

# Radiation Narratives in Don DeLillo's *Underworld*: Managing the Incalculable, Long-Term Effects of Nuclear Waste

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## Abstract

This study explores the issue of radiation in Don DeLillo's *Underworld*, which involves a nuclear crisis that is domestically generated by weapons tests and radioactive waste. Drawing on research on the long-term effects of radiation, it examines how the novel's protagonist, Nick Shay, conceptualizes and practices nuclear waste management in the face of the awe-inspiring incalculability of radiation. To achieve that aim, the study first explores the nuclear landscape and examines how DeLillo, against a contaminated landscape, raises problems with the technological mastery of nuclear power, chief among which are the amount of time required for radioactive decay and the sensation of the mathematical sublime Nick develops in his response to the complex effects of radiation. To approach Nick's sublime sensation, the representation of the untouchable—a group of individuals who have been exposed to deadly radiation around a nuclear test site—is also important. Overall, the article investigates the geographic, aesthetic, and ethical aspects of DeLillo's narratives about radiation in conjunction with waste management's long-term responsibility for the protection of life.

## Introduction

Don DeLillo's *Underworld* can be regarded as a national epic of America that features critical military tensions with the Soviet Union and the serious consequences of the arms race. As a Cold War novel, it depicts nuclear threats, including those other than direct missile attacks. Set in the Southwestern desert, the opening episode of the 1992 narrative present describes a memory of America's first atomic explosion, the Trinity test conducted in 1945. This primal scene of explosion, as imagined by the protagonist Nick Shay, a professional waste manager, foregrounds the threat of radiation that unsettles him forty-seven years after the original explosion. From the beginning, the novel problematizes radiation as a major crisis that America has long been facing. Intriguingly enough, the radiation was not caused by America's foreign

adversaries. In fact, some types of radiation that haunt the novel are domestically generated by weapons tests and radioactive waste. This domestic nuclear crisis and Nick's involvement with it form a central concern of the present study.

The nuclear waste crisis that affects Nick and many other American citizens has been created, to a large degree, by the nation's economic and military development in the Cold War era. Concerning waste as a byproduct of individual and national empowerment in *Underworld*, Patrick O'Donnell writes, "Waste is . . . the fallout of our quest for empowerment in life (whether that comes about through the possession of objects and the accumulation of capital or through the demonstrations of military prowess that characterizes an arms race)" (110). A most potent means of empowerment is nuclear generation, but the waste it leaves behind is extremely difficult to handle. Other critics have, like O'Donnell, discussed the problems posed by nuclear waste in *Underworld*. Exploring DeLillo's treatment of American Cold War ideology, Mark Osteen states, "The ideology of containment . . . encompasses weapons and waste, whose devastating physical and psychological repercussions constitute DeLillo's primary theme in *Underworld*" (215). Approaching this issue from an environmental, planetary perspective, Isabel Lane underscores the significance of "byproduct time." Regarding a tension between human time and nuclear time, she writes, "This tension between annihilation and permanence, between short-lived human life and its tenacious waste, is central to the novel, which pits human time against geology, dramatizing the persistence of man-made byproducts and the fragility of human existence" (110). The question of time scale has been a major concern in the study of the nuclear sublime, as exemplified by scholars like Allan Stoekl. Exploring the complex interconnections between natural phenomena and human interventions, Stoekl points out the fundamental incalculability of the effects of harmful waste on life forms and the environment. He argues that this "version of the sublime entails an infinity that precisely resists computation (the sublime of externalities); we are bound to compute, but are ultimately, and repetitively, incapable of it" (45). Taking advantage of this mathematical sublimity, the present study focuses on the long-term effects of radiation in *Underworld* and examines the ways in which Nick Shay conceptualizes and practices nuclear waste management.

To achieve this aim, I first explore the nuclear landscape of the Southwestern desert and examine how DeLillo, against the background of that contaminated landscape, raises problems with the technological mastery of nuclear power, chief among which are the amount of time required for radioactive decay and the sublime response Nick develops to the complex effects of radiation. In addition, the study analyzes Nick's

esoteric, pseudo-religious view on radioactive waste. Artistically, this view enriches the sublime representation of nuclear waste, but scientifically it poses a threat because his discourse undermines the rationality of nuclear waste management. In analyzing this threat, I discuss the sacralization and diabolization of nuclear waste. My last aim is to examine DeLillo's representation of the untouchable—a group of individuals who have been exposed to deadly radiation around a nuclear test site. Overall, the paper investigates the geographic, aesthetic, and ethical aspects of DeLillo's narratives about radiation in conjunction with waste management's long-term responsibility for the protection of life.

