Radioactive Knowledge: State Control of Scientific Information in Post-Soviet Kazakhstan

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RADIOACTIVE KNOWLEDGE:
STATE CONTROL OF SCIENTIFIC INFORMATION IN POST-SOVIET KAZAKHSTAN

by

MAGDALENA EDYTA STAWKOWSKI

B.A., University of Delaware, 2003
M.A., University of Colorado, 2007

A thesis submitted to the
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This thesis entitled:
Radioactive Knowledge: State Control of Scientific Information in Post-Soviet Kazakhstan
written by Magdalena Edyta Stawkowski
has been approved for the Department of Anthropology

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Date_________________

The final copy of this thesis has been examined by the signatories, and we
Find that both the content and the form meet acceptable presentation standards
Of scholarly work in the above mentioned discipline.

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Radioactive Knowledge: State Control of Scientific Information in Post-Soviet Kazakhstan  
Thesis directed by Associate Professor Donna M. Goldstein

Drawing on sixteen months of fieldwork in the Semipalatinsk Nuclear Test Site region in Kazakhstan, this ethnography is an account of the local understandings of health, livelihood, and suffering among rural Kazakh communities. Using the 1949-1989 Soviet atomic testing program as a historical backdrop, my research is situated in histories of overlapping regimes, episodes of heightened secrecy, disinformation campaigns, as well as Kazakhstan’s contemporary nationalist ambitions to become a leader in the global energy market. In ‘Radioactive Knowledge’, I trace the lesser-known history of the Soviet nuclear program from the perspective of people who were most affected by its military-industrial complex, exploring how they cope with their own present-day nuclear challenges.
Acknowledgments

My deepest gratitude goes to the people of Koyan who took me in and shared their lives with me under some of the most difficult circumstances. By participating in their daily life, I learned what it means to persevere in the face of a catastrophe and to discover joy in life, even if it is found on a nuclear test site. Without their kindness and wisdom that kept me out of harm’s way on the Kazakh steppe, this research would most certainly not be possible. Although the majority of names and places have been changed, I would like to thank the countless numbers of friends and colleagues living in the nuclear test site villages and in the cities of Kurchatov, Karaganda, Semey, Pavlodar, Astana, and Almaty who took the time out of their busy lives to share their thoughts with me about Kazakhstan and its people, both informally and in individual interviews. I want them to know that their stories have made a permanent imprint on my life.

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aul—a mobile traditional ethnic Kazakh unit
chaban—herder
Gulag—Soviet era forced labor camp
IAEA—International Atomic Energy Agency
kolkhoz—farming cooperatives operated by peasant families
kommersant—trader or seller of goods
komsomol—All-Union Leninist Young Communist League
kulak—rich peasant
NKVD—The People’s Commissariat of Internal Affairs or Soviet secret police
NNC—National Nuclear Center of the Republic of Kazakhstan
oblast—an administrative region
Polygon—local name for the Semipalatinsk Nuclear Test Site
produkty—reference to commercially bought merchandise
sovkhоз—farming cooperatives operated by the state
zimovka—winter farm
CHAPTER I

Introduction

The Polygon is the only place on earth where people actually live on a nuclear test site (Igor, founder of an environmental Non-Governmental Organization (NGO) in Kazakhstan, interview, 2010)

If you are traveling in a car behind another vehicle, keep such a distance, so as to avoid getting covered in dust (Advice to drivers on how to travel safely through the Semipalatinsk Nuclear Test Site in Kazakhstan, “Advice to Drivers, Passengers, and All, All, All!!!”)

Overture

“We are living in the 15th century. Look at this place. It’s a dump; everything is falling apart. And there is radiation here too, but that’s the least of our problems.” That was Burkut ruminating to me as we sat upon a large tractor tire on top of a hill peering down to the small village and the grasslands of the Semipalatinsk Nuclear Test Site where he lives. I first met Burkut in 2010 in north central Kazakhstan sitting on top of that same tractor tire in his rural settlement, Koyan.1 Over the next couple of years, I often joined him there for a late afternoon conversation. Though he was eighty years old, he frequently and vividly recalled Koyan’s better days. “We had jobs, paid vacations. You could even buy bicycles at the corner store. Lots of people used to live here and there was even bus service! Since people moved away, everything fell apart. Now, Koyan is a ruin,” he said.

It was actually difficult for me to imagine Koyan’s better days, given that the houses where people lived were in such poor shape and the remaining buildings were abandoned. At its worst, only concrete foundations and crumbling walls were left, suggesting where activities of the past used to occur. I remember thinking: why stay in this rundown, isolated village? There are no jobs here, no food stores, and most of all there is radiation. How can radiation possibly be

1 Following the American Anthropological Association’s “Code of Ethics,” all names of individuals, places, and locations have been changed to protect the identities of all residents of villages located near the nuclear test site, as well as those who work there. All other place, individual, and location names remain unchanged.
the least of anyone’s problems? Even though today Koyan is in disrepair and life there is increasingly fraught with difficulties, like everyone else in the village, Burkut cannot leave due to the simple fact that there is nowhere else to go.

Despite Koyan’s small size its history is linked to Soviet projects that were quite monumental. Founded in the 1930s, Koyan was developed in the 1950s as part of a Soviet campaign to transform the region into an agricultural industrial complex for livestock breeding and wheat harvesting. By the late 1940s onward, it was also located walking distance from the official border of Soviet era nuclear proving grounds. It was then that the Soviet military took away the treeless, hilly grassland bordering Koyan and turned it into an experimental atomic landscape upon which hundreds of nuclear weapons were detonated. It was at the juncture of agriculture and weapons testing that all villages in the area, and certainly those contiguous with the nearly seven thousand square mile test site, were brought into a top-secret military zone.

Within this geographic space, men and women raised thousands of animals (sheep, goats, cows, and horses) and grew crops; children went to school; and Soviet scientists tested some of the world’s most powerful nuclear weapons. Yet people in Koyan coexisted with the nuclear bomb for forty years, leading seemingly ordinary lives and unaware of the dangers. Soviet authorities made sure that local residents were kept ignorant of the nature of the explosions and thus did not connect the radioactive plumes periodically travelling overhead to ill health and a poisoned environment. As one might suppose, what went on here was a highly classified state secret. It was only when the Soviet Union collapsed that the legacies of nuclear testing were declassified and then became known to Koyan residents and the countless other victims of the Soviet era nuclear testing.
The Semipalatinsk Nuclear Test Site reveals a great deal about the Soviet Union’s relationship to Central Asia, particularly how cultural spaces were conceptualized. In this Cold War setting, the Soviet military used the region to communicate its burgeoning nuclear might to the West. The land, however, is historically Kazakh—also known, mapped, and communicated internally as a cultural space outside of Soviet history. Consequently, the period of nuclear testing produced a contested space within Kazakhstan, demonstrating some of the most startling complexities of the post-Soviet epoch in Eurasia.

I began working with the residents of Koyan at the end of September 2010. At the time, I had already visited Kazakhstan twice—once for three months in summer 2007 and then for additional two months in summer 2009. Initially, I was studying the Polish diaspora exiled to the region in the 1930s and early 1940s by the Soviet leader Joseph Stalin. During World War II, my family was also exiled to northern Kazakhstan. Unlike many of those who perished from hunger, disease, or cold in the desolate Kazakh steppe, my family was lucky enough to survive five years of exile. And, with an exception of a distant uncle, all were able to return to Poland at the end of the war. Today, there are some sixty thousand self-identified Poles living in Kazakhstan. They are the children and grandchildren of the Soviet era deportees. Many of them want to return to their homeland, despite Poland’s government reluctance to help them. I wanted to understand what compels the Poles of Kazakhstan to retain their sense of ethnic identity, given the severe pressures (especially during the Soviet period) to assimilate.

Yet in 2007, when conducting some initial fieldwork, I had a chance meeting with Igor, a founder and director of a Non-Governmental Organization (NGO) in Kazakhstan developing programs that address the Soviet legacy of toxic pollution in the country.² This is when I learned

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² I chose to keep the name of the NGO anonymous to protect the identity of individuals who work with populations living on the Polygon.
of the *Polygon*, a colloquial name for the Semipalatinsk Nuclear Test Site, and this is when I decided to change my research focus. “The Polygon is the only place on earth where people actually live on a nuclear test site. Nowhere else in the world does this happen,” he said. “Our NGO tried to force the government to move some of the villages away from the test site, or at minimum, secure radioactive areas. Nothing was done. No one cares,” Igor continued. As it turns out, the Semipalatinsk Nuclear Test Site is perhaps one of the largest terrestrial nuclear research complexes in the world, the only site of this kind where people live next to craters produced by underground nuclear explosions, travel freely through some of the most radioactive areas on the planet, and work in mines operating on the test site territory.

Igor’s NGO has been working in the area since the mid-1990s. I would later learn, however, that the NGO’s efforts to secure the test site were met with resistance from Kazakhstan’s government officials and ultimately proved to be futile. Given the scale of the Polygon, safeguarding the entire nuclear test site is an impossible feat, a point made by government representatives I interviewed as well. Thus, the NGO’s solution to this problem was a series of informative pamphlets on how to safely travel through radioactive land. One of these pamphlets titled “Advice for Drivers, Passengers, and to Everyone, Everyone, Everyone!!!” gives tips on how to avoid inhaling radioactive dust. It urges drivers to keep away from dust plumes, from fixing broken down vehicles, or picnicking on the Polygon. Other pamphlets advise against eating animals grazing on the Polygon, drinking cows’ milk from the area, hunting, gathering hay, collecting metal, drinking stream water, or swimming in lakes. None of these suggestions, however, proved to be practical for the people who depend on the test site for their survival.
This chance meeting with Igor and my “discovery” of the Polygon coincided with a broader interest of mine in Cold War era nuclear legacies, an interest that stemmed from my own experience of the Chernobyl disaster in Ukraine and its effects on the health of people living in Poland. In this way, what occurred in Kazakhstan resonated with what I knew of the Chernobyl disaster. Many of my friends and extended family in Poland, for example, have come to attribute some of their illnesses—thyroid and renal cancers—to radioactive exposure. Whether this is the case remains a controversial topic and one that my work as a medical anthropologist ultimately engages with.
Arrival

In summer 2009, I returned to Kazakhstan for preliminary work. Initially, I wasn’t planning to work in Koyan. I didn’t even know it existed, since this village, like many other small settlements around the nuclear test site, was not found on any available area map. Scientific peer-reviewed articles, too, never mentioned Koyan. As it turns out, most local and international geneticists, radio-ecologists, medical doctors, and NGOs working on the Polygon conduct research in the larger rural settlements, often building on earlier studies described by Soviet era scientists. For my proposed research, I too wanted to live in the same places studied by other researchers—the only ones I thought existed—to document how poor and marginalized people deal with the Soviet era nuclear legacies. I had in mind an ambitious project: one year divided equally among three separate villages located on the Polygon, followed by work with local NGOs, government officials, and local scientists. Looking back, this research plan was, in all practicality, impossible. Not familiar with the harsh continental climate characterizing much of Central Asia—where winter temperatures dip as low as minus forty degrees Fahrenheit—ignorant of the fact that roads are few and completely impassable for much of the year, and unaware that public transportation is nonexistent in this corner of Kazakhstan, my initial research idea was doomed from the start.

When I arrived that August in 2010, together with my U.S. colleague who was also conducting research in Kazakhstan, Igor became my expert guide for conducting research on the Polygon. Having nearly two decades of experience working in the region, Igor knew how to safely navigate the radioactive territory. I shared my project designs with him when we met in his Karaganda office. Instead of commending my efforts, Igor laughed at my obviously naïve proposal and insisted I reconsider the structure of my project. “Look. You can’t do this work.
Three villages? Have you thought about the winter? How are you going to get there? How are you going to move about? It’s impossible. You will need a phenomenal amount of funding for this sort of a project. One year is simply not enough,” he said. Pulling out a large Polygon map, he explained:

You see these roads here? They don’t exist. We just put them on the map because we know people travel through the Polygon on makeshift dirt roads. This is a wide-open territory, grassland, dotted by tiny villages where there is no electricity or phone. It’s easy to get lost. People always get lost—even those who live there for generations. But you can certainly do research in this one village. I’ve done a project there once. It’s one of the more isolated places, hard to get to, and least visited by scientists. It’s called Koyan and you must go there. You will see what it really means to live on the Polygon. It is a desolate village, a place where people live on the nuclear test site. You don’t need to be going where everyone else already went, especially since most of the people in those villages no longer want to work with researchers, especially the foreigners; they feel exploited enough. I am not saying you will exploit them too, but I don’t know of any anthropologists who worked in this region. All those other researchers usually conduct scientific studies—they use these people as experimental rabbits, collect their blood, without providing any other support. If you go to Koyan, at least we will know where to find you if something goes wrong. It’s going to be difficult to live there. So you will need a car, preferably a diesel jeep type vehicle, extra gas canisters, a diesel fuel blowtorch, shovels, ropes, two spare tires, an air pump, a satellite phone, GPS, sleeping bags, water, and a medical emergency kit. (Interview 2010, translated from Russian by the author)

As Igor continued to explain what I would need to survive on the Polygon, I began to wonder if, perhaps, I made a mistake. Could I really do this project? Did I really want to live in an isolated village on a nuclear test site? I couldn’t imagine why I would need a diesel blowtorch. Is he exaggerating? I had spent childhood summers at my grandparents’ home in a small village in Poland and visited plenty of rural settlements in Kazakhstan. I thought I knew rural life. But none of this prepared me for the isolation of Koyan. Even though I would later learn of Igor’s tendency to inaccurately paint the Polygon as being inhabited by friendly but primitive natives living without modern technologies, he was mostly right about the supplies.
All of September I spent preparing for my departure. Although I initially insisted on not buying a car, but rather, being simply dropped off in Koyan to live like everyone else, Igor thankfully convinced me to do otherwise. In time, together with the NGO, we pooled money and bought a blue Mitsubishi Delica van. It was already six years old and it looked like a mail delivery vehicle, with a perilous right side steering wheel, automatic transmission, and what would quickly become apparent: a non-functional four-wheel drive and a damaged engine block. Officially the Delica belonged to the NGO, but was mine for the duration of fieldwork and whenever I returned to Kazakhstan. It took nearly a month to register and insure it, as well as to translate my driver’s license from English to Russian and Kazakh—requiring several trips to a notary. For over three weeks, I visited seemingly countless offices, asked for countless stamps, and learned to navigate the Kazakhstan bureaucracy, waiting my turn in a specifically Kazakh fashion, that is, by remembering who was ahead and behind me. Taking care of the car seemed like a Sisyphean task; the paper work was endless, as if to make a point of its importance. After a while, I began to think of government officials as trained in psychological abuse. Igor insisted I would get used to Kazakhstan’s unwieldy bureaucracy, or what he referred to as durokratsiiia (roughly meaning “idiocracy,” a pun on the Russian biurokratsiiia, or bureaucracy). In time, indeed I did.

By the end of September I was finally ready to go. The car was packed with two twenty-liter canisters of diesel, two spare tires, two shovels, rope, a barely functioning car jack, sleeping bags, motor oil, transmission fluid, four large water jugs, sanitary masks, rubber boots and gloves, a Geiger counter, a non-working satellite phone, non-perishable food items, and the diesel blowtorch. The latter would eventually be used to heat the Delica’s engine oil when temperatures dipped to well below zero and the car wouldn’t start. My U.S. colleague and I left
early that morning. The first four hours we spent travelling on asphalt roads, through Kazakhstan’s countryside and economically depressed former Soviet collective farms. What quickly became apparent is that the further we drove away from the city, the poorer the settlements became. The asphalt roads were washed out, road signs either missing or incorrect, stores and gas stations and available goods became sparse. In time I would learn that in these areas of Kazakhstan it is necessary to become self-sufficient. Thus we began to collect things that would be of later use. These items included discarded pieces of wood eventually used to elevate the tire jack or as heating fuel, a three hundred pound slab of concrete placed in the back of the car for extra traction, a metal wire used to tie down the hatch (that would break in time), and so on. In other words, what I once saw as junk became valuable tools and commodities in Kazakhstan.

After four hours, the asphalt road ended and was replaced by a grated one. Horribly potholed and no longer maintained, it took nearly two hours (where it should have taken one hour) to traverse the sixty-kilometer stretch to reach the border of the Polygon. The grated road ended too, giving way to an open steppe, crisscrossed by makeshift dirt roads like the ones Igor warned me about. Koyan was still more than an hour away and getting there without a guide was impossible; there were no signs and one simply was expected to know the area. Igor had arranged for someone from one of the small settlements to meet us along the way. We made the acquaintance of the escort (the local mayor and assistant) just as we were stuck on the grated road changing the first flat tire of the season (there would be more than twenty such repairs done throughout my fieldwork). Two hours later, we followed them through the fields toward Koyan. For some time, the path snaked along old telephone poles, then away from them, passing over hilly terrain. It took us across three seasonal streams, fields of grass, and formidable bogs of
mud. We passed a couple of dilapidated cemeteries and abandoned buildings before the village finally appeared. It would take more than a couple of trips to remember my way through what seemed at the time to be most empty steppe in Kazakhstan.

Upon arrival, we were greeted by the host family: Tursynbek and his wife Altynaï, both in their late 50s, their son, daughter in-law, and two grandchildren. Our new home was a separate apartment attached to the main house. It consisted of four rooms, a stove, a rusted bed frame, and a shelf. Many of the windows were cracked or missing glass altogether. The floorboards were warped, widely spaced, or completely absent—letting the field mice come and go as they pleased (a problem I solved by getting a cat). For a week, there was no electricity until Tursynbek and his friends ran a cable from the outside to a single light bulb inside. In all, only the room with the stove was habitable. I remember seriously considering going home and quitting the Ph.D. program altogether. I gave myself a week to decide. As this work will attest, however, I became quite fond of this little room, the steppe roads, Koyan, and its residents.

Igor was right. Koyan is one of the more isolated villages on the Polygon, a place where people appear to be excluded from the economic life of Kazakhstan. For the most part, people here have come to accept their radioactive environment even though many suffer from illnesses they link to radiation exposure. Most of the fifty residents in Koyan and three hundred more in a nearby village live in poverty. And most have no access to even the most basic resources or social services. In these settlements, it seems, the state is no longer responsible for peoples’ lives. One might even get the impression that there is no state, or if there is, Koyan is outside of it. For instance, there is no medical clinic, store, school, or public transportation. Only one of the three cars in the village runs well enough to travel across the steppe, but unfortunately its
owner frequently refuses to take passengers. Some people walk long distances to get a ride or wait patiently for one to appear.

Igor estimates that anywhere between 20 and 40 thousand people live near the Polygon. Most of them live in poverty and make use of the polluted territory. While in many ways representative of all settlements found in the Polygon region, Koyan is distinct in some regards. Most of its residents, for example, make a living from subsistence animal breeding, raising cows, horses, sheep, and goats. Moreover, unlike larger Polygon villages, Koyan is completely isolated during winter months and early spring—the only way out is on foot or by horse. Getting stuck is common, as I discovered many times trying to use roads that deceived the eye by appearing to be dry. The village is also one of a handful of settlements located in close proximity to former experimental fields that are highly radioactive, yet officially it is considered one of the less polluted. Taking the differences and similarities together, Koyan is in fact part of a larger history of the region. In many ways, then, it is not entirely unique. What one can glean from the village is a glimpse of life among people most affected by the Soviet military-industrial nuclear complex.

**Context and Aims of the Project**

With the destruction of the Japanese cities of Hiroshima and Nagasaki in 1945, the images of nuclear destruction and Armageddon entered public imagination. Documentary film footage of the bombings showed the devastating nature of atomic destruction turning the mushroom cloud into an iconic image of the awesome power unleashed by the atom. Science-fiction films and comic books began to feature super-human mutants (the Incredible Hulk, Spider-Man, and the Fantastic Four, for example) who got their superpowers from radiation exposure. Yet despite the fact that U.S. American anthropology was also shaped by the nuclear
age, the human effects of nuclear weapons testing were seldom the topic of ethnographic
inquiry. This early ethnographic silence is surprising given that the United States government
allocated staggering amounts of human and economic capital toward the development of the
bomb. Since the early 1940s, for example, the United States spent $5.5 trillion on programs
related to nuclear weapons development, or what amounts to $21,646 per U.S. citizen by the
mid-1990s (Schwartz 1998). No one really knows what this cost was in the Soviet Union.

When anthropologists (and those sympathetic to the anthropological approach) eventually
set out to write about nuclear weapons, mostly in the early 1990s, they focused their research on
the human cost of nuclear weapons development and the resulting environmental degradation by
emphasizing the plight of communities, risk perception analysis, and the culture of nuclear
weapons laboratories/production facilities (Ackland 1999; Alcalay 1992; Barker 1997, 2004,

Barbara Rose Johnston (1994, 2007), for example, reveals the devastating health effects
of communities that hosted nuclear weapons development and who participated, often
unknowingly, in secret human radiation experiments. Even though the Cold War has ended,
Johnston makes a point in showing that the nuclear program, including uranium mining and
processing, development of nuclear weapons, and their testing, has created “radiogenic

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3 This may seem surprising since many of the canonical ethnographies come from the Pacific Islands, a
region overwhelmingly shaped by the U.S. and French nuclear weapons testing. Some 3 million square miles
(almost the size of the United States) of Pacific territory was militarized and many people were dislocated as a result
(Kiste 1974). Robert Kiste’s (1974) ethnography The Bikinians: A Study in Forced Migration focused on the effects
of forced resettlement on Pacific island populations and is one of the earliest studies conducted on the social
consequences of nuclear testing.
communities” that bear the brunt of radioactive pollution. These communities, Johnston shows, suffer from increased rates of cancers or other debilitating diseases and decreased life span. Holly Barker (1997, 2003) sets out to “play a critical role in witnessing and documenting human environmental rights abuses” among the Marshall Islanders (2003:138). Specifically, Barker explores the sociocultural context of nuclear environmental disasters, focusing on the nuclear history as it is told from the perspective of the Marshall Islanders. She also shows how the U.S. government avoids responsibility for the continuing health and environmental problems. Joseph Masco (2006) examines multiple legacies of the atomic project in New Mexico demonstrating how they interact on the local, national, and global level. Specifically, Masco explores the shifting perceptions of radioactive environments themselves, including the human body.

Although in the United States environmental contamination and the plight of communities are generally well documented, in the Soviet context this literature is mostly lacking. In anthropology, for example, there are only a small number of studies dealing specifically with the subject of Soviet era nuclear legacies and their human and environmental costs. The majority of existing studies focus primarily on Russia and Ukraine (Garb 1997; Garb and Komarova 1999; Petryna 2002). Paula Garb and Galina Komarova (1999) for example, examine the history of environmental activism in Chelyabinsk, Russia, a major nuclear industrial complex and home to the Mayak plutonium reprocessing plant, the largest nuclear facility in the country. Since Mayak’s inception in 1948, a number of large scale accidents contaminated the area where over half a million people were exposed to radiation that was at least twenty times

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4 Only with the fall of the Soviet Union were non-local scholars allowed to conduct nuclear related research in the area. Although most studies focus on Russia, anthropologist Cynthia Werner (2007, 2013) is one of the few people to write about the plight of communities affected by the Semipalatinsk Nuclear Test Site in Kazakhstan. In addition to the studies on the Soviet nuclear legacy mentioned above, the following groups and authors have also produced policy-oriented analyses on nuclear contamination in the post-Soviet context: Feshbach and Friendly 1992, Leeuwen 1995, Warner and Kirchmann 2000.
higher than the Chernobyl disaster (Garb 1997; Larin 1999). Garb and Komarova (1999) investigate how Russian activists forced their governments to address environmental and social problems associated with nuclear weapons manufacturing.

In the Ukrainian context, Adriana Petryna’s (2002) *Life Exposed: Biological Citizens after Chernobyl* explores the political economy of Chernobyl-related illnesses. She shows how the dismantling of the Soviet command economy and harsh market transition created a paradoxical social formation where “the damaged biology of a population has become the grounds for social membership and the basis for staking citizenship claims” (Petryna 2002:5). Petryna’s case study offers a useful context for Kazakhstan where the ability of the Polygon communities to confront and understand their past, present, and future is constrained by their access to information and limited power in decision-making processes. Outside of Russia and Ukraine, Sharon Stephens (1995) examines the impact of the Chernobyl disaster on children in the Norwegian Sami regions. As for Kazakhstan specifically, the only anthropological studies are by Cynthia Werner and Kathleen Purvis-Roberts (2007) who examine “risk perception,” or people’s subjective understanding of risk informed by their social context, at the Semipalatinsk Nuclear Test Site.

