



ACID WEST

• ESSAYS •

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MCD X FSG ORIGINALS • FARRAR, STRAUS AND GIROUX

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CHILDREN OF THE GADGET

In the Year of Our Lord 2015

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Hundreds of twinkling lights, five hundred brown paper sacks with candles in them, luminarias around the mound and spilling out into the base paths and a family of three with singing bowls on the infield grass, the biggest singing bowls I've ever seen, like singing buckets between their legs and them dragging mallets along the glass rims to make the air drone, for hours the air drones as one by one the luminarias are extinguished by roving figures in the dark, and when another wisp of smoke from a smothered wick dissipates, then we are done remembering, for this year, one more victim of the Gadget, the Manhattan Project's crowning achievement at Trinity, the world's first atomic blast, seventy years ago, right here in Southern New Mexico. The guy sitting in front of me on the bleachers has a John Wayne koozie around his drink. He sips and sips from John Wayne. Up in the press box a trio of announcers takes turns reading pages of names of all the

people in the Tularosa Basin who have died of cancer caused, they say, by radioactive fallout from the first breath of the atomic age. For hours, name after name like the slow grind of a macabre graduation ceremony. So then this is how the twenty kilotons of the Gadget's blast fades, not up into the mushroom cloud and gone in under a minute, but filtered through seventy years and still a few more names, and still a few more flames to be extinguished.

Out beyond center field is a rusty merry-go-round, the kid-powered playground kind with the kids running in circles to get it spinning at unsafe speeds and jumping on and getting immediately flung off, and all through the reading of names and extinguishing of luminarias, that merry-go-round never stops creaking and spinning, the children of Tularosa never stop running and hollering and getting flung into the night. It's almost like they don't even know they're the children of the bomb. Or, the Gadget. Children of the Gadget. Out of New Mexico came two different versions of the bomb and then there was a superbomb and eventually many tens of thousands of each including warheads on missiles and torpedoes, but they were all born of the same moment of warfare singularity when mass destruction became less of a campaign and more of a decision. The Trinity Site: just forty-five miles northwest of those children discovering the nauseous joy of physics on the merry-go-round. Every bomb is the Bomb. But that first one at Trinity was called the Gadget—a code name for secrecy's sake, a name diluted by the technicality that it was only a test device, a name meant to hide the significance of what we were about to do. Just a gizmo or a widget. A little doohickey. Nothing but a goddamn gadget. Just toying with the nauseous joy of physics.

Henry Herrera sits up in his lawn chair next to the

bleachers and says, *The thing went off and the fire went up and the cloud rose and the bottom half went up that way.* He gestures over my head toward first base. *But then the top part, the mushroom top started coming back this way and fell all over everything.* He waves both his arms back toward us and all around us, big swoops of old, thin, and crooked arms over his head like he might be able to accurately pantomime an atomic blast or like he's invoking its spirit or just inviting the fireball to rain down again so the rest of us can really understand.

Henry's sort of a celebrity in this crowd, one of the only remaining residents of Tularosa who actually witnessed the Gadget's blast, a guy who's beat cancer three times already and says he'll lick it again if he gets the chance. I've heard him repeat the story, word for word, to anyone who will listen, for years now. He sits next to me, fiddling with the pearl snaps on his Western shirt, petting his white hair down in back behind his big ears, telling the tale in spurts, little stanzas between long gaps of pondering, those rests of silent reflection that never stop growing as we age, like ears, like I guess all our really old storytellers have big ears and the will to ride a lull for as long as it takes until an aphorism or anecdote has marinated on the tongue and is ready to serve. He serves one up: *I'll bet ten dollars to a donut your momma never blamed you for the atomic bomb.* True enough. And the rest of his story sidles out as the luminarias burn.

Henry was eleven and up early, just before dawn, to fill the radiator in his daddy's Ford, always his first morning chore. The radiator on an old Model A had to be drained every night and filled every morning if you couldn't afford fancy additives like water lube or that newfangled antifreeze.

And the Herreras couldn't afford anything fancy. This was 1945 and they were just like all their neighbors in Tularosa, most everyone Hispanic and working ranches, growing and raising as much of their own food as they could and collecting most of their summer drinking water from the monsoon rains. So there's little Henry with his skinny arms holding a bucket over the fill hole in the grille of the Ford, and what he remembers most is that his momma had laundry hanging on the line to dry. He remembers the laundry blowing in the wind. *Kinda strange to have wind like that right before dawn. All her white stuff*, he says. *Linens and shirts and underwear flapping around*. And then the flash: on the polished steel of the Ford's grille and the dull steel of the bucket and the flapping white linens and the retinas of little Henry's eyes. *Light. Night turned to day*, he says. *Like heaven came down*.^{*} And then the blast and the shaking and then dark again. Silence. Nobody ever thought much of a bomb going off because bombs were always going off over at the Alamogordo Bombing and Gunnery Range since our Second World War began, but this explosion was different. *It was huge and after*

^{*}There's a hymn I sang often in my youth, from a pew in a warehouse chapel over on Cuba Avenue: "Heaven Came Down." I'm certain that in his description of the Gadget, Henry is referencing, however subliminally, this very hymn. I sang it so many times, those lyrics that make simultaneous the historic event of the crucifixion and the divine experience of the singer receiving grace thousands of years later, as if every time you repent, Jesus is crucified again, just for you. Those lyrics that meant one thing about joy until Henry says them about the Gadget: *My sins were washed away and my night was turned to day / Heaven came down and glory filled my soul!* Now *heaven came down* will become a refrain in this essay about the Gadget and mean the opposite of joy, which is sorrow, and also, I think, nervousness.

a few minutes comes this little filmy dust, Henry says. Fine dark ash just came down and landed all over everything. Momma's clothes hanging out there turned nearly black, so she had to wash them over again. You talk about a mad Mexican. He laughs at the thought of his momma's face, seeing all her whites turned to grays, screaming, *What the hell did you explode out here, Henry?*

So that's the story of how Henry's momma tried to blame him for the atomic bomb. *It's funny until you know we was drinking it and eating and everything else. But we didn't know that for years. Not really until we started dying.*

For so long the story of the Gadget's explosion at Trinity has included some version of this: history made in an uninhabited stretch of the high lonesome desert in New Mexico. A 2015 PBS documentary about Trinity begins, "Here, miles and miles from anywhere . . ." Even the most acclaimed history, *The Making of the Atomic Bomb*, by Richard Rhodes, an otherwise stellar eight-hundred-page tome that covers everything from the most minute details of late-nineteenth-century theoretical physics to the rate of venereal disease at the Trinity outpost (proudly the lowest in the nation), glosses over that many thousands of New Mexicans lived within fifty miles of the blast. "A bomb exploded in a desert damages not much besides sand and cactus and the purity of the air," writes Rhodes. More recent articles about Trinity occasionally use the phrase "sparsely populated region." And it is true that a few thousand mostly Hispanic or Native ranchers and villagers living within fifty miles of the Gadget pale in comparison to the nearly half million Japanese who felt the Bomb in Hiroshima and Nagasaki in 1945. But that kind of math is little solace for folks

such as Henry who feel they've been poisoned in the shadows, forgotten or swept under the rug by their own victorious nation.

Henry intertwines his tale of the Gadget with one about being in the military ten years later, touring Hiroshima and Nagasaki after the war because he'd become obsessed with what he'd seen as a kid—*night turned to day, like heaven came down*—and he needed to see also what the Bomb had done to our enemies, and he surely saw it all: the complete devastation, the rubble and ash and shadows stuck to walls and *just imagine all those families*, he says. His eyes get watery, crying the way all these old tough guys from the desert do, a quivering lip and the eyes barely dripping but gritting his teeth to offset it all, gritting so hard it appears he's trying to stop not just his own tears but trying to will away all the sorrow in the world all by himself, the presence of any tears really secondary to the wrought of his face in relating not just sadness about Japanese civilians killed in the bombings or sadness about American civilians killed by the test but also rage about the inevitability of it all. *We did it*, he says. *We Americans did that. We had to, I know. But nobody remembers we did it here first.*

So here they are having a vigil, three generations of families from the Tularosa Basin, a stretch of desert southeast of Trinity, between the San Andres Mountains and the Sacramento Mountains, from Carrizozo down past Alamogordo with the village of Tularosa smack-dab in the middle. And the luminarias on the village ballpark are their way of saying after all this time, *We were there. The desert you blew up was not so lonesome. We are here still but we are dying. If you cannot save us, then let us tell our story.*

July 18, 1945

(Two Days After the Gadget's Blast)

There's the head of a jackrabbit, blown from its body. Little chunks of them are everywhere, and maybe this one's body is in pieces nearby or maybe it evaporated. There are so many heads and legs and piles of charred guts or just shadows on the sand, burns where all the sand is scorched except where a jackrabbit stood, perked up at the sight of a warning rocket, then blocked the heat of the big blast for a shake until it was blown away, leaving only the specter of its long, jagged ears on the sand. The official report will use the word *eviscerated*. How else to explain a whole spattering of lucky feet not far from the crater where just the other day sand was melted to green glass by heat ten thousand times hotter than the surface of the sun. So it was jackrabbits. And snakes and cicadas and maybe a coyote or two. First blood of the Gadget. Someone reports a stench in the air from eviscerated animals, but that is the only time any death will ever be officially linked to the first breath of the atomic age.

The Gadget's explosion was only announced retroactively after its cousin Little Boy wiped out Hiroshima. The *Alamogordo Daily News*, the paper of record for the Tularosa Basin, wrote it up like this on August 9, 1945, printed this as the Gadget's twin, Fat Man, was falling toward Nagasaki:

Some of the biggest news ever to break on man's understanding has exploded this week—a terrifying type of bomb, the Russian declaration of war upon Japan, etc., etc. Since our readers get the details in the dailies and magazines and by radio, we will not attempt to even review it. In fact

we are forced to leave out much news of local import for lack of space.