### **In the Nuclear Landscape: Mastery of Nuclear Power and Fear of Radiation**

The novel's opening sections, which move dramatically through space and time, underscore the persistence of nuclear waste problems in America. The prologue, which revolves around the 1951 playoff game between the New York Giants and Brooklyn Dodgers that would decide the pennant, conveys news of the Soviets' second atomic bomb drop test in the Kazakh test site. Immediately after the prologue, the 1992 narrative present unfolds itself in the American counterpart of the Kazakh steppes. It is a desert about 200 miles southwest of the Trinity test site—a deeply symbolic location in New Mexico where the first American atomic bomb was tested. Set shortly after the declaration of the end of the Cold War, the 1992 episode describes Nick Shay's visit to his one-time lover Klara Sax, who now runs an art exhibition of mothballed B-52 bombers in the desert. While the presence of the aesthetically recycled bombers celebrates the end of the Cold War, the episode directs readers' attention to the masked presence of unrecyclable radioactive waste. In her militaristic discourse, Klara refers to the toxicity and danger of that waste: "So we use this place [the desert] to test our weapons. It's only logical of course. And it enables us to show our mastery. The desert bears the visible signs of all the detonations we set off. All the craters and warning signs and no-go areas and burial markers, the sites where debris is buried" (71). To her, the marks of destruction and contamination of the land are signs of human mastery over nuclear power. In addition, she stresses her own artistic mastery by recycling and exhibiting the nuclear-capable B-52s. Comparing Klara's attitude toward waste with Nick's, John Duvall argues that "Klara's and Nick's careers oddly reflect one another—both are waste managers" (272). "Like Nick," Duvall observes, "Klara makes invisible the waste of consumer culture, but with a twist" (272). This twist includes Klara's

“paint[ing] in rainbow colors the decommissioned B-52s that previously had carried the nuclear payload that could have annihilated humanity” (272). To be sure, she manages to exert artistic control over them and hide the danger they once posed, but—preoccupied with America’s and her individual mastery over nuclear power—she shows little concern about the effects of nuclear waste, which is buried in the area beyond the signs of mastery.

Her representation of the Southwestern desert radically underplays the devastation of such radioactive sites. For instance, compare her landscape with that of Area G—the largest nuclear waste dump in the area surrounding Los Alamos—described by Joseph Masco in his anthropological study *The Nuclear Borderlands*. As Masco observes, “dozens of cement plugs [were] sticking out of the ground, noting where shafts of tritium-and plutonium-contaminated waste were buried. Alongside the football field sized open pits, neatly packed with containers of radioactive contaminated waste, are fences posted with radioactive warning signs” (150). In both Area G and in Klara’s aesthetically rendered desert, radioactive materials are not mastered or disposed of. Stored deep underground, they retain their tremendous power for an astronomically long period of time, as we see below. Thriving aesthetically on nuclear destruction, Klara exhibits a nonchalant attitude toward the danger surrounding her, but DeLillo’s art unmasks it through another, traumatic chronological leap.

As the episode draws toward its end, there is a sudden shift back in time to a primal scene of nuclear detonation in New Mexico. After his visit to Klara, Nick imagines “the world’s first atomic explosion, which occurred about two hundred miles northeast of my present position” (84) or the Trinity nuclear test, conducted on July 16, 1945. Nick’s historical national memory gravitates toward a disturbing anecdote about Edward Teller—a scientist who participated in the production of the first American atomic bomb. According to Nick, “the story said how Dr. Teller feared the immediate effects of the blast at his viewing site twenty miles from zero point” (84). In the seemingly peaceful desert, forty-seven years after the blast, radiation still triggers an undeniable fear in Nick. Unlike Klara, who places too much trust in the mastery of nuclear power, Nick as a professional waste manager knows how radiation persists far beyond the “immediate effects” and continues affecting the area. When the 1992 desert episode summons Teller’s fear into the present, it belies the sense of an ending suggested by Klara’s art exhibition and brings to the surface the long-lasting threat posed by radiation.

## Radioactivity, the Nuclear Sublime, and Fantasies about Nuclear Waste

As Nick grapples with nuclear waste, he reveals a deeply disturbing view of it. A case in point is a remark he makes near the end of the narrative present, when he has become a senior executive qualified to offer expert advice on waste management. In the episode, Nick reflects on the lectures he gives on the risks of nuclear waste:

I talk to them [his audience] about the vacated military bases being converted to landfill use, about the bunker system under a mountain in Nevada that will or will not accommodate the thousands of steel canisters of radioactive waste for ten thousand years. . . . The waste may or may not explode, seventy thousand tons of spent fuel, and I fly to London and Zurich to attend conferences in the rain and sleet. (804)

What is disturbing is that Nick speaks about possible radioactive leaks and nuclear explosions in such a nonchalant, even defeatist, manner that he violates his professional trust. Commenting on the passage above, Mark Taylor keenly observes Nick's strong self-doubt: "By the end of the book, however, it is clear that Nick regards his success as failure. Plans and purposes that once seemed clear become obscure" (207). Though Nick has certainly been a successful businessperson, he finally realizes his own powerlessness in the face of radioactive waste. What defeats him is the time scale of the "ten thousand years" required for nuclear waste storage. That time scale, however, is not necessarily correct.