My work is also an ethnographic account of the legacies of the Soviet atomic bomb project in Kazakhstan, their disastrous health effects and the formation of a nuclear landscape. Here, I aim to understand the lesser-known history of the Soviet nuclear program from the perspective of people who were most affected by its military-industrial complex, exploring how they cope with their own present-day nuclear challenges in a complicated arena of global nuclear weapons proliferation. I document how present-day regional, political, and economic developments of the nuclear test site produced, in tandem, specific material realities that
structure human experience in the region. Indirectly, my work also speaks to current debates about human radiation exposure such as that which occurred in 2011 in Fukushima, Japan.

Drawing on a total of 16 months of fieldwork in the Semipalatinsk Nuclear Test Site region, I examine local understandings of health, livelihood, and suffering among rural Kazakh communities. Using the 1949-1989 Soviet atomic testing program as a historical backdrop, my research is situated in histories of overlapping regimes, episodes of heightened secrecy, disinformation campaigns, as well as Kazakhstan’s contemporary nationalist ambitions to become a leader in the global energy market. In this dissertation, I ask three interrelated research questions: (1) How do Kazakh villagers envision themselves in a post-Soviet, post-nuclear, free-market social order? (2) How do the consequences of radiation, human survival, and anxieties about low-dose exposure operate in contemporary Kazakhstan? and (3) How do scientific debates about the effects of low-dose radiation exposure inform biological conceptions of the body in the post-Soviet context?

To address these questions my conceptual framework is primarily influenced by political economy perspectives in critical medical anthropology, proposing an approach that recognizes the importance of addressing marginalized communities within the broader socio-economic dynamics (Scheper-Hughes and Lock 1987; Goldstein 2003; Petryna, Lakoff and Kleinman 2007). Research in anthropology on the relationship between health and socioeconomic inequalities between countries, international policy, and along ethnic lines has shown how different institutions influence socio-cultural identities of marginalized populations (Farmer 2004; Petryna, Lakoff and Kleinman 2007). Competing claims to ‘truth’ raise questions about how local interpretations and actions are influenced by state and international level policy decisions (Das 1999). In the post-9/11 world where the emergence of the security state is
coupled with the renaissance of nuclear power, anthropologists can shed light on the emergent social, political, and economic configurations. My research attempts to make sense of these dynamic tensions and frictions between state-sponsored agendas and demands made by communities that suffered because of nuclear testing.

Intellectually, I am inspired by theoretical work in critical medical anthropology and its approach to health. As such, I strive to engage with the scholarship of João Biehl, Donna Goldstein, Paul Farmer, Joseph Masco, and Nancy Scheper-Hughes, among others, in revealing how human lives are made, unmade, and then remade under dramatic social, political, and economic pressures. Relatedly, I engage and expand on the work of Adriana Petryna (2002) by contextualizing how abrupt market transitions and scientific knowledge influence everyday survival in Kazakhstan’s nuclear zone. Unlike Petryna’s research, however, my work reveals that the Polygon residents ‘embrace’ radiation as a sign of genetic resilience, rather than accentuating illness to access state resources. This dissertation thus offers a necessary historized view of the complex web of political, economic, scientific, and social dynamics that enable the human inhabitation of a radioactive landscape. In order to offer this new perspective, the following ethnographic account is organized as follows.

In Chapter two, titled, *From Nomads to Soviet Citizens: Koyan’s Narrative History*, I describe the historical background of Koyan by outlining locally significant narrative history. First, I discuss Koyan’s pre-Soviet era focusing on the Kazakh nomadic existence and the Russian colonial expansion into the region. Making use of archival materials, primary and secondary sources, as well as in-depth interviews, I then describe a series of life-altering Soviet modernizations projects, paying special attention to the First Five-Year Plan (1928) and the resulting famine, the development of atomic weapons, and finally, the Virgin Lands Project and
with it the development of agro-industry in the Polygon region. The goal of this chapter is to provide the reader with a sense of Kazakhstan’s particular history, that is, a context-specific vantage point from which to understand the ways in which individuals and their families in Koyan navigate the post-Soviet social order.

In Chapter three, titled, “Sami po Sebye”: Kazakhstan’s Neoliberal Economic Reforms through Dispossession, I examine the social effects of rapid economic restructuring programs following the wholesale dismantling of the Soviet command economy that have come to transform the social, political, and economic orders in Kazakhstan. Specifically, I explain a paradox: how Koyan residents have come to support plans for the economic development of the Semipalatinsk Nuclear Test Site, despite the increased risk of further radiation exposure. More broadly, I detail how poor and marginalized people of the Polygon navigate the collapse of the Soviet system by focusing on Kazakhstan’s independence, the rise of Kazakh ethno-nationalism, and the implementation of neoliberal restructuring programs.

In Chapter four, titled, “I am a Radioactive Mutant”: Mutant Biologies and Subjectivity in Post-Cold War Kazakhstan, I show how scientific authority over the biological effects of low-dose radiation exposure, coupled with Kazakhstan’s aforementioned economic restructuring programs, led to the socio-economic marginalization of the test site’s inhabitants. Specifically, I examine how Kazakhstan’s visions of socioeconomic development have produced a unique post-socialist subjectivity in the nuclear zone—one that has fostered rural populations who have come to “embrace” radioactive pollution. As recent anthropological texts argue, history, the medico-scientific productions of facts, and various techno-medical interventions have often come to define and shape the relationship between body and subjectivity (Biehl, Good, Kleinman 2007; Dumit 2004, 2012). Anthropological investigations of emergent subjectivities within
communities that have survived the nuclear era in damaged environments are essential for understanding the politics of health, social marginalization, and market transformations. Tragically, as I explain in this chapter, the people I work with have come to see their own survival as proof of biological adaptation to a radioactive ecosystem.

I conclude this ethnographic account by summarizing how present-day regional, political, and economic developments of the nuclear test site produce, in tandem, specific material realities that structure human experience in the region.
CHAPTER II

From Nomads to Soviet Citizens: Koyan’s Narrative History

Ата бабаларымдың аруақтары сендерді қолдан жәүрсің
Release the souls of my ancestors so that they may be able to help you (Kazakh Proverb)

We say: our aim is to achieve a socialist system of society, which, by eliminating the division of mankind into classes, by eliminating all exploitation of man by man and nation by nation, will inevitably eliminate the very possibility of war (Vladimir Iliich Lenin, 1917)

We must show the peasants that the organization of industry on the basis of modern, advanced technology, on electrification, which will provide a link between town and country, will put an end to the division between town and country, will make it possible to raise the level of culture in the countryside and to overcome, even in the most remote corners of land, backwardness, ignorance, poverty, disease, and barbarism (Vladimir Iliich Lenin, 1920)

Introduction

On a nearly treeless Kazakh steppe, the village of Koyan (like many other settlements) is located less than seventy kilometers from the epicenter of Soviet nuclear testing, or ground zero. There, people go about their daily lives, grazing animals on the nutrient rich but radioactive pastures. Early every morning, a chaban (herder) sets out with his sheep, goats, cows, and horses for the meadows across the invisible nuclear test site boundary, five kilometers away. The village is a small settlement that borders what is perhaps the largest terrestrial nuclear test site in the world, known to outsiders as Semipalatinsk and to the locals as the Polygon.

Although mostly abandoned, Koyan still has a small core population, even if many people say it is at the “end of the world,” that point where the power and phone lines end. Koyan is one of the few remaining villages in the region once integrated into a now defunct Soviet collective farming system where residents worked raising animals and cultivating millions of tons of grain per year while nuclear bombs polluted their environment. A mere fifty people now live in the village, whereas twenty years ago, there were nearly seven hundred.

In mid-October, still early in my fieldwork and a month before knee-deep snow blanketed Koyan, I visited a local ancestral site with Tursynbek. Now in his late fifties, Tursynbek was a
handsome man with a shock of black hair and a large sunburnt face distinguished by prominent cheekbones. His rugged body told of strength, but also of years of farm labor that appeared in his rounded shoulders. The day of our excursion, Tursynbek wore a set of faded camouflage fatigues, accentuated only by his dated Russian rifle hanging on a piece of string from his shoulder. He was going to hunt rabbit, fox, or deer with what he knew was a gun that never shot straight. He was born in this village, just like his parents, grandparents, and great-grandparents had been, and as had everyone else generations back. Even though Tursynbek knew where everything was, twenty years ago while searching for his missing horses, he discovered something new—an archaeological site located some distance from the village. Showing it to anyone in Koyan was out of the question and according to him, he never did. “If word gets out about the archaeology, people will try to make money selling artifacts. They will excavate the site and disturb our ancestors who will get angry and take revenge. It’s better to let them rest,” he said. On the day I set out with him, Tursynbek made one thing clear to me: “speak about it all you want, but you can’t tell anyone where we are going.” Minding his words, what follows is a redacted version of our journey.

We walked two-hours from Koyan to the highest mountaintop in the area. The path meandered through dense grasses crossed by seasonal marshes before ascending steeply. Along the way, old cemeteries, dilapidated winter pastures, remains of stone buildings, and what some locals attest is a Tsarist period copper mine, provided a rich sense of human activity that has now ceased. Groups of argali (wild mountain sheep) roam these landscapes and observed us from a safe distance. At the flat summit of our trail stood the twisted iron frame of a radio tower at least twenty years out of service. From there, and descending about two hundred yards in the distance and certainly obscure to the untrained eye, were two medium sized boulders. Their smooth
surfaces were adorned with faded petroglyphs of a Bactrian camel, argali herds, a lone wolf, dogs chasing horses, and people.

It is conceivable that the rock art is a thousand years old or more, as I have seen similar stones in Kazakhstan’s Tamgaly petroglyph site, but no one in the village is certain. In the valley below, clearly visible from the mountaintop was another historically significant site of a different epoch: two large craters. These are “archeological” remnants from the Soviet period left by underground nuclear explosions. Sometime in the 1960s these particular detonations haphazardly vented radioactive particles into the atmosphere. The trail and its panoramic view from the mountaintop—the rock art and the nuclear craters—bring into focus the intersecting histories that shaped life in this region. The nomadic way of life undermined by the Tsarist colonial expansion was eventually extinguished by Soviet modernization projects. With the emergence of a new Kazakh state it is to be immortalized as the true cultural legacy of Kazakhstan. The remnants of these histories all exist here.

From such a vantage point, it is clear that the ways in which individuals and their families in the village navigate the post-Soviet social order cannot be understood without a sense of Kazakhstan’s particular histories, as well as the political and economic contexts that shape everyday life in the region. For over a century, different empires laid waste to Koyan and its people, and the aftershocks are still visible in the “imperial debris” left behind (Stoler 2013). In general, people’s stories emphasize a deep respect for the past and intimate knowledge of the environment. This is reflected in the narratives of historical continuity and highlighted in the kaleidoscopic meaning of places (Basso 1996). Their landscape is marked with history and told in a specifically linear fashion touching on key events that shaped life in this region. In what follows, I outline one version of Koyan’s narrative history, focusing on those themes, motifs, and
events recognized locally as significant. This history is generally divided into two time periods: pre-Soviet and Soviet. The pre-Soviet era includes stories about Kazakh nomadic existence and the expansion of Russian colonial administration, while the Soviet histories generally focus on a series of life-altering modernization projects. Thus, residents often recount the Soviet period beginning with the First Five-Year Plan (1928) that triggered a devastating famine killing millions of people; then atomic bomb testing and mysterious illnesses; and finally, the Virgin Lands Project that turned Koyan into a modern, prosperous village at the edge of a nuclear test site. Armed with my own understanding of the broader themes of Tsarist and Soviet histories and informed by local narratives, the following addresses these accounts.

I. Pre-Soviet Era Narratives

When I lived in Koyan, people frequently spoke of their nomadic past with pride. “Kazakhs were fighters and we always moved with our animals. Our territory was once the land of Genghis Khan. Long ago, the entire steppe was ours and we were not dependent on anyone,” Tursynbek said. Before the eighteenth century and Russia’s incursions into the Kazakh steppe—the mostly treeless, semi-arid grasslands—pastoral nomads inhabited the territories roughly corresponding to present-day borders of Kazakhstan. Flanked by Russia to the north, these grassy plains stretched from the Caspian Sea in the west to China in the east. The central sandy deserts extended south to the foot of the Tien-Shan Mountains rising over 24,000 feet. By the mid-1500s, these lands were inhabited by three nomadic clan confederations, the juz (hordes). The Lesser, Middle, and Great Hordes are believed to have emerged sometime in the early sixteenth century forming a loose political and military alliance to safeguard the steppe territories from hostile attacks (Olcott 1995). Although each of the three was led by a khan, the Hordes constituted themselves loosely, as allied clan groups, occupying distinct geographic territories.
and uniting for military, political, or economic purposes (Olcott 1995). All individuals who made up these sociopolitical groups, however, were one people—Kazakh in language, tradition, and law (Martin 2001).

Traditionally, Kazakhs moved with their animals in small clan units, or *auls*, a term still used to refer to small Kazakh settlements like Koyan. *Auls* were economically productive migrating villages consisting of several families travelling together with their animals (goats, sheep, and horses) to pastures specifically allocated to them. Families lived in mobile dwellings called *yurts* (wooden frame, round tents insulated with sheep’s wool felt) and collectively grazed animals belonging to that *aul* (Olcott 1995). Each clan was headed by a leader, or *bai*. The *bai*’s authority over political, social, and economic life of the clan was not absolute, and all decisions had to be made in consultation with other members belonging to that clan. In spite of this, poorer families of the *aul* were tied to the *bai* (who owned large numbers of animals) by way of a patron/client relationship. In this relationship, poorer herdsmen looked after the *bai*’s livestock and were paid in dairy products and wool. This patronage-based system effectively guaranteed that families who fell on hard times could count on the *bai* for sustenance. Kazakh life was underscored by guiding principles (*adat*), customary law governing all behavior and interactions within a nomadic society (Martin 2001). Clan appointed *bii* (judges) adjudicated *adat* and were charged with negotiating internal disputes and resolving conflicts over pasturelands. “Our *biis* were fair and famous for their justice,” Tursynbek said of these judges who ensured compensation for any wrongdoings.

Kazakh clans did not live in isolation and interacted to varying degrees with Russian and Central Asian sedentary populations. Yet prior to Russian colonial expansion to the region, this interaction was, more often than not, limited to contact with foreign merchants moving Chinese,
Russian, and Western goods across the steppe. These merchants came from the southern Silk Road oasis cities (Samarkand, Bukhara, and Khiva)— burgeoning centers of trade and Islam. Because the Kazakhs’ primary subsistence was stockbreeding, they traded animal products, meat, milk, cheese, animal furs, and leather goods for tea, grain, silk, tools, and other commodities. Moving goods across the vast steppe, however, was not for the faint of heart. Attacks by raiders in search of fortune were frequent. As a result, merchants sought alliances with clan leaders guaranteeing safe passage. Perhaps because much of the contact with outsiders was trade based, within this relatively isolated territory, much of the traditional Kazakh socioeconomic structure remained unchallenged. This would be so until the arrival of Russian settlers.

Things began to change for the Kazakhs at the start of the eighteenth century when the steppe came under attack. From the east, Nomadic Dzungars and Kalmyks attacked and destroyed Kazakh encampments. “We were all boeviki (fighters) back then. Around Koyan we fought with the Kalmyks all the time! Koyan is a Kalmyk name of a great batir (warrior) whose military detachments battled our ancestors on these territories. You can still see old structures they built in the region,” Tursynbek said, pointing to circular rock formations located on an open field just outside of Koyan. Although the Kazakhs fought back, the clans were nevertheless politically weakened by the constant raiding campaigns against them. To slow the attacks, they turned to Russia for protection in the hopes of stabilizing the region. Help was offered, but with a stipulation: the Kazakh hordes must declare their allegiance to the Tsar. Without recourse, one by one they did. For the Russian crown this proved to be an opportune moment to claim new territories. Taking full advantage of this political instability in the region, the Russian colonial administration advanced south into Kazakhstan with the help of pioneering, military Cossack
communities who built forts and guarded Russia’s Empire borderlands. The allegiance proved to be exploitative—it justified Russia’s further southern advance and expansion in the region. By the middle of the nineteenth century, the Russian presence transformed all Kazakh territories into colonial possessions of the Tsar.

The Tsar’s newly acquired territories were deemed by the Russian colonial government to be sparsely populated and therefore suitable, if not in need of, extensive agricultural development by the “culturally superior” Russian peasant (Sabol 2012). Serfs, newly set free with the emancipation in 1861, were encouraged away from European Russia to settle in the newly obtained colonies to produce grain for the Empire. Predominantly of Russian and Ukrainian extraction, the freed peasants migrated east to Siberia and south to Central Asia in search of these new and promised farming plots. Many settled in the fertile regions located in the northern and central areas of the Kazakh steppe and along rivers, areas already occupied by the Cossacks. Intermarriage was rare even as the population in the steppe rapidly increased.5 The Tsarist regime encouraged the European peasant settlers to plow the semi-desert plains and grow crops, a practice that would come to considerably alter the Kazakh way of life.

The settlers’ unfavorable ideas about the “Other” structured much of the relationship between the colonists and the Kazakh nomads (Said 1978). Similar to their European counterparts engaged in colonial projects abroad, Russian colonial settlers and administrators arrived with a sense of civilizational superiority and constructed the colonized people as fundamentally different, capable of being helped, but unable to transcend their “naturally”

5 The dramatic increases are described by historian Martha Brill Olcott (1995:90): “Although only 35,000 settlers came to the steppe from European Russian between 1865 and 1895, and the 1897 census reported only 15.7 percent of the population as Russian or Slavic by nationality, by 1916 these same population groups constituted 41.6 percent of the population of the four northern oblasts (administrative regions). In some northernmost districts, Slavs were an absolute majority of the population.”
determined social status (Chatterjee 1993). The works of Russian, British, and Dutch Orientalist ethnographers collecting materials about the Kazakhs, clearly reflect this view. Many depicted Kazakhs as animals, living in filth and in desperate need of proper instruction that only Russian settlers possessed (Michaels 2003; Slezkine 1994). The civilizing mission, however, was clearly secondary. As Adeeb Khalid (2006:236) points out, “the Russian state had neither the desire nor the capability to assimilate the indigenous population or bring about radical cultural change.” In Central Asia, “the state was primarily concerned with the maintenance of law and order, which would allow economic life to progress” (Khalid 2006:237). Thus, the colonized populations remained inorodtsy (non-citizens—literally, aliens) in the eyes of the Russian state (Sahadeo 2005; Khalid 2006). So other were they, and so primitive, that the Tsarist army wouldn’t conscript them. Thus, similar to colonial projects happening elsewhere in the world at the time, the conquest of “uncivilized” peoples of Central Asia meant that Kazakhs were treated as barbarians standing in the way of colonial development. Yet it was the colonists’ disregard for nomadic land-use patterns, not the perceived superiority of European civilization, that ultimately had the greatest impact on nomadic life.

From the middle of the nineteenth century onward, the Russian crown established stricter administrative controls over the steppe and encouraged sedenterization of the nomadic peoples who were seen as interfering with regional development schemes (Martin 2001). Traditional

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6 The American explorer and diplomat Eugene Schuyler was stationed in Russia and wrote extensively about his travels in Central Asia. He came to see the Russian presence in the region as having a positive impact on indigenous populations. His 1876 book, Turkestan, was one of the most influential works on Central Asia (see Herlihy 2010).

7 Historian Adeeb Khalid takes issue with much of the recent scholarship attempting to describe Soviet Central Asian as comparable to European colonial projects. Although Khalid (2006) agrees that Imperial Russia resembled European colonial rule by perpetuating differences among its newly acquired populations, the Soviet regime attempted to overcome this difference by attempting to create a classless and egalitarian society.
clan authority and the custom of land distribution were accordingly subverted. The new land
distribution policies interrupted seasonal migration routes. This is because most valuable and
productive pastures were confiscated by the state and allocated to newly arriving farmers. As a
consequence, Kazakhs who typically migrated with large animal herds were increasingly unable
to do so. Livestock populations dropped; food shortages, famines, and violent clashes with
peasant farmers over pasturelands ensued. In time, a good proportion of nomads in Kazakhstan
were obliged to take up a semi-nomadic existence. In other words, although Kazakhs did not
fully abandon nomadism, they did, begin to keep the same pastures year-round. Only the poorest
of nomads farmed land. To settle and plow (as I came to understand it much later) was seen by
Koyan residents as lamentable antithesis of Kazakhness. It was to fully abandon one’s identity.
The influx of peasants, moreover, resulted in increased contact between the two groups.
Although Kazakhs generally did not take up farming, everyone became dependent on peasant
grain to supplement their diets. *Auls* around Koyan were no exception.

The residents of Koyan are proud to trace their ancestry to the Kazakh clans of the
Middle Horde, famous for its intellectuals, philosophers, and artists. The Middle Horde
traditionally occupied the central and northeastern pasturelands of Kazakhstan, today the *oblasts*
(administrative regions) of Karaganda, East Kazakhstan, Pavlodar, and Akmola. “Before atomic
testing, and before the Soviets came, the Middle Horde produced many intellectuals. The
Russians civilized us—but we had our own intellectuals. Now, we only have *tupye* (stupid)
people running around the village because radiation got in their brains. You see anyone smart in
Koyan? I don’t remember the last time anyone smart was born here,” said Tursynbek laughing.
Tursynbek and other village residents often blamed atomic testing for destroying Kazakh
intellectual life. They frequently spoke of the last great Kazakh poet, philosopher, and
intellectual, Abay Kunanbaev, who was born nearby, but was educated in colonial schools in the
city of Semipalatinsk. Today, many streets and towns bear his name. For Koyan residents,
however, Kunanbaev represents the last generation of great Kazakh thinkers of the Middle
Horde.

As local history is told, Koyan’s clan *auls* migrated with their animals and yurts to the
region sometime in the early part of the eighteenth century from the southern city of Tashkent
(present-day capital of Uzbekistan). In so doing, they displaced nomadic Kalmyk populations
that once lived on these lands. I was told that the abandoned stone structures, still a
characteristic feature of the Koyan steppe, belonged to displaced Kalmyk clans. Speaking to this
history, today’s village residents trace their descent to an esteemed *bai*, a Tashkent mosque
builder. He is also reputed to have produced a bloodline of regarded and celebrated intellectuals.
Perhaps one of the most recognized is this mosque builder’s son, the musician Tattimbet
Kazangapuly (1815-1862)—a composer of classic folk instrumental music esteemed throughout
Kazakhstan. Born in the hills of Koyan, Tattimbet was a “dombrist” (musician of a two stringed
guitar understood as a national and cultural symbol of Kazakhstan) and a composer of traditional
Kazakh folk music. In recent years, Tattimbet has been inscribed onto the local landscape. A
short distance from Koyan, a fifty-foot statue commemorating his life adorns his burial site.
Depending on whom one asks, the mother of the philosopher Kunanbaev was reputed to be born
in Koyan itself, making the village a historically significant place for Kazakhs.

As peasant farming took hold in the Tsarist era, many Kazakhs circumstantially began
living in the same *auls* because long-distance migration routes were blocked. Nevertheless,
Kazakhs continued to travel with livestock to *jailau* (summer pastures). To obtain grain, an
increasingly important staple food, Koyan residents sold their animals at a market located eighty
kilometers west. I was told that beginning in 1848 and lasting until 1928 when it closed, summers were a time when children and village elders alike eagerly awaited the annual Koyandy fair. It was the largest and most famous of its kind in the steppe region and was a destination for traveling merchant caravans from Siberia, Russia, and western China, as well as famous Kazakh intellectuals like Kunanbaev.

In addition to compelling Russian settlers to the steppes, the Tsarist regime also sought to extend its own economic activities in the Koyan region. “Not far from here, there is an old abandoned copper mine; I am not sure what they were digging up, but I think it was copper. It was discovered back in the time of Tsars—our famous Kazakh geologists discovered it, but the English excavated the ore while they were doing business with the Tsar,” said Zhanbolat, one of the few remaining elders in Koyan whose grandparents remembered “the Englishmen.” Interestingly, the English in Koyan reflect the interconnectedness of various imperial projects. Aside from limited mining operations, the Russian administration also sent out scientific survey expeditions for the development of farming. In 1898, for example, Russian scientists working for the Ministry of Agriculture and State Property arrived in Koyan territory to collect a Kazakh population census and designate “underutilized” parcels of land for agrarian development. For climactic reasons, however, most of this land was unsuitable for sustained agriculture (see the Virgin Lands project later in this chapter) and the area initially did not see a dramatic influx of Russian pioneers who preferred to settle on nutrient rich soils along large rivers.