And in the BIG NEWS: Alamogordo probably is now a heard-of place to people all over the world, as the site of the final atomic-bomb test.

This is the entirety of the announcement of the Gadget's birth in our hometown newspaper. Because the Trinity test happened on the Alamogordo Bombing and Gunnery Range (now White Sands Missile Range), Alamogordo is often credited as the site of the bomb's birth. But the village of Tularosa is closer to Trinity—forty-five miles southeast. Carrizozo is closer still—thirty-five miles east. Alamogordo is sixty-two miles south of Trinity and I guess that's about as close as the government wanted the press to suggest any Americans lived. The announcement in the *Daily News* is small, and half of it is an apology for lack of space. There are two *et ceteras* (abbreviated, of course, for space). Maybe this was the beginning of us not telling the full extent of the story. But Alamogordo was only three thousand folks large and the paper was only a weekly, so maybe it can be excused for extreme brevity regarding “the biggest news ever to break on man's understanding,” if not for what comes directly below the small announcement of the Bomb, just an eighth of an inch away, separated only by a slight line with a small circle in the middle, a second announcement that dwarfs the first, dominates the page:

Early on the morning of Friday, August 17th, with the rumbling of heavy trucks, the neighing of horses and ponies, the screeching of monkeys, the trumpeting of Susie Q, the elephant, everyone will know that BUD E ANDERSON'S ALL AMERICAN CIRCUS has arrived at the Tularosa circus lot.

It has always been spectacular to watch the arrival of a circus and how with precision, truck after truck of material and animals are run on the lot, unloaded, and in just a few hours the big top, with its pennants floating in the air, the side show with its colorful banners, all have been erected in the twinkling of an eye, forming a complete little city of its own, ready for the sound of the calliope, the blare of the brass band which announces that all is in readiness for another day of good wholesome family fun and entertainment.

The circus coverage barrels on for another three grafts, down to the bottom of the page, just as flowery as it began, mentioning the “monkies” a few more times and adding the “Great Wilkins Family of aerial artists” along with “Buckley’s Troop of trained dogs” and “Rodeo Ranger with his well known educated white Stallion Tonto” and finally bringing things to a close with the promise every reader eagerly awaits: “clowns, clowns, clowns.”

Just below the circus ad is an invitation to the Church of Christ in Alamogordo—the warehouse chapel my family has attended for much of the seven generations we’ve been here. They invite you in August 1945 to attend a study of chapter 10 of the Book of Revelation, aka Revelation, aka the Apocalypse. The name of the sermon this week is “A Mere Form, or a Mighty Force; Pretence or Power,” preached by Minister Tice Elkins. His congregation had been working their way through the Apocalypse for months, one chapter at a time, meaning they started way back in May, long before they had any notion of the Bomb. When the Gadget exploded in secret early on the morning of Monday, July 16, the church had just finished, the evening before, reading

aloud from chapter 8, which ends with the writer proclaiming, “And I beheld, and heard an angel flying through the midst of heaven, saying with a loud voice, Woe! Woe! Woe to the inhabitants of the earth!” The angel says woe because the angel holds a key to some awful force and has every intention of using that key, which the angel does straightaway: “And there arose a smoke out of the pit, as the smoke of a great furnace; and the sun and the air were darkened by reason of the smoke of the pit.”

As we sit at the ballpark, listening to names of the dead, luminarias flickering and merry-go-round spinning, Henry Herrera and I try to talk about something other than the Bomb. We talk about how he plays guitar every Sunday at mass, about how his favorite thing in the sky these days is hot-air balloons, about how he knew my granddaddy and uncles from work out at the missile range in the seventies, after the Department of Defense had gobbled up so much of the land in SNM and was offering the only decent-paying jobs around. But I can't shake the clowns and so I put it to Henry: *Did you go to the circus a few weeks after the Gadget's blast?* He doesn't remember. He can't say for sure. *But, yes, every now and again, there'd be a circus right here.* Then he waves his arms again just like he did when he was showing how the fallout came down, saying from where we sit along the third-base line over to Highway 54 running north to Carrizozo, right in that thousand or so feet of sand and mesquite is where Bud E. Anderson's All American Circus raised their big top seventy years back. We're more or less sitting on top of the old Tularosa circus lot. And so the neighing of horses and ponies, the screeching of monkeys, the trumpeting of Susie Q, all that happened right here but back then and in the wake of the Gadget. Susie Q stomping her giant feet in the radioactive

ash. The Great Wilkins Family of aerial artists swinging on their trapeze high above all the settled ash. Trained dogs and Rodeo Ranger and clowns, clowns, clowns, traipsing around in it. And maybe Henry but definitely plenty of the other residents of Tularosa who were children then, many of those whose names are no doubt being read in the endless list over the PA, all of those first children of the Gadget running around excitedly and hollering and the screams of the kids on the merry-go-round out past center field are the screams of all these luminarias rolled back in time and reformed into the light inside the children they once were, running around with their peanuts and big eyes and experiencing magic for the first time right here at the circus in the world's first radioactive fallout.

July 17, 1945

(One Day After the Blast)

Twenty miles northeast of Trinity, M. C. Ratliff and his wife and their grandson and dogs and livestock have been wondering why their house and fences and land are covered in gray snow in the middle of summer. The Army sends out two doctors to investigate a canyon they've just named Hot because it keeps sending the needles on their Geiger counters into a tizzy. The doctors wander onto the ranch in Hot Canyon and are surprised to see the family going about their chores, gathering food and shoeing horses. All the official Army reports claim nobody lives in this area. The doctors do not identify their reason for visiting the Ratliff ranch and do not explain the snow of ash, which will continue to appear at dawn and dusk for many days, blanketing the roof and garden and live-

stock, sinking into the soil. The Ratliffs appear alive enough and are left to go about their business, dusting the soot from their animals and vegetables, collecting ashy rainwater from their roof for drinking and washing after a long day of chores.

The luminarias are extinguished and Henry heads onto the baseball field with nearly everyone else in the stands, people currently suffering from cancer and people who have loved ones who are suffering from cancer and people who have survived by the skin of their teeth, all to get blessed by the village priest, who lays his hands on their heads one by one as a medicine man, an Apache from the Mescalero reservation in the nearby mountains, dances and drums and sings and kneels down in the dirt around home plate and rubs his hands in the dirt and tosses the dirt up into the air like he's trying to show all things it has contained over time. Dust to dust, ashes to ashes: the simplest story ever told because the whole human part is erased.

When I arrived at this ballpark vigil for the Tularosa Basin Downwinders Consortium, there was a fair amount of confusion at a table where people were gathering and compiling the names of the dead. Some folks wanted to add a name to the list but didn't know if they could because the person didn't die from cancer. And the list makers said, *Well, this is just for those that are dead.* And the family with the name said, *Oh, yes, our father is dead.* And the list makers said, *Oh, well, this is for those that had the cancer.* And the family said, *Oh, yes, he had the cancer but that's not what killed him.* After a long back-and-forth regarding the exact factors that went into the father's death and all the illnesses he suffered and all his addresses of residence, his name was added to the list, a luminaria lit in remembrance of him.

It is so hard to know, seventy years on, exactly whom the Gadget hurt. The explosion killed no one yet the fallout fell all over this desert. In a world where the causes of cancer seem to seesaw between everything and most things and absolute randomness, the issue has become what you might call muddled. The National Cancer Institute is in the midst of a years-long study in Tularosa, but there's not a whole lot of hope that it's a real priority because they only interviewed a half dozen residents of the village and, according to Henry, their questions were dumb. The state's own Tumor Registry claims cancer rates for Anglos, Hispanics, and Native Americans in the Tularosa Basin are similar to those throughout New Mexico, that there is nothing anomalous. So I hold a three-page homemade health survey in my hands, a thorough inquiry of family background and medical history and a page listing over thirty types of cancer, each with a box next to it for writing your year of diagnosis or your family member's year of diagnosis. The village wants to finally collect their own proof that they were downwind of something terrible that now creeps through every new generation too.

The notion of downwinders, American citizens exposed to fallout from nuclear tests, wasn't part of the national consciousness until the 1970s, even though aboveground nuclear weapons testing stopped because of environmental and safety concerns in 1963. The horrors of death by radioactive fallout were well-known, despite government obfuscation, as early as 1946 with John Hersey's publication of *Hiroshima*. But somehow we convinced ourselves that nuclear weapons detonated in the name of science rather than war (if such a distinction can exist) caused little or no harm, despite all evidence to the contrary. In 1954, U.S. tests of a hydrogen bomb at Bikini

Atoll made the Marshall Islands the most contaminated place in the world. That fallout eventually killed a Japanese fisherman on the boat *Lucky Dragon 5* along with eighteen Marshallese children who played in the downfall of what they called snow. Their deaths would lead to compensation payments just two years later for all Marshall Islanders, the first-ever restitution to people affected by nuclear weapons testing, and the last of that kind for nearly four decades. The year 1954 included live television broadcasts of the Bikini test, and a flood of press about the dead fisherman and Marshallese children, and an aftermath of men in full hazmat suits closing down fish markets on California's coast, and a blockbuster film, *Them!*, about giant killer ants, mutants born out of the Gadget's blast at Trinity—all of that and still there was little political pressure to do much of anything about the plight of American downwinders. Not until 1979, and about 750 more nuclear tests on our soil, did Ted Kennedy first try (but fail) to pass a radiation-exposure compensation act for American citizens.

Then John Wayne died.

