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Physicists, Lawyers, and Gold Diggers: Bearing Witness in a Culture of Secrecy

A Review Essay of *Savage Dreams:
A Journey Into the Hidden Wars of the American West* By Rebecca Solnit

Jo Carrillo*

From 1963 to 1990, the United States government conducted at least 204 secret underground nuclear tests at the Nevada Test Site;¹ Somewhere between thirty-four and thirty-seven of them released radiation into the atmosphere.² These secret tests brought to 1,051 the total number of nuclear weapons tests conducted by the United States worldwide since the beginning of the ominously titled "Nuclear Age."³ While the American government was bombing Nevada, America's Armageddon, the American public was on an unending car pilgrimage to Yosemite, the country's Eden.

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1. DEPT. OF ENERGY, OPENNESS PRESS CONFERENCE: FACT SHEETS (Dec. 7, 1993) [hereinafter OPENNESS PRESS CONFERENCE] at 1-17; DEPT. OF ENERGY, DECLASSIFICATION STAKEHOLDERS MEETING (Jan. 11, 1994) [hereinafter STAKEHOLDERS MEETING]. The actual number of secret tests is still classified. The Department of Energy [hereinafter DOE] has revealed that the number 204 "declassifies all nuclear tests conducted at the Nevada Test Site. However, some of these tests had multiple explosives resulting in multiple nuclear detonations which are being reviewed for potential declassification." OPENNESS PRESS CONFERENCE, at 18.

2. The DOE acknowledged that "some of the unannounced tests released small quantities of radioactivity onsite." OPENNESS PRESS CONFERENCE, *supra* note 1, at 2. This list identifies 37 "events" at which there was an accidental release of radioactivity detected onsite. *Id.* At 5-17. The day after the DOE's Openness Press Conference, the Los Angeles Times reported: "The Energy Department revealed Tuesday that the United States conducted 204 secret underground nuclear tests over 45 years. In disclosing the secret nuclear tests, O'Leary acknowledged that 34 of them released radiation into the atmosphere." *U.S. Reveals 204 Nuclear Tests, Plutonium Exposure*, L.A. TIMES, Dec. 8, 1993, at 1.

3. The DOE acknowledged that 204 of the total 1051 tests were "not announced and their existence was classified to inhibit Soviet monitoring of United States activities." OPENNESS PRESS CONFERENCE, *supra* note 1, at 1-2.

The irony, as Rebecca Solnit's *Savage Dreams: A Journey Into the Hidden Wars of the American West*⁴ explores it, is that "this country's national Eden [is] so full of disturbing surprises and its Armageddon so comparatively pleasant, at least for its wide skies and gallant resistance community."⁵ When it comes to the actual land we live on, America's love and fear lead to the same place: the repression of knowledge and the destruction of land, both in the name of our innocence. These are the themes of *Savage Dreams*.

Just after *Savage Dreams* was published in 1993, the Department of Energy [DOE] announced its new "Openness Initiative."⁶ The sea change from secrecy to openness was in direct response to media reports about unannounced weapons tests, nuclear experiments on unwitting human subjects (including a 1965 experiment that released a nuclear cloud over Los Angeles' 6,000,000 residents), and rumors that DOE was shredding documents.⁷ As DOE secretary Hazel O'Leary implied when she promised to

4. REBECCA SOLNIT, *Savage Dreams: A Journey Into the Hidden Wars of the American West* (1994) [hereinafter *Savage Dreams*].

5. *Savage Dreams*, *supra* note 4, at 367.

6. OPENNESS PRESS CONFERENCE, *supra* note 1.

7. The DOE has confirmed that between 1945 and the mid-1970s, the federal government sponsored a number of experiments that exposed human subjects to highly radioactive substances. These studies were conducted for

military and non-military purposes. Ruth Faden, the Johns Hopkins University medical ethicist who chairs the President's Committee on Human Radiation Experiments, predicted before the review process began that the experiments would likely reveal a pattern of abuse of vulnerable and dispossessed people. *Science of Power and Weakness*, L.A. TIMES, January 8, 1994, at 1. Six months into the review process, Dr. Faden's Committee reported that the experiments were part of a systematic effort that was secretly planned at the highest levels of the U.S. Government. According to Dr. Faden,

Frankly, we did not believe before we started this that there was much debate and planning done in connection with these experiments...but there was, and it was at a high level of the military and scientific establishment. That is not to say what the motive was for these ethical discussions – whether it was high-minded moral reasons or public relations reasons – but in any case there was an awareness at high levels that one could not process in the area of radiation and human experiments just casually.