By the early twentieth century, the areas traditionally occupied by the Middle Horde were firmly under the control of Russian colonial administration. The cities of Semipalatinsk and Pavlodar located on the banks of the Irtys River thrived and their corresponding colonial schools, government offices, hospitals, and prisons signaled that the appuratuses of the state were
in place. The imperial postal service even built stations throughout Kazakhstan to provide mail service to colonial administrators. One of these was in Koyan and remained in use until 1927 (already in the Soviet period). The postal service, in essence, fixed the aul, permanently, to one place. It was there, between the cities of Pavlodar and Semipalatinsk, that riders rested and exchanged horses. To this day, a grassy knoll about ten feet high marks the spot that everyone in the village says are the remnants of the beket (mail stop), a term still occasionally used to refer to Koyan. In local narrative, the story of Tsarist expansion ends with this beket. The story picks up again in late 1920s, when Kazakhstan belonged to the Soviet Union, at a time when famines laid waste to the region.

There is something important to bear in mind before continuing this narrative. Although imperial colonial policies unquestionably intruded on the lives of native populations in Kazakhstan, it was ultimately the Soviet modernization projects following the 1917 Bolshevik Revolution that dramatically altered the social and physical landscapes of the region. For the people whose life stories I came to know well, the Soviet Union was both the harbinger of “civilization” on the one hand and a destroyer of Kazakh life on the other. This contradiction, characterizes much of the local narrative pertaining to the Soviet era. Moving to the next section, I focus on the Soviet Union’s modernization projects that are of importance to Koyan’s residents. These include the First Five-Year Plan and a devastating famine, nuclear testing, and finally, the Virgin Lands Project. Before delving into these Soviet state schemes, however, it is necessary to briefly depart from Koyan’s narrative and focus on the underpinning Soviet philosophies and motivations that informed them. Without these, it would be difficult to understand how a nascent revolutionary state related to the Kazakh steppe and its people.
II. Soviet Era: Revolutionary Mentalities

When Vladimir Iliich Lenin’s Bolshevik-led government finally emerged triumphant after years of Civil War it did so in a country on the verge of an economic catastrophe and with a population on the brink of revolt. The October Revolution of 1917 had overthrown the Tsar and had predicted a new global political order, a modern era of worldwide communism. This prediction, however, did not come to pass. There were no workers’ revolutions in Poland, Germany, France, or the United States, much to the surprise of Lenin and his Bolshevik Party cadres. Neither did state governments disappear to give way to a collective rule of law and public ownership of the means of production. To a certain extent, the same is true for early Soviet Russia: one centralized state was exchanged for another. Whether or not this detracted from the original aims of the revolution, or the degree to which it detracted, is a question that serves to highlight the material realities that the Bolsheviks faced in the aftermath of the Civil War and how the imminent, grandiose, classless utopia was to be pursued in such conditions. The Bolsheviks, in effect, were forging a new path. This path necessitated the emergence of a strong centralized state that beginning in 1928 radically transformed the lives of nearly everyone in the Soviet Union. How this radical transformation came to pass, and what it entailed, is essential to understanding how Koyan narratives of the Soviet era modernization projects reflect both the narratives of triumph and tragedy of communism in Kazakhstan.

From the beginning, the Bolshevik leadership sought to construct an entire society anew in accordance with Marxist eschatology, in which communism appears as the final stage, the end of history, and the destiny of human progress. Karl Marx hypothesizes that social progress can be described as developing in six successive stages: primitive communism, slavery, feudalism, capitalism, socialism, and communism. For Lenin and the Bolsheviks, the progress of history
was a science—predictable, rational, and universal. In this context, each stage of human
development was a universal expression of the total sum of social relations, one fundamentally
shaped and determined by the material conditions (economy) of the time and people’s relations
to these material conditions. These economic structures and resulting social relations define
what specific forms of consciousness (ideology) and social organization are going to arise in
each stage of human progress. Thus, the Bolsheviks adopted from Marx (1993 [1858]:265) the
view that “society does not consist of individuals, but expresses the sum of interrelations, the
relations within which these individuals stand.”

For Marx, like the Bolsheviks, social progress was clearly inevitable and occurred in
successive stages by way of class struggle. In the capitalist stage, for example, when the
working class becomes conscious of itself as exploited, it overthrows the capitalist oppressor to
usher in a new historical era. If successful in their overthrow, the working classes attain the fifth
stage of human development—socialism. Socialism is distinguished from other stages by the
collective ownership of the modes of production, centralized planned economy, and government
for and by the workers. As proper material conditions develop under socialism, the working
classes will become politically conscious and emerge as a new, rational society of men and
women embodying the socialist values of modernity, secularism, humanism, cosmopolitanism,
proletarian internationalism, and egalitarianism. Able to act in their own best interest, these new
citizens would collectively build a utopian world, the final stage of history. For Lenin and other
Bolshevik revolutionaries, socialism and the political consciousness it forged was a necessary
prerequisite for the full realization of communism.

Where did the newly post-imperial, post-Revolution, and post-Civil War Russia fit in
with Leninist theoretical predictions? Instead of a workers’ paradise, the new state was on the
brink of an economic collapse. Agriculture barely functioned; industrial production had sunken well below pre-Revolution levels. The majority peasant population looked nothing like the rational, modern, and secular citizens the Communist Party of the Soviet Union was trying to forge. This is perhaps because the economic and demographic damage of World War I, the revolution, and then the Civil War was most pronounced in the countryside. Nevertheless, the Bolsheviks declared themselves the vanguard party of the Revolution and were going to transform their newly inherited agrarian society accordingly. By 1922, the Soviet Union emerged as a strong centralized state, and Lenin vowed to modernize Russia and its people into the 20th century along prescribed authoritarian socialist lines. But the material conditions as they existed at the time led the Party members to gross adaptations and extensions of abstract Marxist theory. Faced with a failing economy, Lenin temporarily abandoned a full nationalization drive and introduced the New Economic Policy (NEP). NEP allowed for small private enterprise and private land holdings to coexist with those that were state run. It “softened” hard-core communism. This limited form of capitalism, however, was contentious from the start.

Although by the mid-1920s the Bolsheviks acknowledged that the Soviet economy rebounded through the NEP, Lenin’s plan was controversial. For hardened Communist activists the partial retreat from socialism was a betrayal of the Revolution. Instead of what was supposed to be a government for and by the workers, many saw the NEP promoting ideologies of “backward” capitalism leading to the further decay of social life and increase in social stratification. A proper Soviet citizen was a class-conscious member of society who embodied the ethos of socialist modernity where cleanliness, punctuality, trustworthiness, efficient work habits, and loyalty to the Soviet Communist Party sustained the well-ordered and centrally
planned socialist economic machine (Scott 1998). Capitalism, as it manifested itself in the NEP-era on the other hand, led back to the contradictions of capitalism and encouraged behaviors incompatible with socialism and with proper Soviet conduct.

The critiques of the NEP were indeed, many. For one, it enabled a small class of nouveau riche businessmen (NEP-men) to accumulate wealth, while the majority of the population survived on limited food supplies and continued to live in poverty. The visibility of prostitution, homelessness, and other social ills were proof for the Bolshevik supporters that these capitalists thrived on exploitation. Soviet men and women were supposed to live simple, rational lives, but the NEP was seen as encouraging capitalist bourgeois desires, conspicuous consumption, while simultaneously breeding the worst class inequalities and anti-Revolutionary ideologies. Thus, for Soviet Communists, NEP-men became symbols of oppression, moral perversion, inequality, and everything that is wrong with capitalism (Starks 2008). They were, as the Bolshevik revolutionary Leon Trotsky once said of capitalists and other evolutionarily backward peoples, “bankrupt” and “disunited individuals” who needed to be put in “the dust-bin of history” (Trotsky 1930:328). So while the Revolution attempted to cleanse the Soviet Union of all traces (material and ideological) of feudalism and capitalism, with the NEP these traces continued to linger. Soon, however, everything would change.

Lenin’s death in 1924 created, or perhaps exposed, a leadership and a succession crisis at the highest ranks of Soviet power. The scope of disagreements that ensued within the Party was manifold and beyond the range of this work. Broadly speaking, however, until 1928 these

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8 The Bolshevik’s embrace of the cult of technology, science, and punctuality, as James Scott (1998) also points out, was described in the satirical dystopian novel by Yevgeny Zamiatin (1924) titled *We*. The novel is set 1000 years after a revolution in a world ruled by One State, where all citizens are known only by a number and are under constant surveillance by government spies. The novel was an explicit critique of the emergent Soviet socialist rule and, as such, was swiftly banned in the Soviet Union. Zamiatin was imprisoned.
disputes drew on the ideological and philosophical imperatives of the Revolution and revisited what the Soviet Union was and what it was not supposed to be. During this period, the fractured Soviet leadership gradually gave way to Joseph Stalin’s dictatorship, ushering in an era of radical and unprecedented transformations (Khlevniuk 2009). In 1928, Stalin abolished the NEP in favor of a centrally planned economy under the auspices of the First Five-Year Plan. The Plan included, among other things, a suite of repressive measures calling for the abolition of private property, prohibition of private enterprise, and forced collectivization of agriculture (including forced requisitioning of grain and livestock from peasants and nomad populations who were to be settled on collective farms producing for the state). Once the grain was seized, sold, and people settled on the collective, the money was used to finance another provision of the Plan: the rapid industrialization of the country. Following Marxist logic, the nationalized economy would give rise to a new society of men and women determined to “build socialism in one country.” Reforming the Soviet economic base was not enough to forge a new society, however. As a result, Stalin also called for the removal of kulaks (a fluid category of rich peasants and a catchall term for anyone opposed to Stalinist policies) as a class. The 1928 First Five-Year Plan ushered in a period of mobilization at a scale hitherto unseen. What followed, however, is a spectacularly startling social, political, and economic transformation of the Soviet space and its people (Baron 2007).

Collectivization and forced requisition of grain plunged the Soviet countryside into chaos. Riots, especially bab’i bunty (women’s riots), protests, and what the state called sabotage, became hallmarks of peasant resistance to forced nationalization of the agrarian economy during the all-out drive (Northrop 2004; Viola 1996). Simply put, collectivization was

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9 It is not clear if collectivization was necessary and if it did in fact, fund industrialization. For the debate on Stalin’s collectivization campaign see Millar and Nove (1976).
the complete intrusion by the state into the lives of the peasantry in order to mechanize and consolidate agricultural production, to extend the virtues of Marxist-Leninism to the countryside, and above to all, to create a Soviet socialist utopia.\textsuperscript{10} In essence, “it was a campaign of domination and destruction, aimed at nothing less than the internal colonization of the peasantry” (Viola 1996:3). The spectacularly rapid pace of the first two months produced such disastrous results (crop failures, peasant migration to the cities, and resistance) that on March 1, 1930 the state newspaper \textit{Pravda} published Stalin’s article “Dizzy with Success” in which he called for a temporary halt. When peasants began to leave collective farms in droves, collectivization once again intensified in the fall of 1930 (Fitzpatrick 1994).

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In many ways, the First Five-Year Plan and collectivization are emblematic of trends that appear throughout Soviet history. Based on a systematic re-evaluation of existing structures and realities on the ground, centralized planning was key to modernization, industrialization, as well as to transforming and molding new citizens into a perfect reflection of socialism envisioned by Lenin and Stalin. In the Soviet case, planning spawned comprehensive projects where the material and the social fused to become one—socialist bodies producing socialist modernity and vice versa, together forging a new historical epoch (Hellbeck 2006; Kotkin 1995). These socialist bodies, or the “body Soviet,” had to be made and were a physical expression of the revolution’s success, proof that victory over backwardness was possible (Starks 2008). But to make these socialist bodies, the state aimed to do away with class stratification. Indeed, everyone was subjected to “patriotic education” aimed at instilling a sense of Soviet identity and

\textsuperscript{10}As part of the First Five-Year Plan, Stalin enlisted Henry Ford to help with the construction of automobile factories for the production of cars, trucks, and most importantly, tractors in the Soviet Union. Ford sold plans, training, information, equipment, as well as assembly kits to the regime. These factories are credited with producing the Soviet Union’s first Fordson tractor, a symbol of the modern collective farm. Many of these tractors were built by skilled American autoworkers (former Ford employees) who moved to the Soviet Union in search of work during the Great Depression. When the American embassy refused to issue passports, they were arrested and shot by the soviet secret police during Stalinist purges (Tzouliadis 2008).
the fostering of hope that utopia is just around the corner (Bezrogov 2012). Accordingly, the emergent Soviet Union embodied the spirit of a “gardening state” (Bauman 1989)—managing, sculpting, creating, and bending society to its will through the pruning of contradictory ideologies and “human weeds” (Holquist 2003; Weiner 2002).

While the early Bolsheviks guided by Lenin’s philosophical teachings initially preferred to win the hearts and minds of the populace with propaganda campaigns, Stalin generally preferred force.11 During his dictatorship, the favored method of removing anti-revolutionary ideologies, human weeds, and instilling socialist values among the populace was terror—the murder or imprisonment of those individuals whose ideology threatened the vision of progress, or Stalin’s rule. The goal was not necessarily to kill them all, but rather, to brutally crush their opposition and eliminate, permanently, the stain of barbarism soiling Soviet civilization and preventing economic progress (Siegelbaum and Sokolov 2004; Žižek 2008). This description captures the ethos of the time: “a true Stalinist politician loves mankind, but nonetheless performs horrible purges and executions—his heart is breaking while he is doing it, but he cannot help it, it is his duty towards the Progress of Humanity” (Žižek 2008:227). Thus beginning with the First Five-Year Plan, targeted for Stalinist-style reeducation and/or some form of repression were peasant kulaks, nomads, capitalists, priests, scientists, intellectuals, non-Russian peoples of the former Tsarist Empire, as well as anyone opposed to the Plan. Party officials were not immune to the cleansing process either; they too, were targeted and swept up in the purges. In short, anyone suspected of being ideologically contaminated by traditionalism,

11 Propaganda campaigns became a regular part of Soviet life. These campaigns extended the reach of the state to the countryside. Early Bolshevik activists often traveled by steamboat and train to far-off provinces spreading the message of socialism. Peasant resistance to the state building project was fierce. Nevertheless, the complete reorganization of Soviet society was made possible by “accommodation, adaptation, acquiescence, apathy, internal emigration, opportunism, and positive support” (Viola 2002:1).
backwardness, and other anti-Soviet beliefs or anyone who stood in the way of the governing inner circle for that matter, had to be cleansed. Accordingly, in the name of progress and liberation, the state apparatus was able to liquidate real and often imagined “enemies of the people,” arrest countless others, wipe out private property and its bourgeois owners, and squash nationalist sentiments (Martin 2001).

The master orchestrator of this cleansing process was none other than Stalin himself. While he personally drew up long lists of enemies and signed execution orders in 1937 and 1938, the People’s Commissariat of Internal Affairs (NKVD)—secret police also in charge of administrating forced labor camps—dutifully carried out the massive assault. In the grip of mass hysteria, enemies of the state multiplied by the millions as neighbors, friends, colleagues, husbands, and wives sometimes enthusiastically denounced each other. Historians Alter Litvin and John Keep (2005:58) suggest that between 1923 and Stalin’s death in 1953, upwards of 41 million people were convicted of various crimes, including work absenteeism, for not producing enough grain to meet the impossible state mandated quotas, or for “colluding with the enemy,” that is, knowing someone whose political leanings were suspect. Millions of these individuals vanished into the vast archipelago of forced labor camps in Siberia and Central Asia never to be heard from again (Solzhenitsyn 1973). Others received a bullet to the head. Countless men, women, and children starved to death in state choreographed famines in Ukraine, the North Caucasus, and Kazakhstan (Conquest 1986; see Moon 2013 for the discussion of the Tsarist-era nineteenth century famine for comparison). The scope and pace of Stalinist repressions was extraordinary. To put things in perspective, at the height of what is known to historians as the

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12 The Soviet secret police was initially known as Cheka (All-Russian Extraordinary Commission to Combat Counter-Revolution, Sabotage and Speculation). In 1923, it was transformed into OGPU (Unified State Political Administration), then in 1934, the NKVD, followed by the now infamous, KGB (State Security Committee) in 1946.
1937-1938 Great Terror campaign, 1,344,923 people were arrested for various crimes, of whom, 681,692 were shot (Litvin and Keep 2005). In other words, in the span of those two years the secret police executed on average 936 individuals each day, or 39 people per hour.\textsuperscript{13}

In the context of Stalin’s dictatorship then, a true Communist not only lived, breathed, and oozed socialism, but was also enthusiastic and, at times, necessarily violent in bringing civilization to the backward peasant masses. It was this duty to progress that made the social engineering projects relentless, chaotic, and violent. The violence of the First Five-Year Plan and the Great Terror campaign is emblematic of Soviet Totalitarianism at its most expressive (Arendt 1951). Stalin’s ability to transcend and suspend the rule of law, that is, implement a state of exception, effectively sanctioned terror as a means to build a new political order aimed at ushering in a better, brighter tomorrow (Agamben 1998; Schmitt 1985). Anyone opposed to the state project was thus stripped of all rights and subject to state authority. The Soviet regime’s rationale for this state of exception was rooted first in the Marxist eschatological view of history and second in the Stalinist Communists’ desire to reach utopia at a breakneck speed. But terror perhaps obscures the fundamentally idealist values at the core of the Soviet state project, namely, the dedication to a conviction that a better world was just over the horizon (Žižek 2008). It was, after all, only by ignoring the rule of law that the Soviet Union was able to blaze the path of rapid industrialization, collectivization of the agricultural sector, and the wholesale transformation of society.

For Kazakhstan, as for the rest, the road to a better tomorrow was built on millions of dead bodies. Bringing the narrative back to the steppes of Kazakhstan, Koyan was in the midst

\textsuperscript{13} For one of the more powerful firsthand accounts of Stalin’s Great Terror campaign see Eugenia Ginzburg’s (1967) \textit{Journey into the Whirlwind}. The powerful memoir describes in minute detail Ginzburg’s arrest, imprisonment, and exile to Russia’s Far East.
of these paradigmatic changes and planning. These changes are a fundamental component of life histories in the region that also reflect the Soviet regime’s obsession, aptly termed “gigantomania,” with behemoth-sized projects (Fitzpatrick 1982). Nearly everything that the Soviet Union planned in Kazakhstan was of a colossal scale—new cities, irrigation canals, prison labor complexes, nuclear testing, industrial scale farming, and the new society. As this local history is told, Koyan was at the center of many of these modernizing projects as it went from being a “backward” and isolated aul, to a full-fledged, incorporated, modern village.

Yet to situate Koyan and its people spatially reflects a paradoxical nature of their existence. On the one hand, the people were assimilated into the core of some of the largest modernization projects to ever take place in the Soviet Union. Koyan (like countless villages throughout the region) was, for example, at the center of the worst excesses of the First Five-Year Plan and collectivization drive, atomic testing, and the Virgin Lands Project. On the other hand, Koyan was also peripheral—a small remote village, one cog in the wheel of Soviet administrative machinery, even more distant than the infamously desolate forced labor camps also located in the region. Local historical narratives capture what amounts to this spatial paradox, oscillating between center and the periphery. But looking back from present to the past, these narratives reveal a number of other things too: bitterness, anxiety, and nostalgia in regards to everyday life under Communism during and after Stalin.

**Antecedents, the First Five-Year Plan, and Famine**

In Koyan, the story of how the village became a collective farm begins not with any heroic feats of communist organization but rather with the Stalin-initiated 1931-1933 famine. Perhaps not at all ironically, I heard about the catastrophe whenever I refused to dine with my host family and was thus reminded, *starvation kills*. “Our ancestors died here because there was
no food. You starve yourself on purpose,” Tursynbek’s wife Altynai said annoyed. “You need
to lose weight? Just wait till winter.” I wasn’t trying to “starve” myself; I was rather overcome
by nervousness and anxiety over potentially eating radioactive food from the Polygon. All the
same, in Koyan, I was constantly negotiating ways to avoid eating. After a while, I developed a
repertoire of excuses that nevertheless failed to shield me from what I felt to be an oppressive
eating regime. My escape routes were many: I am allergic to soups; I don’t like bread; in my
family we don’t eat breakfast; I have diarrhea, and so on.

I learned quickly that one of the many facets of Kazakh hospitality is the obligation for
guests to eat, excessively, or at least pretend they do. Refusing to partake could be insulting on a
number of levels. I heard about certain kinds of guests too—gluttons—who eat too much but
don’t reciprocate in kind, exploiters of Kazakh generosity. “They just come here to pig out,
because they know we will feed them,” Tursynbek’s sister in-law Nurgul said of a Russian friend
who frequently passes through the village. “He gorges on our food, sleeps in our house, and then
leaves. He is so fat! He doesn’t need more food! We get nothing from him!” “Don’t feed him!
Let him starve!” I said in jest. “That’s not the Kazakh way,” Nurgul said, laughing at my absurd
suggestion.

In Koyan, “the Kazakh way,” means many things. Overtly, it means that people will go
beyond their means to produce a nice spread, sometimes bordering on extravagance. Biscuits,
bread, apples, a plate of steaming noodles or rice with meat, salads, and an assortment of candies
are a standard fare for guests. In short, anything at hand will often wind up on the table. Not
everyone in the village, however, has enough money or a large enough herd to slaughter or sell a
sheep, a goat, or a cow without tapping into their food supply. Obscured by the constant
reminders to jey, jey, jey, (eat, eat, eat) is pride that hides the fact that the majority of Koyan’s
residents are poor and concerned about food shortages. This is especially true when heavy snow
and subzero temperatures effectively isolate the village and strand people for months of the year.
“By springtime our faces are sunken and you can see our cheek bones. It’s a great diet! But in
the summer, we get fat and our faces are round again. It’s a cycle,” Altynai said, only half-
jokingly. Aside from worrying if the food I ate was toxic, I frequently thought of myself as an
extra mouth to feed.

When I arrived in Koyan, famine was the furthest thing from my mind, but not for village
residents who survive harsh winters on little food. In short order, and no doubt through recurrent
kitchen conversations during which I learned things of importance to my host family, I also
discovered the centrality of starvation narratives and their connection to how Koyan became a
collective farm. In Koyan, the famine (golod) is recounted as the failed genocide of the Kazakh
people, a time when overzealous Soviet Communists stole Kazakh property and let people starve
to death. 14 From 1931-1933, approximately 1.5 million ethnic Kazakhs (out of a population of
3.8 million) died from hunger, together with 90% of all livestock (Cameron 2010; Conquest
1986; Olcott 1995; Pianciola 2004). In Soviet times, to discuss the famine openly was a
punishable, criminal offense. Thus, narratives of it are often fragmented, perhaps also because
the majority Koyan residents were born after the tragic years. Nevertheless, in a broad sense,
this is a story of increasing contact between Soviet agencies, institutions, and the Kazakh steppe.

14 Before Russian expansion to Central Asia, famines among nomadic populations were often the result of
harsh winter conditions decimating animal herds. These bouts of hunger were limited in scope, however, only to
intensify with the arrival of Russian settlers. Severe famines in Kazakhstan began during the Tsarist period between
the onset of World War I (1914) and the Bolshevist Revolution (1917). The collapse of governmental structures
following the 1917 Revolution, however, made famines even more intense. The Bolshevik overthrow of the
colonial regime, for example, completely destroyed the economic system of the empire. During the Civil War, grain
production and trade came to a halt. The result was a devastating famine (and related epidemics of disease) lasting
from 1920-1922, killing over a million Kazakhs (Olcott 1995). Following World War II and until Stalin’s death in
1953, all of the Soviet Union experienced famine-like conditions exacerbated by the destruction of the agricultural
sector during the war.
The ill planned and excessive modernization drive culminated in a famine that effectively
destroyed much of the traditional Kazakh political, economic, and social structure. Based on
local oral histories, field notes, archival research, and secondary sources, I was able to partially
compose a picture of the region and how Koyan’s ancestors became part of the 40% of all ethnic
Kazakhs killed during the famine.