To better understand Nick's attitude, we must consider in greater detail estimations of the time required for safety assurance. The issue is clarified by recent criticism of nuclear management. Daniel Cordle, in his analysis of cultural and literary anxieties in the nuclear age, cites the example of Onkalo, Finland, a nuclear waste storage facility located in an underground space carved out of rock. Drawing on *Into Eternity*—a 2010 Finnish documentary film about Onkalo—Cordle writes, "Designed to contain radioactive materials until they are no longer dangerous, Onkalo must last, we are told, for 100,000 years" (230).<sup>1</sup> When Cordle refers to the time required for safety assurance, he stresses how the ethical responsibility for nuclear waste management persists on an unimaginable time scale. Cordle also quotes fundamental questions raised in the film: "What knowledge of nuclear toxicity will future societies have? What languages will people speak and how can we warn them not to excavate Onkalo's tunnels?" (230).

The duration of radioactivity generated by high-level nuclear waste utterly surpasses current human plans for containment. As we have seen above, this is a deeply troubling aspect of nuclear waste management that Klara Sax, armed with the nonchalance of a victor, blithely disregards. She does not seem aware that the victorious “warning signs and no-go areas and burial markers” (71) will most likely be meaningless and fail to help sustain human responsibility toward those who will inhabit the land in the far distant future.

Klara’s mastery over nuclear power for survival is short-sighted and limited in scope. She recycled the B-52s to show a “survival instinct . . . a graffiti instinct—to trespass and declare ourselves, show who we are” (77). Analyzing this claim, Paul Gleason writes, “For Klara and DeLillo, art is an assertion of freedom, a way in which humanity can reject and survive an American culture whose mass-market capitalism and weapons of mass destruction threaten individualism and human life” (140). Klara and DeLillo certainly make powerful artistic assertions of freedom and human survival, but readers might wonder whose survival is being discussed and who Klara means by “we.” Her triumphalist post-Cold War rhetoric seems to exclude those who have already lost their lives and those who might do so in the future due to radiation exposure. Unlike Klara, Nick as a professional waste manager must face the question more seriously.

To return to Nick’s approach, we need to see how radioactive decay takes place in complex, long-term processes of natural evolution and human interventions in that evolution. When humans attempt to grasp the totality of such processes, as Allan Stoekl argues, “we experience awe before the sheer task of calculating sustainability” (45) or “the sublime of externalities” (45). Such interlocking processes defeat current human estimations. Likewise, in *Underworld*, it is this type of sublime sensation that confounds Nick to the point where he succumbs to radioactive leaks and even nuclear explosions. In so doing, Nick is in a deeply disturbing state of mind, which Stoekl regards as a form of “claustrophobia” (46). As Stoekl observes, “above all the fundamental incalculable nature of externalities, we can affirm only our consciousness. We revel in the thought of apocalypse, of the fate of the earth both in our hands and somehow out of them” (46).<sup>2</sup> Nick is stuck in the thought of an apocalypse that he imagined himself and accepts it because, near the end of his career, he is defeated by the long-term effects of radioactive waste that relentlessly undermine his containment efforts.

Before Nick reaches that impasse, however, he and his colleagues are more confident in their ability to contain hazardous waste. Remarkably, they approach it with aesthetic feelings grounded in the sublime, as an oft-cited Staten Island waste

management scene demonstrates. Brian Glassic, a colleague of Nick's, inspired by the pyramids of Egypt, meditates on the waste management facility on the island:

He imagined he was watching the construction of the Great Pyramid at Giza—only this was twenty-five times bigger, with tanker trucks spraying perfumed water on the approach roads. He found the sight inspiring. All this ingenuity and labor, this delicate effort to fit maximum waste into diminishing space. The towers of the World Trade Center were visible in the distance and he sensed a poetic balance between that idea and this one [the idea on the landfill]. Bridges, tunnels, scows, tugs, graving docks, container ships, all the great works of transport, trade and linkage were directed in the end to this culminating structure. (184)

Impressed by the large-scale management of massive waste, Brian exhibits complex feelings of awe. The vision of the waste management facility, which exceeds the Great Pyramid in magnitude, is grounded in the mathematical sublime, but it is far-reaching enough to evoke aesthetic, even romantic, feelings of awe. As Immanuel Kant argues, the aesthetic sublime “brings with it the idea of the sublime and produces that emotion which no mathematical estimation of its magnitude by means of numbers can bring about”; it also “presents magnitude absolutely, as far as the mind can grasp it in an intuition” (90). In the grip of such feelings of awe, Brian develops his vision and boasts of the “poetic balance” between the symbol of global capitalism and its waste management facility, connected by modern infrastructures and technologies. In his meditation, Brian makes the mathematical, aesthetic, and technological sublime work together so as to fully represent the greatness of the facility and the innumerable human endeavors that make it work.