Human Radiation Testing Widen Than U.S. Revealed, INTERNATIONAL HERALD TRIB., Oct. 13, 1994. (News Section) See also *White House Hesitant on Radiation Test Liability*, L.A. TIMES, Jan. 4, 1994 at 1.

News of these experiments first appeared in a 95-page report issued by a congressional panel headed by Democratic Representative Edward J. Markey of Massachusetts. *American Nuclear Guinea Pigs: Three Decades of Radiation Experiments on U.S. Citizens* (1986) (on file with author). News again resurfaced in an *Albuquerque Tribune* report about five of the first

stop the shredding of government documents, the single most important reason for DOE to pursue a policy of openness was to regain something the government had lost: the public trust.⁸

Solnit's thoughts on the suburbanization of Yosemite take issue with the quality of this trust. It was identifiable by a vague standard. We never knew what it was, only what it wasn't: it wasn't the trust of a well-informed, information hungry public. If anything, argues Solnit, it was the belief in a government that promoted the idea of unlimited abundance as reality, at least for the middle class. And it grew in a culture where the Joneses were consuming the earth's resources at a fast pace, and everyone else was keeping up.⁹

eighteen human radiation experiment subjects. See Eileen Welsome, *The Plutonium Experiment*, THE ALBUQUERQUE TRIB., Nov. 15-17, 1993, (Special Reprint). Welsome's report did not get national attention until after Secretary O'Leary's December 7, 1993, OPENNESS PRESS CONFERENCE. See *Stubborn Reporter Chased Down Big Scoop for Small Newspaper; Radiation Testing Scandal Finally Given National Attention*, WASHINGTON POST, Jan. 16, 1994, at 6.

For an overview of the national reports that followed the initial revelations of human experimentation, see generally *Government Radiation Experiments of the '40s and '50s*, ABC World News Tonight, Dec. 28, 1993; Schneider, *Nuclear Scientists Irradiated People in Secret Research: Energy Secretary Plans to Open Files Covering 3 Decades of Experiments on Humans* NEW YORK TIMES, Dec. 17, 1993, at 1; *Facts on Radiation Testing on Americans Known but Unnoticed for Years*, THE BALTIMORE SUN, Jan. 11, 1994, at 10A; U.S. *Still Testing Radiation on People, Energy Chief Says*, S.F. CHRON., Jan. 26, 1994, at 6; *Stranger than Fiction*, THE DALLAS MORNING NEWS, Jan. 16, 1994, (Sunday Section), at 11; *Nuclear Cloud Drifted Over L.A. In '65 Test, Official Says*, L.A. TIMES, Aug. 25, 1994, at 1; *Human Radiation Testing Wider Than U.S. Revealed*, INTERNATIONAL HERALD TRIB., Oct. 13, 1994, (News Section).

The President's Committee on Human Radiation Experiments estimates that the number of known experiments to date is around 600. *Human Radiation Wider Than U.S. Revealed*, *supra*.

8. STAKEHOLDERS MEETING, *supra* note 1. See also *U.S. Reveals 204 Nuclear Tests*, L.A. TIMES, Dec. 8, 1993, (National Desk), at 1 ("[Secretary O'Leary] promised additional disclosures [at the December 7, 1993, Press Conference] as she tries to win new public confidence for the Department. 'We've got to expose the impact of the Cold War, both in terms of its environmental health and safety impacts and also impacts on the psyche of the nation,' O'Leary told reporters. 'One of the benefits to openness will be to build public trust.'").

See also U.S. *Begins Effort to Recast the Law on Atomic Secrets*, THE NEW YORK TIMES, Jan. 9, 1994, (National Desk), at 1 ("O'Leary says the legal framework behind decades of nuclear secrecy, the Atomic Energy Act, 'needs revision.' While its authority was once needed in a 'struggle for survival' against Soviet Communism," she said, "the power it gave officials has damaged American life and institutions, chiefly by undermining trust in Government."); *Hotline Created for Human Guinea Pigs*, S.F. CHRON., Dec. 25, 1993, at C3 ("Many of the records [of human radiation experiments] have disappeared or were destroyed in the past 45 years."); *Nuclear Friends and Foes Bury a Hatchet; Abandon Mutual Disdain to Help Declassify Mountain of Documents*, S.F. EXAMINER, Jan. 12, 1994, at 10.

