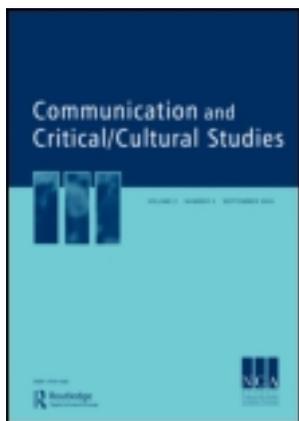


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At the Interface: The Loaded Rhetorical Gestures of Nuclear Legitimacy and Illegitimacy

Ned O’Gorman & Kevin Hamilton

This essay examines an important icon of American nuclear modernity, the operator at the interface control panel, to show how the logic of nuclear legitimation in the Cold War has perdured into the contemporary world, and that nuclear terrorists and bomb-wielding “rogue states” can function as inventions that rationalize America’s claim to nuclear hegemony. Through a critical account of the “competent” gestures of the state-sanctioned nuclear operator at the interface, and the “incompetent” gestures of the state-repudiated nuclear terrorist, we argue that that the rationalization of nuclear weapons, in a psychoanalytic sense, has depended on rationalization in the Weberian sense.

Keywords: Nuclear legitimacy; Rationalization; Terrorism; Rogue States; Interface

Much can and should be said about the unprecedented nature of so-called globalization—about the webbing of modernities across the globe, about communication technologies, capitalist consolidations, and supra-national institutions, and about the crises these developments present to civilizations, cultures, peoples, persons, humanity, and the Earth. Global terrorism and rogue states (again, both so-called) have been portrayed as symptomatic of the disruptive novelty of post-Cold War globalization. No less a critical interventionist than the late Jacques Derrida stated in 2002:

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It is precisely in this context, then, at the end of the Cold War, that clashes of force in view of hegemony no longer oppose the sovereign state to an enemy that takes either an actual or virtual state form. . . . Air or surface missiles, chemical, bacteriological, or nuclear weapons, covert infiltrations into computer networks (“cyber attacks”)—all these weapons can destabilize or destroy the most powerful apparatuses of the state. Yet such weapons now escape all control and all state oversight. They are no longer at the sole disposal of a sovereign state or coalition of sovereign states that protect one another and maintain a balance of terror, as was the case during the Cold War.¹

In this way, Derrida describes the post-Cold War context as possessed by “a new violence . . . more visibly suicidal or autoimmune than ever.”² Is it true, however, that the weakening of sovereign states means those weapons of mass destruction Derrida lists “now escape all control”? Should we so readily associate a system of sovereign states, however repressive, with the *control* of ruinous technologies? Has the *form* of political violence among belligerents in truth been transformed since the end of the Cold War? Or might this conclusion, widely shared, in fact be a form of unconscious participation within a hegemonic ideology?

In this essay we suggest that it is. The problem of the control of weapons of mass destruction sorely needs a reengagement with the Cold War, and one that does not presume its so-called end. Likewise, critical inquiry into globalization, the “global war on terrorism,” and the purported weakening of the nation-state system would each benefit from continued study of the era that brought us nuclear hegemony, the United Nations (UN) Security Council, supercomputers, the internet, modernization, the International Monetary Fund, the World Bank, the Central Intelligence Agency, and many other institutions and phenomena we now associate with an era of “globalization.”³ For, as proponents of “post-Cold War studies” have suggested, an over-determined interpretation of the “end” of the Cold War risks a historicist fallacy that presumes since history, and history alone, is the field of human action, major historical events (e.g., the fall of the Berlin Wall, or September 11) demarcate major historical changes in the field of human action.⁴ While there is certainly some validity to this claim, it hardly applies in all cases, and, when it applies, it does not always apply to the same degree.⁵ In the case of weapons of mass destruction, we suggest that the end of the Cold War, far from demarcating the eruption of “a new violence,” merely shifted the locus of a form of violence firmly established at Hiroshima and Nagasaki.

Here Derrida’s further comments contribute to our analysis. Having declared even “war” and “terrorism” any more obsolete because of the collapse of the sovereign state structure, he characterizes contemporary inter-state war as a kind of artificial invention, enacted “by means of loaded rhetorical gestures.”

The stir created by these war mobilizations can be terribly effective, to be sure; concrete, rational, and real, it can define and deafen the entire earth. But it cannot make us forget that we are dealing here with useful projections and ultimate denegations, with what psychoanalysis calls “rationalizations.”⁶

Rationalization in psychoanalysis is “a way to keep from recognizing neurotic conflicts. It is the conscious secondary thought process of covering the symptom with a

screen.”⁷ Applied to cultural theory, rationalization does indeed depend on “loaded rhetorical gestures,” that is, symbolic attempts to screen over the effects of a collective disorder by inventing socially acceptable secondary motives to account for it. In the cases of the wars against Afghanistan and Iraq, we can see quite clearly how they have been rationalized in terms of the “state harboring” of terrorists or weapons of mass destruction. Such rhetorical inventions mask the true origins of the US conflict with the Middle East, and more particularly with Islamic radicals, in the antinomies of Western hegemony and modernization only secondarily attributable to the conflicts among states per se.

Yet, in the case of the broader “war on terrorism,” rationalization has depended not on a rhetorically invented screen of inter-state conflict, but on overtly ideological symbolisms of “rationality” versus “irrationality,” “civilization” versus the “savage,” the “enlightened” versus the “fanatic,” and the “sane” versus the “mad”—binaries familiar to Orientalism, but not so limited.⁸ That these are enduring tropes in Western modernity should alert us to the perennial character of the “war on terrorism,” and perhaps suggest that there are indeed significant aspects of that “war” that are not new to a post-Cold War era.⁹ We locate one such aspect in the legitimation of nuclear weapons, which has a major history in modern Western warfare as a species of weapons of mass destruction dating back to the chemical warfare of World War I, and which gained widespread credence, a means of “deterrence,” in the Cold War. We argue that the rationalization of nuclear weapons, in a psychoanalytic sense, has depended on “rationalization” in the Weberian sense of the “expansion of empirical knowledge, of predictive capacity, or instrumental and organizational mastery of empirical processes.”¹⁰ Weberian rationalization, to state a position that was not lost on Weber himself, is a form of culture-wide rationalization in the psychoanalytic sense, and nowhere is this more true than in the case of nuclear weapons.

In this essay, we explore this phenomenon through the examination of two “loaded rhetorical gestures” in a near-literal sense. They are the competent gestures of the state-sanctioned nuclear operator at his or her control panel, and the incompetent gestures of the state-repudiated nuclear terrorist. *Both*, we argue, function as rhetorical inventions: to screen over the irrational gamble that nuclear weapons became in the context of the Cold War, and to symbolically create a construct of “nuclear legitimacy” that stands today, in the post-Cold War world, as the most important political construct driving the “war on terrorism” and its successors.

In the service of these claims, this essay is primarily devoted to a critical account of these rhetorical gestures; one that begins by elaborating the connection between nuclear legitimation and the gestures of the console operator, and then chronicles instances of the rhetorical portrayal of these gestures in the figure of state-sanctioned nuclear operator and, crucially, instances of console-operation incompetence or obliviousness in the figure of the terrorist. We argue that, while in fact the successful use of nuclear weapons by state and terrorist groups alike would depend on sophisticated technical and organizational operations, the construct of nuclear legitimation, still strongly associated with the state, hinges on a construct of nuclear illegitimacy that features, as its defining mark, the technological incompetence of the

non-state or “rogue-state” actor. This rhetoric, as we discuss in turn in our conclusions, is strongly tied to the Cold War, suggesting that particular era in world history, or at least what it represents, has not fully ended, and—more importantly—that the ideology of instrumental rationality still perdures as a means of upholding the modern structure of sovereign states in an age of “globalization.”

Rhetorical Gestures at the Interface

“Nuclear legitimation” depends on far more than mere access to nuclear weaponry. It relies on belief in the integrity of the systems and actors that constitute the nuclear-weapons organization. By *nuclear-weapons organization*, we mean, following Brian C. Taylor, “both the *actual* laboratories, materials-production facilities, assembly plants, and test sites of nuclear-weapons production, and the *discursive processes* through which raw materials, technology, and human labor are rationally ‘managed’ to accomplish this end.”¹¹ In American liberal society, the three main loci on which nuclear legitimation have depended are the nation-state structure, the military-industrial complex, and the political-media network. The pivotal actors in these systems have been national rulers, their agents and officials, technocratic and technological elites, and all those responsible for the *public* discursive processes that “manage” public perceptions of nuclear weapons.¹²

Nuclear legitimacy, like modern modes of political legitimacy more generally, appeals both to the *procedural* and the *substantive*. The former refers not only to legal frameworks, but also, more broadly, to formally structured processes of decision making and, crucially for our argument, to predictable, formally structured processes of instrumental control. The latter, on the other hand, relies on “various primordial, ‘sacred’—religious or secular—ideological components.”¹³ These modes of legitimation can be considered independently, as antithetical, especially when the focus is “constitutional” versus “charismatic” authorities.¹⁴ However, others—for example, Jürgen Habermas—have argued for a synthesis, suggesting that that while procedure may be necessary, it can hardly be sufficient; it must be embedded within and rest upon a more fundamental “world-view which legitimizes authority.”¹⁵ To use Max Weber’s seminal terms, instrumental rationality (*zweckrationalität*) must ultimately appeal to value rationality (*wertrationalität*) as a basis for its “legitimate” exercise.¹⁶ If applied to nuclear legitimacy, this view would suggest that belief in the integrity of the systems and actors that constitute the nuclear-weapons organization rest on more fundamental, value-oriented ideologies of Western modernity, especially a belief in human agency and rationality as a transcendently derived means of progress, social order, and human flourishing.¹⁷ Such a synthesized view is crucial to any analysis of the procedural systems of nuclear armament. To neglect the *substantive* dimensions of nuclear rhetoric is to risk reifying the very rationalization that lends Western nuclear legitimacy its power.