The story begins like this. When the Bolsheviks “liberated” Kazakhstan from Tsarist
oppression in 1920, they added it to a growing list of territories slated for radical development
along socialist lines. The Red Army pacified the region and by the middle of the 1920s the
newly established Soviet state began its systematic incorporation of the Kazakh population into
its sphere.\footnote{Violent clashes between Kazakhs and Lenin’s supporters were frequent during the Civil War period. Between 1917 and 1920 a provisional Kazakh government, the Alash Orda, declared autonomy. The Alash Orda was overthrown by the Red Army and purged by state authorities.} Remembering Marxist-Leninist teleology, the Communists viewed Kazakhstan as
the most backward of all regions in the Union, one inhabited by archaic shepherds and nomads
stuck somewhere between primitive communism and slavery. But this needed to change. In the
eyes of the Soviet state, nomadism was the most backward form of social and economic
organization, one in need of complete eradication, if the region and its people were to become
properly “Soviet modern.” In order to convert Kazakhs into proper socialist citizens (settled and
no longer bound to primitive tribal life based on class exploitation by the *bai*), the state and local
authorities increasingly deployed propaganda campaigns that expounded on the virtues of
Communist life. The goal was to ultimately reconstitute Kazakhstan as a Soviet Socialist
Republic, to showcase its eventual achievement of modernity, as proof that even the most
primitive peoples of the world can be compelled to evolve (Kret 2013).
At first, the Soviet government adopted a measured and restrained approach toward the Kazakhs, using propaganda to persuade them to voluntarily abandon their nomadic way of life in their transition to socialism. Because many nomadic and semi-nomadic *auls* were difficult to reach, Soviet authorities were obliged to “missionize.” Travelling “red yurts” brought Bolshevik crusaders, literacy workers, and public health officials to the Kazakh steppe (Michaels 2003; Olcott 1995). Once there, the activists traveled with the *aul* to seasonal pastures, proselytizing about the virtues Communism, atheism, personal hygiene, biomedicine, and preventive health care. They also eagerly lectured to Kazakh women on the hazards of traditional nomadic life, one that the Bolsheviks perceived as deeply entrenched in patriarchal exploitation (Bernstein 1998, 2007). Some Kazakh men and women were swayed. These converts were in turn rewarded and received free schooling to become doctors, teachers, or Communist activists agitating for the state (Hirsch 2005; Martin 2001; Michaels 2003). Their enhanced social standing in the Soviet society did not last long, however, as many were purged during Stalin’s Great Terror (Michaels 2003). Nevertheless, in spite of the propaganda campaign, the majority of Kazakhs remained suspicious and skeptical of the migrating “red yurt” propagandists trying to change traditional Kazakh life. On the ground, this skepticism prevented the activists from making real headway in spreading the word of Marx and Lenin among the nomads (Michaels 2003).

No one in Koyan ever mentioned these “red yurts” to me. In fact, the majority of Koyan residents said that until the famine, most of the region’s inhabitants were ethnically Kazakh and semi-nomadic. “Koyan was still a beket, at least until 1927 or so. We were *kochevniki*.

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16 By 1929, approximately 134 “red yurts” operated in Kazakhstan. They were distinguished from Kazakh dwellings by a clearly positioned red flag signifying Communist affiliation (Michaels 2003).

17 In 1917, 98.5% of the population living in the region was ethnically Kazakh (Pianciola 2004).
(nomads) and lived in yurts, far away from everything. Only people carrying mail rested horses here. As for grain, we bought it at a market or traded with people who traveled through Koyan,” Tursynbek said. Since the arrival of Russian peasants during the Tsarist period, Kazakhs regularly obtained grain from the European farmers (Pianciola 2004). Indeed, until 1928, an economically symbiotic relationship existed between the two groups—Kazakhs sold meat to Russian peasants, while peasants sold grain to the Kazakhs.\footnote{18 Although Kazakhs depended on peasant-farmed grain, conflict between the two groups was frequent and revolved around competition for land (Sabol 2003).} In the context of Koyan, many of these economic transactions still took place at the celebrated Koyandy fair, closed during the Civil War, but reopened during the NEP. People also bought grain in Aktasty, a town that naturally grew near the market. I was told that at the time, Aktasty boasted a post office (established a little later than Koyan’s Tsarist beket), as well as the region’s first radio broadcasting programs from Moscow. Nevertheless, Koyan’s aul was located in the steppe, more than eighty kilometers away. Dirt roads made travel difficult and regular contact with the Bolshevik activists remained limited, at least for a time.

From the information I was able to gather, shortly before 1928 a small number of Bolshevik campaigners were already present in Aktasty working for the state apparatus, the People’s Commissariat of Public Health (Narkomzdrav). In 1928, the town boasted a Narkomzdrav-operated hospital with ten beds, as well as a medical clinic with five beds (Document One 1930). In Kazakhstan, as elsewhere in the Soviet Union, Narkomzdrav was a state funded institution placed in charge of protecting the health and well being of all Soviet citizens. It oversaw the administration of hospitals, sanatoria, and medical clinics. Narkomzdrav also sponsored health education programs in order to eradicate traditional structures deemed responsible for the spread of disease and anti-Soviet ideologies. In the context of Marxist-
Leninist teachings, disease was a social problem stemming from primitive ideology, to be excised with “sanitary enlightenment,” or health and sanitation propaganda (Bernstein 1998; Solomon and Hutchinson 1990).

Narkomzdrav’s medical personnel eagerly instructed the Soviet Union’s backward masses on the benefits of hygienic living. By doing so, they linked “health care to the cultural, industrial, and political transformation of the state” (Starks 2008:36). Thus, Narkomzdrav had a broad sweeping mission—to transform the “body Soviet” from within and create healthy Communist workers tasked with accelerating the coming utopia (Starks 2008). Accordingly, Narkomzdrav nurses, doctors, and medical volunteers often worked alongside “red yurt” cultural revolutionaries spreading the message of hygiene, healthy living, and universal health care (Michaels 2003). Although I was unable to find evidence that “red yurts” were deployed to regions around Koyan, archival documents suggest that under the auspices of the 1928 First Five-Year Plan, Aktasty’s Narkomzdrav personnel was to designate two days per month for medical excursions in a radius of 25 versts (23 kilometers) to teach nomads about sanitation, organize “circles of first aid,” and build medical clinics (Document One 1930). The establishment of permanent medical clinics, thus, went hand in hand with sedenterization of nomads.

The “red yurt” and Narkomzdrav measured approach toward the Kazakhs, however, failed to make any real headway in persuading the population to embrace the Soviet ideology. With Stalin’s rise to power, their approach was quickly replaced with something more draconian.

Beginning with the First Five-Year Plan, state authorities employed terror to crush and permanently eliminate nomadism, “primitive” ideologies, and traditional economic structures in all of Kazakhstan. The violent attack began in 1928, when Stalin introduced an assemblage of
repressive measures designed to rapidly industrialize the Soviet Union in the name of socialist progress. To recap, these measures included an all-out forced collectivization drive of peasant agriculture (Stalin and his supporters reveled in the idea of farming as an industry), forced expropriation of grain, sedentization of nomadic peoples, and deportation or murder of kulaks as a class. In the Kazakh context, rapid sedentization of the nomadic auls became the primary goal of the Soviet regime in its quest to advance economic development of the steppe territories. From the perspective of state and local officials, only force could induce the Kazakhs to abandon nomadic subsistence (seen as primitive, useless, wasteful, and incompatible with socialist modernity) and settle to cultivate land and raise animals. All grain, livestock, and machinery were thereafter forcibly seized or consolidated into two types of collective farms where peasants and nomads were interned to work—the less advanced kolkhozy (singular kolkhoz) and the more advanced sovkhozy (singular sovkhoz).19

The kolkhozy were farming cooperatives operated by peasant families for the purposes of collective, agricultural production. In theory, kolkhozy were to be self-organizing and voluntary—based on the idea that everyone would flock to these egalitarian production units. In practice, this proved not to be the case; people were forced into them. Still, the kolkhoznik (member) was paid a share of surplus profits (in goods produced after state quotas were met) and according to the number of days worked. Most sovkhozy, on the other hand, appeared later. They constituted much larger farms that belonged to and were subsidized by the state. Workers were salaried. Consistent with the goals of a centrally planned economy, targets were set for grain harvests and animal products. Yet production quotas were often impossible to meet, and prices offered by the state for grain and livestock were much lower than peasants could obtain on

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19 Kolkhoz cooperatives were encouraged since the Revolution. These collectively organized agricultural economies, however, never become popular among the peasants.
an open market. Punishment ensued for non-compliance. To maintain people on the collectives, the Soviet regime instituted an internal passport system to stem the outflow of peasants into urban areas and tie them to their farms (Fitzpatrick 1994).

In Kazakhstan, the Plan called for the complete sedenterization of all auls and collectivization of peasant agriculture by no later than 1933. This was an ambitious goal, especially since in 1928 just over one percent of such farms existed in all of Kazakhstan (Michaels 2003). But the status of farming, as it presented itself on the ground at the time, was not a deterrent to local and state officials resolute in meeting the target deadline. In fact, the lack of collective farms was proof that confiscation of grain, livestock, and pasturelands needed acceleration. The rapid pace of the all-out drive proved devastating. As peasant grain was seized, Kazakhs no longer had access to an important food staple. Things changed for the worse when overzealous state and local authorities, including complicit Kazakhs, forcefully requisitioned animals, thus producing conditions for imminent starvation (Pianciola 2004). Auls were plundered, livestock confiscated, and the wealthy “capitalist” bai purged as enemies of the state. The majority of them were swiftly deported to remote areas of the Soviet Union or simply shot on the spot (Olcott 1995).

Although most of the people I met in the village were either born after the tragic years of famine or were too young to remember, they tell the story the way their parents told it to them. Tursynbek’s narrative captures the horror: “It must have been 1932 or thereabouts. There was massive hunger here. We protested too! Collectivization was confiscation!” he said one night over dinner. “And what happened?” I said. “People ate each other—that’s what happened.” As I picked at the pieces of my favorite goat meat hidden beneath noodles piled high in a large
communal bowl (my radiation anxieties purged in lieu of hunger), I couldn’t bring myself to ask how Tursynbek’s parents survived. “What happened to the animals?” I asked instead.

First, people were accused of being *kulaks* and the Soviets confiscated their animals. Then, there was no food and whole villages were wiped out. People ate dogs, rats, even grass—everything they could get their hands on. Eventually food ran out. People had no choice but to eat other people, but we don’t like to talk about that. Dead bodies were everywhere, including babies and elders. It was Stalin’s fault; those wrongheaded Communist administrators in Kazakhstan are also guilty. And so are those who snitched and gossiped; I blame them. (Interview 2010, translated from Russian by the author)

The famine was made worse by the influx of starving peasant colonists and deportees coming from other regions of the Soviet Union. As part of the First Five-Year Plan, hundreds of thousands of agricultural colonists were recruited to cultivate cereal crops mostly in the Northern (former Middle Horde territories) areas of Kazakhstan. Kazakhstan also became the land of the disappeared. Hundreds of thousands of prisoners, the deported *kulak* peasants and other enemies of the people, began to arrive to places of their permanent exile in the Karaganda *oblast* (administrative district) famous for its massive complex of forced labor camps administered by the NKVD. Once there, some of these early arrivals were interned in Gulag labor camps that bordered Koyan to the west.20 Others, termed *spetspereselentsy* (special settlers), were relocated to nomadic regions deemed in need of socialist development.21 In these yet to be de-nomadized areas, the special settlers were forced to work on collective farms, in forestry, mining, or in other industrial sectors (Baron 2007; Viola 2007). Monitored by the NKVD secret police, the majority of these deportees were interned in *spetsposelki* (special settlements), or villages they were

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20 The Gulag is an acronym for the Main Administration of Labor Camps. Established under Stalin in 1930, the NKVD administered these forced labor camps located throughout the Soviet Union. The Gulag was officially dissolved in 1960 and millions of people were released from its prisons (see Barnes’ (2011) *Death and Redemption: The Gulag and the Shaping of Soviet Society* for an excellent discussion of the Gulag administration in the Karaganda region of Kazakhstan).

21 The majority of special settlers were border nationality groups Stalin deemed dangerous. Entire populations were moved to the interior regions of the Soviet Union. One of the largest waves of special settler deportations occurred between 1939-1941 during a border population transfer where Poles, Crimean Tatars, Volga Germans, Chechens, Ingush, and other border groups were resettled in Kazakhstan (Brown 2004; Viola 2007).
forced to build for themselves (Viola 2007). Entire families were confined to a specific area where they lived, worked, and died. At the end of 1931 alone, the number of these “special” settlers to Kazakhstan was approximately 250,000 (Pianciola 2004).

Beginning with Stalin’s dictatorship and continuing through the 1950s, millions of willing and unwilling individuals arrived, permanently transforming the demographic structure of Kazakhstan. By 1939, the Kazakh population declined by 50% and by 1959 Kazakhs became a minority group (30%) in a majority Russian (42.7%) Kazakhstan (Flynn 2004; Olcott 2010; Payne 2011). “I don’t know exactly when they started to live in Koyan,” said Tursynbek. “At first Koyan was only a small and poor Kazakh kolkhoz where our families worked. We still walked animals to pastures like our ancestors did! Sometime later others came, but not to Koyan. Most people started to arrive in these regions after things got better, maybe 1936, but they settled in the bigger towns first. We definitely had the NKVD here and Russian nachalniki (bosses) also visited frequently. Of course, there were also soldiers when atomic testing preparations started in 1947. People settled in Koyan after World War II, I think. We had everybody here—Tatars, Ukrainians, Chechens, Germans—everybody. But the majority of them moved to Koyan when the Virgin Lands Project started, in the 1950s—we were all Soviet citizens then,” he said.

During my investigations and interviews I wondered from time to time about active resistance to Stalin’s project as it unfolded in Koyan. One form was to slaughter one’s own livestock, lest it be seized. Yet refusal to turn over livestock to the state triggered wanton state repressions—arrests, torture, or outright murder. Some people tried avoiding collectivization by fleeing to China, Russia, or other regions in Central Asia, only to be captured and dealt with accordingly. “You couldn’t just leave the area without risking your life. People were arrested...
for nothing!” said Altynai. “If someone killed their own sheep because they were starving, they were sentenced to 5 years in prison for sabotaging state property. Someone could say that they saw your horse limp and tell authorities that you put a nail in its hoof on purpose. You would get 5 years for that,” she said. “Why would somebody lie?” I asked. “Simple—the person who told on you would be rewarded. As you know, there was a reward for exposing enemies of the state,” Altynai said. “My father was arrested and sent to Kolyma [the notorious Gulag labor camp located in Russia’s Far East] because somebody made up a story. Ten years of hard labor for being an enemy of the state!” she said. Like elsewhere in the Soviet Union, local state representatives made regular rounds to area kolkhozes arresting or shooting people suspected of anti-Soviet sentiments. In Koyan countless numbers of people were apprehended or murdered by the secret police during these rounds. Thus active resistance, although it slowed the pace of collectivization, was a dangerous option.

It was during such a period of violence, chaos, famine, and demographic shifts that the apparatuses of the state were firmly put in place and expanded to the former nomadic regions. In essence, Stalin’s development schemes began the process of greater integration of the Kazakh economic and social life into Soviet plans. The Soviet social engineering project required the ordering of people and environments into simplified, legibility registers: mapping, creating territorial divisions, census, as well as standardizing language (Russian), farming, education, propaganda, and all other social, political, and economic practices (Scott 1998). Kazakhstan’s oblasts were reorganized into counties that were in turn subdivided into regions, sovkhozy (by the early 1950s), and then kolkhozy. At each level of this diffused administrative structure, a generally poorly trained Kazakh state managerial class presided over new and cumbersome bureaucracies. The debilitated civil society, on the other hand, unable to resist the emergency
powers of the authoritarian state, was the “leveled social terrain on which to build” a new social order (Scott 1998:5). The violence of the famine years produced this leveling effect and is clearly represented in archival sources. For example, in the years 1928 to 1932, there were more than 41,887 ethnic Kazakhs living in the greater area of my study (Document Two 1959). By November 1932 the population had dropped to 15,900 (Karaganda Regional State Archive Spravochnik 2012). In Koyan and adjacent regions only 3863 people remained—all ethnic Kazakhs (Karaganda Regional State Archive Sprovochnik 2012). By 1938, also the year of the Great Terror campaign, collectivization and sedenterization in Kazakhstan was by and large complete, five years after the original target date and at a tremendous cost in life.

The pace at which collectivization and its organizational structures spread depended on the proximity of the auls to larger, established villages. Thus, Aktasty of the Koyandy Fair days, became a kolkhoz immediately in 1928, after which the establishment of collectives radiated outward from there. By 1936, Koyan and nearly 93% of all steppe settlements in the region belonged to a kolkhoz (Kozina 2000). None of this should suggest that the new kolkhozy were gleaming reflections of Soviet planning in action. Poor organization and scarcity of resources meant that sub par economic performance was a given. First chairmen (almost always male) were often illiterate, lacked training, and could barely follow instructions on production quotas (Olcott 1995). Koyan belonged to a kolkhoz that consisted of at least eight separate villages (former migrating auls) each occupied by a number of families. In total, it was allocated a little over 200 square miles (321 square kilometers) of pastureland designated for livestock breeding (Document Three 1961).

22 By 1959, the total population for the greater area of my study was 24,783, a significantly smaller number of people than during the initial famine years (Document Two 1959).
Now settled in *kolhозы*, Kazakhs raised livestock and returned large portions of profits to the state. The majority lived in poverty, desperately trying to rebuild their herds. Burkut, Koyan’s oldest resident, was six years old when Koyan was collectivized. He remembered the landscape as follows:

There were two *kolhозы* here in Koyan. Behind the hill were two more and four more over that other hill there, but we worked together. There were maybe a hundred people in total [after the famine]. Life was very hard because our herds were small—my father had one cow and raised sheep for the *kolhоз*. At the end of each year, the state requisitioned sheep and we were typically given one or two, usually the sick ones, as payment. We did whatever the administration told us to do. Otherwise, we risked arrest. We still grazed our animals in the traditional way by taking them out to pastures! Nevertheless, the Russians built a school and a small medical clinic in Koyan and we all slowly learned how to be Soviet. A few Russians worked here too; they are the ones who made sure we learned to speak Russian, and to live like civilized Soviet people. Ours was a poor *kolhоз* and there was never enough food. We had to steal grain and hide it from the authorities. We lived in small houses built from adobe brick or sometimes in yurts. There were no glass windows at the time—we used a thin mesh made from animal parts instead. The houses that are in Koyan today were built much later. Until the early 1950s we barely survived. I only learned about money in the 1950s! (Interview 2010, translated from Russian by the author)

Salaries were non-existent because the *kolхозники* received a share of meat and dairy products equal to the amount they worked. However, because Koyan barely produced anything, food shortages were common, as Burkut narrated. Sometime in the 1940s, or perhaps in the early 1950s (no one seems to be certain), the *kolhоз* was officially renamed “30 Years of Lenin in Kazakhstan.”

The brutality with which the Soviet regime dealt with Kazakhstan’s nomadic populations was driven by Stalin’s determination to see through the building of “socialism in one country.” For current residents, the forced sedenterization campaign and the famine mark that period in their history and the first in a series of Soviet development projects that shaped life for decades to come. As the story is told, two subsequent large-scale transformations occurred in tandem.
with Koyan squarely at their center—the development and testing of nuclear weapons and the Virgin Lands Project.

**Making Koyan Atomic**

Prior to my arrival in Koyan in 2010, I only had a partial idea of what the Soviet Union’s largest nuclear test site looked like. A few photographs, documentary films, news reports, government publications, and opinions of my urban interlocutors in Kazakhstan, produced for me a medley of post-apocalyptic images. I did have a map of the Polygon, however—the first publically available graphic of radioactive pollution of the region.\(^{23}\) Since Igor and his environmental NGO was helping me settle on the Polygon, I was asked to provide copies of the map to Koyan residents as part of an education campaign promoting radiation safety. This map, however, with its dark red border demarcating the limits of the test site, shows Koyan (and countless other villages) at its edge, with five roads meeting at the village center. There, circled in green indicating that the village is safe to inhabit, Koyan is located just outside of the testing area borders, a short drive from a still dangerous radioactive sliied (trace/footprint) left by an atomic bomb exploded on September 24, 1951. The radioactive trace is denoted in a lighter shade of red and stretches north to south for 120 kilometers. In small print and located at the base of the map, the following message appears:

> This map has been prepared and published with the financial support of the OSCE Centre in Almaty. The OSCE Centre in Almaty shall in no circumstances be responsible for the accuracy and authenticity of the information and data it contains. The boundaries and names on this map, which originate from a variety of open-source material, do not imply in any form or fashion an official endorsement or acceptance by the Organization for Security and Co-operation in Europe (OSCE).

\(^{23}\) In 2004, only 500 copies were printed. Although initially, the environmental organization wanted to print maps that represent all known dangerous areas of the Polygon, the National Nuclear Center of the Republic of Kazakhstan rejected the first map claiming that not all radioactive areas had been studied properly. As a result, only radioactive traces from three explosions were represented on the map.
As I came to learn later, the areas of radiation pollution given are largely incomplete and grossly inaccurate. This is in part because some of the radiation data remains classified and because Kazakh state authorities prohibited the publication of a map showing all known radioactive areas on the test site. As a result, traces of only three explosions are represented. I also learned later

Figure 2. One of the many versions of the internationally sponsored maps of the Polygon.
that physical Polygon boundaries don’t really exist and many villages mapped have been abandoned, others not shown at all. Furthermore, there are no roads to or from Koyan, unless one considers the makeshift dirt paths of the open steppe. Although the map was far from perfect, this was the only one available to the public and the only one the environmental organization was allowed to print. This map demonstrated a number of things to me. First, there is a lack of reliable information about the former nuclear test site. And second, local understandings of the landscape, had they been solicited, would have created a completely different map.

As instructed by Igor, I brought a poster tube full of these maps to Koyan. The one I hung on the wall of my room quickly became a vibrant conversation piece that, ironically, had nothing to do with atomic bomb testing. On countless occasions, I learned of everything that was not represented on the map: nearby mountains, lakes, rivers, fishing areas, nuclear craters, Polygon swimming holes, villages, mining operations, best pasturelands, sacred sites, former sovkhoz areas, and of best routes to take while traveling. I also heard stories of secret airports, army training grounds, and mining ventures operating in the region. In all, I quickly came to realize that for most people, the map became the staging ground for demonstrating wide-ranging local knowledge about the area—a contest between who is a mestnyi (a local) and who is a nemestnyie (not local)—that rarely touched on the topic of Soviet era nuclear testing. In fact, during most of my fieldwork, I had to prompt conversations about nuclear explosions and its effects on local Koyan residents. Once the conversation was initiated, however, most people were eager to share with me their life stories of survival, betrayal, and, surprisingly, of a good life in the Polygon region.
The history of Soviet nuclear testing began at a time when Koyan was still a poor
\textit{kolkhoz}, with no electricity, glass windows, adequate housing, store, or in fact, a road. In 1947,
seven hours drive (on a good day) from Koyan, the architects of the Soviet atomic bomb project
began construction of what would be the world’s largest terrestrial nuclear proving ground.\textsuperscript{24}
Stalin personally appointed the chief of the notorious Soviet secret police (the NKVD), Lavrentii
Beria, to organize and manage the task. Beria chose the banks of the Irtysh River as the perfect
location for the command center (Holloway 1994). Hastily built by prison labor in the dead of
winter, Moscow-400 was a top-secret military installation. If depicted at all cartographically, it
was merely the end of a railroad line (Brown 2013; Tsukerman and Azarkh 1999).\textsuperscript{25} Moscow-
400 was directly linked to the Kremlin as well as other secret cities in the Soviet Union that were
charged with research and production of nuclear weapons. Conversely, the command center was
a closed city, completely cut-off from its immediate vicinity as movement to and from was
restricted and required special permits. And because Moscow-400 did not officially exist, all
mail was delivered to Semipalatinsk, one hundred twenty kilometers away. Even the dead were
buried elsewhere. Yet despite its alleged secrecy, the existence of Moscow-400 and the period
of forty years of nuclear testing that followed were well known to the local populations who
worked on sprawling government collective farms nearby. The extent of scientific and military
activities, however, remained a mystery except to the privileged consortium working on the
bomb project.

\textsuperscript{24} The Pacific Proving Grounds, a nuclear testing area with a primary location in the Marshall Islands,
comprises an area of 140,000 square miles (360,000 square kilometers), most of it ocean. From 1947 until 1962,
the United States tested its most powerful thermonuclear weapons on the Marshall Islands.

\textsuperscript{25} Moscow-400, Site M, Bereg, Semipalatinsk-21, and Konechnaya (the end) were internal code-names for
the military command center. Today, Moscow-400 is known as Kurchatov, named in honor of the Soviet nuclear
physicist, Igor Kurchatov, who was a leading figure in the Soviet bomb project (Balmukhanov 2002; Werner and
Purvis-Roberts 2007).
On August 29, 1949, at 7:00 o’clock in the morning, the four-year American monopoly on nuclear weapons ended with the successful detonation of a uranium bomb, code-named *Pervaya Molniia* (First Lightning) (Gordin 2009; Holloway 1994; Josephson 2000; Ryabev 2002; Sakharov 1990). It made official the beginning of the Cold War arms race. For the next forty years, seven hundred atmospheric and underground nuclear explosions punctuated life in Koyan and villages adjoining what grew in time to be an 18,500 square kilometer (or nearly 7000 square miles) Semipalatinsk Nuclear Test Site research complex.\(^{26}\) Several technical areas and research facilities spread out over the entire site. Although the Soviet Union is responsible for 30% of the total detonations on the planet, it produced 60% of the total yield (Mikhailov 1999). The majority of these nuclear weapons, including the first hydrogen bomb, were exploded on the Polygon. Unknown quantities of radioactive particles vented into the atmosphere exposing the environment and its people to potassium, radium, thorium, strontium, cesium, plutonium, iodine, americium, and countless other elements known to cause illness and death with repeated exposure.