9. See, e.g., KARL ANN MARLING, *AS SEEN ON TV: THE VISUAL CULTURE OF EVERYDAY LIFE IN THE 1950s* (1994). Marling is an art historian as is Solnit.

For the most part, this public innocently left the country's protection from communism (and hence its openness to consumerism) to an unidentified priesthood of physicists, lawyers, bureaucrats, and manufacturers. The underside of this innocence, as Solnit tells it, was that the public's sense of place, connection, and ultimately, self became so disconnected from the land upon which it cut its consumptive teeth that it honestly believed itself absolved of any responsibility for the destruction carried out in its name. Gold, after all, came from the jewelry store, not from the mines of Nevada.¹⁰ It was measured conveniently by karats, not dispersed through the desert soil in the ratio of one ounce per ton of ore.¹¹ And it looked lusty on fingers and ears, never mind the open scars it left in places like Barrick Gold Strike Mine, just south of Carlin, Nevada.¹² This public, at both its best and worst, was personified for Solnit by her Barrick Mine tour guide, "a guileless young woman from the nearby junior college who couldn't answer any economic or ecological questions; a guide whose blithely uninformed confidence, like that of many of the librarians, historians, and public relations people I was encountering around the environmental disasters of Nevada, [was] far more valuable [to her employers] than expertise."¹³

Much of *Savage Dreams* probes into the role that disconnected consumerism played in creating the American West as idea rather than as place. Solnit traces the West as leisure ideal to a beginning where cruelty, development, and apathy, of the sort that cleared Yosemite of its indigenous inhabitants, made way for gold mining and, eventually, a well-administered Eden. Yosemite, the National Park, was from the start an idea the American public could actually and symbolically consume. Over time, and to no great surprise, the Park grew to reflect America's atomizing instinct.¹⁴ It became more a "suburb without walls, rather than a wilderness with amenities, [a place] where all the fences and buildings had disappeared, but the residents went on as usual. . . ."¹⁵ Meanwhile, the desert, as an Armageddon site, also came to mirror the frontier aspects of our national imagination. It reminded us—despite its contaminated water tables,¹⁶ its surreal DOING IT RIGHT

10. *SAVAGE DREAMS*, *supra* note 4, at 186-189.

11. *Id.* at 188.

12. *Id.* at 186-89.

13. *Id.* at 187.

14. See *e.g.*, PHILIP LANGDON, *A BETTER PLACE TO LIVE: RESHAPING THE AMERICAN SUBURB* (1994). See also *The Atomisation of Rich-World Life: Bad Suburbs Make Bad Neighbors*, *THE ECONOMIST*, Oct. 29, 1994.

15. *SAVAGE DREAMS*, *supra* note 4, at 229.

16. The DOE reported:

Although there has been some localized contamination of groundwater in the immediate vicinities of tests, we believe there has

THE FIRST TIME signs at Ground Zero,¹⁷ and its local residents who are dead or dying from cancer¹⁸—of our fantasies for "lawlessness, chaos, every man for himself, [and] self-sufficiency," which were important mirages in a world where one actually camped out with gas ranges and electric lights.¹⁹

Lise Meitner's Walking Shoes considers how these apparently contradictory fantasies of order and lawlessness emerged in the work of nuclear weapons producers. This chapter sifts through differences in approach between the physicists who masterminded the atom bomb (and perhaps some of the nuclear experiments on human subjects) and the physicists who followed in their steps. The former were theoreticians at the pinnacles of academia and medicine. The latter, "government employees with security clearances, [who] seem[ed] to believe in the rightness of weapons design and deployment."²⁰ Theoreticians; technicians. Those who imagined and bore new worlds from the position of their invulnerable careers; those whose careers remained vulnerable until they brought to fruition the imaginings of the theoreticians.

Together these physicists worked like the California gold diggers of the late 19th century. They went to a frontier to mine, and they dug until even the waters of distant rivers were full of silt.²¹ Though their rivers were mostly metaphorical, the effects of their work were visibly, inalterably, and unmistakably real. Believing in their careers, at first, then later in their mission and power, generations of government-funded scientists sat down to plot just where nuclear expansion would take us.²² They designed studies

been very little movement of that water. Test site employees obtain their drinking water from several wells at the site. Site wells are monitored regularly and radioactive contaminants have never been found in test site drinking water

OPENESS PRESS CONFERENCE, *supra* note 1, at 19.

