The Silence of Fallout

The Silence of Fallout:
Nuclear Criticism in a Post-Cold War World

Edited by

Michael Blouin, Morgan Shipley and Jack Taylor

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In memory of Paul Boyer

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PREFACE

JOHN CANADAY

For more than a decade, from the opening of Site Y of the Manhattan Project in 1943 to the revocation of his security clearance in 1954, J. Robert Oppenheimer probably knew more about nuclear weapons—and nuclear issues generally—than anyone. As director of the Los Alamos Laboratory, he oversaw every aspect of the first bombs' design and construction; indeed he was often credited with having more insight into the details of the work being done in the project's many subdivisions than the individuals who were doing the actual work. After the war, as Chairman of the General Advisory Committee of the Atomic Energy Commission, he was in touch with everyone who was anyone in the (western) world of nuclear issues, including scientists, politicians, and military leaders, and he had access to classified details of the technical, military, and political aspects of the development and deployment of nuclear weapons by the United States.

In 1954, despite the services he had rendered to the United States, his enemies—and his outspokenness (sometimes acerbic, always brilliant) had inspired a number of personal and ideological grudges—successfully engineered a kangaroo trial before a panel of three judges. Over the course of the four week "hearing," Oppenheimer's previous association with communists and irregularities in his exchanges with security personnel during the war years were used as a pretext for revoking his security clearance just weeks before it would have expired anyway.

Though the panel's two to one decision may have been, as Ward Evans, Chair of Northwestern University's chemistry department, said in his dissenting opinion, a "black mark on the escutcheon of our country,"[1] Oppenheimer seemed to feel it, with some justification, even more strongly as besmirching of his character. He continued to do worthwhile, even important work—writing, lecturing, and directing the Institute for Advanced Study—and he avoided expressions of anger or betrayal; but behind the public façade, he nursed a profound bitterness—to the extent that Isidor Rabi, his friend and colleague, said, "I think to a certain extent it actually killed him, spiritually."[2]

Broken or not, after losing his security clearance, Oppenheimer

became more reticent in his comments on nuclear issues. A few years later, for instance, when a network interviewer asked, "Could you tell us what your thoughts are about what our atomic policy should be?" the man who had once been among the most qualified individuals to speak on these matters answered, "No, I can't do that. I'm not close enough to the facts and I'm not close enough to the thoughts of those who are worrying about it."[3] His tone was muted, his voice weary and tinged, perhaps, with sadness, yet also firm, almost defiant, as though he was determined not to let anyone—including himself—forget that the United States had deigned to find him unworthy.

It is possible that Oppenheimer did not really believe his own disclaimer. He may have allowed bitterness or discouragement at the state of U.S. nuclear policy—by then thoroughly committed to a strategy of Mutually Assured Destruction based on the proliferation of fusion bombs, whose development he had opposed—to dictate his retiring response. But as fellow outsiders, excluded from the approved and informed coterie of nuclear policy makers, humanist scholars can hardly afford to ignore Oppenheimer's assertion. If even the "Father of the Atomic Bomb" believed he could not comment usefully on nuclear weapons without highly specialized, classified knowledge, how can scholars in the humanities, with no access to such information—lacking security clearances or even, in general, any scientific background—hope to add anything useful to our collective understanding of nuclear issues? Wouldn't "Nuclear Studies" conducted by such armchair quarterbacks be no more than a dilettantish and presumptuous hobby?

These questions should give humanists[4] pause. But before going so far as to imitate Oppenheimer's reticence, it is worth using that pause to consider seriously what the humanities might really contribute to the study of nuclear issues. Part of the challenge here is that "the humanities" denotes a rattle bag of disciplines, often poorly defined and always fragmented into competing, sometimes incompatible sub-specializations. Any working definition needs to acknowledge these tensions and contradictions—indeed incorporate them as an essential feature—while catching something of that elusive essence that the term recognizes as shared by each of the disciplines it embraces. Though no definition will be entirely satisfactory, I believe we can make useful headway by proceeding on the understanding that the (scholarly) humanities consist of those analytical (as opposed to empirical) activities that strive to construct satisfying representations of human experience and its social and cultural expressions.

The weakest link here, of course, is the word "satisfying," but it is

worth embracing. The conditions that count as "satisfying" are legion, which makes for awkward systematizing but reflects the humanities' essential diversity of aims and uses. In general, people seem to be satisfied by the "completion" of patterns—sequences of linked elements that imply additional elements. I place "completion" in quotes because our satisfaction may derive from experiencing a fulfillment, a surprising redirection, or sometimes a purposeful frustration of the expectations raised by the original pattern. Music, rhymes, crossword puzzles, jokes, math problems, baseball games, explanations, sex. Lacking experimental verification of their claims, humanist analyses depend on appeals to our apparent need for closure, including, with real or asserted prominence, that of logical structures of thought.

The words "representations" and "expressions" are also loose and insufficiently distinct from one another. Again usefully so: humanist work is concerned with a wide variety of symbolic activities, ranging from the representational to the abstract, and it is often, implicitly or explicitly, self-referential, sometimes to the point of being more concerned with its media than either their content or context. This can be part of the usefulness of humanist work; it can also be a major weakness: at best because its results are not reproducible, depending on style more than substance; at worst because it invites sloppy thinking. While the sciences seek to produce symbolic representations of physical phenomena based on objective, repeatable observation and manipulation, the humanities concentrate on phenomena that are already symbolic, exploring representations by means of subjective, intuitive observations. While scientists strive to construct representations of the concrete, phenomenal world that are as abstract as possible—ideally encoded in mathematical language—in order to minimize traces of their own subjective agency, humanist representations inhabit that subjective middle ground, managing neither strict fidelity to the phenomenal world nor a full inductive abstraction of it, but instead remaining enmeshed in the symbolic media of their objects of study. While the sciences seek to transcend the quirks of individual human experience, the humanities celebrate, indeed depend upon, their imbrication in these vagaries. Including both "representations" and "expressions" in our description of the humanities emphasizes these entanglements in the (as yet) unquantifiable realm of feelings and intuitions.