Within the Polygon, geographically diverse technical areas were selected for a range of nuclear tests. From 1949-1962, for example, testing was conducted on the *Opytnoye Pole* (experimental field) located less than one hundred kilometers from Koyan.\(^{27}\) All of these explosions happened above ground, that is, near the ground, in the atmosphere, or at high altitude. These tests were for weapons development and simulated nuclear war/combat...

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\(^{26}\) There is no agreement as to the total number of tests conducted on the Polygon. Generally, it is accepted that anywhere between 456 and 710 tests were carried out. This variation can be explained by the fact that many tests used more than one nuclear weapon. Additionally, some data on the number of tests conducted on the Polygon remains classified or are not mentioned in official literature. From my conversations with scientists conducting research on the Polygon, most believe that the number of total bombs detonated is closer to a little over 700.

\(^{27}\) Other testing areas include Degelen Mountains, Sary-Uzen, Telkem, Balapan, Aktan-Berlik, site 4, and site 4a. At the Degelen Mountain test field for example, nuclear devices were exploded in horizontal tunnels that were drilled inside mountains. Diversion and damming of rivers experiments took place at the Balapan site.
engagements—to collect data on the effects of blast, heat, and radioactive fallout on living organisms (a topic I will return to in a later chapter) and machinery like planes, tanks, and other vehicles, as well as a host of structures like bridges and subway stations. In 1963, the Limited Test Ban Treaty was signed by the United States, Great Britain, and the Soviet Union prohibiting all nuclear tests in the atmosphere and under water. Global nuclear testing by most countries after this date was conducted underground. Beginning in 1964 and lasting until 1989, the Soviet regime oversaw research on weapons development, as well as their peaceful applications, carried out in new technical areas located throughout the Polygon. From this period forward research

Figure 3. A crater produced by an underground nuclear explosion on the Polygon (photo by the author).

was geared toward civilian projects including: the diversion of rivers to arid regions of southern Kazakhstan that permanently suffered from water shortage, the creation of water reservoirs and
dams, as well as the prevention of landslides (Kalmykov 1992; NNC Institute of Radiation Safety and Ecology 2011). Three technical areas were located in the small radius from Koyan and a mere eight kilometers from an animal stockbreeding winter farm, Bulak. Though the aims of the Limited Test Ban Treaty sought to reduce the spread of fallout, some of these underground explosions nevertheless vented radioactive particles into the atmosphere.

In 1947, Koyan effectively became a secret militarized zone and like Moscow-400, it too was erased from all maps (Dobrenko 2003). Like the nuclear test site, Koyan residents also did not exist, that is, officially. Because state secrets needed to be protected, the level of surveillance in the *kolkhoz* increased significantly. In short order, deep trenches and barbed wire fences with mysterious signs announcing *Zona* (the Zone) appeared along Koyan’s test site boundary. Altynai found the sign a curiosity. “We used to collect hay on the Polygon. I remember seeing a sign with *Zona* written on it. It’s sort of funny. What sort of *Zona* was it? Was it a *Zona otdyha* (resort) or what? No one in the village had any clue. We worked in the *Zona*, but no one knew what the *Zona* was,” she said, laughing. Whereas before, movement was restricted and policed by the *kolkhoz* supervisor and the NKVD, after 1947, the military took an active role too. Only those working on collective farms were technically allowed to enter the Polygon with prior military approval. Individuals who travelled through the test site without proper authorization (hence illegally) were promptly arrested by the secret police. In effect, the internal passport system impeded movement and access to places within (and outside of) the radius of the

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28 I was told that surveillance of the Polygon changed over time. During later years of testing, for example, people often entered without proper authorization. Although some individuals were arrested, others were able to travel through the test site unimpeded with or without the permission of local authorities. Soldiers regularly patrolled main technical areas.
militarized zone. Officially, the zone was an area closed off to unauthorized persons, a place where all travel was regulated.

At this time, the new military zone became a precarious world. While the rest of the Soviet society practiced civil defense drills and learned how to protect themselves against a nuclear attack and hazardous radiation, people living closest to the bomb knew nothing (Gailar and Wigner 1974; Grazhdanskaya Obrona 1983). Indeed, there were no bomb shelters, no gas masks; no U.S. style “duck and cover” drills in these regions. “What they were doing on the Polygon, no one told us. Some soldiers wore gas masks but we didn’t know why. I wasn’t scared of the above ground explosions, but I didn’t like underground tests. This is only because these bombs were tested year round and made a lot of noise,” Burkut said. Village residents were neither permitted to speak of explosions nor any illness thought to be linked to them. Indeed, until 1989 the term radiatsiia (radiation) was officially forbidden and as a result, was an unfamiliar term to local residents. Using radiatsiia in conversation by unauthorized personnel occasioned swift arrests.

Not surprisingly, the illegality of the term made proper medical diagnoses impossible. According to first-hand accounts of Koyan residents, medical doctors I interviewed at a local hospital, as well as a variety of secondary sources, individuals who experienced immediate illnesses, like acute radiation sickness that often included symptoms of fainting, nosebleeds, diarrhea, or hair loss, were given diagnoses based on state sanctioned illnesses (of which acute radiation syndrome was not included). Even cancer diagnosis was illegal and in official documents these deaths appear as heart attacks, aneurisms, or other unrelated diseases. Nurzhan

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29 The internal passport system was implemented throughout the Soviet Union during the First Five-Year Plan to curb the influx of peasants to urban areas (Fitzpatrick 1994, 1999). The internal passport was the most important identity document establishing a person’s surname, patronymic, date of birth, place of birth, nationality, as well as whether a person was single, married, or divorced (Baiburin 2012).
was just a child when she suffered from what she now believes was radiation sickness. Speaking with Nurzhan about her experiences at a clinic where she now works as a medical doctor, she said:

> I was five or six years old when the bomb exploded, must have been 1962. By looking directly at the light I was blinded and developed cataracts. Then there were these strange burns on my body that made my skin peel. All my hair fell out. Without available transportation, my parents couldn’t take me to the hospital, so I stayed in bed for months instead. There was a Polish doctor in Koyan. He was a victim of Stalin’s repressions and very happy not to end up in one of the notorious labor camps. He tried to heal everyone, even though he lacked drugs. He helped me. But no one ever gave me a diagnosis—the doctor probably didn’t know himself what was going on. Because I am a doctor now and finally learned what was happening in Koyan when these tests took place, I am certain that it was radiation sickness. (Interview 2012, translated from Russian by the author)

With cancer or radiation sickness unavailable as a diagnosis, brucellosis, an animal-borne disease transmitted to humans via ingestion of unpasteurized milk or meat from infected livestock, was commonly used instead. Unsanitary Kazakh living conditions were also cited as causes for sickness, a claim that continues to this day (Carlsen et al., 2001).

Ironically, the health and safety of village residents and animals was a “priority” for military personnel and the ritualized pseudo-protective measures were strictly followed. Many Koyan residents told me that before each test, Soviet troops were dispatched to all Polygon villages where they issued safety instructions including: all stove fires were to be put out; all chimneys on all homes were to be covered (in order to prevent dust from entering); all water wells were to be sealed; all animals were to be corralled in one area; all residents were to leave their homes and gather outside until testing is complete. Sometimes when a nuclear blast would be visible from Koyan, children and adults were permitted to hike to the nearest mountaintop (many trekked to the area of the archaeological site I was shown by Tursynbek) to have a better look. Prior to a detonation event, two planes circled the Polygon area, signaling an imminent explosion. When asked, elders still remember seeing mushroom clouds in the distance. Gazing
in the direction of where bombs were detonated, their eyes mirror the awe they had that day when they were ordered from their homes. As the recollections go, a second sun rose above the horizon. Moments later, a hot wind blew on their faces and the ground rumbled beneath their feet. When residents reentered their homes, they found the contents in disarray and a few shattered windows were reported. As for the soldiers’ protection, they drank their military approved ration of vodka, measured to 150 grams, and drove away.

For forty years, the military zone was a camp where the transcendence and suspension of law—a state of exception—was the rule (Agamben 1998). From the beginning of the nuclear bomb project, Koyan residents became experimental subjects, enrolled in one of the largest biosocial experiments ever to take place in the Soviet Union.30 The military zone where they lived operated along the lines of what Giorgio Agamben calls “inclusive exclusion.” Although included in the sphere of Soviet economic, social, and political life (after all, the entire zone was also a collective farm), the inhabitants of the Polygon were at the same time outside—in a region where health and safety of the population was disregarded, especially when it came to radiation exposure. Information was highly classified. This included the physics of nuclear bombs, their toxicity, environmental contamination, as well as biological effects of radioactive exposure. And because the nuclear operation was secret, the entire military zone was not subject to any laws of the Soviet state. For forty years, the state operated directly on life, where individuals could be killed or made ill by being exposed to radiation. As Burkut pointed out to me, “doctors came and examined us, but no one said a word if testing had anything to do with people being sick. We didn’t ask. The strange illnesses scared us. But we didn’t know we were sick because of the

30 There were many secret cities and military zones throughout the Soviet Union where people were purposefully exposed to toxic elements and examined as part of clandestine biomedical studies (see Brown 2013). The Polygon was the largest and most toxic of those sites. Beginning in 1972, 30,000 people in the most exposed areas of the Polygon region were registered and regularly examined for radiation-induced illnesses.
bombs, it was a secret back then. Only now and looking back do things make sense.”

Paradoxically, while the nuclear bombs produced ill health, the Soviet military apparatus responsible for that also sustained (economically and socially) the same individuals that it also “secretly” destroyed. The ways in which nuclear testing was normalized in the zone becomes evident in the historical narratives of Koyan residents. I focus here on the autobiographical narratives of Zhanbolat and Erzhan, both born before nuclear testing began. Although in many ways their experiences are similar, Zhanbolat lived and worked in Koyan, while Erzhan lived inside the official borders of the Polygon.

**Atomic Narratives**

Zhanbolat was one of three elder residents in Koyan when I met him in November 2010. My visit came two weeks after his 70th birthday and one week after his release from the hospital. Even for his advanced age or perhaps because of it, Zhanbolat was most determined to report the “truth about the Polygon.” When we met that November, he was visibly suffering—stomach cancer appeared suddenly and there were no drugs to manage the pain. This was not his first time dealing with a serious illness. In 2004, a large malignant tumor was surgically removed from his right eye, explaining the three-inch scar. Zhanbolat, like his parents and grandparents before him, was born in Koyan, and prided himself on never having moved away. After finishing primary school there in the mid-1950s, he took on many occupations in what was to be a life-long career on the collective farm: a tractor driver, sheepherder, hay and grain collector, as well as an accountant. Zhanbolat had ten children (four girls and six boys, the youngest of whom was twenty-one years old), a feat that earned his wife the Soviet honorary title of “Mother
Heroine.” I never had the opportunity to meet her. In 2006 she unexpectedly died from tongue cancer when she was in her early fifties. Most people in the Polygon region, I learned, rarely lived long enough to see retirement pensions and for most, surviving past fifty is a blessing.

Zhanbolat, therefore, belonged to a very small group of *stariki* (elders), a handful of individuals who reached old age in these parts of Kazakhstan. He died from cancer in 2013.

Zhanbolat was one of a few individuals who saw the beginning and the end of Soviet nuclear testing in Koyan. He was born four years after Koyan became a *kolkhoz* and nine years before the first nuclear test. Zhanbolat’s autobiography, told to me in a series of interviews, sheds light on what life was like during atomic testing. In his own words:

The first time I saw an explosion was in 1954 [the first year of the Virgin Lands Project]. But Koyan became a *zapreshchena zona* (forbidden zone) in 1946 and all sorts of soldiers came. This was the first time we saw soldiers—how were we supposed to know what a soldier looks like when we had never saw one? I was in the first grade. And then in 1954 atmospheric testing began [testing was not frequent until then] and more soldiers started coming. Two or three lived here—they had their own food rations and generators. At the time in these lands, there was no electricity…The day of the explosion, soldiers stationed in Koyan had to protect us so that nothing bad would happen. And we saw the bomb: oy, how the earth shook; and the brightness! Then a mushroom cloud appeared, followed by a loud noise. They only tested bombs when the wind blew away from the village for our own protection. It was all a secret. Then tests stopped in the atmosphere and went underground. They did those tests in two places. A huge crater appeared nearby and we call it an atomic lake…After each test the commanders gave 150 grams of vodka to the soldiers. They gave us nothing! We were experimental rabbits but we didn’t know that then! But my body adapted to radiation and if I leave, I will either get sick or die. Clean air is our death, so we can’t leave. And of course we worked here and on the Polygon—we cut hay, harvested grain, and grazed sheep, everything…there was no fence and everyone went where they were told to go or wanted to go. In those times, what is radiation, how dangerous it is, we did not know. They knew, we didn’t know and now we are used to it. Everyone was afraid to give a real diagnosis. For example, if someone was sick from radiation, some doctors probably knew, but couldn’t tell us because they risked being arrested. So instead, they gave circular diagnosis and that’s it. You couldn’t openly say that people were sick from radiation because it was a secret…A lot of people were shot or arrested by the NKVD in Koyan for not following the law, but that was only...

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31 Beginning in 1944, the order of “Mother Heroine” was given to women who had more than ten children. For raising a large family, the women were given financial assistance, increased food rations, and were able to collect higher pensions earlier than women with fewer children.
because of Stalin. For example, one of my family members hid in the Tsarist mine to avoid going to war. The NKVD officers tied his mother to a pole threatening to shoot her if he does not come out. He did—they arrested him and he died somewhere in the war, but we don’t know where. But after Stalin we had everything: money, coal, and hay. Everything was cheap. We had vacations and life wasn’t bad. You get used to the bombs. (Interview 2011, translated from Russian by the author)

Zhanbolat’s descriptions of his experiences touch on many aspects of daily life in Koyan during this period. On the one hand, people who lived in the zone express anxiety about radiation exposure and are bitter that for forty-years they knew nothing about what was going on. On the other hand, life in the Polygon required adaptation to the conditions at hand. As Zhanbolat points out, life followed the rhythms of the collective farm and not so much those of testing. Couples got married. Children went to school. Adults were preoccupied with livestock herding, hay and grain harvesting, as well as other farm duties. Hence the secret nuclear tests, a regular sight in Koyan, became just a normal interruption. When it all ended, life in Koyan became harder once again, leading Zhanbolat to yearn for a better, different, and earlier time (Boym 2001).

Unlike Zhanbolat, Erzhan spent most of his life tending animals inside the official borders of the Polygon. In fact, he lived there on a winter farm. I heard of Erzhan ever since my arrival at the village in 2010. In this corner of Kazakhstan, he was well known, in part because of the many years he lived on the Polygon and because his “mutant leg” (one that was shorter as a result of a childhood accident) could be used to fool unsuspecting and naïve visitors. Locals deployed Erzhan as a village “mutant” to all outsiders asking about radiation. Although he acquired the handicap by accident, the joke was to make some people believe Erzhan’s deformity was caused by radiation. The joke seemed to work: it fooled countless people (mostly journalists) who scoured the area for “real mutants”—the less than human entities said to inhabit the Polygon. But I was also a perfect candidate to kid. After all, I was studying the “effects of
nuclear testing” and most people seemed to initially assume my interest was to interview and study “mutated people,” the obviously “real” victims of nuclear tests. Erzhan seemed to be in on the joke too, as I came to realize when I finally interviewed him. It dawned on me, however, that this type of humor speaks back to dominant representations equating Polygon victims with deformity. This form of humor, then, can be seen as a thinly disguised form of protest against the systematic and dominant portrayals by the local media, medical doctors, and urban residents that Polygon people are something less than human (Goldstein 2003). As one of the “weapons of the weak” (Scott 1985), humor is the only recourse people have in an uncertain world of poverty (Goldstein 2003).

I spoke with Erzhan at his house a couple of months before I was set to return to Colorado. There he sat opposite me on that hot summer day in 2012—on a couch beside a wall with a hanging carpet. His feet flat on the floor and arm propped up on a cane, Erzhan’s face gave way to a big grin followed by uncontrollable laughter. After a couple of minutes he stopped and happily announced his leg was not mutated. The conversation turned somber, however, when he began speaking about his early life. Erzhan was born in 1938 in a village located forty kilometers from Koyan. That same year, he became an orphan. People say the NKVD murdered his parents for being enemies of the state, but Erzhan did not go into details about this. He did mention, however, that both of his sisters were interned in a labor camp that worked a Karaganda coalmine during the war and there they died. Adopted by “people,” Erzhan moved to Bulak winter farm in 1947, where he worked and lived for fifty years, together with his wife and children. It is now a well-known fact that Bulak is toxic. Indeed, it is located in one of the more radioactive sections of the Polygon, next to several technical areas used for underground nuclear testing. No less than 23 of these tests were conducted there, three of which
were excavation explosions generating craters. The nearest of these craters is visible from the winter farm several kilometers away.

I don’t know my mother and father, because they died when I was born. I was very little when I became an orphan. I had two sisters, but they took them away to work in the mines in Karaganda during the Great Patriotic War [World War II]. I lived with people who took me in. In the kolkhoz, when I was still very little, I grazed calves, sheep, collected hay, and harvested grain. I moved to zimovka [winter farm] Bulak in 1947, it is about 13 kilometers from Koyan…This is where I broke my leg the first time—in 1959 I broke it again. My bone never grew back properly even though for three years I was going to the hospital. So my shorter leg has nothing to do with radiation like everyone says! I worked in a couple of zimovki in this area. I grazed 142 sheep and later, when I became a senior chaban [herder], I looked after horses. Our zimovka is located 3 or 4 kilometers from the Polygon. However, we worked right in the center of the Polygon, all around ground zero where they did the explosions. Before each test, a medical doctor from Moscow whose name was Biriukov, I forgot his patronymic, would come to the zimovka and warn us. He looked after us, a very nice man. Biriukov would tell us where to take our sheep so that they are safe from the blast and made sure we are safe too…He would come during every test—a plane would make circles above making sure no one was left behind…They prepared for these tests for 6 months so that everything was done perfectly without an accident. Biriukov would load us onto a bus and drive everyone to safety. He always had a special preparat [a liquid solution] that we had to drink. If there was no preparat, we drank vodka. And if there was no vodka, he told us to take 150 grams of sugar with water and drink that. He really helped us. When I lived in the zimovka, we herded our animals, oh I don’t know, two or three kilometers from the underground crater…We absolutely knew nothing about radiation, no one told us that radiation can make people ill. But our organism is different now, we are used to it probably. For example, it turns out that right next to the zimovka they tested a neutron bomb! It was a poorly made bomb so it poisoned everything as we later found out…we never got ill. The other craters were okay—there are fish there—you can still see a volleyball court and a diving board once used by soldiers. We lived close to the crater but never got sick. Why? Because we knew how to stay safe. For example, we ate horsemeat. As you know horses generally don’t have mutations and neither do mountain goats. I knew this because whenever I took my animals to pasture next to the crater, I saw plenty of two headed or one-eyed mice. Sheep, goats, and cows also had these same mutations but that’s because all are biologically weak organisms. But I never saw mutations in horses or mountain goats! Also, the administrators helped us stay healthy. They brought us all sorts of fruits from Czechoslovakia, a country with strict food safety protocols. All fruits, for example, were kept in a refrigerator for 6 months and then they were tested in a laboratory. Radiation didn’t affect us then, maybe now it does but how would we even know. We are sick—heart problems, skin problems, all sorts of problems. But maybe we didn’t die because we can’t live without it [radiation]. I recently drove by Bulak on my way to Semipalatinsk. Scary how we lived in such a backward place. But at least then everything was green. Now, grass and soil looks strange. You have to know that when we lived on the Polygon we had very good
relations with soldiers and all administrators. Everyone visited us: doctors, commanders, lieutenants, and even generals…commander Gerasimov is now in Moscow…They really respected us and we were the only ones they allowed to move freely on the Polygon. I didn’t need authorization! On my motorcycle I went everywhere—even to Kurchatov when it was still a closed city. But the Russians should have cleaned up the Polygon and covered all the radiation with quality cement. (Interview 2012, translated from Russian by the author)

The Polygon was an experimental space in a couple of different ways. In one sense it was a place of testing bombs. In another, it was a place where humans could be looked at, too, and Erzhan’s narrative suggests just that. Indeed, the pervasive militarization of daily life, secrecy, and the blatant denial that anything was wrong, not only stripped Erzhan of his juridico-political rights, but also normalized (and ignored) the violence committed against him.

Specifically, the nuclear secrecy in the region produced what Michael Fischer (1991) and George Marcus (1995) call “multiple regimes of truth,” or the dynamic tensions produced by military secrecy, techno-scientific research, and the Soviet production of knowledge coupled with local understanding of health and livelihood that structured and informed life in the nuclear zone.

Hence Erzhan was told to drink vodka and, thus armed, was able to travel through the test site uninhibited. Denial that the area was radioactive, together with the “routinization” of economic life created a façade of normalcy for Erzhan, while at the same time nuclear tests created human ruin. While all of this was going on, so was the agricultural development of the region, a massive Soviet project that transformed, once again, life in the nuclear zone.

The Virgin Lands Project (and Atomic Testing Take Two)

Stalin’s death in 1953 marked an end to one of the most historically memorable and repressive dictatorships. Under the leadership of Nikita Khrushchev, the Soviet Union entered a period of de-Stalinization and liberalization known as “The Thaw.” Although Khrushchev supported Stalinist purges—denouncing close acquaintances in the process—he ultimately
condemned Stalin’s repressions in a secret speech three years after the dictator’s death.

Khrushchev’s governing style was markedly different. He ousted ardent pro-Stalin supporters from positions of power, most notably Beria, the once elevated and feared NKVD boss and known criminal, who was, ironically, subsequently shot by his own secret police. As a result, millions of political prisoners began to be freed from Gulag labor camps; peasants who were previously bound to their collectives received passports authorizing them to migrate from the impoverished countryside. Many chose to move to urban areas in search of work. To accommodate this massive migration, Khrushchev launched a plan to construct modern, five-story apartment buildings. Known as khrushchovki, the low-cost, prefabricated, five-story cement blocks remain a characteristic feature of many post-Soviet cities, and were meant to assuage previously unavailable accommodations for families. Khrushchev’s relaxation of state powers meant that for the first time in many years (since the NEP), foreign music, film, and books became available to Soviet citizens (albeit of the state-approved kind). Foreign tourists and scientists, even if monitored by state agents, were able to travel to the Soviet Union. This liberalization was Khrushchev’s attempt at a kind of “rebranding” of state authoritarianism. The Soviet Union was no longer to stand for revolutionary self-denial and sacrifice, but instead to emerge as a modern welfare state that “staked its legitimacy on providing a better life for its citizens” (Kret 2013:252). In spite of the relaxation of state powers, the nuclear arms race accelerated and so did the desire to produce an economic Soviet global superpower, a viable

\[32\] The majority of prisoners were actually released during the reign of Leonid Brezhnev, but even then, many of them remained interned in forced labor camps.

\[33\] The communal apartment (komunalka) was a predominant form of housing in the Soviet Union until Stalin’s death. Emerging immediately after the Bolshevik Revolution, komunalka remedied the housing crisis. Each of these apartments housed two or more families—each family was given one room functioning as a bedroom, living room, and a dining room. Everyone shared keys, kitchen, hallway, and bathroom (Attwood 2010; Boym 1994).
competitor to the United States.\textsuperscript{34} But first, Khrushchev had to deal with a grain shortage crisis and rebuild the Soviet agricultural sector still recovering from a devastating war.

From a purely economic standpoint, the \textit{kolkhoz} was inefficient in producing the massive quantities of agricultural goods. Exacerbating this inefficiency was the Soviet entry into World War II. As part of the war effort, Stalin was forced to divert economic investments toward the military and heavy industry. When German forces seized and destroyed important agricultural regions (like Ukraine), food production ground to a halt. This resulted in the breakdown of the centrally planned distribution economy (Moskoff 1990; Snyder 2010). In fact, even though millions of soldiers and civilians died in protracted battles with German forces, countless others starved to death. Eight years after the war, Stalin’s war effort pushed grain, dairy, and meat production to historic lows. To feed the starving population, the state (under Stalin) was forced to import grain and other products from abroad. Khrushchev set out to change all of this.