In this section, we introduce the *interface* as a foundational icon in the establishment of nuclear legitimacy in the early Cold War, both with respect to instrumental rationality and to value rationality. The interface, we suggest, played a major role in the symbolic creation and rhetorical management of a new expert class

that regulated social and political power and represented *a new kind of human*—one both technically competent *and* historically, politically, and aesthetically sensitive to the existential implications of weaponized nuclear energy. We are concerned here with the rhetorical power of the nuclear interface and the new kind of human with which it is associated in Cold War and post-Cold War political culture.

As a medium, interfaces anticipate the visual medium of live video. As in live video, interfaces depend on sensors that monitor dynamic conditions and report change via sampled moments of time. The interface viewer experiences this succession of sampled moments as a real-time window into a remote site or sites. There are two ways in which the effect of a live connection is achieved, best typified by the *indicator light* and *gauge* components. *Indicator lights* function like frames in a cinema, breaking continuous events down into individual moments. Lights blink on or off, triggered by switches set to look for specified states in the continuous flow. Indicator lights convert continuous experience into incremental changes. *Gauges*, on the other hand, originally maintained a more direct relationship to monitored phenomena. Through a series of gears or camshafts, gauges were directly tied to a distant event. Each change in that event affected a change in the gauge's needle. The result was a less incrementalized representation, but also one that left more room for subjective interpretation.

The interface viewer, whether operator or non-operator, who watches indicator lights is thus likely to be more aware of the medium between him- or herself and the observed subject. The interface viewer looks through a translation, a sample set, but s/he can still be objectively sure when a condition has been met. Gauge components, on the other hand, facilitate a more transparent, seemingly less mediated relationship to observed phenomena. This is also a more subjective view, in which the watcher cannot be sure exactly when a needle hits a mark—as many moments of cinematic tension can attest, e.g., “She’s gonna blow!”¹⁸ By providing such a range of interpretation—from a highly mediated, abstracted translation of events to a more direct, synecdotal framing of events—control panels take their place alongside the painted canvas, the dramatic stage, or the printed page as forms to which viewers are oriented for diverse ends.

As in many other rhetorical forms, interfaces also offer themselves as potential tools, new extensions of the user's body and will. Interfaces thus function as both instruments and images; or, as Lev Manovich explains, as “image-instruments.”¹⁹ As images, they frame events as information for *viewers*. As instruments, they enable *users* to trigger new events. Importantly, a user is a viewer too. For operators, interfaces present images that function semiotically as media of discrete messages enabling and directing action. As Manovich writes, “Any representation that systematically captures some features of reality can be used as an instrument.”²⁰ This is especially the case when the aspect of reality in focus is undetectable to the human eye if unmediated. Kenneth Burke notes that interfaces can serve as media offering positive indications of otherwise imperceptible phenomena:

Since the modern mathematics of submicroscopic motion is far indeed from the visible and tangible, the sensory aspect of positive experience can become quite

tenuous. But since such manifestations must, in the last analysis, reveal themselves on dials, in measurements and meter readings of one sort or another, the hypothetical entities of electronics can be considered as “positive,” insofar as they are capable of empirical recording.²¹

Image-instruments can play a similar role when the aspect of reality in focus overwhelms, rather than escapes, the human senses. Thus, as Bruno Latour has examined, images have played a critical role in studies of the sun.²²

It is for this reason that interfaces typically offer novice non-operators signals that are opaque and mysterious. For novices, interfaces represent the remote rather than near possibility of contact and control of technologies and the underlying material phenomena that support them. Novices can “see” indicator lights, gauges, and the like but often cannot *decode* them—though, *in contrast to the naïf*, they recognize them as codes. Submicroscopic or super-sensible phenomena thus have for the novice a double ineffability: first, through their imperceptibility as unmediated phenomena, and then through their illegibility as mediated, coded phenomena.

Therefore, with respect to viewing interfaces, there is a crucial divide between non-operators and operators. The phenomenological transition from the former to the latter entails a move from image to image-instrument, consistent with a rhetorical transition from novice to authority. With respect to the former transition, it represents a change in the status of a tool. The interface “heats up,” to invoke Marshall McLuhan’s distinction between “hot” and “cool” media, changing from a cool, opaque if informational promise of influence to a hot, transparent medium of routine tele-action.²³ In the language of Martin Heidegger, the move from interface as exclusively image to interface as image-instrument entails a change in the status of the interface from being “present-at-hand” to “ready-to-hand.”²⁴ Interfaces become more transparent with use, and less conscious in the mind and body of the user. The distance between viewer and object is closed when an interface becomes “ready-to-hand” for a particular user.

In moving from novice non-operator to authoritative operator, two new ways of engaging the interface simultaneously arise for the user: the user can now approach the interface technically (that is, as a medium by which to control a machine) and aesthetically (that is, as a means of potentially virtuoso performance). *Both* are aspects, on a micro-scale, of Weberian rationalization, which is in a socio-political context always “on display.”²⁵ On display, the technico-aesthetic gestures of the operator communicate competence and authority, or “expertise.” In this sense, the gestures of the interface operator are “loaded rhetorical” ones. Operators, however, have made no necessary moral or political advancement over novice non-operators. Indeed, the nuclear interface is not a moral or political medium. This is not to say that technologies are morally or politically neutral, but rather that the interface is not a site that relies for its operation on the distinct moral and political abilities of operators. The move from non-operator to operator, or from the interface as strictly an image to its being an instrument, is a strong one, constituting a definitive change in relation not only between person and machine, but among peoples. The gravity or pull in this move is social, economic, political, and even moral, but the move itself,

once made socially and politically accessible, relies strictly on technical and performative competence.

Unlike earlier martial technologies—e.g., the sword, musket, or even cannonballs, mines, and TNT-based bombs—nuclear weapons strongly afforded the creation of interface mechanisms as an integral component of the technology. The sheer scope and power of the fission- or fusion-induced explosion together with the idea that these weapons were initially intended only for selective tactical uses meant that scientists and engineers had to address the problem of remote control. But there was a second impetus to develop interface mechanisms, arguably even more pressing than the need for remote control: the desire for *comprehension*, and thus mastery. Early atomic tests were as much a form of experimental science as they were “product testing.” Born out of theoretical physics, nuclear technologies were fraught with indeterminacy; in fact, atomic scientists did not know precisely what it was that they had created, and even that which they believed they understood, e.g., radioactivity, they could not measure without technical instruments. Therefore, a great portion of the apparatus that surrounded the bomb device was created in order to scientifically measure the nature and scale of its effects. And, in this regard, the most “natural” of human measuring devices, the eye, was manifestly inadequate. Indeed, a principal consequence of so-called “eyewitness accounts” of early atomic tests was to testify to the incapacity of the human eye to scientifically observe the experiments due to their intensity and grand scale.

For example, “eyewitness” accounts of the 1945 “Trinity” test in desert of New Mexico drew attention not only to the effect of the explosion on the eye, but also to the ultimate inadequacy of the eye as a basic measuring device. O. R. Frisch wrote in a report:

I watched the explosion from a point said to be about 20 (or 25) miles away and about north of it together with the members of the co-coordinating council. Fearing to be dazzled and to be burned by ultraviolet rays, I stood with my back to the gadget, and behind the radio truck. I looked at the hills, which were visible in the first faint light of dawn (0530 M. W. Time). Suddenly and without any sound, the hills were bathed in brilliant light, as if somebody had turned the sun on a switch. It is hard to say whether the light was less or more brilliant than full sunlight, since my eyes were pretty well dark adapted. The hills appeared kind of flat and colourless like a scenery seen by the light of a photographic flash, indicating presumably that the retina was stimulated beyond the point where intensity discrimination is adequate. The light appeared to remain constant for about one or two seconds (probably for the same reason) and then began to diminish rapidly.²⁶

The eye appears in this account not as an imperceptible medium of observation, but as an objective measuring device, yet “inadequate” to the task of scientific observation. Indeed, atomic explosions threatened the physical integrity of the observing eye. “At 10 miles for a few thousandths of a second the light will be as bright as a thousand suns,” Leslie R. Groves wrote in a memo to George C. Marshall. “[A]t the end of a second, as bright as one or possibly two suns. The effect on anyone about a half mile away who looks directly at the explosion would probably be

permanent sight impairment; at one mile, temporary blindness; and up to and even beyond ten miles, temporary sight impairment.”²⁷ The eye was thus in a certain respect too sensitive an organ for atomic science. In the bomb, science had produced a technology that far outran the observational capacities of the human medium of sight.