At the same time, though, Brian's sublime, euphoric meditation can be considered an act of denial. The “poetic balance” masks the material reality of a decidedly unpoetic imbalance caused by the massive accumulation of harmful waste, an imbalance that is increasingly worsened by nuclear waste, the most harmful material imaginable, which haunts America well beyond the Cold War and will do for 100,000 years to come. Therefore, it is not the modern high-rise buildings like the World Trade Center in Manhattan but the nuclear landscape described by Klara Sax that might, in the distant future, dominate what remains of human civilization. From such a post-apocalyptic perspective, Daniel Cordle writes about the relationship between civilization and

nuclear waste: “Our civilization’s most abiding legacies might surprise us: not, perhaps, the spectacular, hubristic sky-scraping edifices currently springing up around the globe, but a hidden, tomb-like architecture . . . not our technology, but its toxic residues” (231). This is a grim, unsettling vision, but the increasing amounts of radioactive waste might result in the triumph of the “tomb-like architecture.” This post-apocalyptic vision is shared by Nick, who succumbs to radioactive leaks and anticipates nuclear explosions.

Like Brian, however, Nick has heroically struggled to contain nuclear waste. It is notable that behind his pride lurks a pseudo-religious feeling of awe that is rooted in his Jesuit education. For instance, readers can observe how Nick approaches nuclear waste through esoteric metaphors: “We were waste managers, waste giants, we processed universal waste. Waste has a solemn aura now, an aspect of untouchability. White containers of plutonium waste with yellow caution tags” (88). First, by taking advantage of the sheer scale of his business and especially the risk he takes in radioactive waste management, Nick aggrandizes himself. Furthermore, when he sees an “aura” grounded in the “untouchability” of radioactive waste, he endows the waste with a quasi-religious, transcendental quality to further elevate its status and, by extension, his own.

Nick’s sense of awe toward nuclear waste can undermine his professional responsibility. In another scene in the Texas desert, a burial of nuclear waste is underway:

[Nick] watched men in moon suits bury drums of dangerous waste in subterranean salt beds many millions of years old, dried-out remnants of a Mesozoic ocean. It was a religious conviction in our business that these deposits of rock salt would not leak radiation. Waste is a religious thing. We entomb contaminated waste with a sense of reverence and dread. It is necessary to respect what we discard. (88)

Here, as he develops his pseudo-religious fantasy, Nick self-mockingly reveals how the containment of nuclear waste stands on fragile scientific grounds. Metaphorically, the terms “burial” and “entombing” indicate the death of radioactive materials, but technically, it is incorrect because of the extremely long-term effects of high-level radioactive materials. The geological storage of nuclear waste described by Nick is a widely accepted method, but that storage is affected by many factors, including chemical reactions triggered by minerals and salt, changing water flows, and different levels of engineering. It is fair to say that when Nick generates a pseudo-religious fantasy, he is



at pains to come to terms with such overwhelming uncertainties.

Nick's pseudo-religious, sublime feelings become darkly twisted, and this disturbing phenomenon can be effectively approached using concepts from anthropology. Taking advantage of the anthropological concept of "ambiguity" originally developed by Mary Douglas, the critic Robert McMinn underscores "the anthropological puzzle of categories: or how the sacred shades into the profane. In *Underworld* the form this puzzle takes is the sacralization of waste" (45).<sup>3</sup> In McMinn's argument, the sacralization of waste is "a form of transubstantiation" (45). Through the act of waste management, which Nick describes in ways that evoke religious ritual, he recycles profane substances into useful and even aesthetically acceptable objects. Nuclear waste, however, resists Nick's act of sacralization because it is fundamentally unrecyclable. In an attempt to represent the awe-inspiring, destructive power of plutonium, Nick generates a profoundly dark myth about Pluto, the Roman god of death. This act of representation enables him to simultaneously sacralize and diabolize nuclear waste. In the manner of his colleague Brian Glassic, who compares the large-scale waste management endeavor to "the construction of the Great Pyramid at Giza" (184), Nick claims, "We build pyramids of waste above and below the earth. The more hazardous the waste, the deeper we tried to sink it. The word plutonium comes from Pluto, god of the dead and ruler of the underworld" (106). Unlike Brian, who sees a balance between capitalist production and the disposal of consumer waste, between the secular world and the underworld, Nick fearfully imagines the supremely diabolic figure that unsettles the balance.