In November 1980, seventeen months after Wayne lost his long battle with lung, throat, and liver cancer, *People* magazine ran his photo on their cover with the question "Did atom bomb tests give him and other stars cancer?" Their story raised the possibility that, while filming *The Conqueror* in Utah in 1954, John Wayne, Susan Hayward, and many others in the cast and crew were exposed to radiation from a test site at Yucca Flat, Nevada, about one hundred miles from their shooting location. The year before production began, there had been eleven nuclear explosions at the Nevada site, including the infamous atmospheric test of Dirty Harry, which

resulted in the highest downwind contamination ever measured in the United States. Ninety-one of *The Conqueror's* 220 cast and crew were diagnosed with cancer by 1980, with forty-six of them already dead, including Wayne. No definitive link between these nuclear tests and the cancers of those from *The Conqueror* production has ever been established. Wayne's penchant for six packs of Camel smokes a day didn't help to resolve anything. But the possible nuking of an American icon finally helped imprint the plight of downwinders on the national conscience. Apparently the only thing more horrifically un-American than the filming of *The Conqueror*, a historic flop in which John Wayne plays the monstrous Mongol emperor Genghis Khan, is the thought that while John Wayne played Genghis Khan, we murdered him with our Bomb.*

* *Please, God, don't let us have killed John Wayne*, a nuclear defense scientist told *People* magazine. This prayer contains the obvious and pragmatic desire to avoid extremely bad press, but it's also, when you ponder it deeply, a desperate plea about the whole narrative of our nation, a plea that's caught up not just in our Bomb's possibly having killed one of our most defining (for better or worse) icons, but that the possible poisoning happened as a result of the singularly mind-boggling film *The Conqueror*.

And maybe nobody understood this prayer better than the film's financier and producer, the man who wanted *The Conqueror* to be the great epic of his film career, Mr. Howard Hughes. When *The Conqueror* was panned by critics as one of the worst films of all time, Hughes reportedly spent millions buying up every print in existence. Different sources record his obsession over eliminating the film from public view as either a matter of shame over its awfulness or devotion to its greatness or some of the obsessive-compulsive disorder that dominated his later years. But most agree that he spent a four-month period in 1957 locked in a screening room in Hollywood watching films by

Joseph Masco's got this idea in his book *The Nuclear Borderlands* that he calls the nuclear uncanny: "Fear of radioactive contamination has . . . colonized psychic spaces and profoundly shaped individual perceptions of the everyday from the start of the nuclear age, leaving people to wonder if invisible, life-threatening forces intrude upon daily life, bringing cancer, mutation, or death." Masco writes mostly about Northern New Mexico, the strange collision of Pueblo culture and weapons scientists around the nuclear laboratories at Los Alamos where the Gadget was built, where most all iterations of the Bomb were designed after the Manhattan Project, where all contemporary nuclear weapons science is increasingly happening in immersive computer simulations, where the horrors of the Bomb have become, quite literally, only virtual. You've likely never heard of Masco's

himself, naked and eating chicken, watching a few films over and over, and one of the lucky few films for this audience of one was *The Conqueror*. Hughes watched it over and over by himself, even blindfolding the projectionist to maintain the total solitude of the screening. He continued the ritual even after that four-month psychotic break, watching *The Conqueror* over and over when nobody else would or could, through the sale of his airline, which made him the richest man in America, through his gobbling up and development of the largest single stake on the Las Vegas Strip, through his exile in the Bahamas with the Mormon mafia, always watching *The Conqueror* and probably always still with that poor blindfolded projectionist.

Or maybe the blindfolding of the projectionist was not a crass act to maintain the solitude of the screening but an act of grace to save the poor projectionist's life, because maybe in the story of *The Conqueror* is some powerful truth, some wicked axiom about the existence of America, some unutterable prophecy about humankind, the witnessing of which will drive you insane just like Hughes went insane and watched *The Conqueror* over and over and died with six hypodermic

book because we don't read about the Bomb much anymore, we don't talk about it much except as a plot device in our blockbusters or a chess piece in foreign policy charades. The Bomb is shorthand for all sorts of fear and unimaginable devastation that we'd rather not ponder too deeply, and so we keep it at arm's length, a symbol encompassing so much that it might as well be empty. We are becoming numb to the Bomb despite it pervading nearly every aspect of our lives, which is exactly Masco's thesis and why you'll likely never read his book: the Bomb has become a bore, an unimaginative plot point to inflate the stakes of any film or book or political discussion. But Masco argues that we still feel daily the worry and fear of the nuclear uncanny even as we have made the thing that causes that fear a cliché so innocuous by our pop-cultural representations of it that we

needles broken off in his skin, needles for injecting codeine right into his muscles, steel needles to maybe dull the pain of knowing the unutterable prophecy of *The Conqueror*. Or maybe Hughes is a necessary part of the story, of the unutterable prophecy that comes out of the experience of the whole backstory of *The Conqueror*, and the only one with any real understanding of the unutterable prophecy in its full context is the only one who was in the room with Hughes as he watched the film: the blindfolded projectionist.

So here we are: a blindfolded projectionist with the blindfold just barely cinched up on our face through some vigorous smiling motions or cheek stretches and projecting *The Conqueror* for the zillionth time for Mr. Howard Hughes. If we tilt our head back, we can see a sliver of the world beneath our blindfold, and in that sliver is the light of the projector, all the dust particles reflecting the light, the beam expanding as it shoots past the back of Hughes's head, a head that these days just sticks up out of a naked and emaciated body like the top of a raggedy mop, his playboy looks wasted away and his white hair in scraggles and its thinness really clear—transparent—in the light of the projector,

can no longer remember why we feel so fearful all the time. And that makes the fear worse, and useless.

The guy in front of me on the bleachers at the downwinders vigil with the John Wayne koozie is George. I met George a few weeks ago at a downwinders meeting in the village town hall, where he also brandished his Duke koozie.

“The dislocation and anxiety produced by these moments of tense recognition,” writes Masco, is “the *nuclear uncanny* . . .”

George hasn’t seen *The Conqueror* and didn’t know about Wayne’s possible downwinder status but waves his koozie at me, showing me he’s still got it.

“ . . . The nuclear uncanny exists in the material effects, psychic tension, and sensory confusion produced by nuclear weapons and radioactive materials . . .”

The Conqueror beamed through the billionaire’s scraggles: John Wayne in the Western Costume Co.’s absurd interpretation of a thirteenth-century Mongol tunic, John Wayne in yellow face complete with rubber bands to slant his eyes, John Wayne as Genghis Khan, warring and marauding with his hundreds of warriors, extras cast from reservations of Paiute and Navajo in the southwest of Utah where the film was shot—Snow Canyon, Utah, where the sand was full of fallout from hundreds of nuclear weapons tests just across the border at Yucca Flat, Nevada.

And we can almost see through the billionaire’s thin skin too, see with the light of the projector through his thin skin and watch *The Conqueror* play on his blood, on the 150 milligrams of Valium circulating through his system every day. And on the 45 grains of codeine circulating too, in the reflection of the needles broken off in his skin as he stares at the screen, watching John Wayne, whose own blood circulates with 150 milligrams of Dexedrine, speed to shape him up, to help him pass as the sleek but powerful Genghis Khan. What makes America so red-blooded, full-blooded, poison-blooded? And Hughes stares even deeper, beyond the Dexedrine in Wayne, looking for the radiation,

George sat through a whole rant of mine about Wayne and *The Conqueror* and the existence of the nuclear uncanny and how I found his use of that particular koozie, that seemingly innocuous object, at a downwinders meeting to be a kind of anxiety-inducing deal.

“ . . . It is a perceptual space caught between apocalyptic expectation and sensory fulfillment . . . ”

George doesn't have enough fingers to count up the number of people in his life with cancer. This became evident as he was counting them on his fingers for me and, when he ran out of fingers, just pointed to people in the room, telling me how he knew them and which cancer they had or, if it was someone who had already passed, shaking his head and shrugging because he had nowhere to point.

“ . . . a psychic effect produced, on the one hand, by liv-

the tumors that will develop in Wayne's gut and the woman whom Wayne-as-Khan keeps raping, played by Susan Hayward, the smoky-voiced Hollywood vixen who always called Hughes *Mr. Magic* when she fucked him, who bragged openly that she would marry Hughes until suddenly he was married to some other vixen and so Susan Hayward moved on from Hughes until twenty tumors in her brain kept her from moving at all, little clouds so slowly mushrooming in her brain. Did he do that to her? Did his film put the cancer in her like it put the cancer in Wayne? Is Hughes the signal of a paradigm shift from Wayne as the symbol of the American spirit, frontiersman to capitalist, or is Hughes just the logical evolution of the same terrible myth of the conqueror that has slouched through history since Khan and before?

I stole you. I will keep you. Before the sun sets, you will come willingly to my arms, says Wayne-as-Khan to his bride.

Khan's empire came at the cost of around 40 million lives. The American spirit (and policy) of Manifest Destiny that John Wayne embodied cost anywhere from thirty thousand to seventy thousand Native lives during the Indian Wars, not to mention millions of others lost to

ing within the temporal ellipsis separating a nuclear attack and the actual end of the world, and on the other, by inhabiting an environmental space threatened by military-industrial radiation.”

George finished his pointing and shrugging and said, *There's nobody but us to remember how these people died. There's no monument. No recognition and no compensation and no monument to anyone. The only monument we got is for the Bomb.*

George talks about compensation because that's exactly what many downwinders have already received. In 1990, thirty-six years after the first payments for nuclear-weapons-test fallout were given to Marshall Islanders, the U.S. government passed RECA—the Radiation Exposure Compensation Act—which provides up to \$50,000 of compensation for

smallpox and famine since the coming of Europeans and then also all the Native lives lost to all manner of subsequent American fuckery. The two atom bombs dropped in our Second World War killed around 225,000 in Japan. And what has the capitalist spirit of Hughes wrought?

We can hear them now, can literally feel the atomic bombs.

