

Nuclear Weapons and Extreme Threats. A Tale of Two Men Handling Emergency

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*One man reacted to emergency and the other one didn't. The two men are [Richard Feynman](#) (1918 – 1988), the highly revered Nobel Prize laureate nuclear physicist, and 22-year old David Livingston, Senior Airman and missile repairman who was killed in the [Titan II nuclear missile accident](#) in Damascus, Arkansas, in 1980. The purpose of focusing on these two men is not to describe “human nature” or masculinity or to diagnose psycho-pathology. It is to look at a case of nuclearism, at what went wrong, what could have been different, and what in these men's characters interfaced with society. To draw this distinction, the sources for this article are [Feynman's talk](#) and [transcript](#) about his work on the atomic bomb as part of the Manhattan Project, and Eric Schlosser's book *Command and Control: Nuclear weapons, the Damascus accident, and the illusions of safety*.¹*

We face today at least four emergencies (each intertwined with the logics of capitalism but also having distinct dynamics and features): nuclear, climate, pandemic, and racism. Handling extreme threat means recognizing that there is an emergency in people's lives, directing all attention on how to prevent, mitigate or prepare for it, and urgently prioritizing the saving of lives. An adult reaction to emergency would include realistic fear, concern for oneself and others, a rational sense of time, and single-minded focus.

Making the A-Bomb

Feynman's talk is humorously peppered with many anecdotes. He depicts two versions of himself: as unassumingly boyish, like *Mad* comic's “[What me worry?](#),” or as a godlike science genius. His innocent appearance often exposes others' gullibility or incompetence. He introduces himself: “... although in my field at the present time I'm a slightly famous man [Nobel Prize laureate!], at that time I was not anybody famous at all. I didn't even have a degree when I started to work with the Manhattan Project. Many of the other people who tell you about Los Alamos – people in higher echelons – worried about some big decisions. I worried about no big decisions. I was always flittering about underneath.” Fearing that Hitler “would develop it before we” led him to participate in the project.

“All science stopped during the war except the little bit that was done at Los Alamos.” “It was like those moving pictures where you see a piece of equipment go bruuuuup bruuuuup, bruuuuup.” Feynman then admits that he did get his Ph.D. from Princeton before he left for Los Alamos “so I wasn't quite as far down the scale as I led you to believe.” He says that one of the first interesting experiences at Los Alamos was meeting great men. These men could listen to complex information and agree to a decision without endless repetition: “So that was a shock. These were very great men indeed.”

"My conscience bothered me a little bit because they would all work so hard to explain things to me, and I'd go away without helping them. But I was very lucky. When one of the guys was explaining a problem, I said, 'Why don't you do it that way?' In half an hour he had it solved, and they'd been working on it for three months. So, I did something!"

"Every day I would study and read, study and read... All the big shots were away except for Hans Bethe... Well, he comes in to this little squirt in an office and starts to argue, explaining his idea. I say 'No, no, you're crazy. It'll go like this.' You see, when I hear about physics, I just think about physics, and I don't know who I'm talking to, so I say dopey things... But it turned out that's exactly what he needed. I got a notch up on account of that, and I ended up as a group leader under Bethe with four guys under me."

"One of my diseases, one of my things in life, is that anything that is secret I try to undo." Feynman became obsessed with picking locks, especially combination locks. "So I used to practice it like a card shark practices cards, you know - all the time." "I went back to Los Alamos after the war was over to finish some papers, and there I did some safe opening that - well, I could write a safecracker book better than any previous safecracker book... I opened the safe that contained the secret of the atomic bomb - ... the WHOLE DAMN THING!"

He tells how [J. Robert Oppenheimer](#), "Father of the atomic bomb," asked him, "little Richard," to go to Oak Ridge, the uranium enrichment plant. "[T]he big shots in the company and the technical people ... the generals and everyone was interested in this very serious problem." The plant could have blown up. "I have a very bad memory, but when I work intensively, I have a good short-term memory, and so I could remember all kinds of crazy things ..." He explained that the solution was easy:

"You put cadmium in solutions to absorb the neutrons in the water, and you separate the boxes so they are not too dense, according to certain rules... I was a god coming down from the sky!... So, from being rather primitive back there at Los Alamos, I became a super-genius at the other end."