In the context of this brief description of the humanities, we can now turn to consider a pair of questions: What is this "nuclear" thing humanists want to study? and, Why are they drawn to it if it lies outside their disciplinary purview(s)? It may seem self-evident that "Nuclear Studies" center on the examination of technologies powered by nuclear processes,

and while this is broadly true, it oversimplifies the subject in ways that imply scientific knowledge as a prerequisite. In practice, "Nuclear Studies" may focus on a wide range of issues, including theoretical, experimental, technological, historical, military, political, social, and cultural, singly or in conjunction, such as fission cross-sections and neutron energy spectra, the development of cyclotrons and betatrons, the innovations of water boiler reactors and explosive lenses, the birth of big science, the evolution of the military industrial complex, the history of the SALT treaty talks, the spread of Mutually Assured Destruction as a strategic principle, the representation of nuclear war in literary and artistic productions, and the use of nuclear imagery to market everything from candy to cars.

In order to avoid losing sight of the trees in the forest, it is useful to distinguish the two poles marking the terrain "Nuclear Studies" seeks to analyze: A) the technological artifacts themselves—particularly weapons—that derive energy from the fission or fusion of atomic nuclei, and B) the inscription of these artifacts in social and cultural contexts. This distinction can help us clear up the confusion regarding the role of the humanities in "Nuclear Studies." On the one hand, it acknowledges the limitations of a humanist approach: without specialized, technical knowledge, no-one can hope to address A. On the other hand, humanists have a home field advantage when it comes to B. Failure to distinguish between these poles leads to a confused state of affairs in which humanists assume they are not qualified to undertake "Nuclear Studies" and scientists assume they are. In fact, it is just as reasonable to ask whether scientists are equipped to address the social and cultural inscriptions of nuclear artifacts as it is to question whether humanists are competent to examine their technological aspects.

Perhaps it is not surprising that many nuclear scientists have acted as though their specialized knowledge of A has automatically qualified them to speak to B. Subatomic physics is an abstruse topic, involving a rarified vocabulary and mathematical facility, whereas social and cultural contexts would seem to be domains of common sense. But why do politicians and military leaders (in general), though lacking scientists' technological credentials, seem to share their willingness "to boldly go"? Masters of neither scientific nor scriptive pole, soldiers and statesmen occupy the middle ground, tasked with "making things happen." Rightly or wrongly, to our weal or woe, it is the nature of their occupations that they must make decisions and push for action. We might hope that they would avail themselves of experts on either side, and they have been known at least to gesture in deference to scientific knowledge; but they have shown little or no inclination to consult with humanists. Perhaps they sense our hesitance.

Curiously, humanists feel no similar diffidence when approaching other subjects that also have a clear technological basis, such as film studies, even though I think it's safe to say most of us don't understand the function of silver halide in film stock, the optics of an IMAX projector, or the neurological processes that translate a series of still images into the illusion of a moving picture. This lack of self-doubt reflects both a feeling that film technology is less abstruse than its nuclear cousin and the fact that movies are more obviously social and cultural entities—and easily available ones at that—whereas nuclear weapons exist as immensely sophisticated technological artifacts accessible only through various degrees of specialized separation. Even as symbols—the way in which most of us know them—nuclear weapons are almost entirely absent, experienced only as theoretical signifiers pointed to by other symbols.

The general absence of nuclear weapons (and, to a lesser extent, other nuclear artifacts) from our field of experience is perhaps the crucial issue. Film studies is characterized by the apparent presence of an object of study. We can go to a movie theater, buy a DVD, download a film from iTunes. But we can't see, touch, or buy a nuclear weapon, and most of us will never visit a nuclear power plant or operate a nuclear radiograph. It is this absence of an object in "Nuclear Studies" that makes the discipline so fraught for humanists: how do you study what you can't see, touch, taste, smell, or hear? Our practical distance from nuclear artifacts mirrors and intensifies our sense of epistemological distance.

It is important to recognize that this absence—though in different forms—also characterizes the relationship between nuclear scientists and their objects of study. Whole atoms cannot be grasped by the senses, much less nuclei, and physicists have had to become masters of indirection, inference, and metaphor (in both verbal and mathematical forms). Ironically, this distance led many scientists involved in the initial development of nuclear weapons to turn to literary sources and devices in their efforts to represent, even to themselves, the things they were working on. Thus there is an essential commonality of experience in scientific and humanistic involvement in "Nuclear Studies." Our authority, whether as humanist or scientist, derives not from privileged proximity, but from an ability to read with subtlety and sensitivity the symbolic inscriptions through which nuclear phenomena are written in natural and social contexts.

Humanists, therefore, are not necessarily interlopers in a realm reserved for the technological cognoscenti. As long as they focus their efforts in the vicinity of the pole that marks their area of training, humanist expertise in the identification and interpretation of social and cultural

representations can play a crucial role in forming a better understanding of nuclear technologies—which exist outside the lab or bunker precisely in the form of such representations. Though some individuals will be able to venture further from their native territories, scientists as well as humanists would do well to remain mindful of their limitations.