His awe suggests deeper implications of the sacralization of the discarded. To use another anthropological concept, the lord of the dead and the person who deals with the deadly waste in the underworld are figures related to taboo. Both belong to the realm that is considered simultaneously sacred and unclean. Or to use Giorgio Agamben's words, "the ambiguity of the ban [taboo], which excludes in including, implies the ambiguity of the sacred" (77). This ambiguity surrounding taboo derives from the contradictory inclusion of the untouchable into the social, cultural system. Likewise, Nick is a type of the untouchable who hold an ambiguous position in society. He serves Pluto or plutonium, which is divine in its tremendous capacity to generate power and abominable in its capacity to bring about mass death.

It seems that part of him seeks this social identity because of a murder he committed in the past. As a minor in the Bronx, he murdered a bartender who was like a father figure to him. Being an outcast by choice, he identifies himself with the untouchable. In other words, by aligning himself with the lord of death, he is at pains to

come to terms with himself and his past. At the same time, though, another part of him relies on the dark power of Pluto to increase his own power and authority. As Graley Herren insightfully comments, “throughout his life he resorts to mythic fabrication to reconceive his relation to the real” (453). Herren stresses the way in which Nick takes advantage of “mythic fabrication” as a measure to deal with his traumatic experiences. In addition, as we see below, Nick is fully aware that the power of plutonium affects the lives of many citizens, but the problem is that his denial of the real prevents him from establishing a meaningful relationship with the very victims of radiation with whom he should identify.

### **Radiation Exposure, Evacuation, and the Return of Repressed Kazakhstan**

*Underworld* includes possible cases, including Nick, of radiation exposure. For example, critics have noted the presence of strontium in the novel (Wallace 374-75; Boxall 198)—a radioactive isotope produced by nuclear fission or as fallout of a nuclear explosion. Peter Boxall, analyzing an episode in which Nick and his brother recall their shoe shopping experience as children, hints at the bone damage Nick has suffered due to radiation exposure. He directs readers’ attention to how Nick, trying on a new pair of shoes at a store, puts his feet in an X-ray machine to see if they fit. Associating the shoes with the shoes of Kazakh radiation victims, Boxall argues that “like those of the Kazakh child, they contain radiation which, Matt [Shay] suggests, may have caused Nick himself to ‘suffer bone damage’ . . . to become another of the blind victims of the military industrial complex” (198). Certainly, Nick can be among many marginalized victims of radiation in the novel because of his possible exposure to radioactive materials. And what complicates the problem is the blindness Boxall cites, indicating that Nick cannot see his own exposure and victimization. What is worse, however, is that he lacks any concern for victims of radiation.

In *Underworld*, DeLillo describes people who have been exposed to radiation—those who are thoroughly marginalized. Nick fails to imagine those individuals mainly because, in DeLillo’s America, those who are called downwinders remain objects of paranoid rumors.<sup>4</sup> It is near the end of the narrative present, when Nick visits Kazakhstan, that he finally faces radiation victims and recognizes the devastation from which they suffer. There is, however, a foreshadowing of the event. As David Cowart observes, “The Kazakh victims of radiation figure proleptically in DeLillo’s imagined Sergei Eisenstein film *Unterwelt*, which supplies this novel’s title with one of

its important referents" (51). In an episode set in 1974, DeLillo shows *Unterwelt* as if to prepare for the upcoming traumatic encounter with radiation victims in Kazakhstan, individuals who have been foreclosed from American and international memories. The 1974 episode, focalized through Klara Sax, represents anonymous radiation victims in shadowy images to suggest a nightmarish nuclear holocaust. Those radiation victims evoke prisoners who built the city of Semipalatinsk at great cost. According to Klara, the film shows how "escaped prisoners move across flat terrain, some of them hooded, the most disfigured ones, and there are fires in the distance, the horizon line throbbing in smoke and ash" (442-43). As she notes, this disastrous scene is created with dexterous skills, developed out of the filmic technique of "typage":

The audience was stilled. You saw things differently now. If there was a politics of montage, it was more intimate here—not the themes of atomic radiation or irresponsible science and not state terror either, the independent artist who is disciplined and sovietized. These deformed faces, these were people who existed outside nationality and strict historical context. Eisenstein's method of immediate characterization, called typage, seemed self-parodied and shattered here, intentionally. Because the external features of the men and women did not tell you anything about class or social mission. They were people persecuted and altered, this was their typology—they were an inconvenient secret of the society around them. (443)