Feynman professed ignorance about reading blueprints. He described a "loooooong table cover, a stack of large, long blueprints [of] pipes coming up from the second floor... going through the stack of blueprints, down-up-down-up" and how the engineers were talking very fast. "I'm completely dazed." Feynman took a guess about what the symbols meant and was right. "So the engineers look up and down, the other guy up and down, back and forth, back and forth, and they both look at each other and they tchk, tchk, tchk, and they turn around to me and they open their mouths like astonished fish and say, 'You're absolutely right sir. You're a genius... what you have just done is so fantastic. I want to know how, how do you do that?'"

In a now famous anecdote, Feynman described meeting with the world-renowned physicists Niels and Aage Bohr. Niels Bohr was "a great god" who said to his son, "Remember the name of that little fellow in the back over there? He's the only guy who's not afraid of me, and will say when I've got a crazy idea. So next time when we want to discuss ideas, we're not going to be able to do it with these guys who say everything is yes, yes ... we'll talk with him first."

Feynman's wife died in Albuquerque and he was there on a short vacation, at the same time

when he got the message saying “the baby [the test] is expected on such and such a day.” He flew back and arrived when buses were leaving. He went straight out to the test site. “They gave out dark glasses... [I] knew then that they wouldn’t see a damn thing.” He knew that the only thing that could really damage eyes was the ultraviolet light and his eyes would be safe behind the truck’s windshield. He said that his were the only human eyes that witnessed this first atomic explosion.

“I was an underling at the beginning. I met some very great men.” One of them, the great mathematician John von Neumann, taught Feynman a great lesson: “that you don’t have to be responsible for the world that you’re in. So I have developed a very powerful sense of social irresponsibility as a result of Von Neumann’s advice. It’s made me a very happy man ever since.”

Some years later he sat in a restaurant in New York and looked out at the buildings.

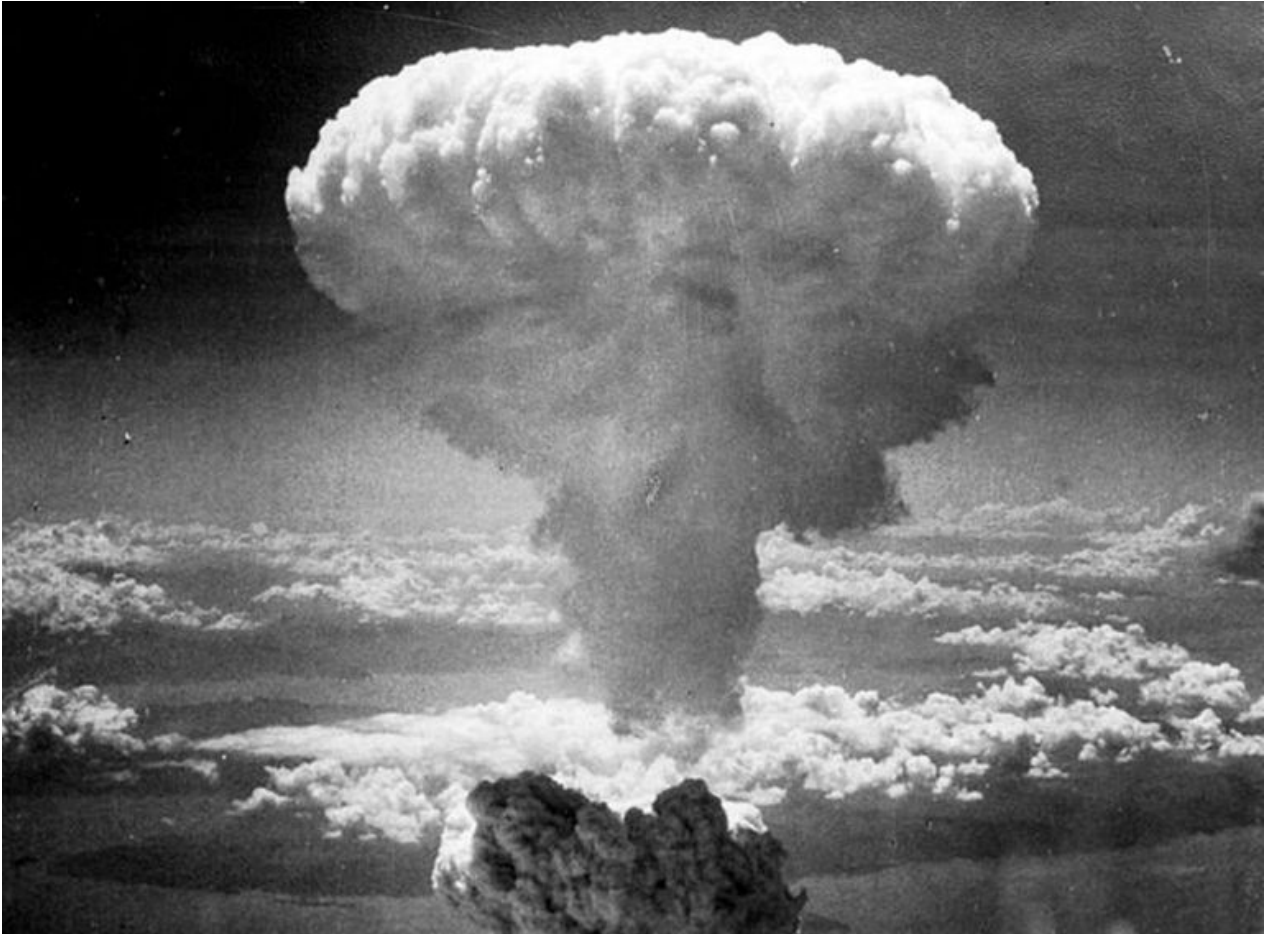
“... and I began to think, you know, about how much the radius of the Hiroshima bomb damage was and so forth ... How far from here was 34th St? ... All those buildings, all smashed – and so on. And I would go along and I would see people building a bridge, or they’d be making a new road, and I thought, they’re crazy, they just don’t understand, they don’t understand. Why are they making new things? It’s so useless. But, fortunately, it’s been useless for about 30 years now, isn’t it? So I’ve been wrong for 30 years about it being useless making bridges and I’m glad that those other people had the sense to go ahead.”