Historically, the steppes of Central Asia were known to be rich in natural resources like coal, copper, gold, and other raw materials. Most important for the post-Stalin regime, however, were the Kazakh pasturelands. In 1953, Khrushchev embarked on what seemed at the time a brilliant solution to the grain crisis. He proposed that the fragile, virgin steppe grasslands, the majority of which are located in Northern and Central Kazakhstan, be transformed into gigantic agricultural farms. Like his predecessors, Khrushchev considered the steppe underutilized, empty, and therefore an obvious answer to the grain problem. This view, however, was mistaken. The majority were actually pasturelands, still very much in use by Kazakh herders.

\textsuperscript{34} Khrushchev expanded the top-secret Soviet space and nuclear programs. The Baikonur Cosmodrome, the largest space launch facility in the world, was built in Kazakhstan during the Khrushchev era. From the steppes of the present day Kyzylorda \textit{oblast}, the first satellite, dog, and human were launched into space. In case of a nuclear war, missiles carrying nuclear warheads would blast off from Baikonur. Today, the site is leased by the Russian Federation. In the Karaganda \textit{oblast}, it is not uncommon to see rockets (locally known as \textit{proton}, a reference to a type of rocket booster) light up the sky.
Reflecting upon this, the Kazakh Communist Party leaders came out against the plan, fearing that traditional Kazakh lands would be permanently transferred to European peasants (Olcott 1995). In spite of their gentle protests (it was, after all, only one year since Stalin died and opposing the party line was literally life threatening), Khrushchev inaugurated the Virgin Lands Project. In line with Soviet ideological goals, agricultural production had to be revolutionized along socialist lines—shaped into an efficient, integrated, and rational agro-industrial complex maintained by properly socialized Soviet bodies.

Disregarding concerns that Kazakhstan’s grasslands were prone to wind and water erosion (desertification), and therefore, not the ideal site for cultivation, the plan forged ahead at a swift “Sovietesque” tempo. Vast tracts of land (equal in size to the total cultivated area of Canada) were designated for cotton, wheat, and other cereal crops (Feshbach and Friendly 1992; Field 2007; McCauley 1976; Olcott 1995; Siegelbaum 2006; Taubman 2003). These tracts were organized in the following way: wheat was grown in the North, cotton in the South. Large grain and livestock sovkhozy, long seen as an advanced form of socialist organization, were rapidly built from scratch, or eventually consolidated from the less productive kolkhozy. “Scientific” livestock breeding techniques were introduced, which in turn altered Kazakh grazing practices. “Antiquated,” free-range grazing was replaced with feedlots, causing animals to get fatter, quicker. Machinery and workers were also sent to the region. Initially, 200,000 tractors and other machinery were transported on trains to the Virgin Lands (Taubman 2003). As for manual labor, instead of prisoners, Khrushchev recruited workers by appealing to the ideological sensibilities of the Soviet youth. Hundreds of thousands of unpaid, idealistic volunteer komsomol (All-Union Leninist Young Communist League) brigades arrived in Kazakhstan to podnimat’ tselinu (raise the Virgin Lands). In subsequent years, millions of students, soldiers,
and former special settlers established tent cities in the steppe and joined large grain *sovkhозы*. Yet during the initial years, living and working conditions were dismal. For starters, the tent cities were a far cry from the romanticized images of socialist collectivity. There was no electricity or plumbing and very little food. Secondly, food, tractor parts, and planned housing were in short supply. Disillusioned, many volunteers returned home. Those who stayed behind usually included exiled border nationalities and former Gulag prisoners who, with no place to go, found the *sovхоз* life an improvement.

Although the Virgin Lands Project (and the subsequent measures taken by Leonid Brezhnev [1964-1982]) increased the overall grain output in the Soviet Union, it was deemed by many western and Russian scholars to be ultimately destructive, unpredictable, and ecologically costly. Industrial-scale farming had a barrage of effects and, looking back, the problems were indeed manifold. Failing to rotate crops, lack of fertilizers, overgrazing of delicate soils, and the relentless pressure to boost output, led to catastrophic erosion in subsequent years. Dust Bowl-like conditions were reported in many parts of the country. Faced with this situation, central planning and science were called upon yet again. Soviet engineers opted to divert rivers to irrigate arid lands and the use of chemicals became widespread. The poorly trained workforce with poorly researched methods set out with fertilizers, pesticides, insecticides, herbicides, and fungicides—applying these liberally and unevenly. Despite factors that would suggest failure, however, the first Virgin Land harvest (1954) was a definitive bumper crop and hailed as a success throughout the Soviet Union—even though a large proportion of grain rotted for lack of proper storage. Nevertheless, after this initial year of success, harvests can best be assessed as

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35 Soviet engineers were tasked with the diversion of rivers to irrigate the arid southern regions of the steppe to grow cotton, rice, and other crops. In the 1960s, the rechanneling of Amu Darya and the Syr Darya Rivers lead the Aral Sea, once the largest inland body of saltwater, to shrink (see Feshbach and Friendly 1992 for a discussion of environmental problems in the former Soviet Republics).
fluctuating and beginning in 1960 there was a steady decline in yields. Although the all-out drive alleviated food shortages in all of the Soviet Union, the agricultural output projections were, more often than not, wrong.

The Virgin Lands campaign as an “environmental catastrophe” is frequently highlighted by Russian and Western scholars alike who tend to focus on the desiccation of the Aral Sea and widespread topsoil erosion. These have become understood as classic examples of epic failures by historians who study Soviet industrial and agricultural planning. While reading these studies, however, one typically doesn’t get the sense that many of the behemoth state-sponsored projects often took place on overlapping landscapes. In fact, in much of Russian and Western literature the simultaneously occurring Soviet modernization projects, like agro-industrialization and nuclear testing in Kazakhstan, appear to be neatly delimited and separate, located in their own bounded space. More to the point, the environmental damages of these Soviet developmental schemes are neither contained spatially, nor are they kept inside borders. But the gaze has been focused in such a way as to create false boundaries or reproduce standardized ones. This is the case with the nuclear test site.

Beginning in 1954 the Polygon and its expanding military zone were slated for agricultural development, including large sections where active nuclear testing was happening. Yet researchers who focus exclusively on the Polygon often ignore this complicated history. They have a tendency to conceive of the Polygon as a neatly delimited and uninhabited place for nuclear testing (not agricultural development) and the people outside its borders as the victims of Soviet era war games. By doing so, they participate in the erasure of a multiplicity of place-based cultural, political, and economic historical realities, as well as discourses that contradict much of what is said (Escobar 2001; Trouillot 1995). What has tended to occur in these
dominant narratives is a silencing of histories challenging certain representations of the Polygon, that is, local narratives that privilege the history of the Virgin Lands over that of nuclear testing, survival over victimhood, and the porous nature of borders over their impermeability.

This local privileging of one representation of history over another makes perfect sense in this context. After all, most local people only learned about the nature of the Polygon and what really was happening after the fall of the Soviet Union. In fact, they spent their lives working on a collective farm and not waiting for bombs to explode. In this context, the nuclear test site is both a place of explosions that (people eventually learned) caused ill health, as much as it is a place where individuals lived, worked, and participated in all aspects of modern everyday life. In fact, nuclear tests, as Burkut once told me, were a complicated, albeit normal part of life—a brief suspension of a daily routine (a state of exception within a state of exception).

Accordingly, for most residents, finding out about radioactive pollution (sometime in the early 1990s) failed to tarnish and dislodge the image of a pleasant and comfortable life they acquired when Koyan became part of a large multi-village and multi-ethnic sovkhoz. Thus for local residents, the Polygon boundaries are fluid, just as fluid in fact as historical narratives of this time period.

Koyan experienced immediate economic redevelopment at the start of the Virgin Lands campaign in 1954 but this cannot be separated from the founding of Oktyabr (October) kolkhoz, which was yet another round of economic and spatial reconfigurations. As the story goes, Oktyabr appeared out of nowhere. Hundreds of Russian and other non-Kazakhs (special settlers and komsomol volunteers) spread out a tent colony on an open steppe 30 kilometers away. Its appearance was unforeseen by local residents. More surprising, however, was the speed with which the tent settlement turned into a fully functioning modern Soviet village. In a matter of
months, Oktyabr had cinder block houses arranged in neat grid pattern, a school, administration buildings, sports complex, medical clinic, and a graded secondary road linking it with Aktasty. Oktyabr also boasted a rarity in these parts: two asphalt roads stretching across and sideways through town like a large letter T. Little did Koyan residents know that Oktyabr was soon to be an administrative arm of the agro-industrial complex in the region. Ironically, given the remoteness of this territory in general (even if it was at the center of the most secret of all secret projects), the appearance of Oktyabr further integrated Koyan into the Soviet economic sector. On a local level, Koyan was no longer just a peripheral Kazakh kolkhoz, but rather a “rurally-cosmopolitan” agricultural node in a larger Soviet project.

On September 20, 1954, all area kolkhozy, including Oktyabr, were officially consolidated into a large-scale agriculture and stockbreeding sovkhoz (Document Four 1954). Nine days later this was “celebrated” with an inaugural nuclear explosion, followed by eight more in October. The decree on how to restructure the area initially called for the development of two separate state-operated collective farms: one exclusively focused on agriculture (Oktyabr), the other on stockbreeding (30 Years of Lenin in Kazakhstan). These separations, however, were superficial and in name only. By spring 1961 all area settlements were officially reconstituted and renamed as one gigantic sovkhoz named Oktyabr. Spreading over a fifty-kilometer radius, the sovkhoz included four other villages and at least fifty zimovki (winter settlements); each assigned a specific role on the collective.

The four villages, or otdielenia (sectors), were tasked with raising livestock. They specialized in breeding cows, sheep, horses, and goats or combinations of these. Yields were shipped to Oktyabr, the administrative center of the entire sovkhoz and a transport link in a long chain of distribution centers throughout Kazakhstan. Oktyabr not only oversaw its otdielenia,
but also managed grain harvests belonging to the sovkhoz. Within this economic institution various types of hierarchically positioned officials administered a 6000 strong workforce composed of tractor drivers, hay collectors, veterinarians, herders, grain harvesters, repairmen, teachers, and so on. This division of labor embodied the highest form of socialist development, that is, all parts needed to work together in order to ensure that the sovkhoz operated like a well-oiled proletarian machine.

As local history is told, the Virgin Lands Project hoisted Koyan out of abject poverty. In 1954 its name was officially changed to otdielenie number 4 and the village reorganized to raise thousands of sheep and horses, all kept on the territories of eleven zimovki under its jurisdiction. “We had thousands of horses and sheep, while the sovkhoz produced a million tons of wheat per year. It’s amazing how big our herds got! We also had technology—tractors, combines, lifts, and all sorts of machinery—electric scissors to shave sheep! Even Bulak zimovka had electricity,” said Tursynbek. Each zimovka had at least two chaban (herders) who together with their extended families raised livestock. Some were designed for Soviet youth brigades. Indeed, a winter farm several kilometers from Bulak had a dormitory for a komsomol brigade (at least 50 people). Enlisting for two years, individuals collectively raised thousands of sheep and goats. While the animals grew fat and multiplied, in Koyan they were slaughtered (sheep were slaughtered only after wool was collected). I spoke with Altynai and Nurzhan about the two years they spent in the komsomol brigade. Both women described life in the zimovka as the best years of their youth, a time of freedom, a time when they made friends, found boyfriends, had

36 Unlike in the kolkhoz that usually had more than one director, the sovkhoz had only one. In Kazakhstan most managerial positions in the sovkhoz were given to Europeans—Russians, Germans, Ukrainians, or the like. Throughout my fieldwork people frequently pointed out to me that there was no ethnic strife in the sovkhoz during the Soviet era. In fact, the majority of people in Koyan remember other nationalities favorably, especially the Germans who many see as being clean, precise, and, thus, highly valued workers. Nevertheless, Koyan residents are resentful of the Russians who they blame for dismantling the sovkhoz and stealing formerly state-owned property.
fun, and became exemplary Soviet citizens rewarded for hard work. After all, they had a real
task to do—help the Soviet Union reach an ambitious goal of breeding 50 million sheep. “Not
everyone was admitted to the komsomol. We had to have good grades and pass entrance exams
on Marx, Lenin, atheism, and so on. Only the best people were accepted. There were no Kazakh
language schools,” said Nurzhan. Indeed, with the komsomol’s help Koyan became a modern
village of sorts.

Before the end of 1955, all settlements within the sovkhoz were electrified, extra housing,
schools, medical clinics, and dormitories were constructed, and consumer goods became
available for purchase. For the first time ever, a well maintained dirt road connected Koyan to
Oktyabr. Regular monthly wages allowed people to access previously unattainable goods and
for the first time in Koyan locals could buy bicycles, building supplies, and food products. For
Burkut, life became much easier:

We finally got glass windows, salaries, and real houses. The volunteers came to Koyan,
erected barns for livestock and then built cinder block houses, store, and a dormitory.
There was even a radio and a telephone. When volunteers raised the Virgin Lands we
had so much bread—we were still collecting wheat harvest in December! Life really
improved and we participated in the building of Communism. Economically it was better
then. Now what’s better is that we can go to Kazakh schools. (Interview 2010, translated
from Russian by the author)

In fact, many local Kazakh families officially joined the Communist Party and were
rewarded as a result. Nurzhan, for example, was able to become a medical doctor and was
guaranteed a job in the sovkhoz because her parents belonged to the Party. Others never joined
the Party and continued to practice traditional customs, albeit in secret. Nurzhan said:

We fed the Soviet nation and were provided with all the necessities of life. I was a doctor
here in the sovkhoz. But our parents never had to think about how they are going to
provide for us, the state did it for them. Yes, people were ill from the bombs, but we
didn’t know that at the time. People shouldn’t criticize the Soviet Union. I worked for
the Soviet authorities and there were never any problems—to get stuck outside of the
aul? Never! We always had a road that was maintained. We had a sea of plows, a sea of
tractors—even Bulak had them. We did not have to think about tomorrow—we lived for today. (Interview 2012, translated from Russian by the author)

Even though not everyone had access to a university education like Nurzhan, everyone belonging to the sovkhoz was provided free occupational training (tractor drivers, herders, agronomists, hay collectors, accountants), schooling, and healthcare. After training, everyone was offered a job. Social mobility in the Soviet Union, as elsewhere (e.g. in the United States), worked at creating loyal patriotic citizens.

For most residents, the establishment of the sovkhoz created stability and wealth. No matter the bombs exploding in the distance, or the fact that all movement was monitored by the Soviet secret police and the military. Instead, as the story goes, the population experienced an increase in the standard of living and grew as a result. Over 4000 individuals lived in Oktyabr and nearly 700 people in Koyan and its winter pastures (not counting the other three otdielenia and their zimovki). Most of the new arrivals were non-Kazakhs and included a large population of Stalin-era deportees, like Russians, Ukrainians, Poles, Moldavians, Chechens, Tatars, Germans, among many others. According to those old enough to remember, outsiders effectively displaced ethnic Kazakhs who now found themselves a minority population (less than half of the total according to some) on ancestral land. People also occasionally complained that Europeans, not ethnic Kazakhs were usually placed in administrative posts. Thus, without a university education, Kazakhs were frequently assigned to tend livestock, harvest grain, or to other non-managerial jobs. Although the sovkhoz is generally remembered as a time of plenty, in present-day conversations I can hear a tinge of resentment toward ethnic Russians who seemed to preside over all other nationalities. For many village residents, one positive aspect of the Soviet Union’s disintegration is that today (since 1991) children can now attend Kazakh language schools and Kazakh is one of the official languages of Kazakhstan (together with
Russian and English). Nevertheless, most people I spoke with remember the sovkhoz life as pleasant and one that gave purpose and meaning to people’s lives.

There is something in the overall positive tone of the local narratives about the sovkhoz that warrants further exploration. Generally speaking, in everyday conversation people rarely bring up nuclear testing. This is not the case, however, when it comes to the Virgin Lands and life in the sovkhoz. In fact, regular daily conversations often elicit stories of a happy, idyllic, and peaceful time where everyone worked together in seemingly everlasting friendship, the time of their youth. In this world, there is no radiation, erosion, pesticides, failed harvests, lack of machinery or parts, difficult hours, or descriptions of sovkhoz life that can be associated with hard work on the farm. Indeed, this version of history always celebrates life under Communism so much so that it resembles an aesthetic ideal of what Milan Kundera (1984) calls “Communist kitsch.” Kundera (1984:248) writes in *The Unbearable Lightness of Being*: “kitsch is an absolute denial of shit, in both literal and figurative sense of the word; kitsch excludes everything from its purview which is essentially unacceptable in human existence.” In this formulation then, the local representation of idyllic life on the Polygon during the time of the sovkhoz could be construed as a desperate attempt to affirm one’s humanity or as nostalgia, a way to hide what is intolerable in life. Perhaps what is intolerable for the people of Koyan is the reality that violence always lurked behind the “idyllic” sovkhoz everyday.

After the fall of the Soviet Union in 1991, people were told the “truth” and learned about the forty-year legacy of nuclear testing, biological effects of radiation exposure, and the purposeful failure of the Soviet state to protect them. As will become clear in subsequent chapters, Koyan residents were informed by local medical doctors and the Kazakh media that they were irradiated, they were once experimental subjects, had genetic mutations, and were lied
to by the Communist regime. People also learned that there is no utopia and that everything they once did is no longer relevant in the current Kazakh social order. Now, individuals in Koyan are told that the only “real” way to be is to be a “true” Kazakh and a victim of Soviet era excesses (Grant 1995). As Tursynbek often said to me, “we are once again traditional Kazakhs—nomads living in the steppe.” It is not to say that people who live in Koyan and Oktyabr are unaware what happened to them, delude themselves through stories of pleasant sovkhoz life, or necessarily yearn for the past and the bombs. Rather, the stories they tell themselves about themselves reflect the fact that their lives under the Soviet dictatorship, especially after Stalin’s death, were much improved (Yurchak 2006). People had careers with paid vacations, enough food to eat, free medical care and education. But following Kundera, they prefer to ignore what is unacceptable to human existence. After all, who would want to live in a world where the past wasn’t “real”? In this context, people’s insistence that life in the sovkhoz was wonderful, has to be understood from the present state of isolation and poverty Koyan residents find themselves in. They are no longer a part of ambitious plans. Since Soviet disintegration their status has been devalued, as their skill sets are perfect for a Soviet collective farm, not for a free market economy. Like before, scientists continue to do epidemiological research on the Polygon populations and don’t share their findings. By the end of my fieldwork I realized that no one seems to care about Koyan and its people except those who want to learn about the Polygon—anthropologists included.

**Conclusion**

Historians and anthropologists alike have done a remarkable job in capturing Soviet modernization projects, their centralized economic planning, and the “ordinary life in extraordinary times” of Stalin’s terrorized Russia (Fitzpatrick 1999). But places like Koyan are
rarely, if ever, written into the grand narrative account of Soviet history. In part this is because Koyan’s story begins at the margins of the Tsarist Empire and then the Soviet state, only to end at the margins of present-day Kazakhstan. Yet Koyan has a larger recognizable history and is a place with its own distinctness, one emblematic of the Soviet shared experience. Koyan was, after all, at the center of some of the most dramatic transformations ever to take place on Kazakh soil. The brutality with which individuals were incorporated by the Soviet Union is reflected in the stories people tell. The Bolshevik Revolution was the beginning of the end for the Kazakh traditional way of life, yet within what became the secretive military zone, people in Koyan and other villages were socially and economically sustained by the Soviet system. After all, everyone had access to free healthcare (however limited), secondary and university education, job training, and a guarantee that the next generation of Soviet citizens would be provided for. This sustenance, however, came at a price. The Cold War arms race, resulting in the intensification of nuclear testing, as well as the Virgin Lands Project, subjected communities to multiple sources of dangerous contaminants in a single site, or what Donna Goldstein and Kira Hall (2013) call “toxic layering.” In spite of local perspectives that see the Polygon as an ecological disaster, today many local villagers would like to see the test site reopened (after the sovkhoz system collapsed in 1991 when the Soviet Union literally ceased to exist) for their own commercial and private usage. This issue—the question of an inhabited economically viable radioactive landscape—is at the center of a debate about the region’s future. It is a topic I address in the following chapter.
CHAPTER III

“Sami po Sebye”: Kazakhstan’s Neoliberal Economic Reforms through Dispossession

According to the global ranking, Kazakhstan has joined the group of countries with the most favorable conditions for doing business. We have to reinforce this trend. Small and medium-sized business is the economic basis of our Universal Labor Society. For its development we need to comprehensively address private property rights. It is necessary to repeal all the outdated legal norms impeding business development (President of Kazakhstan, Nursultan Nazarbayev, in his Address to the Nation January 17, 2014)

We must continue reducing poverty and tackling unemployment. At the same time, it is important not to allow welfare mentality to grow. For all recipients of state allowances and aid, it is necessary to introduce a rule for mandatory participation in employment programs and social adaptation (President of Kazakhstan, Nursultan Nazarbayev, in his Address to the Nation January 17, 2014)

It wasn’t long ago, 1991, I believe, when repressions started again in Koyan. People did whatever they wanted—they took tractors and animals and the smarter ones took both. The former sovkhoz directors, brigade leaders, and everyone else who worked in the upper administrative posts during the Soviet period took everything and moved away. We were left with absolutely nothing. No animals, machinery, grain—nothing. We now rely on ourselves and it has been that way ever since the collapse (Burkut, 2010 Interview)

Introduction

The first, and only time I drove a slaughtered animal to the bazaar (market) without its rightful owner, was in June 2012. Tursynbek and Altynai usually joined me on these trips to the bazaar, in part, to make sure that that their meat arrived safely to its destination and to visit with their other children in the city. This time, however, they stayed behind in Koyan. That afternoon Tursynbek was beginning a two-week shift working twelve hours per day at an open pit mine. Altynai had to tend to cows, sheep, goats, and horses, as well as take care of the household that included a son, daughter-in-law, and two grandchildren. It is always difficult to find return transportation to Koyan anyhow—a journey consisting of buses, taxis, and other inconveniences that can take days without a car—so it seemed obvious to everyone that I might as well be the one to go. Importantly, the family decided that I could be trusted with getting the required spravka (in this case, an official document certifying the meat passed a health inspection and can be transported). I had made this trip countless times already; my “always on the verge of breaking” Mitsubishi Delica van seemed to work better than ever; and it was much
cheaper to send me to the city than to find other ‘for hire’ transportation. The standard cost of carting an animal from Koyan to the city bazaar in Karaganda, after all, can be as high as 15,000 Tenge (or $102).

It was a busy morning. Tursynbek and four other village men got up at dawn. They were anxious that I was going to leave too late and worried that high summer temperatures would spoil the meat before it got to Karaganda. As a result, the cow needed to be slaughtered early that morning—when the weather was still cool—before it embarked on a seven-hour journey to the bazaar.37 This day a sheep was also slaughtered; I would take it to Tursynbek and Altnai’s three older children who live in the city. The sheep, and what amounted to 151 kilograms (332 pounds) of beef, were neatly wrapped in a large blue tarp and placed in the back of the van. The entire meat preparation process lasted no more than an hour and a half. But my departure was not immediate.

Being the only one with a reliable car in Koyan, I was obliged to ask if anyone in the village needed a ride to Oktyabr or any other town along the way. Besides that, I also needed to collect itemized produkty (a reference to any commercially bought merchandise, like detergents, hair coloring solutions, medicines, or food) lists from the other households in Koyan. Written on scraps of notebook paper, these lists were usually quite extensive and included anything from tea, flour, rice, sugar, noodles, potatoes, onions, carrots, and cucumbers, to machinery parts, lime for painting houses, toys, make-up, and clothing. Because the price of all produkty is at least four times cheaper in the city than in the small, often inadequately stocked, family-run stores in Oktyabr, people always buy merchandise in bulk and the lists reflect this accordingly. Thus, on

37 According to individuals I spoke to in the village, meat can only be sold in the oblast of residence. Hence, even though the city of Semey is much closer to Koyan than Karaganda, Koyan residents cannot sell their meat products there.
this particular day, I was to return with 300 kilograms (661 pounds) of flour, sugar, and rice; three large sacks of carrots and onions; twenty boxes of black tea; ten heads of cabbage; four large buckets of lime; and an electric separator (a machine that separates milk into cream and skimmed milk, from which butter, sour milk, yogurt, and kurt—the small, dried, and hard sour cream pellets—are made). It was, therefore, just before noon when I finally left Koyan, together with Nurgul (Tursynbek’s sister in-law) who was going to attend her son’s wedding the following weekend.