This is not to say that atomic scientists did not “see” the bomb. Rather they engaged in a particular kind of seeing with their eyes, a quasi-mystical witnessing. For all the attention to the manifest inadequacy of the human eye to observe with technical precision the “Trinity” test, eyewitness accounts were vital because they drew attention to this other way of seeing. Groves described the sentiment in the control room just before “Trinity’s” detonation: “The feeling of many could be expressed by ‘Lord, I believe; help Thou mine unbelief.’ We were reaching into the unknown and we did not know what might come of it. It can be safely said that most of those present—Christian, Jew, Atheist—were praying and praying harder than they had ever prayed before.”²⁸ In the same memo, Groves testified that subsequent to the explosion local papers had reported “brief stories from the many eyewitnesses not connected with our project. One of these was a blind woman who saw the light.”²⁹ Indeed, for generals, scientists, engineers, and blind women alike to see the bomb was to “see the light,” rather than observe with technical acuity its effects. And yet the latter form of seeing—technical measurements, scientific analysis, etc.—was far from abandoned. It was channeled through an array of technical instruments, virtually all of which used indicator lights and/or gauges to frame scientific information.

Interfaces thus had two crucial functions in the early years of nuclear testing in America. First, at the instrumental level, but even more at the symbolic level, the interface regulated power through granting or denying access to technological “mastery.” For the novice, the expert user at his console represented a remote status to be achieved, or at least a proxy with whom some are invited to identify. Second, interfaces were a material condition of technical possibility for nuclear weapons, one as crucial as the discovery of processes by which to perform atomic fission and fusion. Without the interface, the expert class would remain “blind” in its efforts to measure and thus ultimately control the chemical and physical effects of the bomb. With the interface, on the other hand, a new expert class would not only have the capacity for such scientific knowledge, but would be able as well to claim as their own a full range of visual capacities, ranging from the mundane, instrument-enabled observation to quasi-mystically witnessing the sublime—thus further signifying their expert status.³⁰

The interface therefore helped create a new expert class that was also, in an important respect for the future of nuclear legitimation, a new representation of the human—one both technically competent and historically, politically, and aesthetically sensitive to the awesome power of weaponized nuclear energy.³¹ The latter ability to “see” the value-laden “power” of the bomb provided for the elite class a legitimizing foundation for their instrumental control of the bomb’s technologies. At the same time, it was precisely because of the possibility of competent technical control that the bomb could be historically, politically, and aesthetically “sublime” for US advocates of atomic weaponry. For an awesome object out of control is not sublime;

it is simply terrifying.³² It was thus this dynamic of competent technological control—or “safe distance”—on the one hand, and a kind of historical, political, and aesthetic appreciation on the other, that federal agencies sought to rhetorically balance when they produced, in the 1950s, films featuring nuclear tests for American and world publics. In these films, it was the gestures of the operator at the interface that functioned as the means of performing this balancing act.

Nuclear Legitimacy: A Simple Flip of the Wrist

Although the most spectacular icon of nuclear anxiety in the 1950s was the image of a mushroom cloud, we suggest that the dominant icon of nuclear *legitimacy* during the period was that of the operator at his control panel. Indeed, officials in the US government were quite conscious of the role technological mastery played in assuaging anxieties about nuclear destruction. Technological mastery was an implicit, and sometimes explicit, topic in debates among state elite regarding the dissemination of atomic science, as well as in internal discussions of domestic and international propaganda regarding nuclear weapons.³³ Eisenhower’s “Atoms for Peace” campaign represented the culmination of the latter in the Cold War. Atoms for Peace, which historian Kenneth Osgood calls “the largest and most concerted propaganda campaign” of the early Cold War, entailed a deliberate long-term effort on behalf of the US government to ease fears about the destructive power of atomic science and persuade publics that, as Eisenhower told the UN on December 8, 1953, atomic weapons might be “put into the hands of those who will know how to strip its military casing and adapt it to the arts of peace.”³⁴ Indeed, technical “know-how” was the lynchpin of the Atoms for Peace campaign.

Among the many propaganda initiatives the Eisenhower administration supported under Atoms for Peace, decisions to release films featuring major nuclear tests were among the most surprising. While filming tests had been an integral part of atomic science and engineering, as well as an important means by which state elite were apprised of the progress of the bomb, the government did not release such films as a conscious and active part of a propaganda campaign until the release of *Operation Ivy* in 1954. Indeed, publicity about atomic tests had been a persistent problem for the Truman administration, and their approach was overwhelmingly “low key,” as one Truman administration staff study put it, attempting to control news leaks, manage bad publicity, and generally contain interpretations of the government’s nuclear weapons program.³⁵ Under Eisenhower, however, the government became more proactive.

On March 10, 1954, the president’s Operations Coordinating Board determined to release to US audiences a “sanitized” version of a film made about the November 1, 1952 (mere days before the election of Eisenhower) “Operation Ivy” MIKE shot on Eniwetok Atoll, Marshall Islands. The film was produced by Lookout Mountain Laboratory, a well-funded Air Force unit in Hollywood credited from 1946 to 1968 with some 6,500 films, most of which concerned atomic tests. The history of the unit

remains to this day largely classified, but according to a Department of Energy fact sheet, Lookout Mountain Laboratories:

was the only self-contained film studio in Hollywood. Staffed by both military and civilian personnel recruited from nearby motion picture studios such as Metro-Goldwyn Mayer, Warner Brothers Studio, and RKO Pictures, Lookout Mountain studio retained more than 250 producers, directors, and cameramen—all cleared to access top secret and restricted data and sworn to secrecy regarding activities at the studio.³⁶

Indeed, Lookout Mountain Laboratory was indicative of a much broader transformation undergone in Hollywood during World War II from, in the words of Larry May, “the promotion of radical politics and a modernized republican creed” to “a new Americanism rooted in big business, class consensus, and consumer democracy.”³⁷ The transformation meant not only institutional alliances between the state and Hollywood studios, but, in the case of Lookout Mountain Laboratory, the aesthetic melding of Hollywood and military cultures. The result, both cultural and strategic in origin, was a relentless and highly stylized attention to operational oversight and technical practice: process was coupled to progress, and technical expertise to security and stability, all to render the nuclear bomb sublime rather than simply horrifying. In this way, Weberian rationalization came to serve psychological rationalization, as the potential disorder of the bomb was delimited in strictly technical terms capable of being deterred through expert instrumental operations.

This is not to say that *Operation Ivy* and other Lookout Mountain films were strictly devoted to the straightforward documentation of technical operations. Naked technology could do little to screen the disorder of the bomb. On the contrary, *Operation Ivy* featured as its on-site narrator a cigarette-smoking, smooth-talking Hollywood actor, Reed Hadley, featured in numerous Westerns in the 1930s, 1940s, and 1950s (e.g., *Zorro*, *I Shot Jesse James*, *The Half-Breed*). This distinct Hollywood cliché was complemented by a range of Hollywood conventions in both the classified and public versions of *Operation Ivy*, including a musical soundtrack, stunning shots of natural scenery, and ample attention to the narrative drama of the “countdown.” Thus, technical mastery gained a distinctly dramatic frame in Lookout Mountain’s films. Like other technologically fetishistic films of the 1950s—*Destination Moon* (1950), *The Flying Saucer* (1950), *Unknown World* (1951), *Rocketship X-M* (1950), *When Worlds Collide* (1951), *Strategic Air Command* (1955), *Bombers B-52* (1957), to offer a sampling—the human-machine dynamic became the central register of competence and incompetence in geopolitics. As one advisor to the Eisenhower administration wrote, there was “no way to produce a movie of the operation in which the hydrogen weapon can be minimized or ignored.” Consequently, he advised:

that the film highlight the scientific, systematic and typically American way by which we have been going about developing nuclear energy. We should show the effort involved, our regard for human lives, and the various construction, logistical and technological activities, in order to drive home the idea that American technology can accomplish many gigantic undertakings efficiently. In this particular case, the

audience should be convinced that such a problem is “right up our alley” and can be handled without strain.³⁸

Process in this way could be coupled to progress, and scientific and technical expertise to security and stability, *if* filmmakers could persuade audiences that America could handle the problems of nuclear technology with seeming effortlessness. Thus, the problem and the solution lay in the narrative.

In this respect, nothing could be more important than the mundane gestures of a working body at his machine (see Figure 1). Such gestures served not only as a counterpart to the sublime scale of the bomb, they also constructed a new expert class of labor that film viewers could trust as proxy, or even aspire to enter. Portrayals of the nuclear operator, handling the bomb “without strain,” diverted attention away from the destructive scale of nuclear weaponry—which, after all, is and was at the core of moral objections to nuclear weaponry—and toward the elegance and efficiency of technological processes. Thus these government films helped produce a “humane science of the bomb,” reorienting judgment about the weapons by locating debate outside of moral and political questions and firmly within the realm of labor and expertise.