Of course expertise is itself a vexed question, with no clear rules for determining who has it and who doesn't. Academic degrees, student evaluations, and peer-reviewed publications form a rough set of criteria, but each time an individual ventures to learn something new, she is crossing back over the (imaginary) boundary between expert and student. This dynamic becomes particularly significant when an expert in one field ventures into territory that lies between disciplines or that, even more dangerously, might be claimed by another discipline altogether. Sokal's Hoax and the ensuing Science Wars illustrate some of the pitfalls and offer useful cautions to specialists from either pole. When venturing into new territory, one would be wise to respect the authority of the locals and, in fact, to seek out their guidance and collaboration. In these circumstances, peer review becomes even more essential, as does taking seriously our responsibility to learn the work of those who have preceded us and to recognize our own limitations.

Oppenheimer understood this better, perhaps, than anyone. It was his extraordinary breadth of knowledge, which included a deep grounding in the humanities—a mastery of French literature, of Metaphysical poetry, of sacred Sanskrit texts, of Indonesian cooking—in addition to his expertise in physics, that allowed him to speak wisely and stylishly to both poles of "Nuclear Studies." Even Oppenheimer, however, retained a sense of his own limitations, and when his security clearance was revoked and he lost access to what he believed to be essential technical knowledge, he curtailed the scope of his comments. During the heady days of his ascendancy, when he was one of the most influential analysts of nuclear issues, he did not shy away from sharing his opinions. Yet even then his pronouncements were models of rhetorical grace and subtlety. Even then he sensed that his understanding of nuclear issues was as much—or more—a matter of style than substance.

Describing the difficulties involved in finding a workable political solution to the challenges involved in international nuclear control, for instance, Oppenheimer asserted in 1948:

> The problem of doing justice to the implicit, the imponderable, and the unknown is of course not unique to politics. It is always with us in science, it is with us in the most trivial of personal affairs, and it is one of the great problems of writing and of all forms of art. The means by which it is

> solved is sometimes called style. It is style which complements affirmation with limitation and with humility; it is style which makes it possible to act effectively, but not absolutely; it is style which, in the domain of foreign policy, enables us to find a harmony between the pursuit of ends essential to us, and the regard for the views, the sensibilities, the aspirations of those to whom the problem may appear in another light; it is style which is the deference that action pays to uncertainty; it is above all style though which power defers to reason.[5]

The force of "the implicit, the imponderable, the unknown" in science and in human affairs can hardly be illustrated more clearly than by nuclear power. It is ironic that Oppenheimer would forget this after having his security clearance revoked—forget there is more to say about nuclear issues than can be included in a security briefing, forget the importance of style and his own sensitivity to it. But perhaps his later reluctance to assert himself was less forgetfulness than a loss of faith in the force of his own personal style, which had so notably failed to make the powers that put him on trial defer to reason.

Of course Oppenheimer was (and is) not the only person to forget the two poles of "Nuclear Studies." Style is precisely what politicians and military strategists discount. Pressed by their need to devise literal applications for nuclear weapons, for instance, they fall into the trap of behaving as if these weapons are accessible to the expert, are amenable to reason, are objectively knowable. In doing so, they ignore the way nuclear weapons function in society and the buttons in us they can push, focusing instead solely on their ability to destroy an enemy and the attendant questions of manufacture, maintenance, situation, security, and delivery. Even if nuclear weapons existed only as technological artifacts, this approach would be imperfect; but as cultural entities, they defy such reductive, statistical manipulation.

If we are to escape the hazards of purely literal readings of nuclear technologies, we need to recognize the importance of style. We must attend to the ways in which we represent these technologies, not just to the ostensible content of those representations—for the *ways* we say things also encode meaning, whether we are aware of it or not. We must remember, with Oppenheimer, that meaning-making is not only a denotative process but a connotative one as well. Our understanding of nuclear weapons must go beyond megatons and spark gap switches, our grasp of nuclear power plants reach past megawatts and zirconium cladding, because these technologies are not inevitable, universal manifestations of natural laws but socially specific human manipulations of forces we understand only imperfectly, the consequences of which lie

far beyond our ability to predict.

In short, our actions should pay deference to our uncertainties, not hide them in the name of security under a spackle of secrecy, no matter how expertly applied. In expressing deference, we would be following the example of physicists in the 1920s who acknowledged the fundamental uncertainties involved in their efforts to understand the subatomic realm. Indeed for them this was only the beginning, and they went further, recognizing in Werner Heisenberg's Uncertainty Principle the essential wisdom inherent in an acceptance of the limitations of objectivity. It is time for us, likewise, to embrace the metaphoric nature of our descriptions of nuclear technologies and by doing so confront and learn from the essential uncertainty they inscribe.

Oppenheimer identified such deference as a matter of style, and the tools for understanding and applying style are the particular expertise of the humanities. If for no other reason than our survival, we must admit the importance of style in "Nuclear Studies"—both in our analyses of the ways nuclear technologies have been made manifest in our society, and in our explorations of the limitations and possibilities of future representations—and we must accept the responsibility of applying ourselves to these studies despite, or rather because of, our uncertainties.

Notes

[1] Cited in Richard Polenberg, *In the Matter of J. Robert Oppenheimer: The Secuirty Clearance Hearing* (Ithaca, New York: Cornell University Press, 2002), 362.

[2] *The Day After Trinity: J. Robert Oppenheimer and the Atomic Bomb*, directed by Jon Else (San Jose, CA: KTEH, 1981), 1:22:10, DVD.