While watching the catastrophic scene, the avant-garde artist Klara is fascinated by Eisenstein's filmic technique. In Klara's mind, the montage method is "intimate" rather than political because Eisenstein could not have openly criticized state-led nuclear science, especially its disastrous outcome. Typage includes a technique of casting nonprofessional actors whose appearance expresses certain types, such as social class and profession. For example, as James Goodwin argues, there is typecasting of working-class people: "In regard to physiognomy and camera point of view, the working class is an ideal type, distinctive for its physical power, artlessness, and collective identity" (73). DeLillo's version ironically reveals how nuclear destruction and the spread of radiation affect the "persecuted and altered" or an undesirable type located outside the Soviets' social norms. In addition, the dreary scene induces Klara to wonder whether the scene was shot in Kazakhstan, where Eisenstein's magnum opus *Ivan the Terrible* was filmed. She associates the scene with Kazakhstan because it is a major nuclear weapons test

site. In a study on the legacies of Soviet nuclear testing, Susanne Bauer et al. note that “[a] total of 715 Soviet nuclear tests were carried out between 1949 and 1990, with 456 and 130 near Semipalatinsk and on Novaia Zemlia, respectively” (244). The former test site is in Kazakhstan and the latter in extreme northern Russia, an archipelago in the Arctic Ocean. Klara’s evocation of Kazakhstan, triggered by the imaginary Eisenstein film, foreshadows Nick’s truly traumatic experience in that area near the end of the narrative present.

Furthermore, as described at the beginning of the present study, the narrative present begins in the symbolic nuclear detonation site in the American Southwest. As the novel approaches its close, the narrative finally moves to the Soviet counterpart—or, to be more exact in terms of the novel’s chronology, the narrative returns to Kazakhstan because it was imagined by J. Edgar Hoover back in the 1951 prologue, when he heard about the news of the Soviets’ second atomic bomb detonation. It is a sinister vision of “a lonely tower standing on the Kazakh Test Site, the tower armed with the bomb, and ... the wind blowing across the Central Asian steppes” (50). The location, reintroduced by DeLillo near the end of the novel, assumes a different narrative role. “The wind blowing across the Central Asian steppes” not only poses a threat to America but also evokes the damage done to local downwinders. Furthermore, DeLillo calls readers’ attention to the increasing risks of nuclear waste and nuclear armament.

## **Beyond the Cold War Boundary: Challenges from the Russian Counterpart**

The Kazakhstan episode gives Nick a final test of professional responsibility. After the fall of the Berlin Wall, Nick and his colleague Brian Glassic visit their Russian counterpart Viktor Maltsev, who works for Tchaika, a waste management firm. They are surprised by Viktor’s bold plan to dispose of nuclear waste in a most violent and disturbing manner: “We try to bury it [radioactive waste]. But maybe this is not enough. That’s why we have this idea. Kill the devil. And he smiles from his steeple perch. The fusion of two streams of history, weapons and waste. We destroy contaminated nuclear waste by means of nuclear explosions” (791). This violent act of pitting nuclear power against nuclear power would disperse nuclear waste rather than dispose of it. If Tchaika “put it in the ground and vaporize it” (788), it would further harm the local population. Then, Viktor unexpectedly takes Nick and Brian to the Museum of Misshapens and to downwinders living around Semipalatinsk. The museum, resembling today’s Semei State Medical University Anatomical Museum, displays radiation victims preserved

in formalin. Trying to determine Viktor's true motive, Nick comments, "This is a man who is trying to merchandise nuclear explosions—using safer methods, no doubt—and he comes here to challenge himself perhaps, to prove to himself he is not blind to the consequences. It is the victims who are blind" (800). Viktor, however, does not have to challenge himself or prove anything to himself. What he is trying to do is reveal Nick's blindness to or ignorance of the devastating effects of radiation on humans. Unlike Nick, Viktor is fully aware of the conditions of the deformed humans in the Museum of the Misshapens and of the surviving downwinders. At the museum, Viktor guides Nick and Brian to the traumatic scene: "The fetuses, some of them, are preserved in Heinz pickle jars. There is the two-headed specimen. There is the single head that is twice the size of the body. There is the normal head that is located in the wrong place, perched on the right shoulder" (799). Here, DeLillo's repetitive use of "there is" underscores the sheer scale of devastation. Along with these displayed specimens, the Heinz pickle jars that contain them disturb readers. The act of putting the dead from a predominantly Muslim area into an American consumer object desecrates those minority victims—the untouchables killed with impunity due to the fierce arms race between the Soviets and America.