In *Operation Ivy*, Hadley leads audiences through the entire process of converting Bikini Atoll in the South Pacific into a nuclear laboratory. On board the USS Estes, from which the bomb was remotely fired, he takes audiences from scientific expert to scientific expert, who successively explain such information as the exact location of the test, the nature of the labor and technology involved in the project, the televisual and other means by which the test would be monitored, and the monumental scientific and security importance of the test.

The film presents process and progress as co-constitutive. Having been shown by an engineer a flowchart of the test’s overall process, Hadley declares: “So that’s the



Figure 1. The nuclear operator at his interface control panel in *Operation Ivy*.

flow. From timer on through to display panel, picked up by a television camera and relayed on out to the Estes. A very ingenious arrangement.” “But what happens if you have to stop the firing mechanism, or can you stop it?” Hadley asks. “We can stop it alright if we have to,” the engineer answers. “We have a radio link direct to the firing panel in the shot cab. If we have to stop the shot we simply push this button.” “Just a simple flip of the wrist, huh?” Hadley asks. “That’s right, but a lot of work goes down the drain. You understand we don’t want to stop this thing unless it is absolutely essential.” The interchange stressed at once the technical efficiency and operational complexity of the testing system. “Just a simple flip of the wrist” is all that is needed to bring the test to a halt, and yet this simple gesture, audiences are told, is loaded, bringing down a vast and elaborate technological operation. In this way, the film contrasts the simplicity of stopping the test against the complexity, and indeed sublimity, of pulling it off, with the latter presented as the firm rationale for proceeding. It is this tension between simplicity and complexity that makes up the crux of legitimate nuclear power in the film, and it is the image of the skillful human operator before the complex machine interface that metonymically represents this crux.

Central to *Operation Ivy* is the portrayal of several interfaces and their decoding and/or operation by scientists. Hadley and the camera return most often to one particular interface at the detonation station, which we will refer to as the “detonation-interface.” The detonation-interface sits in a fortified cab upon Bikini Atoll while its image is projected to engineers aboard the USS Estes via a television signal. Viewers of *Operation Ivy*, the film, are thus triply removed from the interface, first by virtue of the interface itself, which is a medium, then by virtue of the televisual mediation that separates Bikini Atoll from the USS Estes, and finally through the filmic representation in *Operation Ivy*. Yet the second and third layers of mediation are virtually invisible; it is the detonation-interface itself that is conspicuous. Viewers, regularly given a view of the detonation-interface that approximates that of the scientists and engineers aboard the USS Estes, see an array of indicator lights and gauges, apparently legible only to the sweaty operators who function as proxies for film viewers. Indeed, in being given an operator’s-eye view of the interface, its role as a mechanism of information and control is heightened precisely because to a “novice” it appears so illegible and complex. By contrast, the seemingly effortless technological mastery displayed by the operators enhances their authority and credibility.

The film’s narrative climax coincides with a synthesis of technological mastery and world-historical sublimity. Having been presented with the inauguration of a one-hour countdown at *Operation Ivy*’s beginning, viewers are eventually brought to the final two-minute countdown. “The time is now H minus two minutes,” they hear as they are shown the detonation-interface again, its lights flickering to indicate the countdown. Hadley announces:

You have a grandstand seat here to one the most momentous events in the history of science. In less than a minute you will see the most powerful explosion ever

witnessed by human eyes. The flash will come out of the horizon just about there. [As if to indicate the impossibility of directly viewing the explosion with the human eye, Hadley points to the horizon where the bomb will be detonated but the camera refuses to follow, staying firmly fixed on Hadley and thus keeping from view the horizon to which he gestures.] And this is the significance of the moment: this is the first full-scale test of a hydrogen device. If the reaction goes, we are in the thermonuclear era. For the sake of all of us, and for the sake of our country, I know that you join me in wishing this expedition well.

Then, as the final seconds tick off, a Wagner-like musical chorus arises and the film commences a series of shots beginning with a lengthy take of a trio of engineers hovering over the detonation-interface. This shot, which positions the engineers in intimate proximity to and expert relation with the interface, and thus the bomb, is followed by rapid series of shots: first a close-up of the detonation-interface itself, then of the USS *Estes's* towering antenna, then a close-up of a second interface, then of the engineers leaning over their interface, then a long shot of Bikini Atoll's radio tower, then the nuclear detonation, the island disappearing, a tsunami forming across the sea, a shot of observers on the deck of the USS *Estes*, and finally a lengthy take of a giant mushroom cloud forming in the sky.

The montage, which begins with a lengthy shot of the engineers hunched over the detonation-interface and culminates with a lengthy shot of the mushroom cloud, begins the construction of a kind of rhetorical routine in the formation of nuclear legitimacy. Indeed, an abbreviated version of the sequence is later replayed in *Operation Ivy*, as a narrator urges viewers to “remember” the scene. “Nothing but water. An island completely erased. ‘Mike’ was power. A kind of titanic energy released by stars . . . So at this point let’s replay the detonation, go back and watch ‘Mike’ in action once again; remember those final last seconds.” The replay entails a repetition of a relation, rhetorically constructed, between the expert-class operator and the new means of nuclear destruction, and this relation forms the axis of the film’s construction of nuclear legitimacy.

Indeed, when a second film—*Operation Castle*—was released some two years later, it began by explicitly reminding viewers of the purportedly routine nature of the association between the new expert class and atomic weaponry:

Operation Castle, the fifth in a series of tests at the Pacific proving grounds. Another accumulation of men, of machines, another meeting of ships, and aircraft, and troops. Here was the best of physics, of metallurgy, of electronics. During the months after the historic “MIKE” detonation, preparations for a new series of tests to solve the problems of a deliverable megaton weapon went ahead at an accelerated pace throughout the country. Operation Castle became a reality and is now successfully concluded.

This script performed what it denoted. The prominence of “Another,” the reliance on a series of words punctuated by commas, and the rapid narrative movement from “reality” to “successfully concluded” performed in prose a feat strongly similar to that upon which nuclear legitimacy was coming to rely: the efficient aggregation and repetition of elements into expert routine.

Operation Castle, however, was not routine. The first of its six test shots resulted in fallout far exceeding expectations. This problem was attributed to unpredictable winds, and the film emphasized the effort of the taskforce unit in charge of the test to evacuate both field workers and “natives” from islands as far as 280 miles away. But even more, the film emphasized that despite the unanticipated scale of the tests, the government retained firm scientific control and aesthetic mastery over the detonation events. *Operation Castle* explained how engineers had set up a network of high-speed cameras to record the detonations, and subsequently featured numerous shots from these cameras. If the question, therefore, that emerged from the unexpected magnitude of the Castle shots and the fallout danger far exceeding expectations was a question of technical competence and scientific control, *Operation Castle* asserted that the effects of the operation were firmly within the new expert class’s capacity to capture, measure, and thus control.

In this respect, that the central technological object of *Operation Castle* was not the detonation-interface, an icon of control, but the camera, an icon of recording, signified that the former power depended upon the latter. If interfaces mimic the visual medium of live video, monitoring dynamic conditions and reporting them via captured or sampled moments of time in a real-time window, then the camera in this respect represents the foundation of the interface technology. As an “artificial eye” capable of seeing that which the unassisted human eye cannot, the camera evinces the capacity of humans to overcome “natural” limits through technological ingenuity while still remaining firmly within control. *Operation Castle’s* persistent attention to the camera suggests that even if control of atomic weaponry had proved far trickier than a text such as *Operation Ivy* proposes, the fundamental relationship between the new expert class and the new means of nuclear destruction—the dynamics of monitoring, recording, and operational production—was not in crisis.

Indeed, despite the numerous problems faced in controlling the weapons technologies, *Operation Castle* ends with a resolute statement of confidence by General Clarkson, the task force commander, in the “spirit” of the enterprise:

Castle was by far the most complex and significant operation in the short but impressive history of nuclear testing, and in my opinion absolutely vital to national security and the security of the free world. We were beset by operational problems of a magnitude not encountered previously. The degree of flexibility attained by the task group and by the task force as a whole in meeting these problems is only one example of the spirit of cooperation evidenced by all members of the three services and by members of the Atomic Energy Commission and its contractors. To the men who made Operation Castle a success, to the same men who were asked to undergo many personal hardships, I have already expressed my gratitude. I am sure that these men also deserve the sincere appreciation of the Department of Defense, the Atomic Energy Commission, and the people of the United States.

The mundane gestures of a working body at his machine thus took on all the significance of soldier upon the battlefield, and the new nuclear labor class assumed the importance of those who sacrifice life and limb on behalf of country. In the same vein, the recording tools of the scientist and the engineer took on perhaps even

greater significance than defense weaponry itself with respect to security, promising not just means of security through weapons, but security from the increasingly destructive unexpected, and unintended, consequences of the new generation of nuclear weapons.