Feynman still did not talk of human lives lost – just bridges and buildings. His bare eyes were the only ones to see the first atomic blast, but even after thirty years, he still did not see human beings.

The Titan II ICBM

Twenty-two-year-old David Livingston was one casualty of nuclearism. In my recent review of Michael [Klare’s uncritical paean](#) to the American military, I point out the military’s [psychotic] grandiose aspiration of total command and control. Schlosser’s detailed history of the accident contrasts the improvised, desperate measures used by men on the ground with the delusions of precision, procedural proficiency, and state-of-the-art technology used by the hierarchical chain of command who play with mass destruction.

By 1980, the Titan II missile was the largest intercontinental ballistic missile (ICBM), roughly 9-storeroys high, carrying a W-53 thermonuclear warhead with a yield of about 9 megatons, about three times the explosive force of all the bombs dropped during WWII, including the atomic bombs. The missile was primed, cocked, ready to be launched within minutes. There were eighteen Titan II launch complexes in Arkansas. They each had identical safety guidelines, meticulous maintenance procedures, and detailed weather reports, which was a crucial factor in any maintenance work that involved fuel, oxidizer, and re-entry vehicles.



Livingston was one of the two workers who went into the missile silo to obtain vapor readings after a 9-pound socket was accidentally dropped into the 9-storey silo, hitting and puncturing the rocket. Seconds later, fuel started to escape. It was dangerous because so much material involved was flammable. All the warning lights on the oxidizer vapor launch duct, the fuel vapor launch duct, and the fuel launch duct were lit. Schlosser reports Livingston saying, "I've got a bad feeling about this. Somebody's going to die out there tonight." "He was not a fearful or high-strung type."

After the fuel started to escape from the punctured missile, a decision had to be made whether the silo was safe to enter. At 20,000 ppm the fuel vapor could spontaneously combust, but the portable vapor detector shut off when the vapor level reached only 250 ppm. It was decided that if the vapor level was below 200 ppm, they could enter the silo and hopefully vent the stage 1 fuel tank. If the vapor level was higher than 200 ppm at any point, the men would get out of the launch complex as quickly as possible, leaving the doors open behind them. Some officers opposed this plan due to concern that rising heat in the silo could cause the oxidizer tank to rupture from the heat and explode and because of concern about tank pressures inside the missile. Colonel Scallorn stated that the mission was not worth the risk to these young men and that some people at Strategic Air Command headquarters treated maintenance crews and Propellant Transfer System guys like they were expendable.

Jeff Kennedy, partnered with Livingston to measure the vapor levels, also disagreed with the plan. "It was insane. It made absolutely no sense to send men into the launch complex ... down the longest, most dangerous, most likely to be contaminated route" (Schlosser, p 239). It was a tragicomic series of errors and breakdowns. To even enter the site, a hole had to be cut in the chain link fence, as the access gate was locked and nobody had the key, and climbing over the fence in protective gear could tear the Rocket Fuel Handler's Clothing

Outfit (RFHCO) that weighed 22 lbs with a backpack that weighed an additional 35 lbs and carried about an hour's worth of air that was really usable for only a half hour. Livingston was told to put his hand over the metal grate to estimate the temperature. The vapor probe detector pegged out, so it was impossible to measure the exact level of vapor. The entrapment area doors were locked and would have to be broken into with crowbars to reach the control center. The decontamination-area door was locked, and the combination they were given did not work.