Since the collapse of the Soviet Union in 1991, the makeshift steppe dirt roads that connect the main sovkhoz administrative center to other villages in the area, once easy to traverse, are no longer maintained. Today it takes an hour (in good weather conditions) to get to Oktyabr by car. Because the veterinarian, normally on duty in Oktyabr, was not available to give me the spravka, I had to get the document from a different veterinarian living in an adjacent village, yet another hour away. The spravka does two things: it certifies that the transported meat is not stolen, and that it’s fit to eat. According to Tursynbek and others I spoke with, whether the animal is healthy or not can be determined by looking at its liver, that is, the veterinarian visually scans the organ for tale-tale signs of brucellosis or siberiiska yazva (anthrax). These things, I was told, include liver abscesses that appear in the form of milky white spots. Both brucellosis and anthrax are animal borne diseases and pose serious health risks to humans. Some individuals in Koyan have had brucellosis at one point in their lives; while it is rarely fatal it nevertheless causes fevers, severe joint and muscle pain, headaches, and fatigue—all of which can become chronic.

After obtaining the spravka, the trip to Karaganda—punctuated by the routine stop at a favorite roadside café—took an additional six hours on the rutted-out, one-lane road. Waking up
at dawn seemed really pointless. After dropping off Nurgul on the outskirts of town where she needed to go, I headed down the road to collect Tursynbek and Altynai’s older son (as well as their nephew and his wife visiting from Koyan) in one of the many rundown khrushchovki apartment blocks dotting the periphery of Karaganda. The son would be the one to actually sell the cow. With everyone in the car, we headed to the bazaar and into the labyrinth of alleyways. It must have been an hour or more before the kommersant (merchant) arrived. Once he did, however, things moved quickly. The meat was taken from the back of the van, placed on a scale, weighed, and then hung on metal hooks in a cooler. Meanwhile, the cow’s liver, spread out on a large, bloody wooden stump, was inspected by the thirty-something year old kommersant for traces of the ominous white spots. None were found. He didn’t bother to look at the spravka either, the official seal of approval that I only later learned was really just for the local police in case we are stopped at a random checkpoint. The kommersant agreed to buy the entire cow for 135,900 Tenge (or 900 Tenge per kilogram), a decent price, at least according to Tursynbek.\footnote{During my fieldwork in Kazakhstan, one dollar equaled 147 Tenge on average. Tursynbek’s cow sold for $924 (often, he would sell for as low as $700), at six dollars per kilogram. Between 2010 and 2012, food prices were relatively stable in Kazakhstan and at the bazaar were as follows: milk 150 Tenge/liter, loaf of bread 60 Tenge, ground beef 1500 Tenge/kilogram, beef strips 2700 Tenge/kilogram, beer 250 Tenge/liter, and grilled lamb shashlyk (a skewer of about five pieces of meat 1000 Tenge). Sheep and goats from Koyan were sold in Karaganda anywhere from 10,000 to 15,000 Tenge (or $68 and $102 respectively). According to my urban colleagues in Karaganda, the sale price for Tursynbek’s cow was too low.}

Part of the money from the sale was used to buy produkty for Tursynbek and Altynai’s household back in Koyan. The rest was given to their family living in the city—three daughters, one son and his wife, and two sons-in-law—who need help covering food, transportation, and housing costs. Although all of the individuals worked, none had jobs that paid enough to make them fully independent. In fact, the majority of Kazakhs who moved from Koyan to Karaganda rely on their village kin network for financial support and families pool resources together. But
because Koyan residents cannot sell more than two cows per year without seriously depleting their own food supply, most of the help comes in the form of the occasional sheep meat (these animals are more numerous, easier to breed, and much smaller to store than cows) and milk products.

Capturing the difficult situation people from Koyan and their families in the city find themselves in, Tursynbek remarked:

Times were better during the Soviet Union. But what does one compare this to? After the fall [of the Soviet Union] it was worse. It’s getting better now, as they say. But everyone who doesn’t live in Koyan, including the people from Oktyabr who themselves once lived in Koyan and are our relatives, think we are stupid. Everyone just wants to buy our animals and metal for cheap and make a profit by selling it for a much higher price. They take our diesel and never bring it back or pay us. They make us work for nothing at these awful mines, using old machinery like in the days of Gulag labor camps. On top of that, if we are not happy about work in the mines, they tell us to just quit—that they have no problem firing us and finding someone else who would be very happy to have a job. But we are self-sufficient and don’t live in poverty. What normal person would ever want to live in a polluted, dirty city like Karaganda, where there is nothing to do and life becomes just about the money? At least in Koyan, the air smells fresh. The [government] administrators should allow us to legally use the land on the Polygon; so at least, we can start our own businesses. (Interview 2011, translated from Russian by the author)

Altynai added: “Today, we live sami po sebye (have only ourselves to rely on) and we live simply, quietly. But at least we are self-sufficient, because our food supply grazes on the pastures! People don’t care about us. Ha! Nazarbayev [Kazakhstan’s current and only president] doesn’t even know where we are on a map!” she said.

This chapter is about dispossession. It’s about the social effects of economic restructuring programs—including the all-out drive to dismantle the Soviet social welfare system—that ushered in an era of wholesale transformations of the social, political, and economic orders in Kazakhstan under the auspices of the “shock doctrine” launched soon after the collapse of the Soviet Union in 1991. With a focus on post-independence change in
Kazakhstan, I turn attention to Koyan, where I explore how the traces of the post-Soviet socio-economic fallout manifest at the village level. There, I consider the emergence of a novel “citizen-state-market formation,” what Biehl and Petryna (2013) refer to as the underlying frictions between economic practices, politics, law, and marginalization of certain people, all shaping life on the Polygon. I expand and apply this framework to three aspects of Koyan’s development, namely: 1) the Soviet economic system; 2) the disintegration of that economic system and with it the state, resulting in a failure to regulate social spaces amidst the rise of economic restructuring programs; 3) imported market logics that inform new and emergent strategies of those seeking to develop the Polygon into a viable economic asset. What is key here is that post-independence Kazakh state is presenting the radioactive landscape as a past nuclear disaster, meanwhile creating “conditions that cultivate a will not to know, not to engage, not to experiment” with the toxic environment (Fortun 2012:459). Specifically, my question regards how local residents of the former sovkhoz—historical victims of Soviet era Cold War testing—have come to support plans for the reopening of the Polygon for their own commercial and private uses.

In what follows I investigate the parameters of a paradox, that is, how it is that the current residents of Koyan have come to support regional development agendas that many in Kazakhstan see as outlandish and reckless—namely, the commercialization of the Semipalatinsk Nuclear Test Site that would necessarily include the increased risk of accessing and employing radioactive land for economic purposes. Yet, with a broader context in mind, too, I examine how people navigate the collapse of the Soviet system on the rural Kazakh steppe, and how this has affected those who live near (sometimes directly on) the Semipalatinsk Nuclear Test Site. I begin with a brief historical outline of Kazakhstan’s drive to independence, the rise of Kazakh
ethno-nationalism, and its adjustment to the “late capitalist/neoliberal” (Ortner 2011 following Sahlins 2002) restructuring programs. I then return the narrative to the Polygon and Koyan where I focus on the present state of things as they appear on the ground. The paradox I suggested earlier can thus be seen in the ways in which the existent economic and social dynamics of the region conspire to make the polluted environment a preferable place to live for Koyan villagers. Supporting this claim, I trace a clear lack of economic opportunities and intensifying social marginalization of rural Polygon populations when they enter the cities as informing their decision-making processes.

This chapter is ultimately about survival. But it is also about the “slow violence” (Nixon 2011) against the poor—the difficult to capture “invisible harms” (Goldstein 2013) transforming human existence—and the profound feelings of loss, humiliation, and fear this particular form of structural violence engenders.

Road to Independence

Kazakhstan reluctantly declared independence on December 16, 1991 and was the last of the former Soviet Central Asian republics to do so.39 Its late emergence as a new state—only ten days before the formal dissolution of the Soviet Union—was, in part, a result of a series of “behind the scenes” political maneuverings aimed to secure geopolitical concessions from the power center in Moscow and garner popular support for the eventual transfer of leadership in the coming shake up. Nursultan Nazarbayev (born in 1940), a devoted Communist Party member, who in 1989 became the first secretary of Soviet Kazakhstan, made it his priority to negotiate favorable terms of economic sovereignty before anyone, himself included, could have predicted

39 In 1991, the first to declare independence was Kyrgyzstan (August 31), followed by Uzbekistan (September 1), Tajikistan (September 9), and Turkmenistan (October 27). Although beginning in the mid-1980s ethnic Kazakhs demanded greater freedom and autonomy in the decision making process within the Kazakh Soviet socialist republic, there were no official calls to secede from the Soviet Union.
the Soviet Union’s demise. That is to say, there was change coming, but it was anyone’s guess about what the details would be. In particular, Nazarbayev sought to strike a careful balance with Russia in the transfer of industrial and military enterprises to Kazakhstan’s jurisdiction and in the process, secure the country’s vast wealth of mineral assets (Alexandrov 1999). As far as negotiations between Russia and the soon to be Soviet successor states were concerned, he favored the creation of an economic and strategic union. This is because Nazarbayev strongly believed that preservation of the well-established Soviet era nexus of industrial, military, and agricultural infrastructures was crucial in maintaining stability in the region and central to the survival of Kazakhstan as an independent state (Alexandrov 1999).

As the Soviet Union unraveled, Nazarbayev was mindful not to alienate Kazakhstan’s multi-ethnic population, including, the sizable number of ethnic Russians. Perhaps fearing ethnic conflict, he was careful to foster strong alliances with local and regional government leaders gathering his own vital, political capital in the process (Alexandrov 1999). After all, the Soviet Union and the Moscow power center controlled all of the vast territory of Kazakhstan and establishing good Kazakh-Russia relations was key to maintaining geo-political stability in the region. Establishing favorable diplomatic contacts was an important strategy and Nazarbayev was a close friend of the Soviet leader Mikhail Gorbachev, and supported him to the end. Nine months before independence, over 80% of people in Kazakhstan (including Nazarbayev) voted to remain in the Soviet Union (Nazpary 2002). These statistics changed dramatically by the time of Kazakhstan’s mid-December election in which the only candidate in the running for the presidential office, Nazarbayev, earned more than 90% of the popular vote with seemingly no

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40 At the end of 1991, the Central Asian republics joined the Commonwealth of Independent States, a loose alliance of former Soviet republics (Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, Russia, Armenia, Azerbaijan, Belarus, Moldova, and the non-ratified de facto members, Turkmenistan and Ukraine) that work together to establish economic and military security interdependence.
protest (Minahan 1998; Nazarbayev 1998). Indeed, it was a peaceful transition of power and Nazarbayev has remained Kazakhstan’s de facto authoritarian leader ever since. Nearly twenty-three years later, he is still a popular head of state whose official approval ratings hover well above the 90 percent mark.  

To be sure, at least among the urban classes, the high regard for Nazarbayev’s rule can be attributed to a successful state-sponsored propaganda campaign depicting the founding leader as an omnipresent guiding hand of the nation—a political visionary responsible for turning Kazakhstan into a Central Asian success story. One has to look no further than roadside billboards depicting Nazarbayev to understand the message. In one, he stands together with hard-hat wearing industry workers; in the background, the gleaming modern skyline of the capital city, Astana, and a caption that reads: “Peace, Agreement, and Stability.”

In another, waist deep in a golden wheat field, he demonstrates Kazakhstan’s bountiful agricultural resources, both present and future. Natalie Koch (2013, following Coronil 1997) points out that the regime is quite successful in fostering an image of Nazarbayev as a “benevolent father” and a

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41 It is difficult to gauge citizens’ admiration for Nazarbayev’s rule with any level of certainty, given the regime’s hostility toward dissenting attitudes and the occasional imprisonment of journalists or political adversaries who challenge the Nazarbayev regime. In the 2011 early presidential election, for example, Nazarbayev collected a remarkable 95.55% of the votes. The OSCE Office for Democratic Institutions and Human Rights observers have attributed this electoral outcome to serious voting irregularities, including “numerous instances of seemingly identical signatures on voter lists, cases of ballot box stuffing, and proxy, multiple and family voting” (OSCE/ODIHR 2011:3). While voting irregularities are common in Kazakhstan, among the urban population, there nevertheless seems to be widespread support for the regime. There are no serious challenges to his rule.

42 During Stalin era, Astana was known as Akmolinsk. In the early 1960s it was renamed to Tselinograd (the Virgin Lands City). After the fall of the Soviet Union it was renamed once again, to Akmola and then in 1998, to Astana, literally meaning, capital. Until it became a capital, Astana was a barely existing city. Located in a treeless steppe where temperatures in winter can drop to minus 40 degrees Celsius (same in Fahrenheit) it is located far away from major urban centers. After Astana became the new capital, however, its originally small population has grown to over three-quarters of a million inhabitants.
“magnanimous sorcerer” “...providing economic prosperity and rapidly improving quality of life, unparalleled elsewhere in Central Asia” (Koch 2013:A2).

The nation’s new capital, Astana (transferred from Almaty in 1997, as some claim, with a goal to subvert the mostly Russian speaking areas of the north by inserting an ethnically Kazakh population and landmark), is a symbol of Nazarbayev’s success as a “Leader of a Nation.”

With its blend of futuristic architecture, wide boulevards, city parks, monuments, and overabundance of newly constructed skyscraper apartments, Astana represents Kazakhstan’s ambitions to become modern and global. It is in many ways, however, Nazarbayev’s own building project and his name is ubiquitously inscribed into its urban landscape. There are many ways to demonstrate this, but a few examples in particular stand out. In the heart of the new capital, for example, stands the 344-foot tall Baiterek (Tree of Life) monument. From the observation deck spectators not only take in the panorama of the city, but also may take the opportunity to touch Nazarbayev’s life-size handprint, cast in what appears to be a block of solid gold. There is also the Nazarbayev University with its English language only lectures taught by professors, cherry picked from some of the top universities in the world. There is also the opulent Presidential Palace resembling Versailles, a UFO shaped Circus (supposedly Nazarbayev’s favorite pastime), and a gigantic tent-shaped climate-controlled mall—the Khan Shatyr—with its cosmopolitan stores, food court, and a year-round water park with wave pools, slides, and a volleyball beach. In this context, Astana belongs to an elite nation-building project;

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In 2010, a new law conferred Nazarbayev the status of “Leader of a Nation.” This law has far-reaching implications, as it further expands Nazarbayev’s political reach. Although there are already no term limits to his presidency, the new law gives Nazarbayev lifetime immunity from prosecution, as well as granting him the power to arbitrate the political, economic, and military affairs of the country after his retirement. It also makes it a criminal offense, punishable by prison time, to make insulting remarks about the leader.

Nazarbayev’s handprint also appears on the Kazakh money, the Tenge.
its modernity has become the regime’s discursive trope legitimizing Nazarbayev’s authoritarian rule (Koch 2010).

While there is certainly much to be said about Nazarbayev’s rule and the “cult of personality” that has grown around him over the years, in rural hamlets like Koyan, admiration for the leader is mostly muted. Given the current state of impoverishment in rural regions, especially of those located near the Polygon, what could be seen as revolutionary changes in Kazakhstan do more to highlight the chasm between rich and poor than provide for the general wellbeing, a lack of enthusiasm is not at all surprising. Besides, historically rural communities rarely support any form of revolution. Historian Sheila Fitzpatrick asks rhetorically (1994:3) “do peasants ever actively support programs of radical change advocated by the state?” I would have to add, as long as radical change destroys rural communities (Kazakhstan’s famine, Soviet era collectivization campaign, and post-independence economic restructuring programs come to mind), the answer is a resounding no. But before I turn my attention to Koyan, its disintegration after the fall of the Soviet Union, and its status as a periphery zone, it is important to consider the ways in which the regime sought to transform the former Soviet space, what these transformations entailed and how they played (and are playing) out in independent Kazakhstan. A burgeoning Kazakh nationalism and the interventionist “market-only” economic policies supervised by the International Monetary Fund (IMF) and the World Bank—led to spectacular demographic and economic shifts that had, and continue to have, far-reaching effects on Koyan residents, who find themselves living in a world not mired by bloodshed and brutality, but rather by “slow violence” (Nixon 2011) and economic uncertainty. My Koyan colleagues—to this point—frequently highlight the rise of nationalism and economic restructuring programs in
Kazakhstan as the most significant events that led to the rapid disintegration of the sovkhoz and marginalization of the rural poor. For clarity, let me briefly examine these issues in turn.

**Kazakh Nationalism**

In the wake of Soviet Union’s collapse, Kazakhstan was confronted with establishing a common national identity in a territory with no historical tradition of ever being a modern, independent nation-state. Complicating the matter further was the question of how to define Kazakhstan (literally, the land of the Kazakhs), where the titular nationality comprised less than half of the entire population. As it will soon become clear, to forge a common national identity in a region where more than half of people were non-ethnic Kazakh continues to pose problems for the new regime. In spite of a host of difficulties in defining the new nation however, Nazarbayev opted for introducing Kazakhstan to the global community as a politically stable, peaceful, multi-ethnic/national state. Importantly, this new state was committed to free market economics and international cooperation. On the surface all of this seems to be true.

Kazakhstan is in fact a relatively politically stable, albeit authoritarian, state with little explicit ethnic conflict, with a political economic infrastructure favorable to and desirous of international business. Regardless of the claims of political stability, however, the rise of Kazakh nationalism and growing economic polarization in the country have managed to create a volatile social environment where many people, especially those living in rural regions of the country, find

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45 Nazarbayev frequently highlights the multi-ethnic composition of the nation and the peaceful co-existence of 140 distinct ethnicities in Kazakhstan (http://www.kazakhembus.com/document/address-by-kazakhstan-president-nursultan-nazarbayev-strategy-kazakhstan-2050). However, there seems to be some disagreement as to the number of ethnicities living in Kazakhstan. Even though Nazarbayev often cites 140 ethnicities, a 2009 census report by the Agency on Statistics of the Republic of Kazakhstan claimed the nation hosts 125 different ethnic groups (15 less than in 2012) (National Population Census 2011:19). Regardless of the number, the fact that a large segment of the population is composed of different ethnic groups that can co-exist peacefully has become Nazarbayev’s ideological strategy in promoting Kazakhstan as a multi-ethnic state on the one hand, while simultaneously promoting ethnic Kazakh interests.
themselves excluded from the state building project and all of the wonderful things that Kazakhstan broadcasts abroad.

However specific to Kazakhstan it is, the particular brand of nationalism appears to borrow from a widely employed (in the Soviet Union) definition of a nation formulated by Stalin in his 1913 publication titled *Marxism and the National Question* (Suny 1993). Stalin suggests that a nation is a stable community of people who are united by a distinctive psychological makeup, and who share a common history, territory, and language. Yet, prior to the start of Soviet rule the majority of people in Central Asia did not imagine themselves as members belonging to any distinct nationality. Their identities were fluid, not fixed, and changed over time. But it was Stalin’s definition that became the foundation from which the Soviet Union developed its multifaceted nationalities policies (Suny 1993). In *Empire of Nations: Ethnographic Knowledge and the Making of the Soviet Union* (2005), historian Francine Hirsch describes the Soviet approach to nationalism (and nationalities) as one rooted in the Marxist-Leninist belief that the formation of nations and with it, national consciousness, is a necessary evolutionary step toward the building of socialism. All citizens of the Soviet Union were thus summoned to imagine themselves in this way and classified according to ethnicity (often a contested label developed by Soviet ethnographers), albeit an identity that would mindfully be cast aside in time. Even though the Soviet approach to nationalism was complex and dynamic—that is, at certain times, the state defined ethnic/national groups and then promoted national consciousness, at other times it took a more guarded approach toward its nationalities—the goal was to help all of its peoples “evolve” into true Soviet citizens (Grant 1995; Hirsch 2005; Martin 2001; Slezkine 1994).
Ironically, the Soviet Union’s embrace of this specific articulation of ethno-nationalism and the creation of hierarchically ordered nationalities (Russians above everyone else), was one of the major contributors to the Soviet Union’s unraveling. This is because nationalism as it was taught and reinforced among the various ethnic groups prior to the collapse of the Soviet Union took the form of *jus sanguinis*, or right of blood. As Ronald Grigor Suny (1993:ix) shows, ethno-nationalism “reigned supreme” in the Soviet successor states. After all, people in the Soviet republics (Lithuania, Latvia, Ukraine for example) embraced nationalism to stake territorial claims and legitimize their ethnically defined national rule of law and self-determination. Kazakhstan followed this lead. Indeed, the regime embraced what Rogers Brubaker (1996:5) calls “nationalizing nationalism,” that is, a form of nationalism where:

"...claims are made in the name of a “core nation” or nationality, defined in ethnocultural terms, and sharply distinguished from the citizenry as a whole. The core nation is understood as the legitimate “owner” of the state, which is conceived as the state of and for the core nation. Despite having “its own” state, however, the core nation is conceived as being in a weak cultural, economic, or demographic position within the state. This weak position—seen as a legacy of discrimination against the nation before it attained independence—is held to justify the “remedial” or “compensatory” project of using state power to promote the specific (and previously inadequately served) interests of the core nation.

In post-independence Kazakhstan, people who did not belong to the “core nation” found their status greatly diminished. Indeed, the Nazarbayev regime took immediate action to advance the interests of the “core nation” in the name of just “compensation” for past injuries committed by the Soviet state against the Kazakh people.

In order to strengthen the cultural, economic, political, and demographic position of the “core nation,” the new regime embarked on “Kazakhification” of the state apparatus (Nazpary 2002). The process of “Kazakhification” included, among other things, a massive purge of high-ranking individuals (mainly Russians and other Russian-speakers) from old Soviet institutions.
This occurred in earnest following independence when, for instance, non-Kazakhs holding high positions of power—former members of the Communist Party, university professors, directors of industry or of *sovkhоз*, as well as others belonging to the Soviet elite—simply lost their jobs. By 1994, 74% of high-level state positions were held by ethnic Kazakhs who made up 44% of the entire population, a shift of nearly 25% since late the 1980s (Matuszkiewicz 2010). This is not to say that ethnic-Kazakhs were immune; they too had their careers upended. What is mostly the case, however, is that many ethnically Kazakh former Communist Party members, like Nazarbayev, found their lots greatly enhanced. I often heard my Russian colleagues (especially those in lower paying jobs) speak of the structural difficulties they face to break through the nationalist “glass ceiling” and of “only Kazakhs” having access to good university education, well-paying jobs, and, certainly, careers in high political office. Among things they quickly noticed was the changing of street, village, and city names from Russian to Kazakh. The same individuals also begrudge Kazakh language policies as furthering their marginalization and as proof that things are only going to turn for the worse.

Indeed, one clear plan of the Nazarbayev regime after independence was to revive Kazakh language thought to be on the decline since the Soviet era and bring it from the private into the public sphere. His language policies are especially upsetting to non-Kazakhs who view the weakening position of Russian language as an attack on their way of life (Dave 2007). Undermining the position of Russian as the *de facto* language of the state is, in fact, Nazarbayev’s goal. Thus, in his 2012 Address to the Nation titled “Strategy Kazakhstan 2050: New Political Course of the Established State,” Nazarbayev said:

> Our aim is to develop the Kazakh language actively using it in all areas…The state does a lot to strengthen the positions of our State language. It is necessary to continue implementation of the measures complex to popularize Kazakh language…Language should function as a unifying influence for the people of Kazakhstan. Therefore our
Kazakh language policy is aimed at reversing the Soviet era practice of promoting Russian as a culturally superior language, one befitting of all Soviet citizens regardless of their ethnic background. Even though the Soviet Union prided itself for being a multilingual and multi-ethnic state where discrimination based on language was officially forbidden, Russian language fluency was required to access many careers and positions. Vast opportunities existed for everyone in the Soviet Union (regardless of their nationality) in attaining free world-class education in the fields of science and humanities, where literacy in Russian was obligatory (Olcott 2011). The Soviet regime’s ultimate goal was, indeed, to eventually unite all of its nationalities under one political system, culture, and language. As a result, even though Kazakh was supported in certain arenas of life (education was available in Kazakh to some people, for example), membership in the Soviet elite and access to state resources was contingent upon a strong working fluency in Russian, as well as the eventual rejection and dismissal of one’s traditional culture as incompatible with socialism (Slezkine 1994; Suny 1993).