DeLillo then takes Nick and Brian to a radiation hospital in Semipalatinsk so that they can witness the conditions of life after nuclear explosions and rigorous state control over them. Nick and Brian immediately realize that the main purpose of the clinic is not medical care but research: "the bald-headed children standing along a wall in their underwear, waiting to be examined" (800). More specifically, "Their hair, nails and teeth have fallen out and they are here to be studied" (801).<sup>5</sup> This biopolitical control over bare life turns the radiation victims into mere bodies useful for data extraction. In describing the scene, DeLillo exposes how children who are biologically vulnerable to radiation are relentlessly abused as research subjects. DeLillo's effort serves a humanitarian purpose at a critical time in the history of Kazakhstan. In a broader context, Bauer et al. write: "After the independence of the Kazakhstan Republic and the official closure of the test site, the Kazakhstan government asked for assistance in the assessment and management of its nuclear legacies. The UN General Assembly adopted a resolution on Semipalatinsk at its 52nd session in December 1997, asking for the support of the international community" (250). DeLillo, in this 1997 novel, directs readers' attention to the legacies of Semipalatinsk through his radiation narrative, one that discloses the terrible suffering of Cold War enemies.

DeLillo goes even further and imagines a situation where those individuals can

be harmed by multinational waste when he describes Tchaika's scheme to make Kazakhstan a dumping ground of nuclear waste produced overseas. Regarding this bold scheme, Nick comments that Tchaika "want us to supply the most dangerous waste we can find and they will destroy it for us. Depending on degree of danger, they will charge their customers—the corporation or government or municipality—between three hundred dollars and twelve hundred dollars per kilo" (788). This disturbing plan subtly foreshadows an announcement made by Kazakhstan's national atomic company, Kazatomprom. To base the episode on historical fact, it was in 2001—four years after the publication of *Underworld*—that "Kazatomprom suggested that Kazakhstan could import foreign nuclear waste and use the income to dispose of (bury) all waste—Kazakhstan's own and imported—at once," according to a source in *World Nuclear News*. This, however, was not realized because "[p]ublic opposition muted those plans."<sup>6</sup> In DeLillo's novel, the further contamination of Kazakhstan by multinational waste is still an emergent possibility surrounded by uncertainties, but he clearly indicates how exporting nuclear waste to Tchaika damages the lives of the local Kazakhs, who have been already placed in an extremely precarious position.

Tchaika's scheme includes a more dangerous transformation of nuclear waste management: nuking nuclear waste is an act of destruction rather than management. Furthermore, it blurs the boundary between nuclear waste management and nuclear weapons testing. In fact, the Tchaika project could bring about a radical change in the role played by waste managers because they would gain the authority to deploy and use nuclear weapons. Tchaika even maintains an army, as Nick and Viktor note. Nick says, "A small private army, I hear," to which Viktor replies, "Also intelligence unit. To protect our assets" and to "scare the hell out of the competition" (790). The excessive militarization of the organization poses a threat that is further complicated by the shady individuals and groups around Tchaika. Viktor coyly hints at their motives and practices: "There are geologists and game theorists and energy experts and a journalist with a book contract. I see waste traders and venture capitalists, piroshki and skewered lamb. There are arms dealers looking to make bids, Viktor says, on the idle inventory of weapons-grade plutonium floating at the fringes of the industry" (794). The implication is that such a shady, ad hoc network could lose control over nuclear materials. Due to the expanding access to nuclear materials, the risk of nuclear destruction increases.

In reality, nuclear threats dangerously increased in Semipalatinsk after the dissolution of the Soviet Union. To put a stop to it, scientists from Russia, Kazakhstan, and the United States joined forces to contain nuclear materials in the area. According

to Eben Harrell and David E. Hoffman, "It began in 1995, after the collapse of the Soviet Union, when experts from the Los Alamos National Laboratory were told during a visit to Kazakhstan that plutonium residue in recoverable form was likely to have been abandoned at the test site" (1).<sup>7</sup> In a vacuum of authority, plutonium was available for use by formerly unauthorized individuals and groups, and that is the situation DeLillo underscores in this episode. The cooperative efforts to contain nuclear materials was completed in 2012, but with *Underworld* published in 1997, DeLillo is unable to address that cooperation.

It is no wonder, then, that Nick is incapable of coping with the emergent threat posed by uncontrolled nuclear materials; the problem is that Nick's time in Kazakhstan does not inspire him professionally. That experience should have provided him with a crucial lesson about nuclear waste management. The Kazakh episode is followed by one that includes Nick's defeatist musing about nuclear waste management, which is analyzed at the beginning of the present study. To return to the disturbing musing, Nick ponders "the bunker system under a mountain in Nevada that will or will not accommodate thousands of steel canisters of radioactive waste for ten thousand years. Then we [Nick and his wife Marian] eat lunch. The waste may or may not explode, seventy thousand tons of spent fuel" (804). This fatalistic moment reveals Nick's state of mind as an executive waste manager near the end of the narrative present. He seems helpless after witnessing the tremendous power of radiation in Kazakhstan, and what is worse is his indifference to the effects of nuclear explosions on humans and the natural world.