[3] Cited in Mark Wolverton, *A Life in Twilight: The Final Years of J. Robert Oppenheimer* (New YorK, NY: St. Marten's Press, 2008), 267.

[4] I will resist the impulse to refer to scholars in the humanities as "Sith" and instead use the term "humanists," hoping readers will forgive the use of a broad term in this limited sense.

[5] J. Robert Oppenheimer, "The Open Mind," in *The Open Mind* (New York: Simon and Schuster, 1955), 54.

INTRODUCTION

THE SILENCE OF FALLOUT

MICHAEL J. BLOUIN, MORGAN SHIPLEY
AND JACK TAYLOR

> How does a people react when the entire basis of its existence is fundamentally altered? Most such changes occur gradually; they are more discernible to historians than to the individuals living through them. The nuclear era was different. It burst upon the world with terrifying suddenness. From the earliest moments, the American people recognized that things would never be the same again.
> —Paul Boyer, *By the Bomb's Early Light*[1]

It begins with a moment of silence. The English class, comprised of eighteen and nineteen-year old students, happens to be reading John Hersey's *Hiroshima* (1946) when a 9.0 earthquake strikes the coast of Japan. The Fukushima Daiichi nuclear plant quickly declares a state of emergency. In the United States, broadcasts blend images of utter devastation with references to the atomic bombs and its horrific aftermath. The discourse would all feel a bit anachronistic—if it was not suddenly so fresh. The only activity we can conceive of undertaking with the class is to play a slideshow of images, first from Hiroshima and then from the tsunami-ravaged Japan of 2011. Together we struggle to contemplate, without words, the unsettled clashing of worlds before us: past and present, U.S. and Japan, classroom and "real world." And behind the screen remains the rather formless concept of the nuclear.

How should we discuss nuclear concerns in a humanities classroom? Where is the common ground, the shared site of recognition? After all, most of these students were born after the Cold War's (theoretical) closure. And many of those who were alive during the period seem to have grown complacent. As Aaron Rosenberg observes, "We risk considering ourselves competent with the total nuclear threat simply by virtue of living in a 'post-apocalyptic' time." To approach these vital questions, we might

first ask: what happened to Nuclear Criticism, the brief moment when theorists appeared to establish a bond, however unstable, between scholars interested in analyzing cultural phenomena and the nuclear fears of the general populace? Impromptu efforts to explain this juncture for the English class feel unconvincing and consequently fall flat; once more, there is silence. This collection thus aims to re-articulate Nuclear Criticism amidst the continually shifting paradigms of the contemporary landscape.

Nuclear Criticism: A Brief Overview

Nuclear Criticism was a trend in literary theory that emerged most prominently in the 1980s. Many believe it started to coalesce with the 1984 conference at Cornell on the subject, featuring Derrida's seminal discussion of the subject. However, it must be noted that there were a number of important texts that preceded this conference which greatly influenced the trend.[2] This group of theorists had a myriad of goals, though Nuclear Criticism never seemed to agree upon a cogent set of scholarly ambitions. Rather, the trend radiated outward, fading by the mid-1990s, figuratively atomic in its diffusion. Assembled from presentations at the Cornell conference, the introduction to a subsequent collection reads:

> (Nuclear Criticism) arises, on the one hand, out of reading a certain amount of recent criticism and critical theory and feeling that without exception it recounts an allegory of nuclear survival; and, on the other, out of the sense that critical theory ought to be making a more important contribution to the public discussion of nuclear issues… the purpose of uncovering the unknown shapes of our conscious nuclear fears… the use value […] from predicting the end of things.[3]

The Reagan administration's heightened nuclear rhetoric at this time gave impetus for academics to insert their expertise into discourse on the subject.[4] By way of a reaction, scholars at the conference attempted to outline the primary assertion of Nuclear Criticism as a whole: theorists, already entrenched in nuclear issues on a philosophical level, ought to contribute to discourse on the subject. The approach, on the surface, would be one of *reconciliation*, an undercurrent of trying to bring the humanities, and theory specifically, into the realm of the "real world," of the practical—and urgent—matters plaguing the citizens of a nuclear age. Indeed, as Jeff Smith writes in the opening chapter of the volume, "nostalgia is a means for making sense of experience by putting a satisfying construction on it, plotting it out with narratives and hierarchies

and systems of value. If one role of the critic is to undo such constructions, that job is as important now as it was during the Cold War, or ever."

The most widely-cited piece from this conference remains unquestionably Derrida's "No Apocalypse, Not Now (Full Speed Ahead, Seven Missiles, Seven Missives)."[5] The essay extends his deconstructive ethos into the arena of nuclear rhetoric. Therefore, while the goal of the conference was at first to construct a bridge between academia and the nuclear concerns of the populace, Derrida's work pushes back upon Nuclear Criticism with the oppositional assertion that an imagined event only recapitulates the need to break down links between signifiers and transcendent signifieds. He famously writes that the nuclear event is "fabulously textual… a nuclear war has not taken place: one can only talk and write about it… it is a non-event."[6] Derrida argues that any attempt to "ground" the discussion would be folly; words are based in nothing but pure fantasy, caught in Saussure's "endless chain of signifiers." He proceeds to examine how language and the nuclear age are of the same post-structuralist moment: "Deconstruction belongs to the nuclear age… literature has always belonged to the nuclear epoch."[7] Language, he points out, has itself always been in a process of "stockpiling" (more words, more "meaning"). As with the arms race, language is based on speed, the rapid build-up of hasty metaphysical assertions that, deep down, language makes sense. As missiles are stockpiled, so too are the words supporting them, a language designed to re-assure audiences that their existence is "just." Derrida's task, as he lays it out, and the task he calls upon Nuclear Criticism to perform, is to slow down this acceleration, rather than add to it by simply heaping more words with assumed meaning onto the pile: "The critical slowdown may thus be as critical as the critical acceleration."[8] Theorists must not succumb to the need for traditional rhetorical means to match the speed of the political/material movements. Nuclear Criticism, if it is to succeed, must instead continue to breakdown all discourses, regardless of the presumed repercussions in the "real world."[9]

