

[Article Review 467- "The Global Effects of Nuclear Winter: Science and Antinuclear Protest in the United States and the Soviet Union during the 1980s"](#)

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Nuclear winter is a scientific hypothesis of the 1980s. It describes a post-nuclear war scenario in which massive fires produce enough atmospheric particulates to block sunlight, lower global temperatures, and possibly end life on earth. The popular scientist Carl Sagan introduced this atomic idea in October 1983, and his announcement capped an already tenuous Cold War year. That March, President Ronald Reagan delivered his 'Evil Empire' speech and promoted his controversial Strategic Defense Initiative (SDI, or 'Star Wars'). By September, Europeans had begun protesting the arrival of U.S. Intermediate-Range Ballistic Missiles (IRBMs) to counterbalance Soviet SS-20s. In America, these 'Euromissile' protests were overshadowed by the October bombing of an American Marine barracks in Beirut, and the U.S. invasion of Grenada that soon followed. In the wake of these events, Sagan hoped that scientific findings and his media savvy might convince U.S. policymakers, and the American public, to reconsider Reagan's nuclear arms buildup.

Paul Rubinson's article, "The Global Effects of Nuclear War," traces nuclear winter debates in the American and Soviet scientific communities. He argues that this atomic idea was important because it allowed scientists on both sides of the Cold War divide to challenge "versions of truth offered by their respective governments" (50). Rubinson, an Assistant Professor of History at Bridgewater State University, begins with the American perspective on nuclear winter. This story has already been told, most recently in Lawrence Badash's comprehensive *A Nuclear Winter's Tale: Science and Politics in the 1980s*.¹¹ Yet Rubinson adeptly distills this long narrative down to its essential elements: how the Mariner 9 Martian landing led Sagan to study atmospheric dust storms; that emerging scientific theories, including Luis and Walter Alvarez's dinosaur extinction model, were catalysts which meshed with Sagan's antinuclear activism; the efforts to attain a scientific consensus, and the backlash from scientists, like Edward Teller, who were wary of Sagan's media savvy (48-61). There is nothing particularly path-breaking in this section, but Rubinson does an excellent job of summarizing the somewhat arcane scientific quibbling to be found in dozens of 1980's scholarly journals such a

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Science and Nature.

The second section, on Soviet debates over nuclear winter, is more groundbreaking. The bulk of this research is from private collections. In the American case, the personal archives of scientists like Teller or Hans Berthe enhance, but don't necessarily change, Badash's nuclear winter narrative. What is different is the addition of Soviet documents, which makes Rubinson's tale a lens through which historians can compare Soviet and American Cold War scientific dissent. In both countries, nuclear-winter debates became showdowns between the arcana of nuclear defense and the supposed objectivity of science. In America, Sagan's thinly-veiled hatred of the arms race opened him to attacks by pro-Cold War researchers (like Teller) and criticisms by a scientific community clinging to notions of objectivity. Rubinson shows that in the Soviet Union, nuclear winter had a far more profound impact. Like Sagan, the Soviet dissident Vladimir Brodsky and his Moscow Trust Group promoted nuclear winter as a threat which transcended ideology. Whereas Sagan looked to a largely unresponsive Congress for support, Brodsky engaged in demonstrations to publicize the issue. For his efforts, Brodsky faced trial for "aggravated hooliganism," and continued KGB surveillance (65). But these efforts weren't ineffectual. Only two years after the nuclear winter announcement, the Soviet-American joint International Physicians for the Prevention of Nuclear War (IPPNW) received the Nobel Peace Prize, even while Brodsky remained imprisoned (66).

These varying government responses do more than remind readers of the obvious differences between U.S. and Soviet legal systems. They suggest nuclear winter's transnational potential to challenge Cold-War policies. As Rubinson states, "Soviet authorities' refusal to inform the public about the possibility of nuclear winter reinforced the growing belief that the Soviet Union cared nothing for its people. The Soviet regime in turn grew alarmed when nuclear winter was used as an argument against its own policies, rather than those of the United States, and nuclear winter consequently became a symbol of free speech and free information that challenged the Soviet system in general" (63). Herein lies the most important contribution of Rubinson's comparative treatment: it shows that however ill-received Sagan's efforts were in America, nuclear winter triggered transnational activism that truly challenged Soviet policy.

If there is one limitation to the piece, Rubinson slightly downplays Sagan's nuclear winter media campaign. He states that Sagan "concentrated too much on scientists and the government as the target audience of his activism, leaving less time for the general public" (61). Sagan certainly attempted to persuade Congress, finding one supportive voice in Wisconsin Democratic Senator William Proxmire, but from late 1983 until mid-1984 Sagan's efforts to educate the public were considerable. He worked with a public relations firm, crafted media presentations for a college campus tour, oversaw television propaganda pieces, and even appeared on ABC's *Viewpoint* in a roundtable discussion that followed the biggest television event of the year, the airing of the antinuclear docudrama *The Day After*. In that event alone, Sagan warned tens of millions of Americans about nuclear winter, a considerable achievement. In short, Sagan's attempts to reach the public were robust. But historians have to make choices, and Rubinson's focus on scientific activism provides a valuable part of a much larger story.