We, the blindfolded projectionist, are at the Desert Inn in Las Vegas where Hughes spends some of his last years pouring money into developing our national City of Entertainment—our Sin City—at the Desert Inn just seventy-five miles from the very same Nevada test site that irradiated Snow Canyon, Utah, where *The Conqueror* was filmed. Hughes watches *The Conqueror* yet again as nuclear blasts shake the walls of his penthouse every three days and shake the projection of the film off the screen. Hughes yells, *Straighten the picture and God damn the Bomb.* And it is our job—we, the blindfolded projectionist—to anticipate the shock waves of the Bomb and stabilize the projection despite our blindfold. But we know the trick of seeing a sliver of the world out the bottom of our blindfold and have been peeking like this for years and we could easily straighten the picture but we must not let on

downwinders and up to \$100,000 for uranium miners, mill workers, transporters, and any other workers exposed to radiation at nuclear test sites. RECA covers exposures of private citizens in Nevada, Utah, and Arizona but fails to acknowledge that anyone may have been hurt by the Gadget in Southern New Mexico.

I don't have the expertise to convince anyone that the Gadget is responsible for all or any of the cancer in the Tularosa Basin. But I can tell you Henry's story. And I can quote the government's own 2009 report: "Exposure rates in public areas from the world's first nuclear explosion were measured at levels 10,000-times higher than currently allowed." And I can give you Masco's summation of the character of our species' nuclear weapons testing:

The international nuclear complex is estimated to have already produced over four hundred thousand cancer deaths worldwide simply from the dispersion of radioactive materials into the environment. It also has consistently targeted minority communities for the most dangerous nuclear projects, creating a new form of global environmental discrimination some have called radioactive colonialism.

Put differently, even as the sole remaining superpower, the

that we are peeking or we will raise the ire of the billionaire so we let the blasts in the distance shake the film from the screen, we let it play like that, Wayne-as-Kahn cockeyed across the wall of the casino penthouse, warring with his thousands of Navajos-as-Mongols, the whole scene wobbling in the shock waves and we just pull the blindfold down and pray the lunatic dies before too long and aren't we always the blindfolded projectionist just letting the uncanny unfold like that, like we couldn't ever change things anyway, didn't have our fingers on the power switch the whole goddamn time.

United States is also the most nuclear-bombed country in the world, having detonated nearly one thousand nuclear devices within its own territorial borders.

So then this is really why we're at the ballpark, why the downwinders of Tularosa have organized into a consortium, why there are letters of support from U.S. senators and representatives being read from the press box—the victims of the very first atomic blast want an apology and a chance at compensation. The standard RECA settlement, \$50,000, might help pay for a few months of chemotherapy but wouldn't even begin to settle the full bill for someone such as Henry, who's battled the sickness multiple times. Really the folks of Tularosa want recognition, acknowledgment that the first of nearly one thousand nukes exploded on American soil had some consequences for the citizens nearest Trinity. *We were lab rats*, says Henry. *That ought to make us hero patriots or something. Which we are. But nobody gives a damn.*

Henry's eighty-one now and his story of the Gadget likely has all the refinements any of our stories might after seventy years of retelling. In some ways it's just another anecdote mapping the birth of a new age our scientists now call the Anthropocene Era, an epoch in which the earth is affected by human technology more than all natural forces combined, an epoch whose beginning we often pinpoint at exactly forty-six seconds past 0529 hours on July 16, 1945: the moment of the explosion at Trinity. A miner felt the blast forty miles east in White Oaks. Windows broke 180 miles southwest at a bar in Silver City. A whole passenger train gawked at the flash 235 miles to the north. On a highway between Socorro and Albuquerque a blind woman, Miss Georgia Green, exclaimed, *What's that?!* In Tularosa, little

Henry's eyes lit up and his bones shook and his momma blamed him. But the part of Henry's story that runs against the grain of the official narratives is that most vivid part: the white linens and underwear flapping in the wind on the clothesline and then all of it going gray in the snow of fallout. The government has always claimed that the wind on the morning of July 16, 1945, blew the radioactive plume of the Gadget's fiery mushroom cloud northeast toward the plains in that corner of the state that truly was sparsely populated, that the cloud of fallout simply missed the towns of Carrizozo and Tularosa and Alamogordo in the basin to the south. The whole issue of whether anyone in the Tularosa Basin will ever get any recognition or apology about the Bomb in their backyard relies entirely on weather conditions over about twelve hours on a morning seventy years ago. The answer, my friends, is blowing in the bygone winds.

1620 Hours—July 16, 1945

(Ten Hours Fifty Minutes After the Gadget's Blast)

The beta-gamma meter in Carrizozo goes off scale. So much radiation is in the north part of the Tularosa Basin that scientists openly debate evacuation. Monitors continue to chase the Gadget's fallout cloud beyond Carrizozo but lose radio contact with base camp at Trinity. They are not equipped with long-distance radios. They never expected to chase the fallout so far.

The Army has drawn up plans for evacuating everyone within a forty-mile radius of the blast, if necessary. The evacuation would include Carrizozo but not Tularosa. But their evacuation plans contain little more than maps of villages

and ranches in the area—a sham plan to pacify concerned scientists. The Army would never risk exposing their big secret. Tomorrow they’ll discover ranches covered in fallout that they had no clue existed because even their maps were a sham. But for now the radios are silent, the fallout monitors out of contact. And no evacuation is ordered. The official reasoning: *There is no immediate threat*. But if some evacuations are ordered now, perhaps fewer people will collect fallout-tainted rainwater from their roofs, fewer people will slaughter irradiated cows or swallow those cows’ fresh milk. They will think twice about harvesting their vegetables growing along arroyos flowing with ash. But no evacuation is ordered. Four decades from now one of the doctors who discovered the M. C. Ratliff ranch caked in fallout will pen a memoir that says, “A few people were probably overexposed, but they couldn’t prove it and we couldn’t prove it. So we just assumed we got away with it.”

July 14, 2015

Four days before the downwinders’ vigil, two days before the seventieth anniversary of the Gadget’s blast, and I’m at the New Mexico Museum of Space History in Alamogordo because the *New Horizons* spacecraft has made a 3-billion-mile journey to Pluto and the man who discovered that lonely rock, Clyde W. Tombaugh, lived in these parts and his ashes are on that spacecraft and this is a ceremony to proclaim today Pluto Day forever after in the Tularosa Basin. In the gift shop of the museum they sell T-shirts sporting a fiery mushroom cloud and the slogan HAVE A BLAST AT TRINITY, NM. This is perhaps an object of the nuclear uncanny like

George's koozie of John Wayne, but it is also just a dumb-ass cash grab and bad humor to boot and the kind of thing whose real value is only in helping us identify with some certainty the morons in our lives because they are the ones proudly wearing the shirt that reduces the whole complex human triumph/tragedy of the Gadget to a corny and insensitive pun. I buy the shirt anyway (size medium, \$25.99), but only because I know that at times it is comforting (and empowering and necessary for getting out of a supreme depression) to reduce immense tragedy to a corny pun. But even as you read this, I will not yet have worn the shirt because it will only work once, will only help defuse one imponderable paradigm shift toward greater savagery before it becomes inert like the ugly Christmas sweater at the back of the closet that will never bring you joy again. Sometimes, when so many wars and murders and rapes are on the news, the Trinity T-shirt will call out to me from the drawer, but I will never convince myself that this is as bad as it's gonna get and so I leave it for another day. Mostly I forget it exists.

The museum has only a few exhibits on the Gadget, saving most of their space for space. But recently I found an AP story from November 12, 1945, that reminds me how our explorations of space are totally intertwined with the Bomb: "Hap Predicts Space Ships Dropping Atom Bombs": "General Hap Arnold advises that atomic bomb warfare waged from interstellar space ships is 'within the foreseeable future' . . . Said he: 'War may descend upon us by thousands of robots passing unannounced across our shorelines—unless we act to prevent them.'" We haven't yet waged war on invading robots with spaceships, but we've got plenty of spaceships and they're going far, fueled by the same stuff that made the Gadget blast.

New Horizons uses a radioisotope thermoelectric generator (RTG) to power its over-3-billion-mile journey. The RTG runs on about twenty-four pounds of plutonium. Though it is not quite the same weapons grade as the fifteen pounds of plutonium that made the Gadget blast, it's a nuclear power whose origins can be traced to the science of the Manhattan Project and Trinity. And the whole Manhattan Project was a model for Kennedy's moon shot in the sixties, was the only real predecessor of NASA, was proof of how the highly regulated concentration of scientific minds under the pressure of military conflict could change the trajectory of human existence.

Also, there's the rather obvious Pluto connection: the planet is named for the Greek god of the underworld, and the element plutonium is named for the planet. Apparently the naming of the elements neptunium and uranium had started a pattern that could not be broken, a pattern of naming the little things we were discovering after the biggest things we had already discovered. But plutonium's once-removed connection to the god of the underworld manages to fit too. The underworld of Pluto was often described by the Greeks as being in perpetual darkness, and the planet is far enough from the sun to be in perpetual darkness, and the element in the form of the Bomb has the ability to one day cast us all into, you guessed it, perpetual darkness. But the ancient god of the underworld was not an entirely bad guy, and though he controlled your fate after death, it was not necessarily a depressing afterlife—there were plenty of fields in which those who had won the god's favor could frolic. Pluto could offer rebirth and was often considered the god of wealth because he was in the ground from which agriculture and minerals arose. So too is plutonium by turns

terrifying and generous. I sit in the theater at the space museum watching video from *New Horizons*' trip to the edge of our solar system and know that the Gadget's legacy, the legacy of the primordial element at its core, includes both the means for escaping our home and the means for destroying it.

In the theater, gobs of schoolchildren hold up little models of *New Horizons* and signs that say WE LOVE PLUTO and PLUTO IS OUR PLANET!!! Technically, scientists have demoted Pluto to a dwarf planet, but in SNM we are stubborn, and proud because Pluto was discovered by one of us—we cling to its glory days as if it were a far-flung chunk of our own desert home. The mayor reads a proclamation declaring this day Pluto Day at the exact moment the video feed from NASA declares the spacecraft is passing by the outer planet, snapping souvenir pics.