Those responding to Nuclear Criticism often highlight the perceived impracticality of a Derridean model in a world of genuine threats (and potential victims). For some critics, it was the final straw, seen as a moment of absurd critical over-reach by the "cult of high theory."[10] Roger Luckhurst notes: "Even if Nuclear Criticism is not reducible to the universitas, it must still pay attention to the operational effectivity of frames, of framing institutions."[11] K.K. Ruthven's overview entitled *Nuclear Criticism* echoes these concerns: "(Nuclear Criticism) will have to be presented as offering a way out of the impasse of post-structuralism by

reintroducing the question of *value.*"[12] Meaning must be infinitely illegible and irresistibly legible at the very same moment. This crisis, Ruthven states, stands as the fundamental one facing Nuclear Criticism: "It becomes more important than ever to preserve the nuclear referent and *to resist efforts to textualize it out of existence.*"[13] In an attempt to reconcile meaning with the word, signified with signifier, historians such as Spencer W. Weart likewise re-claim interpretive abilities to scrutinize the nuclear age, a branch of Nuclear Criticism content to return to structuralism for its answers.

J. Fischer Solomon's *Discourse and Reference in the Nuclear Age* (1988), also driven by the exigency of the nuclear age, works to revisit the foundations of literary criticism in just these terms: "The nuclear referent does present a challenge to criticism, an epistemological challenge to think through the consequence of our general textualization of critical knowledge, our unrelenting deconstruction of the referent, of the believe in a physical world whose behavioral properties and dispositions can be objectively calculated and known."[14] Solomon suggests that critics can illuminate "potentialist metaphysics," the probability of a text corresponding to reality. Through meticulous work as a literary critic, they could arrive not at a "hard conclusion" (Solomon admits such reified concepts are philosophically impossible), but at a *likelihood*, a shared understanding of the "structural regularities" of language.[15] After all, he reminds us, is not the purpose of theory to move closer to connection, to a "better understanding"? Solomon contends that we might trust language again, not in a naive or negligent way but in a fashion that starts once more, in earnest, an analysis of words and their relation to our lives. Bradley Fest accordingly acknowledges that we "cannot ignore the imaginative and historical forces produced by the continued dialogue between information and military technologies, between the archive and the Bomb, between the decentralization of the first nuclear age and the networked distribution of the second age in which the nuclear referent has dispersed in a variety of ways."

Written in the immediate aftermath of the Cold War, Peter Schwenger's *Letter Bomb: Nuclear Holocaust and the Exploding Word* (1992) also leaves room for tentative connections to the "real world" by innovative scholars, individuals who did not wish to abandon the advances made by post-structuralism but who longed for constructive approaches to problems that they believed would not be solved by deconstruction alone. These innovative scholars, though largely lost in the wave of "high theory" that persisted through the 1980s, must be re-examined by those who strive to understand the fate of Nuclear Criticism in a post-Cold War world.

Schwenger labors to resurrect a discourse moving multi-directionally, a productive back-and-forth not unlike the politicized notion of deterrence at the heart of nuclear politics: "Launched missiles will not wait for us to finish our sentences, sentencing ourselves to death. Rather the missiles must be returned to their senders even before they are posted, and something in the *timbre* of the sender's mind must make it impossible for them ever to be posted."[16] He, like Solomon and Derrida before him, contends that theorists should re-evaluate the fundamental purpose of language. Nuclear Criticism, according to Schwenger, can assist critics in their efforts to locate a language which is deconstructive but concomitantly posits an ethical position regarding nuclear relationships. Like Schwenger, Paul St. Amour's contribution to this volume seeks an ethical position amidst these missiles/missives, utilizing the theoretical writings of queer theory to interrogate "death drives of church, state, archive, and subject" and, by so doing, re-engage with the nuclear in novel and meaningful ways.

While the title of this collection suggests that on a certain level there has been a tendency to remain "silent" in the post-Cold War world, it is essential to temper this suggestion by recognizing scholars who continue to take up questions posed by Nuclear Criticism. Daniel Cordle stresses the value of this line of inquiry: "The challenge for Nuclear Criticism, whether we conceive of it as a specific theoretical approach, or simply as a critical interest in nuclear issues is to mature beyond its Cold War adolescence and find a way to speak to long-term and more subtle manifestations of nuclear culture." Rey Chow's *The Age of the World Target* (2006), for one, criticizes authors that attempt to make "new meaning" after the dropping of the atomic bomb by simply reiterating deterministic, and oppressive, discursive practices. Examining the emergence of area studies following Hiroshima and Nagasaki, she writes, "Language and literature are rather tools with which to hypostatize the targeted areas… and make them more legible, more accessible, and more available for 'our' use."[17] Chow maintains that language has been used to re-institute boundaries in reaction to the Bomb, making "legible" concepts such as the "essence" or "core" of a particular culture. This claim connects to Gillian Brown in "Nuclear Domesticity: Sequence and Survival," as she points out that the linkage between "peace" and "the feminine" which followed the nuclear event, initially giving the impression of work against armament re-installs linguistic barriers, reiterating "a traditional domestic usage of the feminine, the symbolic value of women to the reproduction of culture."[18] This line of argument, we might add, reverberates with Cordle's

emphasis on the "leakage" of nuclear consciousness, its subtle and shifting permutations.