Nuclear Illegitimacy: The Rhetoric of Fractions

In World War II, so-called “kamikaze” pilots from Japan crashed their explosive-laden planes into Allied battleships. In 1964, Stanley Kubrick’s *Dr Strangelove* featured as its culminating scene Major T. J. “King” Kong (Slim Pickens) mounted on a nuclear bomb being dropped from the sky, like a cowboy upon a steed. Today “suicide bombers” repeatedly ransack markets, hotels, and resorts, offering their flesh as murderous mediums of terror. We have argued that in the early history of the atomic bomb, a “humane science of the bomb,” and thus nuclear legitimacy, depended on the appearance of a new labor class devoted to Weberian rationalization and organized around the interface—a class that evinced both proper technical mastery over, and aesthetic appreciation for, nuclear explosives. Contrawise, within the frameworks of Western modernity, unmediated proximity to bombs—whether “kamikaze” pilots, Major T. J. “King” Kong, or “suicide bombers”—occurs only for the inauthentically modern, the primitive, the insane.

Mediation therefore signifies. Scenes of mediation or the unmediated communicate status and significance. They can sanction or censure social actions, positioning social actors within narratives of modernity. More than strict instances of instrumental rationality, in Western modernity the ways in which and the contexts within which humans interact with tools constitute rhetorical gestures. With respect to communicating nuclear illegitimacy, Major T. J. “King” Kong’s unmediated hold of the bomb is a hyperbolic gesture that, in the context of *Dr Strangelove*, reinforces, through the absurd, the claim that the only reasonably safe means of securing ourselves against nuclear annihilation is through the imposition of mechanisms of rational control and proper mediation. Like its government-produced antecedents, the interface is a pervasive sign in *Dr Strangelove*; it is the incompetence—indeed the insanity—of interface operators that signifies in the film the deadly roulette that nuclear war games constitute, culminating in the scrapping of the interface altogether in a maniacal embrace of the bomb.

“Danger” and “security” are therefore measured in degrees of technical “competence” and “control,” with the interface, the medium of operation through which the latter are made visible. Not coincidentally, the rhetoric of nuclear illegitimacy, whether the subject is nuclear terror or rogue states, is a rhetoric of degrees, or fractions. That is, nuclear illegitimacy is presented as a less-than-whole appropriation of modernity, a fractioning of modernity. Nuclear terrorists and rogue states are framed as marginal moderns.

This rhetoric of fractions is, with respect to nuclear terrorism, too diffuse to chronicle adequately here. However, we can provide some examples, beginning with Michael Ledeen’s “Understanding Iran,” published in *Imprimis*, a neo-conservative

leaning publication of Hillsdale College (with an advertised monthly circulation of over 1,700,000). In 2008, Ledeen, author of *The Iranian Time Bomb* and contributing editor of the *National Review Online*, began a short primer on Iran in *Imprimis*: “If you read the news carefully, you will find a notable story about Iran every morning. Nine times out of ten it is hilarious.” “Hilarious” because of the incompetence of Iranians:

Just within the last month Iran released a photograph of a missile launch that initially caused great consternation in the West. It showed four missiles being launched, more or less simultaneously, with wonderful contrails behind them. This was supposedly a new intermediate range missile that could hit almost any target in the Middle East, including US military bases. Upon examination, that photograph turned out to be a double phony. First, there was only one missile, and the Iranians replicated it to make it seem as if there were four. Second, the missile was two years old and was not an intermediate range missile at all. A few days later, the Iranians announced that they had a fighter airplane and produced a photo of it. Upon examination, this airplane turned out to be a plastic toy made by Mattel with Iranian markings drawn on it.³⁹

Indeed, it was not only *National Review* contributors who saw levity in such instances. The bloggers on the left-wing, cyber-punk-tinged *Boing Boing* lampooned Iran’s state-released missile photo in their post, “Iran: You Suck at Photoshop,” following up the post with a number of digital parodies of the manipulated Iranian photo.⁴⁰ That left and right, neo-conservative and cyber-punk, could share this laugh suggests, at the very least, that they also share a consciousness with respect to the technological, including a similar sense of “competence,” a mutual regulating sense of the “authentic,” and, above all, a common sense of proper human-machine relations.

Yet, if nine times out of 10, Iranian foibles with technologies of war and representation are “hilarious,” inverse deduction means that one time out of 10 Iranian actions are no laughing matter. And this was the point on which Ledeen’s “Understanding Iran” turned:

As for the question of nuclear weapons, it seems hard to imagine that Iran does not *already* have them. Iranians are not stupid, and they have been at this for a minimum of 20 years in a world where almost all the major components needed for a nuclear weapon—not to mention old nuclear weapons—are for sale. A lot of these components are for sale in nearby Pakistan. And if the Iranians do have a weapon, it is impossible to imagine that, at a moment of crisis, they will not use it. The point is, we have an implacable enemy which has no intention of negotiating a settlement with us. They want us dead or dominated, just as our enemies did in the 1930s and ’40s. You can’t make deals with a regime like that.⁴¹

The “Iranians are not stupid.” Yet they are “an implacable enemy,” not only unwilling to negotiate, but seemingly incapable of it. In other words, they have just enough rationality to be dangerous, but not enough to be trusted with diplomacy or dangerous technologies.⁴² Importantly, their fractional status is signified through evidence displaying their incompetence with an interface technology, Photoshop. The argumentative point of the manipulated missile image example is not that the Iranians do not really have a nuclear missile. In fact, Ledeen says that they do.

Rather, the argument is that if the Iranians cannot competently compose computer-manipulated images, then they certainly cannot be trusted with cataclysmic military technologies. Or, as one comment on the *Boing Boing* post stated: “Say what you will about this [Bush] administration (and I will), but who ever doctored that photo is an IDIOT . . . You know, if you’re going to play at the planet’s ‘adult table’, you really, really, need to make sure you don’t have idiots in your propaganda office.”⁴³

Of course, the consensus reflected in contemporary political discourse that Iran is technologically incompetent, and thus retarded vis-à-vis modernity, is directly tied to the Islamic Republic of Iran’s defiance of American hegemony in the Middle East. Indeed, prior to the Iranian Revolution in 1979, when Iran was, along with Israel and Saudi Arabia, a primary US ally in the Middle East, no such consensus existed. In fact, in the 1950s Eisenhower helped establish in Iran a nuclear power program, and in the 1970s the US willingly sold the Shah over \$9 billion of advanced US weaponry of every type—except nuclear weaponry, which was subject to extraordinary non-proliferation measures under the Nuclear Non-Proliferation Treaty of 1968.⁴⁴

Nevertheless, the logic of fractions has been a persistent means by which Western modernity has delimited legitimacy over and against other modernities and Other moderns, from “half-breeds,” to the 2/3 citizenship-status of American slaves, to Marx’s controversial “Asiatic mode of production.” Indeed, Marx’s notion of a stubborn Oriental retardation in the growth toward “the full development of human control over the forces of nature” is more than apropos to the rhetoric of nuclear terror.⁴⁵ The means by which Iran, Al Qaeda, and other rogue states or terror groups are rendered “illegitimate” vis-à-vis nuclear weapons is by placing them on the margins of a purportedly universal modernity and in a place of retardation with respect to the “natural” homogenizing of all modern societies. They are, in other words, constructed as having a stubbornly incomplete status in relation to modernity. Nuclear danger, this rhetoric claims, lay not in the massive proliferation of state-produced nuclear weapons in the Cold War, but in the refusal of certain state and all non-state actors to progress along the disciplinary path constructed by the West with regard to these dangerous technologies, at the pinnacle of which stands a scientific-technical elite with full appreciation for nuclear power. The consequent rationalization (in the psychoanalytic sense)—and we suggest the crux of this rhetoric—is that the disorder of nuclear weapons comes from without Western modernity, rather than within. The Other is invented as a socially acceptable cause of nuclear disorder. At Western modernity’s margins, this rhetorical rationalization holds, stand political actors with access to Western modernity’s tools, but defiantly unwilling to submit to Western modernity’s regime of (Weberian) rationalization.

This rhetoric is both subtle and pervasive. Its subtlety is seen in *World at Risk*, the official report of the Commission on the Prevention of WMD Proliferation and Terrorism, a US House of Representatives initiated group, chaired by former senators Bob Graham of Florida and Jim Talent of Missouri, which, according to the Commission’s website, “implements a key recommendation of the independent, bipartisan 9/11 Commission to address the grave threat that the proliferation of

weapons of mass destruction poses to our country.”⁴⁶ To be sure, the Commission offers in *World at Risk* a sober and sobering account of problems presented to the US by the widespread proliferation of weapons of mass destruction. Yet, in composing a particular portrait of “terrorists” as the political actors at the heart of these problems, the report perpetuates the fiction that the source of the crisis derives from incomplete relations to a universal modernity, rather than stemming from the specific course of a distinctly Western modernity. Terrorists—to capture the crassness of *World at Risk’s* portrait—are “half-breed” moderns:

Money is moved, transactions are made, information is shared, instructions are issued, and attacks are unleashed with a keystroke. Weapons of tremendous destructive capability can be developed or acquired by those without access to an industrial base or even an economic base of any kind, and those weapons can be used to kill thousands of people and disrupt vital financial, communications, and transportation systems, which are easy to attack and hard to defend. All these factors have made nation-states less powerful and more vulnerable relative to the terrorists, who have no national base to defend and who therefore cannot be deterred through traditional means.⁴⁷

The first set of political actions—“Money is moved, transactions are made, information is shared, instructions are issued, and attacks are unleashed with a keystroke”—is an elaboration of those political actions performed by the US at Hiroshima and Nagasaki. It is a mirror image of that set of social and technological feats “legitimate” nuclear states rehearse over and over again to prepare for the inauguration of a nuclear attack. It is, however, the incomplete and fractional relationship of terrorists to Western modernity that makes them so dangerous: their lack of an industrial and economic base and nation-state status. According to *World at Risk*, terrorists have access to interfaces and the destructive keystrokes they enable, but operate outside the legitimately modern context that supposedly assures the rational control of nuclear weapons.