In two days, NASA will release the first close-up images of Pluto taken by *New Horizons*, and the world will adore its newfound intimacy with this distant, oft-spurned peewee orb pockmarked by nitrogen glaciers. It will be on the front page of *The New York Times* and you will not be able to scroll through any Net feed without seeing its gnarly surface in amazing detail. On July 16, 2015, we will be in love with the face of Pluto, and almost no one will mention that on this exact same day, seventy years ago, the Bomb took its first breath at Trinity.

July 16 is one of those uncanny days. In it you can already see forming the history of our species' running from its biggest mistake, its own destruction. When the lucky few of us look back at the history of Earth, we'll be like, *Damn. July sixteenth was an uncanny day.* Our president of Mars will gather us in our habitat bubble and give a speech like this:

On this day in 1945 at 0530 hours the first atomic explosion occurred, solidifying our fate. On this day in 1965 we obtained the first close-up photos of Mars, where we now live. On this day in 1969 Apollo 11 launched toward the moon, really beginning our history of travel to other celestial bodies. On this day in 1979 at 0530 hours, ninety-four million gallons of radioactive waste spilled into the Puerco River from a uranium mine in Church Rock, New Mexico, the largest single spill of liquid radioactive waste in U.S. history. We have been morons, my fellow Martians. On this day in 1980 Ronald Reagan was nominated by his party as a candidate for president and would eventually preside over a massive nuclear arms buildup even as he signed nuclear disarmament treaties that would, on this day in 2014, be declared defunct. We have been morons. On this day in 2015 the first close-up photos of Pluto are transmitted to Earth, on the seventieth anniversary of the first atomic blast, showing a planet all cratered and brown, finally solidifying our suspicion that all worlds were just as cold and desolate as our own.

Along with the ashes of Tombaugh, *New Horizons* has another memorial of sorts, the Venetia Burney Student Dust Counter. This instrument is named after the British schoolgirl who, in 1930, suggested Tombaugh use the name Pluto for his newly discovered planet. She liked that the new planet, like the god of the underworld, seemed to disappear even though we can always sense its pull. Because she named the planet, Venetia is also indirectly responsible for the name of the element that fuels the spaceship carrying the dust counter named after her, responsible for the name of the plutonium at the core of the Gadget that

made it go boom. What a thing to pin on a little girl! She was eleven when she thought of the name, the same age as Henry Herrera when his momma blamed the Bomb on him.

The purpose of the Venetia Burney Student Dust Counter is unclear. The instrument is meant to study—detect but not collect—how much dust is in the universe and the densities and fluxes of that dust’s dispersion, but no one yet knows what might be learned from this data. For now, *New Horizons* sails through that distant perpetual darkness like an impotent vacuum, finding so much dust but not knowing what to do about it.

0900 Hours—July 16, 1945

(Three Hours Thirty Minutes After the Gadget’s Blast)

One hundred and sixty enlisted men in vehicles spread out around Trinity, around Socorro and along highways to the north and west. Twenty-five members of the Army Counter Intelligence Corps are in towns within a hundred-mile radius, mostly to manage people if they get jumpy at the sight or sound of the blast. About this time, some enlisted men a few miles north of Trinity get a reading on their Geiger counter that makes them anxious. They immediately abandon the steaks they’ve grilled as part of an Atomic Age birthday celebration, going so far as to bury the meat underground for fear of radioactive contamination. A handful of enlisted men chasing the fallout south, toward Carrizozo and Tularosa, have been given respirators and they make use of them because the radioactive dust of the blast has begun to coat everything. At least one soldier forgets a respirator

in his haste to chase the cloud, and as soon as the needle on his Geiger counter begins to twitch, he takes the officially sanctioned precaution of breathing through a slice of bread.

Some of these soldiers on fallout duty are equipped with gear for sampling the environment for later tests—mason jars for collecting soil samples and FilterQueen vacuum cleaners to suck fallout from the air or the sill of a restaurant window or the sleeve of a shirt. The FilterQueen 200 was introduced in 1939, the first vacuum to use centrifugal force to suck and trap dirt. An upgraded version can be used to filter or freshen air, spray paint, dry hair, sand wood, or polish floors, and, it seems, to collect nuclear fallout. The FilterQueen is a squat little beast of a machine with a hose attachment, the ads for which are everywhere in the 1940s and show housewives dancing with the machine or show the Filter Queen herself, a regal woman whose torso is the actual bulky canister of the vacuum, with the hose around her bare legs like a spiraling hoop dress. And so this is quite literally what transpires in a hundred-mile radius after the first-ever atomic blast: soldiers breathing through bread and carrying around FilterQueens, vacuuming up the fallout. Despite all that hard work, the dust collected by the FilterQueens will never be analyzed or tested. The jars will sit in storage until they are forgotten and lost.

July 10, 2015—Noon

I sit at the bar at Applebee's in Alamogordo next to Barb, a lifetimer in the Tularosa Basin, a white-haired lady who's a ton of fun on account of her sour disposition. She sits every

day at the Applebee's bar beginning sometime before noon, sits here in her bathrobe, a shabby, molting vermilion situation. She's dolled up underneath the bathrobe, frilly shirt and a good bit of turquoise, but the frumpy bathrobe is how she chooses to finish off the outfit because nobody in SNM owns a real coat and she is *freezing my ass off here every day*, she yells at no one in particular, *since they started blasting the goddamn AC*. She points up at the air vent in the ceiling and shakes her finger at it and says, *A demon lives there and every day I am battling that demon*. She takes a sip of beer. I only just met Barb, but I agree our Applebee's is a little bit haunted.

On the wall behind Barb, Applebee's has installed a mural of the Trinity Site, not a picture of the Gadget's blast but just a picture of the monument to the test, a lava obelisk that now sits out in the desert of the missile range. Also in the mural is a road sign that is in reality nowhere near the obelisk. The sign, as signs do, explains things: "The world's first atomic explosion occurred on July 16, 1945, at the Trinity Site near the north end of the historic Jornada del Muerto. It marked the beginning of the nuclear age, and the culmination of the Manhattan Project. The site, now part of the White Sands Missile Range, is closed to the public."

Surely you know all about Applebee's quest to be your neighborhood bar and grill since 1986. This quest involved widespread deployment of a highly nostalgic décor, little red wagons and old baseball mitts and rusty rifles and lots of tin signs for gas stations, all manner of stuff that suggests the general feeling of the old white owner's ideal of an American neighborhood. Sometime around the year of our Lord 2010, Applebee's launched a revitalization campaign intended to

make their nostalgia blitz more specific to each of the over two thousand neighborhoods in which their restaurants operated. I do not know the intricacies of the process they must have used in those two thousand neighborhoods to ensure that each of their chain restaurants incorporated exactly the right amount of location-specific nostalgia to make all the rest of the crap on the walls seem unique too. But I don't imagine there was much careful consideration of the political or moral contexts surrounding those decisions because most of the revitalization choices are pretty banal. For instance, my experience at a wide range of Applebee's throughout the Southern, Southwestern, Midwestern, and Western regions of America suggests that most of the Applebee's revitalizations consisted of hanging recent team photos from the local high school's sports programs on the wall. But here in Alamogordo we have a mural, a whole wall complete with overhead spotlights, dedicated to the stretch of desert where the Bomb took its first breath, memorializing not even the Bomb or its mushroom breath or its creators but just memorializing the memorial itself, the obelisk made of lava rock that stands in the place of the Gadget's test. And memorializing also, for some reason, a road sign about the memorial. The choice of the obelisk and sign suggests they (whoever is at the top of the Applebee's pecking order for this particular restaurant or region) had an actual conversation about the possible implications of memorializing the invention of the world's deadliest weapon on the walls of their family-friendly, community-centered, happiness- and nostalgia-obsessed eatery, a place that has, for over two decades, had the primary goal of offering so many generic food, drink, and décor options that it quite literally became so bland that it no longer seemed to

belong anywhere and required location-specific revitalization. These Applebee's regional middle managers said to themselves, *Oh, let's not show the destructive power. Oh, that might be in poor taste. Oh, let's not even reconsider, though, the idea to memorialize the thing that will likely bring the world as we know it to an end, but let's have the mural show only the memorial to the Bomb, just that innocuous obelisk; oh, and also throw in a fucking road sign, so that our mural of the Bomb is so far removed from the idea of the Bomb and its destructive power that almost all of the people who walk into our family-friendly, community-centered, happiness- and nostalgia-obsessed eatery will not have any idea that they are enjoying their Quesadilla Burgers or Grilled Chicken Wonton Tacos while looming over them is a memorial to the thing that will likely bring the world as we know it to an end.*

It doesn't bother me none, says Barb. I never even really noticed it.

Barb talks about how back in the day her husband and two sons collected a million arrowheads and how she would still to this day have them all except that her son married a woman who loved arrowheads too, but then it turned out she didn't love him and loved money most of all. And so the million arrowheads have all been sold. Or most of them, anyway. She still has a box or two of the good ones in some old shed alongside her massive collection of movies on VHS. Barb tightens her bathrobe and switches from beer to a glass of wine that she implores be filled right to the brim. Her collection of VHS tapes is so massive, she used a computer to make a file that indexes all the movies she's recorded from TV onto the VHS tapes over the years. She has the computer file printed out somewhere. She says there's something like three thousand movies on the list but then remembers

she could generally fit three movies on one VHS, so really it's maybe only about a thousand videotapes. That still sounds to me like an impressive collection until she switches back over to the arrowhead story and says, *Yeah, my husband and boy collected those arrowheads all over the Southwest. They got all kind of rocks too. You know, you'll love this . . . they got some of that green stuff from the Bomb.*

Trinitite, also called Alamogordo glass, is the name of the stuff created when the Gadget's blast melted the desert sand. Everybody around here has some. My family has plenty and the bartender chimes in that she's got some in her nightstand and Barb says her husband and her boy probably got one whole box full of it. I ask if her greedy ex-daughter-in-law absconded with the trinitite and she says no, she's sure that's still in the old shed. I tell her I hope she wasn't too fond of her VHS collection. Even though trinitite is more or less safe to handle, a whole box of it probably has more than enough radiation to, over many decades in a storage shed, erase the VHS tapes sitting next to it. I've seen it erase X-ray film stored beneath it on a closet shelf. In 1945, radiation from the Gadget made it all the way to Indiana, where it ruined whole production runs of film at Kodak's manufacturing plant. Likely all Barb's recordings of *The Conqueror* have been erased by trinitite. She stops talking to me after this revelation. I keep picking at my Wonton Tacos.