Another work drawn to similar sites of "leakage," Akira Lippitt's *Atomic Light (Shadow Optics)* [2005], builds directly upon Derrida's contributions. By locating three "phenomenologies of the inside" (psychoanalysis, cinema, and X-rays), Lippitt reads the nuclear event as an intersection between post-structuralist rhetoric and the historical development of Cold War culture. The impulse of the twentieth century, according to Lippit, has been one of "hypervisibility," the need to "atomize" any reified images and thus make the legible simultaneously illegible: "Global visibility: a universal archive, in which everything in the world is visible, and everything is visible in the world… reconciling the depth of the body, its volume, with the flatness of the image."[19] His position is not pessimistic, however; he views the notion of the Bomb as a sort of doorway, an ideal moment for shifting the perceived impenetrability of human skin onto a cinematic screen and opening the spectator to the freedoms which accompany figurative atomic dissolution.[20] In chapter five, Joseph Dewey, moving deftly between *The Sopranos* and McCarthy's *The Road*, ultimately concludes that "it is the difficult affirmation of the texts that make up the canon of Nuclear Criticism, a vast body of wisdom literature that reaches beyond any single traumatic historic event. It extends that complicated hope to a humanity that is in perpetual crisis, terrified of the very sense of mystery that alone provides a doomed world its dimension, its nuance, its genuine shock and awe." Conceptualizing annihilation, many of these authors continue to suggest, is never far from conceptualizing emancipation.

It may be from these traversals of disciplinary bounds—from theory to cultural studies to film studies and beyond—that we can recognize a significant future for Nuclear Criticism. John Canaday's *The Nuclear Muse: Literature, Physics, and the First Atomic Bombs* (2000) examines issues emerging from literary theory in conversation with the language of physics. Canaday interweaves the study of literary form with the rhetorical forms that rose up around quantum physics and the development of nuclear weapons. The revelation that scientific perspectives also confront a sense that reality can only be mediated through an "arbitrary, contingent set of partitions" offers an avenue for a regeneration of Nuclear Criticism (Canaday continues his argument in this volume). He states, "Nuclear weapons have been constructed in our society not only as *textual* entities but more specifically as *literary* ones… they do not exist for us except insofar as we are able to imagine in language a set of experiences we have never had."[21] In short, as the story of the Bomb is the story of our

contemporary world, it is a narrative worthy of careful study from a wide array of perspectives. For example, Julie Williams stresses "the importance of narrative and how the stories we tell about our nuclear past and possible nuclear futures reveal how we as a society deal with the use of nuclear weapons." The perpetual desire to forge plots from this senselessness (scientific and literary) reaches far beyond the confines of reactionary coping mechanisms; it speaks to something deeper within our shared humanity.

In the end, however, chroniclers of literary criticism are likely to locate Nuclear Criticism as a minor blip on the radar screen. It was, for all intents and purposes, subsumed in the wake of Derrida's essay, presented at the very conference during which the field was supposed to be formalized. Of course, as long as there exists a powerful Bomb, and there is no current reason to believe that this will not always be so, there will be debates concerning how to write about such things—the extinction It brings, the promises people exchange in Its presence. Perhaps older methods of Nuclear Criticism faded away because of the prestige the Derridean method carried with it among those invested in the study of cultural forms. Indeed, perhaps Derrida's assessment in 1984 that the Bomb was already part and parcel of his manner of criticism gave the subject the sepia tones of dated thinking. Yet this collection locates Nuclear Criticism as one possible answer in the quest for a theory more grounded in "real world" concerns, having produced some of the most innovative, inspired readings of the post-war period. By compiling these essays, we affirm that both established and emergent scholars continue to attend to these issues, even if the issues manifest themselves in entirely unexpected places. Though engulfed by deconstructive "explosions," these innovative approaches lead us back to the rubble of language with eternal hope to construct something more beautiful.

Geopolitics, the "Real World," and Nuclear Criticism

In the immediate years following the Cornell conference, Nuclear Criticism, as a nascent field of inquiry, ebbed and waned and finally lost its critical footing. Such a narrative of decline speaks to the difficulties of locating a single method adopted by Nuclear Critics and, more distinctly, to the ubiquity of the nuclear. While it would be short-sighted to suggest that all critical studies of the nuclear simply faded with the declared end of the Cold War, we cannot understate the innocuous position that the nuclear now appears to hold as a consistently diffused, and diffusing, referent. Moreover, while the nuclear never found an institutionalized home in the

academy, against Derrida's prediction, it leaks out and contaminates discourses of all kinds. This problematic emerges cogently within everyday life, where the nuclear continually arises as a fantastic, but fully present, threat capable of negating humanity. Yet familiar paradigms continue to be applied to around the topic, refusing to acknowledge the slow drift, to borrow from Jonathan Schell's recent work, "toward what some have termed 'nuclear anarchy'," the growing reality that the Cold War did not end the nuclear, but rather made it an operational norm.[22]

By making the nuclear—in all its guises, from weaponry to energy—an accepted practice (at least, for the nations deemed "responsible enough"), proliferation dictates a geopolitical landscape trapped between the potentials of nuclear energy and the apocalyptic tropes that continue to constitute it in the public imagination. For Schell, this problematic became astute during the post-9/11 era, an era shaped in the United States by the Bush Doctrine and, more specifically, its policy of renewing the nuclear as a common referent and a method of deterrence. Indeed, in the years following 9/11, the nuclear persistently emerges, seeping through the cracks of discourse, illustrating the many ways in which the "real world" continues to exist amongst, and in many ways is defined by, silent specters of the nuclear.