Throughout the novel, Nick has not been able to develop mature views on nuclear waste management. Critiquing the professional ethics that Nick believes are fully grounded in solid reality, Randy Laist comments that "Nick's boast that he lives 'responsibly in the real' represents an evasion of certain new kinds of reality such as nuclear radiation and genetic pollution which elude conventional empirical definitions of what constitutes 'reality'" (141). To be sure, Nick has struggled to anchor his life in the real by shaping his career in waste management, but he has failed to recognize the larger implications of his job, especially his responsibility to protect life from radiation. The real that Nick has been evading is exemplified by the suffering of the Kazakh victims. This evasion also induces him to give in to the claustrophobic musing in which he nonchalantly waits for a nuclear apocalypse. Ultimately, he cannot think or act responsibly for the victims of radiation, those who are abused by a system that prioritizes the maximization of nuclear power.

DeLillo critically exposes the underside of that system when he powerfully describes the extremely difficult lives of vulnerable people, lives that are sustained in precarious ways after a series of nuclear explosions and repeated exposure to radiation. By crossing the Cold War boundary between the United States and the Soviet Union and imagining those who have been severely damaged by the nuclear arms race, DeLillo incorporates the radiation narrative about enemy aliens into the national narrative of Cold War America. DeLillo, however, does not fully address American downwinders, though he sporadically has his characters discuss rumors about them. His reticence creates a blind spot in his radiation narratives and thus contributes to the hollowness lying at the heart of Nick as a waste manager. As the beginning of this paper shows, DeLillo starts the narrative present in a contradictory manner by juxtaposing Klara Sax's claim on the mastery of nuclear technology with Nick's fear of radiation. Nick's worst fear is not realized in America but in the land of its Cold War enemy. By describing the American and Russian waste managers working together in Kazakhstan and by learning from the Kazakh situation about the long-term effects of radiation, DeLillo underscores the urgent need for cross-national cooperation in addressing nuclear crises that manifest in different ways after the dissolution of the Soviet Union.

## Notes

- <sup>1</sup> The documentary film *Into Eternity* (2010) was directed by the Danish film-maker Michael Madsen. Onkalo is a waste storage facility located at the Olkiluoto Nuclear Power Plant on the island of Olkiluoto, Finland.
- <sup>2</sup> To locate Stoekl's argument in the history of nuclear criticism, one must note that he develops his critique of apocalyptic claustrophobia based on Frances Ferguson's early critique of the nuclear sublime. In her 1984 article, Ferguson remarks that "the notion of the sublime is continuous with the notion of nuclear holocaust: to think the sublime would be to think the unthinkable and to exist in one's own nonexistence" (7).
- <sup>3</sup> Douglas's concept of "ambiguity" between the clean and the unclean, the sacred and the profane, is grounded in her analysis of the cultural construction of classification systems: "Dirt is the byproduct of a systematic ordering and classification of matter, in so far as ordering involves rejecting inappropriate elements. This idea of dirt takes us straight into the field of symbolism and promises a link-up with more obviously symbolic systems of purity" (44). Exploring such ambiguities in the realms of myth, religion, and hygiene, she reveals various forms of ambiguity in the



construction of orderly, pure systems.

<sup>4</sup> That there are only rumors among the characters is partly due to their inability to access such information. It was not until the mid-1990s that official investigations into human radiation experiments in the United States began. In 1994, President Clinton created the Advisory Committee on Human Radiation Experiments and directed it to investigate human experiments.

<sup>5</sup> The hospital is reminiscent of the Dispanser No. 4, a Semipalatinsk medical facility established in 1957 for the study of radiation effects on humans: "This Dispanser No. 4—often code-named 'brucellosis hospital'—was specialized in oncology and radiation medicine. Its main tasks included radiation monitoring, assessment of the health impact due to fallout, and medical follow-up of the population living in areas affected by fallout" (Bauer et al. 246).

<sup>6</sup> There is another significant reason why the plans were finally aborted. "When Kazakhstan signed the agreement on establishing a nuclear-weapon-free zone in Central Asia in 2006, it accepted an obligation not to import foreign nuclear waste" ("Kazakhstan's").

<sup>7</sup> To provide greater detail, I quote further from Harrell and Hoffman, who note that in 1997,

Siegfried S. Hecker, just retiring as director of Los Alamos, decided to look more closely. Hecker, who helped pioneer cooperation with his counterparts in the Soviet and later Russian nuclear weapons laboratories, used personal connections to push for action. . . . Scientists and engineers from the United States, Russia, and Kazakhstan overcame deep-rooted suspicions in their governments to find technical solutions to the plutonium threat at Degelen Mountain. . . . The operation took 17 years to complete, a period in history that saw the rise of al-Qaeda and its nuclear ambitions, the 9/11 attacks, and spanned three different U.S. administrations, the latter two of which proclaimed nuclear terrorism the greatest threat to U.S. security and spent billions of dollars to prevent it. (2)

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