Masco writes this about the 1955 Apple-2 atomic bomb test in Nevada, when the military conducted "a civil defense exercise designed to measure how a 'typical' American community would look after a nuclear attack . . .

An elaborately rendered town was built on the test site, consisting of a fire station, a school, a radio station, a

library, and a dozen homes in the current building styles. These buildings were carefully constructed, furnished with the latest consumer items (appliances, furniture, televisions, carpets, and linens), and stocked with food that had been specially flown in from Chicago and San Francisco. Residences were populated with mannequins dressed in brand-new clothing and posed with domestic theatricality—at the dinner table, cowering in the basement, or watching television.

You've no doubt seen video of this. The footage of Apple-2 exploding life-size dollhouses known as Survival Town was widely circulated in civilian preparedness videos throughout the Cold War but has, these days, become a kind of cliché, a joke. The archival footage of JCPenney's mannequins exploded by an atomic blast has been used so often, as B-roll in so many shows and films, that we laugh when we see it. *What were we thinking?! Ha-ha. So naïve we were!* But even as we recognize our past ignorance, we internalize the image of those smithereened mannequins as the worst thing the Bomb ever did to America. The Campbell's soups lined up perfectly in the pantry. The midcentury furnishings. The pencil skirts and the Studebakers. A whole lot of staging of now-vintage décor. The ideal of a contemporary American neighborhood that was nuked back in 1955 looks a lot like the inside of a nostalgia-obsessed Applebee's in 2015. I concoct a plan to replace the Applebee's mural of the lava obelisk at Trinity with a looping projection of Apple-2's destruction of the ideal American community to see how that affects people's appetites. Then Barb and I head out for a smoke.

Another thing that happened during Apple-2: weapons scientists employed a system of parabolic mirrors to channel

the flash (and heat) of the twenty-nine-kiloton blast into a thin beam they then used to light their cigarettes. “The massive destructive power of the atomic age,” writes Masco, “is marshaled to accomplish that most mundane—and purely sensual act—of smoking.”

I use only a Bic. Barb persists in not talking to me though, so we just stand there, gandering at our smoke in the wind.

*0545 Hours—July 16, 1945
(Fifteen Minutes After the Blast)*

The energy developed by the test is several times greater than expected. The cloud column mass now reaches a phenomenal height: fifty thousand to seventy thousand feet. The mass will hover over the northeast corner of the Trinity Site for several hours. This will be sufficient time for the majority of the largest particles to fall out. But now various levels move in different directions. In general, the lower one-third drifts eastward, the middle portion to the west and northwest, while the upper third moves northeast. Many small sheets of dust move independently at all levels, and large sheets remained practically in situ . . . The distribution over the countryside is spotty and subject to local winds and contours. Basically the fallout is going everywhere and could go anywhere and, they say officially, it's hard to say.

July 1, 2015—Breakfast

Tina says many times, *We're the ultimate patriots*, a line that has become the rallying cry for Tularosa Basin Downwinders

Consortium. She's battled thyroid cancer just like half the people she knows. Her father died from jaw cancer. Both of her grandfathers died of stomach cancer within a decade of the Gadget's blast.

Tina Cordova is a cofounder of the consortium, the person responsible for the meetings and the protests and the luminaria vigil that will happen later this month. She is tireless in her organization of people and politicians in an effort to get the children of the Gadget recognized and compensated as the world's first downwinders. We're at IHOP debriefing because she's recently hosted U.S. senator Tom Udall in Tularosa, had him sit through a few hours of stories of sickness and death from Henry Herrera and Margie Trujillo and Edna Hinkle and Louisa Lopez and dozens of other downwinders. They preached at him and sobbed at him and begged for him to take their sorrow back to Washington and lay it at the feet of lawmakers with power to amend the RECA legislation. Udall will go back to Washington and say, *These downwinders are the ultimate patriots.*

Ultimate patriots—that means we've died for our country, Tina says when I keep asking about that phrase, which sounds mismatched to the subject, like a group of comic-book superheroes rather than cancer-stricken villagers. Many downwinders have endured lifetimes of discrimination because of their Mexican heritage. All are at an economic disadvantage in this poor state. Some, such as Edna Hinkle, have had their ranchland taken by the government for use in the missile range. The abuses compound and still they love their country. I get the sense there is no other choice. A patriot makes a conscious sacrifice. A victim, on the other hand, is powerless. It is a remarkable contortion to call your involuntary exposure to an atomic blast a sacrifice, but when your

whole life has been a struggle against powerlessness, you bend to keep from breaking.

Tina wears a black bandanna in her hair and a small crucifix around her neck. The area beneath her eyes is always damp from heat, from the sweat of running around. She touches her forehead with her fingertips as she talks, both hands and the fingers just sort of lightly on her temples, as if she's got a lifelong headache she still believes can be willed away. She presses harder when she talks about her father, who was just three years old at the time of the blast. Milk was his beverage of choice, and before all this mess, everyone used to marvel and tease about how much milk that kid drank. But now they realize the error of their joking—those irradiated cows.

It was probably also a mistake to do so much picnicking out at the Trinity Site, Tina says. For up to five years after the blast, locals would drive out to the site for lunch, spend the afternoon eating from baskets and filling those baskets with souvenirs of trinitite.

We eat as she relates how first they removed the right side of her father's tongue and jaw on account of the cancer. A few years later when he was diagnosed with prostate cancer, it was no big deal after all the jaw surgeries. Then they found cancer in the left side of his face, a totally separate cancer from that first one on the right side. The doctors kept telling him how incredibly rare this was, to have two different cancers on one face. She mentions again how much milk he drank as a young boy. All around IHOP are glasses of milk and little pots of milk to pour into coffee, skilletts of ground beef and burritos of ground beef and big slabs of breakfast steak.

The first of the creatures mutated by the Bomb were promptly eaten. These were the cows. Other animals died,

of course. The government records only the eviscerated jackrabbits, but on September 12, 1945, the AP reports, “Snakes were killed. Ground squirrels and other small animals died. A bat was found miles away, hanging apparently unharmed, but so shocked that it did not attempt to get away from men.* There was the stench of death for about three weeks, all from small animals.” This report doesn’t mention the cows, but by September, ranchers all around Trinity noticed their livestock had changed, were a different color on the sides that had faced the blast. By October the

*This invincible bat hanging in the wake of the first atomic blast was undoubtedly a Mexican free-tailed bat, a species that almost kept us from creating the Bomb at all. These bats fly out of Carlsbad Caverns in SNM by the millions during the summer, an emergence that darkens the evening redness 150 miles southeast of Trinity. Early in 1942, reeling from the surprise attack of Pearl Harbor, a Harvard researcher visited the caverns and snagged about three hundred emerging bats. He wanted to know if their bony wings had the power to carry time-delayed explosives—seventeen grams of napalm. The superweapon on his mind was a fleet of American bombers retrofitted to carry tens of thousands of bats, bats that could be released over Japan, bats that would roost in the wooden houses of the Japanese, bats that would explode after a day or two and ignite the houses and create firestorms that would level cities. President Franklin Roosevelt had approved the project, writing, “This man is not a nut. It sounds like a perfectly wild idea but is worth looking into.” The Army and the Navy pursued bat bombs, achieving suitably destructive results, including the accidental incineration of an airfield in Carlsbad, New Mexico. But the army of bats was abandoned when the project developed too slowly and the directive came down to allocate all available military resources to the Manhattan Project. Go watch the bats emerge at dusk in Carlsbad. Millions in a wondrous roar from the underbelly. Every bat a civilian family burned to death. And still we could imagine something more monstrous.

first of these irradiated cows were sold to slaughter. The November 1945 issue of *New Mexico Stockman* magazine ran the headline “Red Hair of Hereford Cattle in Region Surrounding Site of Atomic Bomb Test in New Mexico Turns White.” But this link to the Bomb didn’t matter much when it came time to sell to slaughter. Or, it only affected the price. “The cattle all appeared healthy, but because of the strange color markings, the purity of the pedigree was questioned, and the ranchers had to take a cut in their price.” Bad pedigree was an explanation that all could wrap their brains around, especially when the country was in the midst of that strange dance with the Bomb, in awe of its power, in a daze from the end of our Second World War, but also with our government swearing up and down that the Bomb was nothing too crazy.

The first public tour of the Trinity Site was organized in September of 1945 “to show first hand,” the AP reported, “that the facts do not bear out Japanese propaganda that apparently tried to lay the foundation for claims that Americans won the war by unfair means.” This was an Army-led media tour with writers and photographers donning “white canvas foot-bags” to protect against radioactive sand and with warnings that “spending a day and night right in the crater [was] a possibly risky business,” but with assertions that “no horrors other than the familiar ones” were inflicted on the enemy. Even as the writers and the scientists tiptoed around “the great jade saucer” and left the “complete annihilation center” after just an hour when their Geiger counters got to jumping too high, the Army maintained that, for the enemy, in the destroyed cities, just eleven days after the Bomb, “it was safe to move permanently into the center of the blast area and live there all his life.”

“No horrors other than the familiar ones,” they said.