17. SAVAGE DREAMS, *supra* note 4, at 205.

18. One particularly poignant description of the harm that downwinders met is told by Janet Gordon of Cedar City, Utah. Gordon's pioneering Mormon family lived about 150 miles east of the Nevada Test Site. Gordon was 12 years old when the atmospheric testing started in 1951. *Id.* At 148-55.

19. *Id.* at 375.

20. *Id.* at 119.

21. "In the time that Yosemite was set aside, thousands of tons of earth were being moved from the foothills into the valleys, the rivers, the San Francisco Bay. Even the mouth of the Golden Gate was brown." *Id.* At 246.

22. Eileen Welsome, *supra* note 7. See also *Science of Power and Weakness*, *supra* note 7 ("At the direction of Energy Secretary Hazel O'Leary, her department has vowed to 'come clean' on the human radiation experiments conducted under the sponsorship of the federal government over nearly three decades.... Although the

to gauge the effects of their work on humans.²³ They exposed porters, house painters, students, mentally retarded children, pregnant women, and prisoners—people whom they regarded as "marginal"—to radiation.²⁴ And they did this to answer two apparent questions. The first: what risk were they themselves taking by working with radioactive material, since "the loss of scientists would be akin to losing generals in an army?"²⁵ The second: how could they best assess the risks of mass exposure given that the United States government had plans to manufacture plutonium in large quantities.²⁶

Their colleagues supported them in their quest for answers. N.P. Lawrence, a scientist in health physics at the Los Alamos National Laboratory, last year minimized the plutonium experiments on humans by noting that "[plutonium has] a bad reputation, but you can't find any cancers that you can attribute to plutonium in human beings."²⁷ And J. Newell Stannard, Professor Emeritus at the University of Rochester, resolved the Nuremberg-degree ethical problems human experimentation raised with a verbal distinction. As he saw it, "plutonium's bad reputation stems in part from 'hysteria' and partly from the fact that someone in the '40s described it as the most toxic element known to man. What we should say is that it is one of the most effective carcinogenic elements known. There are many more toxic elements."²⁸ Quibbling worthy of the best lawyers.

It seems to me that what we really should say is what we *now* know. We know, for instance, that in 1944 Noble laureate and co-discoverer of plutonium Glenn Seaborg wrote about the danger of "even very small amounts" of plutonium in the body.²⁹ We know that Stafford Warren, the first dean of UCLA's medical school, approved, and perhaps initiated, plutonium experimentation on human subjects.³⁰ We know that J. Robert Oppenheimer,

research proceeded independently at different times and in different places, all of it ultimately was financed with tax dollars."). *See generally supra* note 7.

23. *See generally supra* note 7.

24. *Science of Power and Weakness, supra* note 8 (reference to mentally retarded children, pregnant women, prisoners); Welsome, *supra* note 7 (details tests conducted between 1945 and 1947 on 18 human subjects; identifies 5 of the 18 subjects). *See generally supra* note 7.

25. Welsome, *supra* note 7, at 16.

26. *Id.* at 17 (statement attributed to Roland Finston, a health physicist who recently retired from Stanford University). The DOE reported that the United States' total production of weapon-grade plutonium between 1945 and 1988 was 89 metric tons. OPENNESS PRESS CONFERENCE, *supra* note 1, at 21.

27. Welsome, *supra* note 7, at 9.

28. *Id.*

29. *Id.* at 16 (citing a memorandum dated January 5, 1944, from Glenn Seaborg to Robert Stone, a health official at Chicago's Met Lab.)

30. *Id.*

the orchestrator of the project that gave us the atom bomb, wrote a letter to Warren adding his "personal indorsement [sic] of the Los Alamos requests," which is to say, very likely, of plutonium experimentation on humans.³¹ And we know that this experimentation was carried out at public hospitals affiliated with some of our most prestigious institutions: UCSF, UC Berkeley, MIT, Vanderbilt, the University of Rochester, the University of Cincinnati, and the list no doubt will go on.³²

Solnit is too kind with these physicists, whom she calls "pure theorists," invoking a forgive-them-they-know-not-what-they-do stance once too often.³³ The critical eye she brings to the actions of the practical physicists, and later in the book to those of nineteenth century entrepreneur-gold diggers like James Savage, softens when it comes to the likes of those who dreamed up the bomb. But this might be more of a problem of timing than vision. Had Solnit written *Savage Dreams* after news of human experimentation broke, she no doubt would have noted how the pure theorists, despite their European-style erudition, their love of nature walks, and their belief in complementarity,³⁴ were as capable of moral misdirection as anyone else.