Rubinson's article is a welcome contribution to the still-scarce historiography on nuclear winter. Early histories of the theory were closely associated with Sagan. His 1990 collaboration with Richard Turco, *A Path Where No Man Thought: Nuclear Winter and the End of the Arms Race*, traces the

theory's evolution, its cultural precursors, and debates over its validity.^[12] Two of Sagan's biographers also examine nuclear winter, but as Rubinson rightfully points out, both have "glossed over [the] nuclear winter campaign as an embarrassing misadventure in an otherwise admirable scientific career" (49).^[13] There is much more to be said, as Lawrence Badash's work made clear. His 2001 article, "Nuclear Winter: Scientists in the Political Arena," argues that the Reagan administration co-opted nuclear winter to promote the need for deterrence and even endorse SDI. His 2008 book, *A Nuclear Winter's Tale*, concludes that while nuclear winter was plausible, it did little to shape policy.^[14] Rubinson complicates these conclusions, and reveals that scientists provided unique forms of antinuclear protest against both American and Soviet governments.

A few recent works provide alternative viewpoints on the theory. In their 2010 work *Merchants of Doubt*, Naomi Oreskes and Erik M. Conway see nuclear winter as part of a "right-wing turn against science" in which hardline anticommunists formed the George C. Marshall institute to combat arms control efforts of the Union of Concerned Scientists (of which Sagan was a member).^[15] In this analysis, nuclear winter is part of a larger struggle that started with big tobacco and continues with climate change. The comparison is thought provoking: Sagan's pleas that Congress heed scientific warnings and change policy certainly seem to mimic current calls for environmental regulations. In another (forthcoming) piece, Wilifred Mausbach argues that nuclear winter was a product of a larger, global environmental consciousness. It was one of the few innovations that set 1980s antinuclear activism apart from previous decades.^[16] As these works show, this is a story with many facets. Rubinson's article is valuable for investigating the theory's scientific debates, and the transnational activism that they triggered. Additionally, his conclusion is measured and sound: while Congress largely ignored nuclear winter, in the Soviet Union "some leaders," like Mikhail Gorbachev, listened. This scientific theory may have provided more reasons for Gorbachev to have scaled back military commitments and aid a dismal economy.

Since the fall of the Soviet Union, historians have searched for the most important factor in ending the Cold War. Was it internal Soviet economic pressures, or the steadfastness of American containment? Does Reagan or Gorbachev deserve more credit in ending the conflict? This article makes a case for nuclear winter's place in the list of causes, which includes "human rights, mutually assured destruction, democracy, and *glasnost*, among others," that contributed to the Cold War's end (69). As nuclear winter's story encompasses politics, environmentalism, and culture, it is likely that historians will continue to investigate this peculiar late-Cold War story. I imagine that Rubinson will be one of the most important voices in its telling.

William M. Knoblauch is an Assistant Professor of History at Finlandia University (Hancock, Michigan, USA). He earned a Ph.D. in U.S. History from Ohio University, and his research focuses on Cold-War popular culture and foreign policy. His chapter "Will You Sing About the Missiles?: British Anti-Nuclear Protest Music of the 1980s" is now under final review for a forthcoming Cambridge University Press collection entitled *Accidental Armageddons: The Nuclear Crisis and the Culture of the Cold War in the 1980s*.

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[1] Lawrence Badash, *A Nuclear Winter's Tale: Science and Politics in the 1980s*. (Cambridge: MIT Press, 2009).

[2] Carl Sagan and Richard Turco, *A Path Where No Man Thought: Nuclear Winter and the End of the Arms Race* (New York: Random House, 1990).

[3] Keay Davidson, *Carl Sagan: A Life* (New York: John Wiley and Sons, 1999), 354-380; William Poundstone, *Carl Sagan: A Life in the Cosmos* (New York: Henry Holt and Company, 1999), 292-367.

[4] Lawrence Badash, "Nuclear Winter: Scientists in the Political Arena," *Physics in Perspective*, 3, 2001, 76-105; Badash, *A Nuclear Winter's Tale*, 315-316.

[5] Naomi Oreskes and Erik M. Conway, *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming*. (New York: Bloomsbury Press, 2010), 36-65.

[6] Wilfried Mausbach, "Nuclear Winter: Prophecies of Doom and Images of Desolation during the Second Cold War" in Eckart Conze, Martin Klimke, and Jeremy Varon (eds.), *Accidental Armageddons: The Nuclear Crisis and the Culture of the Cold War in the 1980s* (Cambridge: Cambridge University Press, forthcoming).