Especially since September 11, because the systems, techniques, and technologies associated with Western modernity were then so spectacularly used, this portrayal of the terrorist as a fraction of modernity has been amplified in policy circles and popular media alike. By gaining access to skilled control of airliners, the September 11 hijackers achieved for non-Westerns the status of a modern body, a body with a proficient relationship to modern machines. As such, they caused a rift in the regulation of modernity by the dominant West, and this rift constituted a major portion of the shock caused by September 11. The hijackers were, we presume, adept enough with the instruments of modernity to commandeer airplanes and reinvent the “kamikaze” attack, but pre-modern enough to imagine such tactics. A nuclear attack, to be sure, would cause a more severe rupture, not through the mere destruction of lives and property, but through achieving for non-Westerns the status of a recognizably modern body with skilled access to weaponized nuclear power—the pinnacle of technological power in the West, the only technological feat that is, in the words of Harry Truman upon the attack on Hiroshima, “a harnessing of the basic power of the universe.”⁴⁸

Thus, positioning terrorists as outsiders to modernity assumes an ideological urgency. During the initial stages of the war in Afghanistan, CNN reporters gained access to alleged Al Qaeda plans for building conventional and nuclear weapons. After an initial investigation, in cooperation with the Institute for Science and International Security, CNN reported on these documents in a 30-minute special broadcast. Snapshots of the documents in question appeared askew and disheveled (see Figure 2). An emphasis on crude pencil drawings produced a semi-primitive enemy not only through the “raw” nature of the materials involved, but through an obvious lack of modern mediation in relation to nuclear armament. Should terrorists actually gain access to nuclear weapons, the drawings suggested that they would lack the proper level of mediation to participate as wholly modern subjects.⁴⁹

Authorities deal with such a threat not only through tactical maneuvers and surveillance, but through deploying counter-images of interface use. A CBS News segment explained how state counter-terrorism forces were guarding against a possible nuclear attack during Denver’s 2008 Democratic Party Convention. In image after image, viewers are shown law enforcement officials consulting their interfaces, newly visible again in the face of a threat to the West’s status as nuclear moderns (see Figure 3). Presented as facing an invisible threat from a marginal subject with unmediated access to radiological material, the authorities are happy to remind American citizens of their origins in a safely mediated relationship to nuclear power.⁵⁰

Indeed, at the center of the discourse of nuclear terrorism is the crisis of Western modernity itself with respect to the tools of mass destruction it has invented and used. While there is a real threat of nuclear horror from Al Qaeda and other similar

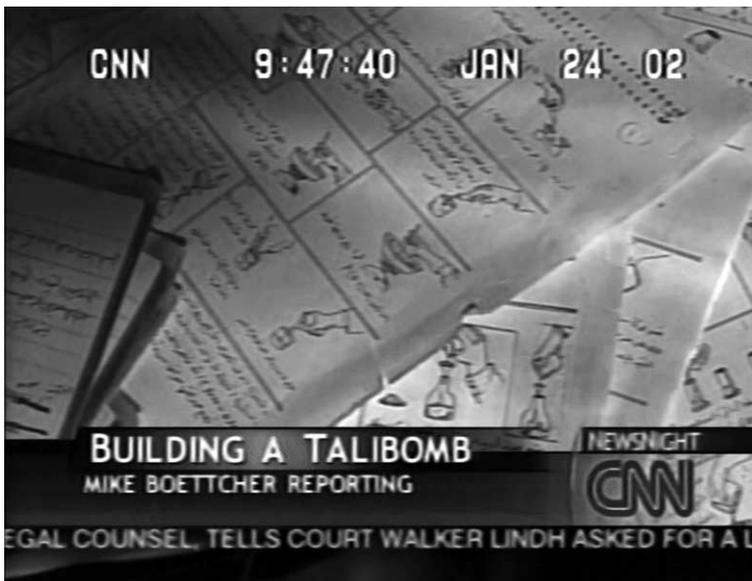


Figure 2. One of the purported Al Qaeda nuclear weapon pencil drawings reported discovered in Afghanistan in the ISIS-CNN special report. Courtesy of the Institute for Science and International Security.



Figure 3. CBS’s report on counter nuclear terrorism efforts at the 2008 Democratic National Convention featured operators at their counter-nuclear interfaces.

organizations, we can surmise from the discourse about nuclear terrorism that this deeper crisis of Western modernity motivates the rhetoric of nuclear terrorism—for in fact, as we have said, if Al Qaeda or another group were successful in the use of a nuclear weapon, it could be a consequence only of a highly sophisticated network of political associations, communications, fund raising, skilled engineers, willing operatives, and savvy strategists. Thus, nuclear terrorism would rest on a mirror image of Western modernity’s “legitimate” nuclear structure. That representations of nuclear terrorists in Western media consistently elide this reality suggests their function is less to inform publics about the dangers of nuclear terrorism and more to perpetuate the ideologies of Western modernity itself.

Conclusion: Rationality’s Others

In September 2008, the director-general of the International Atomic Energy Agency, Mohamed ElBaradei, warned a gathering of scientists in Vienna that nuclear terrorism was an imminent threat. Echoing Michael Ledeen’s argument about Iran, he argued that the threat was critical not because terrorists had secured nuclear materials and formed highly sophisticated operational networks that could deploy them, but because terrorists were invulnerable to deterrence. “The rules of deterrence don’t apply to them,” ElBaradei, the 2005 Nobel Peace Prize winner, declared. “If they get it, they will use it.”⁵¹ ElBaradei’s warning echoed, however strangely, Derrida’s declaration already quoted, and presented here more fully:

Yet such weapons now escape all control and all state oversight. They are no longer at the sole disposal of a sovereign state or coalition of sovereign states that protect one another and maintain a balance of terror, as was the case during the Cold War,

where everyone was held in check by a reasoned game theory that calculated the risks of escalation so as to exclude, in principle and according to the greatest probability, any suicidal operation. All that is over. A new violence is being prepared and, in truth, has been unleashed for some time now, in a way that is more visibly suicidal and autoimmune than ever.

Have the rules of the nuclear game in fact been changed in the post-Cold War world, or is it rather that they were always precarious, unstable, and ultimately indeterminate? Did deterrence really save us from suicidal operations, or were we saved in spite of our calculating logics? Do terrorism and rogue states in fact mark a major transformation on the register of visibility, or are we merely tweaking the plot line and updating the cast of characters? Above all, we ask, do the terrorist and the rogue operate without the rules of modernity, or merely adapt them to particular local causes and cultures?

We have examined here iterations of a visible icon of Western nuclear modernity, the operator at the interface control panel, to argue that the logic of legitimation in the Cold War has perdured into the post-Cold War world, and thus that in important ways nuclear terrorists and bomb-wielding rogue states are other-than-rational Western inventions that rationalize its claim to nuclear hegemony. In psychoanalysis, a rationalization is a kind of misrecognition, and a misrecognition is a misdiagnosis. Such is the case with the discourses of nuclear legitimacy we have explored here. Unlike the sword or the musket, the presence of nuclear weaponry in the world is contingent on the complex processes of Weberian rationalization that are inherent to modernization, including but not limited to the emergence and expansion of empirical knowledge, the development of organizational self-consciousness, and the advent of an overriding instrumental relationship with the resources and inhabitants of the earth. The successful use of nuclear terror, whether by a state or non-state entity, is a *thoroughly modern act*. Yet, a strong rhetorical correlation between nuclear illegitimacy and incompetent instrumental control persists, preventing a reasonable reckoning with the problem of nuclear disorder. To say, as ElBaradei does, that deterrence is impotent before the nuclear terrorist is to attribute to the terrorist an alien rationality, and to confine nuclear disorder to the Other. It is thus not only to be in denial that the rationality implicit within nuclear terrorism can be found within Western modernity's "rational" and "legitimate" nuclear infrastructure, but also to carry on in rationalizing the latter.