Kennedy and Livingston had to communicate with hand signals instead of radios. Incredibly, the radio systems were incompatible. Only one person at a time could speak on the launch complex radio system, and they wanted to keep the line open as much as possible. One of them would speak to an officer on the launch complex radio who would relay the information to a colonel in a pickup truck near the gate who would speak to a colonel at the command post in Little Rock who would talk to Strategic Air Command in Omaha.

To skip ahead: the fuel vapor exceeded 21,000 ppm. When the silo finally exploded, there was a blast, panic, chaos. The Air Force still denied there was a serious problem after the radio went dead. The nearest hospital in Conway at first refused to admit the injured men, claiming it lacked the authority to treat Air Force personnel, but finally admitted them. Kennedy's leg was broken, and he heard Livingston's voice crying out "Oh, my God, help me. Please, somebody help me. Please, God help me." He kept repeating "Please, somebody help me." Suffering severe pain, Kennedy was able to reach the parked truck. There was a rule that everyone on the site needed a backup, but searching for Livingston meant searching alone, and the communications system did not work. When Livingston was finally found, he kept saying over and over "Please don't leave me" and "Please don't tell my mother" (Schlosser, pp. 412-13). The wound in his abdomen was deep with pieces of concrete lodged in there and his intestines clearly visible.

The rescue helicopter was delayed because of instructions to bring a vapor detector that could not be found. The helicopter pilot and ambulance driver at first could not locate each other. The Little Rock hospital did not have a decontamination unit, so they sprayed the naked injured men in the parking lot.

Doctors in the ICU at the Baptist medical center were not able to save Livingston. According to the official report, the emergency procedures worked properly, and human error was to blame. The official cause of Livingston's death was pulmonary edema. The Air Force balked at Kennedy's application for a medical discharge and instead placed him and another survivor in a psychiatric ward. He received a formal letter of reprimand for violating the two-man rule when he was separated from Livingston. There was no mention of his bravery. Livingston had just turned 22, planning to marry his girlfriend in the spring. She was at the hospital when he died.

Here is some additional important information. We know that when it was found that Hitler was not interested in developing nuclear weapons, only one scientist dropped out of the Manhattan Project.² After the atom bomb test at Alamogordo, "the overjoyed inhabitants of Los Alamos gathered in groups all over town to celebrate. 'There were tears and laughter... We beat each other on the back, our elation knew no bounds ... the gadget worked!' Feynman got his bongo drums out and led a snake dance through the whole Tech Area."³

Startling indifference to the loss of individual human life is frequently left out of discourse on

racism, pandemic, climate change, and nuclear weapons. From psychoanalytic understanding, the capacity to know the reality of other people's existence starts at an early age – it is not just a cognitive achievement. It is emotional and reflects an ability to feel and tolerate ambivalence and is reflected in feeling concern about others. It is not simplistically a result of the human “genome” but comes with much work – on the part of individuals themselves, families, and communities. Nor is it tied to a particular ideology, religion, political organization, class, or moral code.

In Holocaust testimonies, people talked about the “righteous” helpers as having this crucial sense of other people's realness. There are signs that Livingston had this – his emotional sense of life being at risk yet his willingness to help, his concern about his mother's suffering. In contrast, there are signs that Feynman could not really think of other people in a real, emotional way. American literary critic Leslie Fiedler found that in American literature the hero of the most popular works was the “good bad boy” who lived on the frontier, not an adult living within the constraints and responsibilities of society but boys believing that everything was possible.⁴ •

Notes

1. Eric Schlosser (2013). [*Command and Control: Nuclear weapons, the Damascus accident, and the illusion of safety*](#). New York: Penguin.
2. Daniel Ellsberg (2017). *The Doomsday Machine: Confessions of a nuclear war planner*. New York: Bloomsbury.
3. Jennet Conant (2005). *109 East Palace: Robert Oppenheimer and the secret city of Los Alamos*. New York: Simon and Schuster, pp. 314-16.
4. Leslie Fiedler (1966). *Love and Death in the American Novel*. New York: Stein and Day.

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