As it stands, Solnit takes the view that because the pure theorists "thought of themselves as innocents involved in a beautiful and morally neutral practice," they somehow were.³⁵ And because they liked ideas, perhaps more genuinely than the rest of us do, they ought to be absolved of the damage their ideas wrought.³⁶ I could almost follow this train of thought if *Savage Dreams* was only about the bombing of "remote" desert areas in New Mexico and Nevada. But by Solnit's own admission, the book is about more.³⁷ Hence it is disappointing when Solnit portrays those scientists who pursued science at the expense of ethics as near-angelic beings meandering innocently around the countryside.

In *Ruby Valley and the Ranch* and *The War*, Solnit takes up another intellectual and professional realm: that of law. Solnit is an art historian, not a lawyer, hence her sense of legal relevance is loose, which means that she is still more curious about how law works in general than she is about the details of any particular legal record. It also means that her curiosity leads her to push to the background information a lawyer might consider "relevant" in favor of bringing to the fore information whose relevance a

31. *Id.* at 17 (citing a letter dated March 29, 1945, from J. Robert Oppenheimer to Stafford Warren).

32. *Id.* See also *Science of Power and Weakness*, *supra* note 7. See generally *supra* note 7.

33. *SAVAGE DREAMS*, *supra* note 4, at 120-44.

34. *Id.* at 125, 142.

35. *Id.* at 125-26, 133.

36. *Id.* at 108-44.

37. *Id.* at 24, 96.

lawyer might question. In Solnit's book, it is the "not relevant" information that bears witness to the scarring of the West. These are the passages I found myself rereading, not because they are beautifully written, but because they are important, poignant reminders of the difference between innocent meandering and willful encroachment.

Carrie and Mary Dann are Western Shoshone ranchers. Their life is the Nevada desert, which to them, as Solnit tells it, is the best the planet offers. They are Native Americans with all the positive stereotyping that inspires, but they are also tough desert dwellers. Their tenacity often challenges the city activists who come out to help, since cattle ranching "is not what ecological saints do."³⁸ Nevertheless, they believe they have a right to stay in the desert, to raise cattle, and to identify as Western Shoshone, which is to say, as citizens of a sovereign nation that is separate from the United States. Reading about the Danns, I was reminded of people I grew up with in northern New Mexico. These people had not yet succumbed to American consumerism; they had no reason to trust any particular form American government. If anything, I remember hearing my grandmother sound a lot like Carrie Dann when she said: "Is the U.S recognizing that it gradually encroached on another sovereign nation? Is gradual encroachment the law of the land?"³⁹

As it turns out, gradual encroachment is indeed the law of the land, especially when it comes to colonialism.⁴⁰ And for every lawyer who is genuinely concerned about the land or about people like the Danns, there are many more who are not. Unfortunately, it is often the latter group that offers its services in protracted Indian litigation. In a way, the lawyers in the century-long Western Shoshone litigation were legal James Savages, or, in some cases, mirror images of the physicists with government clearances. They set the stage for the 1979 Indian Claims Commission judgment, which, as Solnit points out, went on to culminate in a decision that was purportedly in favor of the Western Shoshone.⁴¹ This judgment made the Danns trespassers on their own land.⁴² It also left \$26,145,189.89 in a United States trust account whose reluctant beneficiaries were the Western Shoshone

38. *Id.* at 173.

39. *Id.* at 171.

40. See *Shoshone Indians v. United States*, 11 Ind. Cl. Comm. 387 (1962). In that case, the Shoshone tribes first filed in 1951 a joint petition with the Indian Claims Commission for compensations for aboriginal lands, some of which were in California and Nevada, that were lost in the 19th century. The Indian Claims Commission found that the Shoshone lands, in effect, had been taken by the United States when settlers and other non-native Americans gradually encroached upon the aboriginal title held by the Shoshones.