The mutated cows that weren't quickly sold to slaughter to keep from incurring too much of a price cut ended up as celebrities. By November of 1945 many more cattle with “discoloration” or “burns” were rounded up and displayed at the Alamogordo zoo. Kids came on field trips and sewing circles spent their afternoons in the zoo park gazing over their needlework and drunks stumbled over from the Plaza Pub across the street to do their cross-eyed gawking. The newspaper called them “Atomic Cows” and they traveled like a sideshow from Alamogordo to El Paso and back again. In December, Paramount Pictures came to town and “secured some good pictures of the cattle and also of two cats which have changed coloring.” This stretch of fame did not last long. The military took note and started rounding up the mutated cattle that hadn't already been slaughtered, about three hundred head, and sent some as far away as Oak Ridge, Tennessee, where they were poked and prodded and bred until they were raw. Only twice in the 1950s would the atomic cows at Oak Ridge hit the headlines, both times to say they were fine or dying of natural causes or didn't seem to be passing on any mutations to their offspring.

The effects of internal radiation from inhalation and the consumption of contaminated food are hotly debated, even in the wake of more recent nuclear fallout situations such as the reactor meltdown at Chernobyl in 1986, where estimates of sickness from this kind of exposure range from a few hundred people to millions. *More studies are needed* is the refrain Tina Cordova keeps hearing. But she has little hope for the ongoing cancer studies in Tularosa. Like Henry Herrera, she thinks the people conducting the studies have so little

understanding of the villagers' way of life that they will never reach the appropriate conclusions. She can't, for instance, ever remember them asking about the cows. Tina shifts gears, talks about her fifteen-year-old niece, who has expressed concern about whether she should have children because they might be born deformed. Tina talks about her own anxiety, worry over when her cancer will come back or when the next member of her family will be diagnosed. She knows of two young men from the community who committed suicide after they were diagnosed. *Having seen their neighbors' faces and breasts and guts removed, she says, they just didn't want anything to do with it.*

This kind of fear is a big part of the nuclear uncanny, and some studies suggest the emotional toll is ultimately costlier than the measurable physical effects of fallout. A 2011 study of the aftermath in Chernobyl:

The information policy of the Soviet government which deliberately concealed the scale and the danger of the accident in 1986 and thereby gave room to rumours about disastrous health consequences, the unresolved scientific debate on expected long-term health consequences as well as the inability to assess one's own type of affectedness have provoked deep rooted fears and uncertainty in the population. As a consequence, even physically healthy individuals might be afraid of falling ill. This worry and anxiety might manifest itself in lower subjective well-being, psychological distress or mental disease . . . Significantly higher suicide rates among the Chernobyl affected population indicate the high mental toll associated to the catastrophe.

The study also suggests children exposed to fallout have lower educational outcomes, which in turn makes it more likely their children will have lower educational outcomes, which has a ripple effect throughout the generations. But the same can happen to people who believe they've been exposed to fallout even if no objective evidence supports that belief. Compensating for this anxiety, depression, fatalism, and all of the educational and economic implications, the study concludes, would require 7 percent of the Ukrainian GDP in addition to the 5 to 7 percent already being spent on Chernobyl-related social programs. "The long-lasting toll of the Chernobyl catastrophe for the Ukrainian population," the report says, "works mainly through mental distress and subjective perceptions of poor health rather than through measurable somatic health effects." Another doctor investigating the Chernobyl disaster put it this way: "These people are sick. It's just not the type of illness they think. We have to realize that the psychological damage here runs very deep. And we need to treat that every bit as vigorously as we need to treat cancer."

Tina holds her forehead, rubs her temples.

There are no horrors other than the familiar ones.

0530 Hours—July 16, 1945

(Fourteen Seconds After the Gadget's Detonation)

It was a vision which was seen with more than the eye.

It just kept echoing back and forth in that Jornada del Muerto.

While this tremendous ball of flame was there before us,

and we watched it, and it rolled along, it became in time diffused with the clouds . . . Then it was washed out with the wind.

Words haven't been invented to describe it.

Now we are all sons of bitches.

April 4, 2015

Today is Holy Saturday. Tomorrow is Easter and I'll be down in the Valley of Juárez, where the drug cartels have shifted their war away from the city in search of other Mexicans to terrorize. But today I'm up early with Pops and we're headed to the northernmost part of Southern New Mexico, headed to the Trinity Site as part of the seventieth anniversary caravan of pilgrims. Hundreds of vehicles and a few chartered buses meet up at 7:00 a.m. in the parking lot of Tularosa High School. The caravan coalesces one thousand feet west of a baseball field that will be covered in luminarias in three months, coalesces directly across the road from the lot where Bud E. Anderson's circus raised its tents in August of 1945. As we snake out of the parking lot sometime after 8:00 a.m., we pass a group of people in folding chairs on the side of the road and people standing alongside the chairs, jumping and pumping signs and shouting. Some of their faces are painted like skulls in the manner common here around Día de los Muertos, but today is not Día de los Muertos. *Estos son los días de los muertos*, they say. Some of them have skull cutouts pasted to a stick. Many of them have signs that read TRINITY TEST FAILED US or YOUR RADIATION MADE US PATIENTS or SPEAKING UP FOR THOSE WHO HAVE BEEN SILENCED BY THE

BOMB. Some signs are just a picture of the international symbol for radiation, the trefoil, with a skull at its center. It is not immediately clear what these people are protesting, and many of the people in cars bearing license plates from out of state roll past them with scowls, upset anyone would try to sour their family vacation to such a historic landmark. The tourists must think these protesters are burnt-out hippies and their progeny, still tripping on ripples of the psychedelic era, still believing a world without nukes is possible or even desirable. But all these folks with signs and skulls are self-described *ultimate patriots*. They seem a sideshow until you spend hours listening to them read the names of their dead. They do not hate the Bomb or their country that made it. They just want their dues for being in the wake of the first breath. The caravan moves so slowly out of the parking lot that the protesters get a chance to make everyone feel uncomfortable, even if few understand why.

As we crawl along, it becomes evident that caravans packed this tight with minivans and SUVs are an extraordinarily inefficient way to travel. The kids of the families inside the minivans and SUVs keep having to stop along the side of the road to pee. On days when the Trinity Site is open, a solid stream of piss flows down the middle of White Sands Missile Range, down along the road to Tularosa. When we arrive, many hundreds of cars are already there, visitors having streamed in from the north gate, where participation in a caravan is not required for entrance. All those cars and trucks and RVs and buses in the middle of the open range certainly gives the sense something important is going on. And the media add to the frenzy, are already running around with cameras, working up their hot takes about the legacy of

the first atomic bomb test in an “uninhabited region of the New Mexico desert.”

Today thousands of us are milling around, pretty literally milling around because there is little to see or do. You can take a ten-minute bus ride to the McDonald Ranch House, where the Gadget was assembled. You can stand inside Jumbo, the steel blast barrier for the Gadget, which was never used. You can touch the black obelisk marking the exact site of detonation, maybe kick at the ground hoping to uncover a bit of trinitite. Everybody mills. Many chat. Some of it will end up in *The New York Times*:

“This is kind of the mecca,” said Cammy Montoya, a spokeswoman for the White Sands Missile Range. “This is the first. This is the marking point.”

“It’s nice to sit back and let it sink in, and really get a sense of where you’re at—you get to feel the wind, feel the sun and see the mountains,” [a visitor] said. “It’s so important for people to get here and touch and feel a place like this.”

But most chatter will bounce off the obelisk and disappear:

I can't believe no one died.

No one died?

Well, I heard there was cows.

They were only irradiated.

Mutated? Like with superpowers? Superpower cows?

Cooked.

Atomic burgers. We ought to open a joint that sells 'em.

But a burger truck is already set up west of the obelisk.

The menu makes no mention of atomic cows, just as the official program for the Trinity Site open house makes no mention of downwinders.

By the time I was born, four decades after the Gadget's blast, nearly every rancher in the region had a story about how his cows or his daddy's cows had been hit by the Bomb, burned or bleached or grown a second head or mutated into elephantine beasts. The stories had become unbelievable. And this was true of our whole culture. By the time I came around the Bomb's power had long since been subsumed into myth, the origin story for countless superheroes and supervillains. Captain Atom and the Fantastic Four, Spider-Man and the Hulk, Firestorm and Starlight and Doctor Manhattan, all born of atomic power. Even if the Bomb was never again used, we were desperate to remember that it had inside it an otherworldly thing with the power to change us. All those superheroes were not just the hope that something good could come of the Bomb but that something could come at all, more than an infinite stalemate, that the Bomb and its power could change us from the bloodthirsty thing we've always been, force us into something infinitely better, or, with the supervillains, at least something infinitely worse so that we'd get on with going extinct. The atomic cows were the first walking sign of our foray into this age of desperation—that epoch the scientists now call Anthropocene, the first new geological era in 1.8 million years, predicated on humans as the primary destructive force on planet Earth—just a little *discoloration* here, a slight *burn* there, one flank fully bleached by fallout and the other still that old Hereford red. As a child when I heard about my great-granddaddy's cows bleached white on the side facing the Gadget's blast, I spun them around in my mind, seeing on

one side the dusty color of the Old West and on the other side the glowing, irradiated world of Spider-Man and the Hulk and Doctor Manhattan. All of SNM sometimes feels like that now, after the Bomb, stuck with one foot in two epochs, the ancient and the futuristic ungracefully fused, a warning or a sideshow. All of us down here have been reared in that wobble. The Gadget was designed up north, on top of an extinct volcano at Los Alamos, but then, to blow it up, they just barely dragged it across the 34th parallel, which divides our state in half, that literally divided New Mexico territory in half during the Civil War. Union up north of the 34th. Confederacy down south of the 34th. Surely the whole state has suffered from the industrial nuclear complex, but up north they get it with a side of prestige in the form of two elite national laboratories.* Down here we get one black obelisk at 33°40'38" N, just twenty-three miles south of the 34th parallel, twenty-three miles into the underbelly of the American West where atomic cows roamed. But now the cows are little more than a joke around the obelisk, which is itself

* I'm being too flippant here. The pretty clear cultural divide between Northern and Southern New Mexico is only partly about the Bomb, which has wrought its havoc throughout the state with devastating fairness. Masco writes plenty about the toll that the nuclear industry has taken on the people of Northern New Mexico. As does V. B. Price in *The Orphaned Land: New Mexico's Environment Since the Manhattan Project*. The gist: lots of exposed people, lots of sick Native American uranium miners, and lots of radioactive runoff into communities and rivers around the national labs near Los Alamos and Albuquerque. For instance, Acid Canyon, an area named as a result of large amounts of nuclear waste that flowed through it after being unceremoniously drained "down the mountain" from Los Alamos. Acid Canyon has been "cleaned up," they say, and now boasts a pretty sweet skate park for the

little more than a joke. There's a lot of space between debilitating fear and ignorant nonchalance, but why do we have such a hard time walking that line? See the people with their faces painted like skulls, holding skull cutouts pasted to a stick, flashing the international symbol for radiation with a skull buried at its heart. These are the children of the Gadget. There are no superheroes, no real Captain Atom or Fantastic Four, no Spider-Man or Firestorm, no Starlight. But there are these downwinders, real people who are more than myth. They have been sick and maybe they are sick still. They have little power, super or otherwise. But they remind us, at least, of what we are dangerously close to forgetting. And that's exactly what any superhero story must do. If the Bomb is the origin story for any superhumans, it must be these ultimate patriots.

kids. And don't forget about the Church Rock uranium spill way up north near Gallup, New Mexico, still the largest single incident of radioactive contamination on American soil.