On October 7, 2002, in his speech outlining the Iraqi Threat, President George W. Bush signified and energized the threat of the nuclear by honing in on a common trope: "Facing clear evidence of peril, we cannot wait for the final proof—the smoking gun—that could come in the form of a mushroom cloud." And: "Understanding the threats of our time, knowing the designs and deceptions of the Iraqi regime, we have every reason to assume the worst, and we have an urgent duty to prevent the worst from occurring."[23] As Bush's language suggests, apocalyptic concerns, specifically concerns referencing the nuclear, offered a rhetorical device for garnering mass support through mass hysteria. In connecting the nuclear to the "terrorist," the Bush administration directly challenged the perceived vulnerability of key American values in light of expanding threats decentralized from the nation-state. Subsequently, we witness how the nuclear endures, wielding the bulk of its power as a mere threat, as mere potentiality, anchoring a geopolitical landscape in which the nuclear has effectively taken up residence everywhere, at all times.

Less than fifteen years after the fall of the Soviet Union, the Bush Doctrine, as Schell outlines in *The Seventh Decade* (2007), reinvigorated this potentiality, while simultaneously demonstrating its proliferation as a means to manifest and mobilize outright imperial tactics. In key moments of self-contradiction, the nuclear becomes the source of domestic peril

and, simultaneously, the solution, the great equalizer. Little, subsequently, has changed since the Cold War; and without critical voices to interrogate the application of weapons of mass destruction, we might soon exist in a global world defined by a "unique riddle of the vacillating, intermittent, and currently stalled human encounter, now more than sixty years old, with what is still the only technology that can put an end to all human beings."[24] According to popular thought, the nuclear, rather than diffusing, evolved into a rogue tool. On the one hand, it justifies and legitimates the United States as an imperial mediator, dictating who can (and cannot) implement life-destroying, and life-maintaining, technology. On the other hand, as opposed to two nations—the United States and Soviet Union—having their hands hovering over the proverbial red detonator, the threat of the nuclear, as Bush's speech indicates, becomes detached from particular nation-states that, at least discursively, predicate acceptable levels of force through "just" methods of war. The nuclear concurrently supplied Bush's tool for battling terrorism and an almost universalized technology capable of producing civilization-ending weaponry. As with the Cold War, the nuclear danger became, according to Schell, "an axle around which the wheel of geopolitical events is turning."[25] Given recent global events, there is no clear end in sight.

In truth, over the past two years, the nuclear has re-emerged as a defining trope in political rhetoric and material application. From Iran to North Korea, the U.S. positions itself politically in accordance to the perceived nuclear capabilities of these "rogue" states. Rhetorically, rather than through concrete statements or plans of use, the nuclear functions as a discursive device, utilized for political leverage to invoke terror and, more insidiously, justify pre-emptive international sanctions or direct unilateral confrontation. As recent as May 8, 2012, Vice President Joe Biden vehemently challenged the Iranian government, warning that a timeframe for peacefully resolving the nuclear standoff was closing "in the near term."[26] Almost directly echoing the Bush Doctrine, Biden speaks to the heightened problematic of controlling the nuclear *through the threat of the nuclear*. Such a situation, however, is not solely unique to the United States. Indeed, as Pakistan and North Korea have illustrated, the nuclear persists as an operational ethos for maintaining sovereign power. The Committee for the Peaceful Reunification of Korea directly challenged a recent U.S. declaration for Pyongyang to relinquish its nuclear development programs as a "grave provocation."[27] Yet, as with Biden's comments, does this "grave provocation" simply function as rhetorical fallout, revealing the growing divide between discussions of nuclear

capacity—including the capacity of safer and more efficient energy—and the application of nuclear weaponry?

Indeed, as Nuclear Criticism repeatedly locates, the very problem of the nuclear often revolves around this dialectic, exposing holes within the nuclear yet remaining exposed by its seemingly endless dispersal (the true meaning, for Derrida, of an *epoché*). And, as the United States recently demonstrated, such a dialectic allows the nuclear to operate as an apocalyptic image, signifying the potential destruction of life, while promoting a humanist "ethics" maintained, ultimately, by nuclear proliferation. This can been seen in the recent dismantling of the B-53 nuclear bomb, the largest and most powerful nuclear weapon to date, 750 times as powerful (9,000 kilotons) as the bomb dropped on the city of Hiroshima in 1945 (12 kilotons). But this dismantling, like the nuclear trope in general, is a mere mirage, veiling the continued proliferation that exists simultaneously as a threat, a method of deterrence, and a unifier of people and places. Indeed, while one B-53 bomb is now decommissioned, it is estimated that the U.S. still has 1,800 strategic warheads capable of being launched by land or sea in twelve minutes—and another 2,500 in reserve.