41. SAVAGE DREAMS, *supra* note 4, at 171. See also *To-moak Band of Western Shoshone Indians v. United States*, 219 Ct. Cl. 346 (1979); *United States v. Dann*, 470 U.S. 39 (1985).

42. *United States v. Mary and Carrie Dann*, Civil No. R-74-60 (Jan. 5, 1977).

tribes.⁴³ This sum "included payment for twenty-two million acres of land at 1872 prices—a dollar and change for an acre—after deduction of all shoelaces and spoons supplied in the nineteenth century."⁴⁴

The lawyers who represented the Western Shoshone in the Indian Claims Commission process authorized themselves, and then were dialectically authorized by the legal process itself, to convince their clients (often one by one) that a cash settlement would be better than nothing, even if it barred all future land claims. The "nothing" the Western Shoshone were advised to let go of was their dream—a rather realistic one at the time—of regaining title and control over their homeland.⁴⁵ These lawyers, like the physicists, no doubt justified their actions in air-tight ways that some of them actually believed. As Solnit described the Dann case, I could almost hear the lawyers, whom the Shoshone sought court approval to fire, formulating arguments about why it would be "fair" to reimburse the United States government for the cost of shoelaces and spoons. The land, after all, existed for obliterating (or in any case selling), regardless of the plants, the animals, or the people who happened to live on it.

In 1974, five years before the 1979 Indian Claims Commission award, the Dann sisters moved to intervene in the Western Shoshone land claim process.⁴⁶ They wanted recognition of their aboriginal title, not a pay off that extinguished it. That same year, the Danns were sued for trespassing on federal land (their ranch) by grazing cattle without a permit.⁴⁷ As Solnit tells it, the United States District Court that sits in Nevada eventually ruled that the Danns were trespassing as of the date of the 1979 Indian Claims Commission judgment, thus "suggesting that the Danns had been in the right for the first five years of their battle, and then became wrong."⁴⁸ Solnit's surprise with this sort of legal bucking reveals the lay person's hope that law is fair, not fairer for some than for others, just fair. Yet Solnit's sober and keen sense returns almost immediately to bear witness to what the judgment against the Danns, and by implication the judgment for the Western Shoshone, meant to them.

43. SAVAGE DREAMS, *supra* note 4, at 172. See generally *United States v. Dann*, *supra* note 41.

44. SAVAGE DREAMS, *supra* note 4, at 171. See generally *Te-moak Band of Western Shoshone Indians v. United States*, 18 Cl. Ct. 82 (1989) (general outline of offsets).

45. See generally *United States v. Dann*, 572 F.2d 222 (1978).

46. SAVAGE DREAMS, *supra* note 4, at 170. See also *Western Shoshone Legal Defense & Education Association v. United States*, 209 Ct. Cl. 43 (1976) (affirming the Indian Claims Commission's rejection of the Danns' attempt to intervene).

47. *United States v. Mary and Carrie Dann*, *supra* note 42.

48. SAVAGE DREAMS, *supra* note 4, at 170-173. See also *Te-moak Band of Western Shoshone Indians v. United States*, *supra* note 41; *United States v. Mary and Carrie Dann*, *supra* note 42.

The Danns were of a different world than the consuming acolytes Solnit found at Yosemite. They were the ones whose rejection rather than embrace of the troubling aspects of American culture redeemed America's Armageddon for her. They were the preservers of the physical West that the gold diggers and, later, the physicists encroached upon with their vague ideas for an ordered yet lawless frontier, one that supported both wealth and total destruction. Solnit bears witness to Carrie Dann's own version of order and lawlessness in what is perhaps the high-point of the book. She watches a video tape that shows BLM Special Agent Joe Leaf arriving at the Dann Ranch with the local sheriff to confiscate the Dann's cattle. After a dramatic scene in which Carrie Dann blocks the cow chute with her body, Dann tells Leaf that she will give him her cows if he proves that the United States owns her land. There is a scuffle; Joe Leaf twists Carrie Dann's arm, leaving Solnit to conclude: "Thus two decades of legal battle came to their culmination. The federal government versus the Western Shoshone boiled down to Joe Leaf twisting Carrie Dann's arm." Solnit had traveled to Nevada for an abstraction; she believed lines of biography, history, and ecology converge at physical sites. She left having witnessed the power of the concrete to render the abstract absurd. Her comings and going leave us with a road; a convergent line with which to travel between America's Eden and her Armageddon.