms. Nicholson said. She was holding a remote control joined by a cable to the pulse laser, the business end of which faced an array of mirrors. Ms. Nicholson pressed a button, and a flash of red light darted from the laser, bounced this way and that, and, after passing through a window that separated the gadgetry from the chair where Mr. Byrne was to be seated, landed behind the chair on a sort of easel, which held an emulsified glass plate—the holographic equivalent of film.

At Ms. Nicholson's instructions, Mr. Schmidt adjusted the mirrors this way and that, until the red light was properly centered on the plate.

Still, Ms. Nicholson seemed restless. "How tall is David Byrne?" she asked. She explained that she had been getting conflicting reports—some sources said five feet ten, some said six feet two—and it was hard to set up the laser without knowing for sure. "I don't know if the chair is high



enough," Ms. Nicholson said. "We mustn't have David Byrne sitting on a phone book."

The issue was settled a few minutes later by the arrival of Mr. Byrne himself. Five feet ten. Out came the phone book.

"I got a message to wear a white shirt," Mr. Byrne said after introductions all around. "Why is that?"

"Because I would like to do you against these black and white cubes," Ms. Nicholson said, pointing to some cardboard boxes that had been prepared as a backdrop. "With your classical face, I feel, the white shirt would be best."

"And I have this pair of funny glasses," Mr. Byrne said. He submitted them for Ms. Nicholson's inspection. They were holographic glasses, with the image of an eye built into each lens.

Ms. Nicholson looked uneasy. "Why don't we try one or two shots..."

"Without the glasses?" Mr. Byrne said.

She nodded, and Mr. Byrne took his seat in front of the cardboard cubes.

"Can I keep my eyes open?" he asked.

"Oh, yes, absolutely," Ms. Nicholson replied.

"So there's no effect on my retina?"

"The danger has been greatly exaggerated," Ms. Nicholson said. "I've been doing my son since he was two. He's thirteen now. The laser is less bright, when you really come down to it, than a flashlight."

"The pulse lasts for twenty nanoseconds," Mr. Klempner said, adding that a nanosecond is a billionth of a second—time enough for light to travel a distance of one foot.

"The laser is ready," Ms. Nicholson said. "Are you ready?"

"I'm ready," Mr. Byrne said.

She pressed the button, and for the next twenty billionths of a second Mr. Byrne's face turned red.

A second shot followed. Then a third, for which Ms. Nicholson gave Mr. Byrne carte blanche in posing. "I'm going to shake my head—distort my features," he said.

"That's an interesting idea," Ms. Nicholson said noncommittally.

After the third shot, everybody thanked everybody else, and Ms.

Nicholson promised Mr. Byrne that the finished hologram, of what she judged to be the best of the three shots, would be ready in a week or two. (One copy would be presented to Mr. Byrne, another kept for the museum's collection.) Mr. Byrne departed, and soon the three holographers were in a darkened hallway viewing, behind the developed plate, the disembodied head of Mr. Byrne. When our turn came, we reached out toward the apparition, and our hand went slicing through space.

The consensus of the group was that the second shot was best, in a stark and dramatic way. Mr. Byrne would be pleased, everyone agreed. Ms. Nicholson seemed pleased already. "It's so rare in holography that the concept and the end product match even a little bit," she said.

Freedom

FREEDOM PLACE is the short, broad road that runs from West Sixty-sixth Street to West Seventieth between West End Avenue and the old rail yards. The road was built about twenty years ago, on top of a dirt hill that was left over after Lincoln Towers was put up. The west side of Freedom Place is a fence and a retaining wall, and the east side is the backs of parking garages. Nothing has an address on Freedom Place, no one

lives on it, and it goes nowhere, but it has enormously wide sidewalks and the roadway itself is roughly twice as wide as an ordinary city street. There's talk that it was built because no one knew what else to do with the hill. But Freedom Place serves a valuable purpose: it is one of the very few places in Manhattan where cars can roam free, and we learned while spending a day there recently that it's popular both with student drivers and with the people they're most terrified of—cabdrivers, who enjoy nothing better than spending their lunch hours on Freedom Place heckling the novices.

9 A.M.: A gold Corolla with a bright-yellow "JOHN JAY COLLEGE OF CRIMINAL JUSTICE SPECIAL PROGRAMS" roof-top sign and a "STUDENT DRIVER" sign in the back window creeps around the corner from West Seventieth Street. A long-necked young man with a blond crewcut is at the wheel. The instructor is an older man with thick glasses. The car shudders to a stop in the middle of the street, then inches around in a broken-U-turn and heads back.

10 A.M.: The gold Corolla swings around the corner at an improved clip. At the south end of the street—the end near the television studios on West Sixty-sixth where the soap operas "Ryan's Hope" and "Loving" are

taped—a red Chevette bearing a small "Student Driver" sticker and driven by a small, harried-looking woman appears. The two training cars approach each other, hesitate. The Chevette sputters and begins to stall.

10:15 A.M.: Butch De Monte, the manager of the GMC garage, which has one of its two entrances on Freedom Place, steps out of his office to check the action. "I've been here thirteen years, and I've seen it day in and day out," Mr. De Monte says. "I once saw a woman try hour after hour to make a U-turn, and she got so frustrated that she finally jumped out of the car. That gave the cabdrivers a kick. There are sometimes a hundred cabs back here in a day, and the drivers all know each other, and gather in little groups. Sometimes they bring guitars or bongos, and sometimes they just talk. The student drivers are sort of a sideshow. I sometimes start to recognize a driving-school car when it comes through here a lot, and if it's nice and new at the beginning of the year, by the end it's demolition derby. Come to think of it, a lot of students end up hopping out of their cars because they get so frustrated. Luckily, there's so little traffic on Freedom Place you can get out and stand here having a fit. You couldn't really do that anywhere else. Even one little block away, on West End Avenue, it gets pretty cruel."

10:30 A.M.: A man and his young son have pulled up beside a fire hydrant, parked, dragged out their floor mats, and started washing them. The man explains to us that when he's not doing anything else he likes to wash his car mats and, for his money, Freedom Place is the best spot in the city for car-mat washing.

10:31 A.M.: A fire inspector who is checking a sprinkler system on West Sixty-sixth stops to scold the man with the car mats for using the hydrant. "I think they should close this street," the fire inspector says. "I don't think it serves any purpose."

11 A.M.: Another



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