This problem—between the image of the nuclear versus the reality of its application—returns us to the role of Nuclear Criticism. In truth, with the cancerous proliferation of nuclear capacities, exacerbated by political rhetoric, Nuclear Criticism as a tool of the humanities can and should target the "real world" as its site of interrogation. In chapter ten, Patrick Sharp explores *The Hunger Games* to stress that "in the end, Suzanne Collins provides the hopeful thought that we might be able to evolve quickly enough to avoid extinction via nuclear and ecological apocalypse. Her work shows that nuclear weapons have not been forgotten… By foregrounding the toxicity of nuclear weapons, *The Hunger Games* trilogy continues the tradition of […] contextualizing the dangers that nuclear technologies pose to all life." Sharp forces the reader to consider the price of ignoring nuclear narratives. Thus, in the same moment in which the United States deconstructs the largest nuclear weapon, it is essential to ask: where will we continue to find critics deconstructing the various meaning(s) of this act, specifically given the remaining arsenal and the seemingly daily reminders of nuclear scare tactics as nations fight to control the spread of nuclear capacity? Moreover, beyond the sublime spectacle of the Bomb, the Fukushima Daiichi nuclear plant failure unveils a heightened level of anxiety that re-energizes post-Chernobyl phantasms. The anxiety over fallout, the ways in which the nuclear remains viral, exacerbates the temporal positioning of the nuclear, re-activating the fears

that defined the original nuclear epoch. Echoed in other disasters—from fears of nuclear failure in the United States following an east-coast earthquake to the apocalyptic language that accompanied the BP Oil Spill and other similar human-made disasters—the nuclear continues to function as a signifier of political, environmental, and personal apocalypse.

To be sure, the issues surrounding the nuclear have not been solved and decoding its continued diffusion requires more than a policy of deterrence and more than scientific discourses that anticipate a definitive, empirical answer. As Derrida originally argued, we cannot approach the nuclear through antiquated metaphysical assertions; however, as critics have been apt to point out since Derrida's presentation at Cornell, neither can we ignore the concreteness of nuclear weapons, specifically within a contemporary moment removed from critical interrogation or centralized oversight. This problematic complicates any clear analysis, but it also speaks to the limits—and potentiality—of theorists capable of assuming the mantle of both positions simultaneously, to maintain a type of cognitive dissonance that forces the reader to think about discursive work *and* the material application of nuclear technology. Nuclear Criticism provides guidance by constantly renewing the conversation, allowing the nuclear to exist neither as a naturalized political tool nor solely as an object for quiet contemplation.

Framing *The Silence of Fallout*

This volume explores various contemporary manifestations of nuclear anxiety and advocacy as well as the periodic gaps where critical engagement seems to grow inaudible. Mark Pedretti expresses the treacherous conditions for this re-engagement, noting that "if we are to align a synchronic periodizing concept (style) with a diachronic one (historical event), as the Nuclear Critics have done, then we are left with little alternative but to force impossible stylistic constraints onto texts by vesture of their historical location." With these constraints ever-present, one must pause to ask what the role of the humanities is during times of heightened nuclear anxiety as opposed to times of decreased concern. How has this changed over the last fifty years? How do we remember nuclear catastrophe and forecast its potential devastation as actual witnesses, and citizens formed in the Cold War era, fall victim to the passage of time? What must be preserved—and what must be forgotten? As anxieties often manifest in different channels of representation, what is the relationship between the "nuclear threat" and the "terrorist threat" post 9-11? These are several of the pressing questions investigated within this collection.

Our framework places scholars who were active in earlier expressions of Nuclear Criticism in conversation with emergent scholars who are striving to negotiate the field moving forward. The collection therefore, as a whole, synthesizes around dialogic moments of agreement and departure. As political paradigms shift, and awareness of nuclear issues concomitantly manifests in alternative forms, the collection establishes groundwork for the next generation of individuals that will struggle to come to terms with the innumerable legacies of the nuclear.

Few works have taken a step back to survey the role of scholars or the state of Nuclear Criticism as a loosely-integrated enterprise (notable exceptions are K.K. Ruthven's *Nuclear Criticism* and the short-lived journal, published from 1988 to 1995, entitled *Nuclear Texts and Contexts*). Even fewer works offer insight into the years following the heated rhetoric of the Cold War. This collection asks where Nuclear Criticism stands today. As there is no sign of a world freed from this crisis, where will outlets remain for critical thinking on the subject? William Knoblauch asserts, in his contribution to this volume, "Nuclear fear, a pervasive reality of the Cold War, now seems to be a relic of the past; unfortunately, the nuclear threat remains very real." The volume examines recent discourse in order to contemplate the future of Nuclear Criticism, a conversation we believe to be long overdue.

This dialogue must first address how the notion of the nuclear has changed over the past two decades and how recent cultural works re-orient our relationship to these issues (from *The Road* to the evolution of video games). In analyzing these transformations, contributors to this collection repeatedly locate disjunctive moments in which eschatological concerns disguise radical re-assessments of the present. Darwinian paradigms of "progress" are deconstructed in order to forge productive avenues of inquiry: the death drive of the State and its relationship to queer theories of temporality, the emergence of "secondary circuits" in literature that foster a "nuclear uncanny," the role of the internet as a ubiquitous archive formed in part by the logic of impending nuclear disaster. Each of these original readings shares the ambition to shape from the remnants of Nuclear Criticism not a story of chaos or dread, but a tale from which—as Jessica Hurley eloquently writes—we may still learn "how to stop waiting." This volume therefore articulates an ethical agenda for the next wave of Nuclear Critics. It does so by shifting away from constructions of an apocalyptic future, as well as a nostalgic past, and instead examines how the nuclear—both literally and figuratively—exists within us, self-enclosed in the post-Cold War here and now. For better or worse, it is a part of us.