Notes

- [1] Jacques Derrida, *Rogues: Two Essays on Reason*, trans. Pascale-Anne Brault and Michael Nass (Stanford, CA: Stanford University Press, 2005), 155–6.
- [2] *Ibid.*, 156.
- [3] See Stephen John Hartnett and Laura Ann Stengrim, *Globalization and Empire: The US Invasion of Iraq, Free Markets, and the Twilight of Democracy* (Tuscaloosa: University of Alabama Press, 2006).
- [4] Our reference to "post-Cold War studies" is tentative but important, for "post-Cold War studies" does not (yet) have disciplinary status, but at best represents a mode of inquiry

concerned with legacies, memories, ruins, hauntings, afterimages, perdurance, hegemony, reification, structure, and structuration *relative to the Cold War*—where the “Cold War” is understood variously as an extended and extensive geopolitical conflict; a global project of intervention, engineering, and disciplinization; a political, social, and existential crisis; a set of institutions; and a culture, ideology, and rhetoric. We are not necessarily proponents of “post-Cold War studies” achieving some sort of disciplinary status, but do think it represents a very important mode of inquiry. Bryan C. Taylor and Stephen J. Hartnett have presented an agenda for what they denote as “(Post-)Cold War communication studies” in “National Security and All That It Implies: (Post-)Cold War Culture and Communication Studies,” *Quarterly Journal of Speech* 86 (2000): 465–87. They aim, with others concerned with post-Cold War studies, to “problematize this alleged successor [the “post-Cold War”] by emphasizing how the active residues of its predecessor [the “Cold War”] “contaminate” its ontological bid for distinctiveness and closure” (465).

- [5] With respect to the end of the Cold War, one way in which the claim that major historical events demarcate major historical changes clearly applies is with regard to US military policy. The fall of the Soviet Union meant that decades of institutional, budgetary, political, technological, and cultural assumptions among elites in US politics and governance were put in crisis. As such, the “end” of the Cold War suggested the imperative of a new major global threat, one sufficient in scope and risk to sustain a massive military–industrial–scientific complex. For many in the early 1990s, “rogue” or “outlaw” states and “international terrorism” (concentrated in the southern hemisphere) could represent this new threat. See Michael Klare, *Rogue States and Nuclear Outlaws: America’s Search for a New Foreign Policy* (New York: Hill and Wang, 1995), especially 24–8.
- [6] Derrida, *Rogues*, 156.
- [7] Michèle Bertrand, “Rationalization,” *International Dictionary of Psychoanalysis*, ed. Alain de Mijolla (Farmington Hills, MI: Thomas Gale, 2005), ebook.
- [8] See Edward Said, *Orientalism* (New York: Vintage, 1979); Rebecca S. Bjork, “Public Policy Argumentation and Colonialist Ideology in the Post-Cold War Era,” in *Warranting Assent: Case Studies in Argument Evaluation*, ed. Edward Schiappa (Albany: State University of New York Press, 1995), 211–36; Hugh Gusterson, “Nuclear Weapons and the Other in Western Imagination,” *Cultural Anthropology* 14 (1999), 111–43 [also available in Hugh Gusterson, *People of the Bomb: Portraits of America’s Nuclear Complex* (Minneapolis: University of Minnesota Press, 2004), 21–47]; and Melanie McAlister, *Epic Encounters: Culture, Media, and US Interests in the Middle East Since 1945* (Berkeley and Los Angeles: University of California Press, 2005), 8–13, 219. While our study corroborates arguments about the power of Orientalism, and indeed Orientalism is necessary to our argument, we do not think it quite sufficient. The binaries we note, as we will show, operate outside of colonial and post-colonial discourses, and indeed are endemic to the production of nuclear legitimacy as such, whether in “domestic” or “international” contexts.
- [9] Derrida claims in the post-Cold War world “there is essentially no longer any such thing that can be called in all rigor ‘war’” (*Rogues*, 156). What then, we ask, are we to make of *cold* war? Do vast state-private networks, state-sponsored guerrilla wars, coups designed by foreign spy-agencies, spy satellites, fallout shelters, and so on constitute a mere iteration of the old form of “classical, international war, that is, a war between nation-states” (156)?
- [10] Jürgen Habermas, *The Theory of Communicative Action: Reason and the Rationalization of Society*, trans. Thomas McCarthy, (Boston: Beacon Press, 1985), 159.
- [11] Brian C. Taylor, “Nuclear Pictures and Metapictures,” *American Literary History* 9 (1997), 572, emphasis in original. See also Taylor’s “‘A Hedge against the Future’: The Post-Cold War Rhetoric of Nuclear Weapons Modernization,” *Quarterly Journal of Speech* 96 (2010), 1–24.
- [12] We do not mean to suggest that legitimation depends solely on a *positive* belief. As Jürgen Habermas reminds us: “It is also based on fear of, and submission to, indirectly threatened sanctions, as well as on simple compliance engendered by the individual’s perception of his

own powerlessness and the lack of alternatives open to him (that is, by his own fettered imagination).” Moreover, as Max Weber notes (and Habermas quotes): “Loyalty may be hypocritically simulated by individuals or by whole groups on purely opportunistic grounds.” See Habermas, *Legitimation Crisis*, trans. Thomas McCarthy (Boston: Beacon Press, 1973), 96.

- [13] S. N. Eisenstadt, *Comparative Civilizations and Multiple Modernities*, vol. 2 (Boston: Brill, 2003), 523.
- [14] See, for example, Edward Shils, *The Constitution of Society* (Chicago: University of Chicago Press, 1982), 113.
- [15] Habermas, *Legitimation Crisis*, 101.
- [16] Max Weber, *Economy and Society*, vol. 1, ed. Guether Roth and Claus Wittich, trans. Ephraim Fischhoff and others (Berkeley and Los Angeles: University of California Press, 1978), 24–6.
- [17] No one has more provocatively explored the deep structural and philosophical connections between a transcendental belief in human agency and nuclear weapons than Oliver O’Donovan in *Peace and Certainty: A Theological Essay on Deterrence* (New York: Oxford University Press, 1989). See also Lawrence Freedman, *Deterrence* (Malden, MA: Polity Press, 2004).
- [18] In the period we focus on initially here, the 1950s, nuclear operators were universally male, and gendered as masculine. Over time, this changed, such that by the 1980s women were included in Strategic Air Command operations. For reasons of economy, however, we do not extensively address in this essay issues of sex and gender, although they are everywhere present and critical. We would concur with Judy Wajcman in her conception of “a mutually shaping relationship between gender and technology, in which technology is both source and a consequence of gender relations. . . . [G]ender relations can be thought of as materialized in technology, and masculinity and femininity in turn acquire their meaning and character through their enrollment and embeddedness in working machines” [Wajcman, *TechnoFeminism* (Malden, MA: Polity Press, 2004), 107]. In the case of the production of nuclear weaponry, a strong gender relation was constituted between “masculine” scientists, engineers, and operators and a “feminine” support structure, where the feminine most often functioned in the role of “witness” or “plant worker.” Furthermore, in the testing films of Lookout Mountain Laboratory that we examine in this essay, an intra-masculine (even homo-erotic) dynamic is present, as men—often sweaty and shirtless—are depicted collaborating at remote Pacific sites to detonate what cannot help but be seen as a massive phallic event. And then there is the feminization of the bomb itself—as an object of male desire, care, and/or domination, depending on the particular narrative.
- [19] See Lev Manovich, *The Language of New Media* (Cambridge, MA: MIT Press, 2001), 167–8.
- [20] *Ibid.*, 168.
- [21] Kenneth Burke, *A Rhetoric of Motives* (Berkeley and Los Angeles: University of California Press, 1969), 183–4.
- [22] See Manovich, *The Language*, 167–8.
- [23] Marshall McLuhan, *Understanding Media: The Extensions of Man* (New York: New American Library, 1964), 36.
- [24] Martin Heidegger, *Being and Time*, trans. John Macquarrie and Edward Robinson (Malden, MA: Blackwell, 1978), 141, *passim*.
- [25] Weber himself was not directly concerned with the aesthetic and performative dimensions of rationalization, but an excellent analysis of this dimension can be found in Robert Hariman’s chapter on the “bureaucratic style” in *Political Style: The Artistry of Power* (Chicago: University of Chicago Press, 1995), 141–76.
- [26] See “O. R. Frisch, Eyewitness Account of ‘Trinity’ Test, July 1945,” Document #16, *The American Atom*, 50.