The Church Rock accident happened at 0530 hours on July 16, 1979, exactly thirty-four years, to the minute, after the Trinity test. The uranium mine's disposal pond burst and poured into the Puerco River. The exact consequences of this spill are much contested. The people of the most exposed community, Navajos, say they are sick. The government says they are not. But none can debate the fear, the nuclear uncanny, the little bit of hesitation before putting any local water or food in the mouth. Maybe the most uncanny of facts about this spill is not that it happened at exactly the same minute and on the same day of the year as the Gadget's blast, but that it happened even as *Superman* was still rocketing toward a \$300 million box office.

Superman?

Yes.

July 9, 1945

(One Week Before the Gadget's Blast)

“Up it went, a great ball of fire about a mile in diameter, changing colors as it kept shooting upward, from deep purple to orange, expanding, growing bigger, rising as it expanded, an elemental force freed from its bonds after being chained for billions of years. For a fleeting instant the color was unearthly green, such as one sees only in the corona of the sun during a total eclipse.”

William Laurence will publish this description in one week after witnessing the Gadget's blast. But he's drafting it before the blast because he wants to get it right. All the scientists have clued him in on how it will look. They've done all the math. There's been talk the Bomb might light the atmosphere on fire. They for sure know there will be quite a show, but their equations say that on July 16 the world will

A year before the spill, Christopher Reeve had pranced around in his red tights and cape, shooting the climactic scene of the film only three miles from the United Nuclear Corporation's Church Rock mine, at a place that would forever after be known as Superman Canyon. The climax of the film's story happens after Lex Luthor has launched a nuke into the San Andreas Fault and Superman is trying to mitigate the damage by flying to the center of the earth and forcing up its molten core to plug the gap. But the earthquakes have already started and Lois Lane is caught in the quakes out in the desert along the fault line. She dies. So then, in one of the most iconic film scenes of all time, Superman contorts his face into a devastating strokelike cry and flies around the world, against the direction of its revolutions, in a rage until he gets the world spinning backward and manages (despite the laws of basic physics) to reverse time just enough to get back to the moment before Lois Lane dies.

Here's the uncanny part: all of the San Andreas Fault stuff was

not end, not on account of their Bomb. Laurence will be the only journalist allowed on-site for the Trinity test, has had mostly free rein for over a year to chronicle the Manhattan Project. Perhaps at this time, 1109 hours on July 9, Laurence sits in his room at the Los Alamos camp, sets aside his draft of the blast, and decides to do some official government work, begins revising a press release for the military to use after next week's test, one that will include no purple prose about elemental forces, one that will be a simple cover story to keep the existence of the Bomb secret. Then there is commotion out in the street. The soldiers and scientists have gathered. They stare up at the sky, up at a solar eclipse, many using the same welder's glass that will shade their eyes next week as they gawk at the first breath of the atomic age. The Los Alamos encampment is located at 35°84' N, 106°28' W, on top of a mesa, an extinct volcano. At this location the eclipse will reach its maximum at 1152:21 hours, when the moon will obscure 71.58 percent of the sun. Perhaps this eclipse is what gives Laurence the inspiration for his cosmic description of the Gadget's blast.

In other parts of the world, today's solar eclipse is total. The moon's shadow hits like the fine point of a dagger first

filmed not in California at the actual fault but at the canyon in New Mexico near Church Rock. So in July of 1979, even as that canyon was filling up with over a thousand tons of radioactive waste, tens of millions of people were in theaters watching that exact landscape get hit with a nuclear missile. Our stories of the Bomb, the superheroes we invented to deal with the fear of the Bomb, were already distracting us, were quite literally, in this case, putting us in a dark room and showing us a miraculously saved version of the landscape that was at that very moment flooded with the worst of our creations, the myth mapped over the actual and totally overshadowing it, because in the end Superman

in Idaho, then to Montana and northeast to Hudson Bay and across the North Atlantic to Greenland, then arcs back down through Norway, Sweden, and Finland before passing just seventy miles north of Leningrad in the Soviet Union. The citizens of Leningrad, if they look up at 1413 hours, will see the moon obstructing 98 percent of the sun. But they may not look up because they are still recovering, their heads still hanging from the 872-day Nazi siege that ended last year, still hanging from the weight of over 1.5 million dead, still focused on the trials of over two thousand of their friends and neighbors arrested for cannibalism during the hunger of war. But the Nazis surrendered two months ago, after Hitler's suicide. As the moon's shadow moves southeast past Moscow in the sixth year after our Second World War began, a third wave of mass suicide sweeps across the defeated Nazi regime. This is why we will sometimes call the solar eclipse of July 9, 1945, the Victory Eclipse, even though the war is not yet over. The moon's shadow finally peters out somewhere in Central Asia, just about three thousand miles east of Hiroshima, Japan.

Way back on May 28 in 585 B.C.E., another total eclipse of the sun occurred in the sixth year of a war. On that morning the moon's dark dagger of a shadow sticks into the Southern

saved the girl and everyone left the theater feeling triumphant. Never mind that Superman chooses to only rewind the world enough to save his girlfriend, never mind that he doesn't bother to rewind even just a few more minutes to stop the nuke-triggered earthquakes that are killing thousands, never mind that he doesn't bother to rewind enough to stop the nukes from launching, never mind that he doesn't bother to move back all the way in time to the days before the Gadget when there was not so much fear. Maybe the moral is that even Superman, with his ability to control the spin and tilt of the earth, with his ability to manipulate time, could never stop the human bend toward obliteration.

Pacific, then drags northeast over present-day Costa Rica and Haiti and over the Atlantic to France before swooping back down toward the westernmost protrusion of Asia, where a battle rages. The fifth-century B.C.E. historian Herodotus tells it this way:

As, however, the balance had not inclined in favour of either nation, another combat took place in the sixth year, in the course of which, just as the battle was growing warm, day was on a sudden changed into night. This event had been foretold by Thales, the Milesian, who forewarned the Ionians of it, fixing for it the very year in which it actually took place. The Medes and Lydians, when they observed the change, ceased fighting, and were alike anxious to have terms of peace agreed on.

“Day was on a sudden changed into night,” says Herodotus.

Isaac Asimov, in his book *The Search for the Elements*, credits this moment, when the prediction by Thales of Miletus is vindicated, as the beginning of science as we know it, the first time someone used observable facts to make a hypothesis about a cosmic event that then actually came to pass. That is, perhaps, a fairly singular pinpointing of these origins. But doesn't it feel good to believe that the very origins of science coincided with the end of a war? Isn't this where we have always hoped science would lead us, the commencement of peace? But then why might one eclipse have this effect and not another? If the sun were just a bit more obstructed by the moon on the afternoon of July 9, 1945, at Los Alamos, would that have made any difference? What if we could tilt the earth just a smidge so that the Gadget and its creators, exactly one week before Trinity, are in the eclipse's

path of totality? Who among us has the power to alter the movement of our planet? But a week before Trinity there is already another bomb headed toward Japan, the Gadget's uranium counterpart, Little Boy, which requires no test, which will be dropped on Hiroshima anyway. Trinity is already just a formality. The science that maybe began with the Eclipse of Thales is now advanced enough to be confident that it can create the opposite of a total solar eclipse.

Night turned to day, says Henry Herrera.

Heaven came down.

"On that moment hung eternity. Time stood still. Space contracted to a pinpoint. It was as though the earth had opened and the skies had split. One felt as though he had been privileged to witness the Birth of the World." This is how William Laurence will finish off his description of the Gadget's blast next week. He will work hard to make it a beautiful piece of writing and an honest piece of writing, just as he will with all his future books encouraging our mass proliferation of nuclear armaments. But perhaps now, just after the eclipse, he heads back inside, sits back down at his desk to finish the lie that will be the cover-up disseminated in the days after Trinity. The document is modular and will tell the public what it needs to know in any scenario, regardless of the outcome of the test. The first paragraph is the only one that will be released to the public. It simply states that on July 16, 1945, an ammunition magazine exploded on the Alamogordo Bombing and Gunnery Range and "there was no loss of life or injury to anyone."

A second paragraph, to be added in the event that something goes wrong, states, "Weather conditions affecting the content of gas shells exploded by the blast made it desirable to evacuate civilians." This paragraph will not be used.

Also never to be used is a third paragraph, prepared if something goes more than wrong, goes terribly wrong. This section contains only four words, followed by lots of haunting space for use by a future writer because the current writer does not expect to survive such a catastrophe. And in that way this brief, unused third paragraph of a press release—so much blank space—is the most honest description of the Gadget and its legacy that Laurence will ever write:

Among the dead were:

(names)