- [27] “Leslie R. Groves to George C. Marshall, 30 July 1945,” Document #18, *The American Atom*, 59.
- [28] “General Groves’ Report on ‘Trinity,’ July 18, 1945,” Document #17, *The American Atom*, 55.
- [29] *Ibid.*
- [30] This aesthetic range—from the sublime to the mundane—denotes a *critical* as well rhetorical continuum. As Bryan C. Taylor, William J. Kinsella, Stephen P. Depoe, and Maribeth S. Metzler write: “Commonly, nuclear weapons are depicted in the discourse of foreign policy and military elites as a powerful, threatening, and perversely glamorous technology. As noted above, communication scholars have traditionally engaged this particular genre of nuclear discourse. By emphasizing their prestige, however, this discourse effaces the contingency of nuclear weapons as mundane, organizational products. These weapons always come from somewhere, in other words, and this journey involves a concrete system of materials, locales, personnel, technologies, belief systems, and social practices.” [“Nuclear Legacies: Communication, Controversy, and the US Nuclear Weapons Production Complex,” in *Communication Yearbook*, vol. 29, ed. Pamela J. Kalbfleisch (Mahwah, NJ: Lawrence Erlbaum, 2005), 363–409]. Our argument suggests that the “mundane” is integral not only to the (organizational) production of nuclear weapons, but to their public, rhetorical legitimation, and to their “normalization” or “naturalization.”
- [31] Hugh Gusterson discusses the aesthetic fascination nuclear scientists have with their machines—as means of power over nature; as extensions of their own bodies; and as metaphors for comprehending their work, the world, and themselves. See Gusterson, *Nuclear Rites: A Weapons Laboratory at the End of the Cold War* (Berkeley and Los Angeles: University of California Press, 1996), 119–24.
- [32] See David Nye, *The American Technological Sublime* (Cambridge, MA: MIT Press, 1994), 7–8, 252–6. For alternate considerations of the “nuclear sublime” see Joseph Masco, “Nuclear Techno-aesthetics: Sensory Politics from Trinity to the Virtual Bomb in Los Alamos,” *American Ethnologist* 31 (2004): 349–73; and Ned O’Gorman “Eisenhower and the American Sublime,” *Quarterly Journal of Speech* 94, no. 1 (February 2008): 44–72.
- [33] Thus, when members of the Truman administration at the end of World War II debated about whether or not to share atomic information with the Soviet Union, Truman’s Secretary of Agriculture, Clinton Anderson of New Mexico (the home state of Los Alamos), who opposed sharing, wrote to the President: “It isn’t just a question of turning over to them a mechanical formula; there needs to be certain types of evidence that they possess the genius to apply these laws in a manufacturing process before they can ever make from the knowledge of atomic energy a proper atomic bomb.” The language itself—“possess the *genius*” and “*proper* atomic bomb”—suggests the entrenchment of an ideology of technical control within the debate. For this letter, see Harry S. Truman Library, Papers of Harry S. Truman, PSF: General File, 1940–1953, Box 96.
- [34] Kenneth Osgood, *Total Cold War: Eisenhower’s Secret Propaganda Battle at Home and Abroad* (Lawrence: University of Kansas Press, 2006), 10; Dwight D. Eisenhower, “Address Before the General Assembly of the United Nations on Peaceful Uses of Atomic Energy, New York City,” December 8, 1953, John T. Woolley and Gerhard Peters, The American Presidency Project [online], <http://www.presidency.ucsb.edu/ws/?pid=9774> (accessed November 19, 2010).
- [35] See “Staff Study: Public Information Plan, Operation Greenhouse,” February 26, 1951 in Harry S. Truman Library, Papers of Harry S. Truman, PSF: Subject File, 1940–1953, National Security Council-Atomic File, Box 175. See also Box 176, wherein records concerning the “Psychological Exploitation of Certain Thermonuclear Developments” show that the administration lacked consensus on how exactly to approach publicity around nuclear tests.
- [36] Fact Sheet, “The Nevada Test Site’s Secret Film Studio: Lookout Mountain,” US Department of Energy, National Nuclear Security Administration, Nevada Site Office, Office of Public Affairs, http://www.nv.doe.gov/library/factsheets/DOENV_1142.pdf (accessed July 17, 2009). A number of the films produced by Lookout Mountain Laboratory can be found

at the Department of Energy's Nevada Site Office website: <http://www.nv.doe.gov/library/films/testfilms.aspx>. The Internet Archive Database is also a good source, featuring *Greenhouse* (1951, <http://www.archive.org/details/OperationGreenhouse1951>), *Tumbler through Snapper* (1952, <http://www.archive.org/details/TumblerSnapper1952>), *Trinity through Buster-Jangle* (1952, <http://www.archive.org/details/AtomicWeaponsTestsTrinitythroughBusterJangle>), *Ivy* (1952, <http://www.archive.org/details/OperationIVY1952>), *Upshot through Knothole* (1953, http://www.archive.org/details/OperationUPSHOT_KNOTHOLE1953), *The 280 mm Gun at the Nevada Proving Ground* (1953, <http://www.archive.org/details/The280mmGunattheNevadaProvingGround1953>), *Castle* "Military Effects" (1954, <http://www.archive.org/details/MilitaryEffectsStudiesonOperationCastle1954>), *Castle* "Commander's Report" (1954, <http://www.archive.org/details/CastleCommandersReport1954>), *Teapot* (1955, http://www.archive.org/details/OperationTEAPOT_MilitaryEffectsStudies1955), *Redwing* (1956, <http://www.archive.org/details/MilitaryEffectsonOperationRedwing1956>), *Hardtack* "High Altitude" (1958, http://www.archive.org/details/OperationHARDTACK_HighAltitudeTests1958), *Hardtack* "Underwater" (1958, http://www.archive.org/details/OperationHARDTACK_UnderwaterTests1958), *Hardtack* "Basic Effects," (1958, http://www.archive.org/details/OperationHARDTACK_BasicEffectsStructuresandMateriel195), *Argus* (1958, <http://www.archive.org/details/OperationARGUS1958>), and *Dominic* (1962, <http://www.archive.org/details/OperationDOMINICNuclearTests1962>).

- [37] Larry May, *The Big Tomorrow: Hollywood and the Politics of the American Way* (Chicago: University of Chicago Press, 2000), 180.
- [38] Quoted in Martin J. Medhurst, "Atoms for Peace and Nuclear Hegemony: The Rhetorical Structure of a Cold War Campaign," *Armed Forces & Society* 23 (1997): 576–7. The quotation is from a memo by Stefan T. Possony, who had also served as an advisor to the Truman administration, and was a major early advocate for a kind of "atoms for peace" initiative.
- [39] Michael Ledeen, "Understanding Iran," *Imprimis*, 37, no. 10 (October 2008): 1.
- [40] Xenia Jardin, "Iran: You Suck at Photoshop (updated)," *Boing Boing*, July 10, 2008 10:29 am, <http://www.boingboing.net/2008/07/10/iran-you-suck-at-pho.html> (accessed July 29, 2009).
- [41] Ledeen, "Understanding Iran," 7.
- [42] Our argument is consistent with that of Foad Izadi and Hakimeh Saghaye-Biria, who, in a study of newspaper editorials about Iran's nuclear program in *The Wall Street Journal*, *The New York Times*, and *The Washington Post* spanning 1984–2004, conclude that all three publications "define the Iranian nuclear problem in terms of the two premises of Oriental untrustworthiness and Islam as a threat," and thus "that such a government cannot be trusted with nuclear technology" (150). Therefore, in the papers' editorial positions, "the issue of trust plays a more central role than the actual existence of evidence for Iran's possession of a clandestine nuclear weapons program" (161). Although Izadi and Saghaye-Biria do not explore the issue in depth, they are right to suggest that the culture of national security in the nuclear age is as much dependent on trust as it is on fear: trust in the competence of politicians to exercise restraint and prudence in wielding power over nuclear weaponry, and, just as importantly, trust in the ability of a technological class—engineers, scientists, and operators—to competently control nuclear power. On one level, this trust is merely an extension of the trust necessary to the social order of liberal societies: whenever we grant power to others to shape and govern society, we grant them at least a modicum of our trust. However, the trust integral to nuclear order goes beyond such political trust—it entails a trust in the claims of Western modernity itself to harness natural and social power to create an efficient, peaceable, and prosperous social order. See Foad Izadi and Hakimeh Saghaye-Biria, "A Discourse Analysis of Elite American Newspaper Editorials: The Case of Iran's Nuclear Program," *Journal of Communication Inquiry* 31 (2007): 140–65.
- [43] "Another Aaron," #4 comment on "Iran: You Suck at Photoshop (updated)," *Boing Boing*, July 10, 2008 10:42 am, <http://www.boingboing.net/2008/07/10/iran-you-suck-at-pho.html> (accessed July 29, 2009).

- [44] McAlister, *Epic Encounters*, 204.
- [45] Karl Marx, “Details of Theory” (from *Grundrisse*), in *Karl Marx: The Essential Writings*, ed. Frederic L. Bender (New York: Harper & Row, 1972), 219–20.
- [46] Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism, “About,” <http://www.preventwmd.gov/about/> (accessed April 2, 2010).
- [47] Bob Graham, Jim Talent et al., *World At Risk: The Report of the Commission on the Prevention of WMD Proliferation and Terrorism* (New York: Vintage Books, 2008), xii.
- [48] Harry S. Truman, “White House Press Release on Hiroshima, August 6, 1945,” Document #21, *The American Atom*, 2nd ed., ed. Philip L. Cantelon, Richard G. Hewlett, and Robert C. Williams (Philadelphia: University of Pennsylvania Press, 1991), 65.
- [49] CNN, “Al Qaeda Nuclear and Conventional Explosive Documents: CNN—ISIS Collaboration,” January 17, 2002, <http://www.isis-online.org/publications/terrorism/intro.html> (accessed August 17, 2009).
- [50] Bob Orr, “Detecting Nuclear Terrorism,” *CBS News*, August 25, 2008, <http://atlantis2.cbsnews.com/video/watch?id=4378549n> (accessed August 17, 2009).
- [51] Jonathan Tirone, “Nuclear Terrorism is No. 1 Threat, ElBaradei Says,” *Bloomberg Press*, <http://www.bloomberg.com/apps/news?pid=20601087&sid=ae.wPfK0oXfM&refer=home> (accessed July 20, 2009). See Gusterson, “Nuclear Weapons and the Other,” 117–21 for an analysis of the common argument that deterrence will not work against “rogue states” and “international terrorists.”