Not surprisingly, during the Soviet period all native languages were on the decline. In Kazakhstan especially, this decline was as much a dilution, too—exacerbated by the mass influx of prisoners and agricultural settlers who arrived in the region, first during the Stalin era purges and then following Khrushchev’s inauguration of the Virgin Lands Project. The Virgin Lands

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46 In the Soviet Union, literacy was universal and as I described in the previous chapter, many residents of Koyan took advantage of this free education and benefited in turn.
campaign alone dramatically altered the demographic structure of Kazakhstan, where, by the mid-1960s, ethnic Kazakhs made up 30% of the total population living in Kazakhstan (Schatz 2000). Thus, the decades of Soviet rule, especially in the period from the 1930s to 1960s, saw the largest Slavic population transfer to Kazakhstan helping to ground the claim that Kazakhstan had become one of the most “Russified” of the socialist republics (Dave 2004). At the same time, it was also the only post-Soviet state where the “core nation” was a minority (Dave 2004).

Table 1. Ethnic composition in Kazakhstan, Census Data 1959-1999

<table>
<thead>
<tr>
<th>Nationality</th>
<th>1959 (%)</th>
<th>1970 (%)</th>
<th>1979 (%)</th>
<th>1989 (%)</th>
<th>1999 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kazakh</td>
<td>30.0</td>
<td>32.6</td>
<td>36.0</td>
<td>40.1</td>
<td>53.4</td>
</tr>
<tr>
<td>Russian</td>
<td>42.7</td>
<td>42.4</td>
<td>40.8</td>
<td>37.4</td>
<td>29.9</td>
</tr>
<tr>
<td>Ukrainian</td>
<td>8.2</td>
<td>7.2</td>
<td>6.1</td>
<td>5.4</td>
<td>3.7</td>
</tr>
<tr>
<td>Belorussian</td>
<td>1.2</td>
<td>1.5</td>
<td>1.2</td>
<td>1.1</td>
<td>0.8</td>
</tr>
<tr>
<td>German</td>
<td>7.1</td>
<td>6.6</td>
<td>6.1</td>
<td>5.8</td>
<td>2.4</td>
</tr>
<tr>
<td>Tatar</td>
<td>2.1</td>
<td>2.2</td>
<td>2.1</td>
<td>2.0</td>
<td>1.7</td>
</tr>
<tr>
<td>Uzbek</td>
<td>1.5</td>
<td>1.7</td>
<td>1.8</td>
<td>2.0</td>
<td>2.5</td>
</tr>
<tr>
<td>Uighur</td>
<td>0.6</td>
<td>0.9</td>
<td>1.0</td>
<td>1.1</td>
<td>1.4</td>
</tr>
<tr>
<td>Korean</td>
<td>0.8</td>
<td>0.6</td>
<td>0.6</td>
<td>0.6</td>
<td>0.7</td>
</tr>
<tr>
<td>Combined Turkic/Muslim</td>
<td>39.7</td>
<td>42.7</td>
<td>45.5</td>
<td>50.2</td>
<td>61.0</td>
</tr>
<tr>
<td>Combined Slavic/European</td>
<td>60.3</td>
<td>57.3</td>
<td>54.5</td>
<td>49.8</td>
<td>39.0</td>
</tr>
</tbody>
</table>

Source: (Dave 2004:5)

47 By the time of the 2009 census the ethnic composition of Kazakhstan was as follows: 63.1% Kazakh, 23.7% Russian, 2.1% Ukrainian, 0.7% Belorussian, 1.1% German, 1.3% Tatar, 2.9% Uzbek, 1.4% Uighur, and 0.6% Korean. The same census data shows 70.2% of the population as being Muslim and 26.3% Christian (National Population Census 2011).
Given Kazakhstan’s history, undoing “Russification” continues to pose many challenges for the regime, if it is even possible to do at all. It’s certainly a risky political strategy carrying with it the potential to alienate a substantial number of Russian-speakers, as well as countless others who reminisce about the Soviet period with a sense of nostalgia, and still others who simply don’t know Kazakh and find no reason to spend time learning it. Nevertheless, Nazarbayev’s goal to achieve Kazakh language fluency among all citizens by the year 2025 reflects the government’s increased commitment to “de-Russifying” the region. In the first decade of Kazakhstan’s independence, however, and perhaps because of awareness of the potential risks associated with implementing pro-Kazakh legislature that I have stated, language reform policies were relatively moderate and generally accommodating to the large non-Kazakh population (Schatz 2000). Scholars have suggested that these policies were mostly symbolic, that is they allowed the state to portray itself as a multicultural entity and at the same time gave Russian language a legal status in the country (Brubaker 2011; Dave 2007). Changing legislation on this matter rightfully needs its own moment.

In 1993, the nation’s Constitution proclaimed Kazakh to be the official state language and assigned Russian as the language of inter-ethnic communication. Accordingly, in this iteration of the Constitution, discriminating on the basis of language was strictly forbidden (Commercio 2004). This changed in 1995. An amended version of the Constitution mandated fluency in Kazakh for anyone running for the Presidential office (Matuszkiewicz 2010). The modification invariably meant that only those fluent in Kazakh—mostly ethnic Kazakhs who were able to speak the language (many could not)—were able to run for political office. In 1997, another provision officially made Kazakh the sole state language of the nation (Russian still retained the status of “official language,” but all citizens were to dutifully master Kazakh). That same year,
the Nazarbayev regime implemented the ‘Law on Languages’ mandating that Kazakh be used in all official documentation and that “Kazakhstan’s executive branch list managerial, administrative, and service-sector posts for which knowledge of Kazakh is required and provides for language certification through proficiency exams” (Olcott 2002:73). The policies, however, were not practical for immediate implementation at a time when use of the titular language was not widespread. Although these policies did not cause an immediate linguistic change in the country, they demonstrate important conflicts inherent in changing the official language.

Regardless, hardly any of the changes are reflected in present day realities. Despite the growth of the ethnically Kazakh population—to 63.1% of the 16,638,000 total according to the 2009 census—many people continue to have no knowledge of the Kazakh language (National Population Census 2011). In fact, except for rural areas with a large Kazakh presence (and certain urban areas with large population of rural ethnic Kazakh migrants), Russian continues to be the most commonly spoken language. This means that the majority of non-Kazakhs and some ethnic Kazakhs as well (especially those who live in urban centers) lack even the most rudimentary Kazakh language skills (Dave 1996, 2004; Fierman 2006; Kolstø and Malkova 1997; Olcott 2002). According to a 2006 survey, 3.6% of non-Kazakhs and 88% of Kazakhs claim to be fluent in the state language (Suleimenova, Shaimerdenova, and Akanova 2007). But whether someone is considered to be fluent in Kazakh depends on who you ask. Rural Kazakhs, for example, often say that urbanites claiming to speak the native language actually don’t.

During fieldwork, all of my Russian, Ukrainian, Korean, or other non-Kazakh colleagues could not speak Kazakh beyond formalities and standard greetings. Surprisingly, this was also true among many of my ethnic Kazakh colleagues living in Karaganda, Astana, Pavlodar, Semey (formerly Semipalatinsk), and in other cities with a large population of Russian-speakers. In
Koyan everyone speaks Kazakh and nearly all are fluent in Russian (albeit, this is not so among the youngest generation of children before they enter elementary school, who mostly speak Kazakh).

No matter what the language policy, for the time being Russian continues to be the language of interethnic communication and there are many reasons why Russian-speakers are slow to learn Kazakh. Clearly there is a move to standardize and homogenize Kazakh, but it is difficult to implement any legislation that people cannot or do not want to abide by. For example, there continues to be widespread resistance to language policies among many Russian-speakers who are deeply troubled by what they perceive as statewide efforts to make Kazakh the dominant language of the state. Many feel profound anxiety about the prospect of living as second-class citizens in a Kazakh dominated state. A number of Russian medical doctors, NGO representatives, and university professors I interviewed expressed disdain for the regime’s language policies that they see as an attack, or at the very least an attempt to marginalize and discriminate against all Russian-speakers who still live in the country. They point to the fact that the new elite is mostly composed of ethnic Kazakhs and unless they become fluent in a new language, their chances of securing public sector work or other well-paying jobs are next to nothing.48 Because of this, many expressed the “need to leave Kazakhstan” in order to have better luck somewhere else. Especially concerning and frustrating are policies that attempt to “force” them and their children to learn what they take to be an archaic language, one borrowing heavily from Russian and English anyway, lacking its own scientific and technical

48 In the first decade of independence, Kazakhstan’s elite became anywhere between 80 and 90 percent ethnic Kazakh (Olcott 2002:177).
They also feel that Kazakh language (and by default, the Kazakh people) is less “cultured” than Russian—without a “real” literary tradition or intelligentsia (Dave 2007). Although some individuals I know claim to have tried studying Kazakh, these efforts amounted to failure. After all, they said, it is a Turkic language and shares similarities with Turkish, Uzbek, Kyrgyz, and Turkmen, not any of the Slavic languages like Russian. Furthermore, people cite the lack of properly trained Kazakh language teachers and lack of well-written textbooks. Whatever the reasons, the present day realities of living in a multi-ethnic state are mirrored by Nazarbayev himself, who is forced to present the Address to the Nation twice: first in Kazakh, then in Russian.

Although pro-Kazakh legislative policies have not produced an overt ethnic conflict in the region, they most certainly prompted radical shifts in the demographic structure of the nation unseen since Stalin’s push to “build socialism in one country” and Khrushchev’s Virgin Lands campaign. In terms of out-migration, the fears and anxieties about diminished economic prospects (invariably tied to perceived ethnic discrimination), compelled millions of Russian speakers and other non-Kazakh minority groups to leave Kazakhstan en masse. Rural areas, especially, saw the largest decline of Russian speaking populations. Today, in many villages the only things Russian are the cemeteries. In the first decade of independence alone, for example, nearly 2 million non-titular minorities (mostly ethnic Russians) and over half a million ethnic Germans—whose population decreased from 946,900 people in 1989 to 353,400 by 1999—left.  

Nazarbayev also reflected on the lack of modern Kazakh words in his 2012 Address to the Nation where he said: “We should conduct modernization of Kazakh language. It is necessary to make the language modern, to look for consensus in terminology issues, forever resolving the issues of translating international and foreign words into Kazakh language…There are terms commonly adopted in the whole world that enrich any language. But tend to make life unnecessarily complicated, we often bring in confusion to our minds and swarm our own archaic memories” (http://www.kazakhembus.com/document/address-by-kazakhstan-president-nursultan-nazarbayev-strategy-kazakhstan-2050).
Kazakhstan (Dave 2004). In order to obtain a new citizenship (in Russia, Ukraine, or Germany for example) necessary documentation included proof of ethnic identity and original ties to the titular homeland. But Kazakhs left too. By 1998, approximately 210,000 moved abroad in search of better economic prospects to places like Russia, Europe, and the United States (Olcott 2002). Even though out-migration has slowed in recent years, there are still more people leaving than arriving. Of those who are immigrating to Kazakhstan, most are returning ethnic Kazakhs or migrant workers from other Central Asian republics.

Following independence, the Nazarbayev regime openly encouraged ethnic Kazakhs living abroad to come back. By way of annual quotas (40,000 people in 1993 and 80,000 by 2005), the goal was to increase the numbers of Kazakhs permanently living in the country. By 1998, nearly 170,000 ethnic-Kazakhs from former Soviet republics (Russia, Uzbekistan, and other territories), as well as Mongolia and China (known as oralman) repatriated (Olcott 2002). These are often the children and grandchildren of deportees of Stalin era purges or others who managed to escape them by fleeing. Yet, initial excitement about tipping the demographic scale in favor of the “core nation” quickly faded. After decades of living under the Soviet rule, many Kazakhs were dismayed by the “primitive” oralman, whose alien cultural practices bore scant resemblance to their own. This “moral revolt” against the “backwardness” of certain groups of people, also informs perceptions toward the hundreds of thousands of legal and illegal migrants coming to Kazakhstan from Uzbekistan, Tajikistan, Kyrgyzstan, or Turkmenistan, in search of work. These new arrivals often end up in low paying jobs, usually in construction, mining, or the service sector, work that is considered dirty, degrading, and unbecoming of Kazakhstan citizenry. Some end up begging for food and money. Like elsewhere in the world, the number of undocumented workers is difficult to calculate (National Population Census 2011).
Despite some of the movement that I have been speaking of, since the early 1990s the creation of new borders and citizenship regimes in Central Asia reconstituted the power of the state in such a way as to produce new surveillance regimes and definitions of citizenship, constraining people’s ability to move across borders. Now there are borders where there were none before. The often-celebrated notion (at least among some scholars) of the space-time compression in our globalizing world has, indeed, been reversed in Central Asia (Appadurai 1990; Harvey 1989; Reeves 2014). This is an observation made by Madeleine Reeves (2014:53) who assessed the collapse of the Soviet Union as a “…sobering reminder that the opening of the iron curtain and collapse of the command economy have for many resulted in a de facto decline in opportunities for legal mobility, just as they have opened up new trajectories of movement between formerly sealed borders elsewhere.” In a region where people are still grappling with “making sense of borders” (Reeves 2014:51), it is no surprise that who gets to move and where remains a highly contested political arena. In Kazakhstan this is certainly the case. Countless ethnic Russians continue to leave for their “motherland”; ethnic Kazakhs continue their return; all the while, millions of people who were once able to legally move about the Soviet Union are now confined to their respective republic or are doomed to become illegal migrants employed in dangerous jobs with no prospects of ever gaining legal status.

Kazakhstan is a case in point for demonstrating how cross-border migrations are producing sharp declines of certain populations, meanwhile increasing the number of others. Perhaps to Nazarbayev’s delight, trans-border movement has radically reconfigured the ethnic composition of the state, increasing the proportion of ethnic Kazakhs living in the country—from 40.1% in 1989 to 63.1%—by the time of the 2009 census. More importantly for this chapter, however, is rather the effect of internal migration decimating the countryside. According to the
2009 census, nearly six million people changed their place of residence. Approximately two of the six million individuals moved from rural to urban areas after 1999, especially to the new capital Astana (National Population Census 2011). Peculiar statistics reflect the dramatic scale of the rural to urban migration—on one side, a rapid increase of rural population, while on the other, a rapid decline. Upon closer inspection, this makes perfect sense. Smaller cities experiencing significant levels of depopulation are necessarily reclassified as rural areas (National Population Census 2011).

Driving through Kazakhstan one can’t help but see the ruins left from the mass transfer of people. Countless villages are completely abandoned. In most of the now sparsely inhabited former sovkhozes, people live next to deserted ramshackle homes, while children play in what’s left of the cement skeletons of grain silos and dangerous and structurally unsound administrative buildings from the Soviet era. At times, the exodus was so quick as to produce entire ghost towns in a manner of a few months. The former military town of Chagan, located an hour’s drive from Kurchatov, saw all of its 11,000 inhabitants leave in 1995. Rows of hollowed out five-story-barracks, a primary school, as well as the remnants of an electric power and radiation-monitoring stations are a few of the identifiable remains of an apocalyptic cityscape further emptied and scavenged of its sewage pipes and electrical wiring. Kurchatov likewise experienced a rapid decline, becoming only a shadow of its former self. There, monuments to Soviet power are overgrown with shrubs; the eternal flame honoring heroes of the Great Patriotic War no longer lit. Feral dogs rummage for food and take up residence among the debris, or in the former KGB building. During my fieldwork, many remarked on their surroundings, their “ruined life” as they call it, both literal and figurative. For most, the aesthetic of villages and towns is that of posle voiny (literally, after the war). Yet individuals who moved away from that
and into the cities (mostly the ethnic Kazakhs) find their situation not much improved. If no longer surrounded by abandoned buildings, they are now living in urban slums (usually found on the periphery of cities), chronically unemployed and barely scraping by. In the cities, there are often no well-paying jobs for the former sovkhoz workers. Many of them have become financially dependent on their village kin who send meat and dairy products, pay rent and utilities, while their sons and daughters search for jobs.

But the rise of Kazakh ethno-nationalism can't entirely explain the spectacular demographic and economic shifts occurring after independence. I have not dealt with the more important issue at hand: the complexities of neoliberal capitalism responsible for the uneven development of the country that not only forced millions of people to migrate, but also ushered in an era of wholesale transformations of the social, political, and economic orders. To grasp what is happening in Kazakhstan now, it is important to see this as less of an event than of a continuing process that is having profound effects on people’s lives. There is no doubt that the implementation of neoliberal economic reforms following the breakup of the Soviet Union created a multiplicity of new articulations of the modes of production and ways of being in the world. Indeed, the creation of an entirely new economic system fostered new power arrangements affecting livelihoods and regional reconfigurations of social, political, and economic space. Today, Kazakhstan is acutely divided along economic lines, with the rural poor (mostly the ethnic Kazakhs) experiencing the greatest decline in the standard of living and increased mortality rates. Those individuals, whose everyday struggles revolve around maintaining basic subsistence, often live in the remotest of areas. They find their economic options severely constrained and life generally fraught with difficulties. They too have come to see themselves as no longer having a role in the new market driven society and living, as is the
case with Koyan, not in Kazakhstan, but rather in “Koyanistan,” their own separate “state” within a state. In what follows, I briefly introduce the anthropological engagements with neoliberalism before I turn the discussion to its manifestation as Kazakhstan’s economic “shock doctrine” and what the accumulation of wealth by the few through the dispossession of the many looks like on the ground.

Neoliberalism: Brief Overview

Perhaps it is fitting to begin this section with Karl Polanyi’s (2001[1944]:76) quote from his seminal work The Great Transformation: “to allow the market mechanism to be sole director of the fate of human beings and their natural environment…would result in the demolition of society.” What this demolition necessarily entails, Polanyi argues (2001[1944]), is an economic system where the removal of all social protections of the welfare state, together with the commodification of nature, creates a system that produces an entire class of socially dislocated victims who die from vice, crime, famine, floods, and pollution. Perhaps at the time of Polanyi’s important opus, the dystopian future seemed like an improbable possibility. After all, at the time the United States was moving toward strengthening its social protections, not moving away from them. Yet today, the radical “market-only” philosophies Polanyi warned against have clearly become the standard economic practice in many regions of the world, especially the United States. One has to look no further than the widening income inequality gap in the United States, post-Soviet states, and many areas of the “Global South,” to see the socially dislocated victims and the destroyed environments they live in. These are all problems, as many anthropologists and others like to point out, that are being amplified by the neoliberal free market policies that have come to produce a multinational global arena.
To begin, a clear articulation of philosophies associated with radical economic reforms that eventually came to be known under an umbrella term “neoliberalism,” emerged in the 1950s in the United States. By and large, neoliberalism is associated with ideas first developed by economists Friedrich von Hayek and Milton Friedman (among others) at the University of Chicago School of Economics. Friedman would come to train and influence a generation of scholars (including the young Chilean economists of the 1970s known as the ‘Chicago Boys’) who vehemently rejected Keynesian economics in favor of radical transformations to the capitalist system including liberalization of trade, deregulation, privatization, and the overall reduction of government oversight.50 Although the implementation of free-market economic restructuring programs began as early as 1973 (as is the case of Chilean coup and General Augusto Pinochet’s embrace of free market restructuring), it was the adaptation of free market policies by Margaret Thatcher in Great Britain and Ronald Reagan in the United States in the early 1980s, that established neoliberalism as a global force. The economic policies promoted by the Chicago school and embraced by Thatcher and Reagan engendered a dramatic shift in the ways of thinking and acting, producing “friction” (Tsing 2005), that is the differences that arise between the diverse set of global cultural, political, and economic interactions.

By and large, neoliberalism can be conceived as a “theory of political economic practices that proposes that human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterized by strong private property rights, free markets, and free trade” (Harvey 2005:2). Expanding on this

50 The Keynesian economic system was implemented in the United States after the Great Depression and onset of World War II following British economist John Meynard Keynes publication of his book The General Theory of Employment, Interest and Money (1936). This form of capitalism is based on the idea that a form of mixed economy, where there is a division between the private and public sectors within a system of state regulatory oversight, stabilizes severe unemployment cycles, recession, depression and other financial crisis.
definition, David Harvey (2005:160-165) also suggests that what distinguishes neoliberal capitalist policies from all other market logics is “accumulation by dispossession,” that is, the concentration of wealth among the few at the cost of the many, made possible by the implementation of four distinct practices: 1) *privatization and commodification* of public assets, including social welfare programs, public institutions (prisons, libraries, universities, fire departments, and so on), as well as all public utilities (electricity, water, transportation, communication); 2) *financialization* or the shift from production to finance as the main form of the redistribution of assets through speculation, fraud, mergers and acquisitions, stock market manipulation and so on.; 3) *the management and manipulation of crises*, such as the deliberate creation of high unemployment in order to maximize cheap labor surplus; and 4) *state redistributions* of wealth and income from the poor to the wealthy classes. According to Harvey, it is point number 4, the redistribution of wealth, that is by far the most important feature of neoliberalism, one with far-reaching global effects. Indeed, the unequal distribution of wealth is a “political project to re-establish the conditions for capital accumulation and to *restore* [my italics] the power of economic elites” (Harvey 2005:19). Following this logic, the role of a neoliberal(izing) state is no longer to develop social protections for its citizenry, but rather to promote and create structures (tax codes, corporate welfare, offshoring) conducive to the neoliberalizing logic, one that ultimately leads to the accumulation of great wealth among the elite minority through the dispossession of the majority. Indeed, these changes also frequently shift the make-up of this elite.

In anthropology, however, neoliberalism has become a contested term. Does it refer to an all-encompassing historical period characterized by the global restoration of power of economic elites like Harvey suggests? Or, is it a set of heterogeneous practices pointing to a
globalizing trend that rarely achieves full realization because it is transformed on the local level? Harvey for example, is critiqued for his explicit suggestion that wherever neoliberalism appears, it becomes the main dynamic shaping human life.\textsuperscript{51} Rejecting this view, Catherine Kingfisher and Jeff Maskovsky (2008) argue, for example, that the generalizations are just that, too all encompassing, obscuring complexities of social life, and inclusive of too many social ills that may or may not be related to free market economics. As they point out: “for although few would disagree that some of the most egregious forms of inequality, poverty, exploitation and oppression in the world today are a consequence of the advent of neoliberalism, it is also true that in most cases this is not all that they are” (Kingfisher and Maskovsky 2008:121). To overcome this problem, Kingfisher and Maskovsky (2008:117) suggest anthropologists treat neoliberalism as a process that is always fragmented, limited, and always shifting, rather than a ‘thing’ to be examined. More specifically:

A focus on culture, power and governing practices establishes a framework for mapping the articulation of neoliberalism with established practices and policies, and for assessing how new hegemonic relations of power emerge in different contexts as a result of these articulations. In addition, this perspective encourages a more sophisticated approach to the study of the production of class divisions and new patterns of inequality. New patterns of inequality and class division are in many senses continuous with established relations of power and coercion, and it is precisely this dynamic – of old and new, and also… outside and inside, and top-down and bottom-up... (Kingfisher and Maskovsky 2008:121)

Accordingly, the approach to neoliberalism should be aimed at ‘de-centering’ and problematizing its power, by delving into the historical dimensions to patterns of inequality, as well as examining the dynamics of established relations over time.

With this critique in mind, there are (obviously) no social, political, and economic formations that can be explained away simply in terms of a singular cause and effect, past or

present abstraction, like that of neoliberalism. Furthermore, neoliberalism is a heterogeneous project, reconfiguring local environments in context-specific ways. After all, the ways in which neoliberalism is experienced in the global South or the former Soviet states differs substantially. While these arguments are all quite sound, there is no denying the very real cause and effect relations of power this economic logic engenders, producing very similar outcomes across the globe. Indeed, as far back as the 1980s the unequal development of the global economic system, driven and subjected to the market-only neoliberalizing logic, has only accelerated, and with it too, have the extremes in wealth and poverty, environmental degradation, rapid urbanization, and agricultural decline (Said 1993; Smith 2008[1984]). These in turn, it can be shown, have led to higher levels of violence, drug addiction, hunger, and also a rise in “poor person” diseases like drug resistant tuberculosis, cholera, and infectious diarrhea.

More importantly for this inquiry, however, is how the ever-expanding reach of global neoliberalism has rendered entire populations useless to capital. These individuals, like all “trash” (Levine and Rother 2013), have become “waste products” (Blacker 2013), a useless labor force of bodies to be contained and if possible, ultimately commodified in some way (Scheper-Hughes and Wacquant 2002).

In post-Soviet states, ever-increasing numbers of people are, indeed, eliminated from market flows. As anyone who has lived on the Polygon is aware, the effects of market restructuring programs are experienced in rural areas of Kazakhstan in very real and explicit ways—in the diminished social protections, poverty, hunger, illness, environmental pollution, and in the inability to find employment. These are some of the worst side effects of

52 We can see this most clearly in the burgeoning privatized prison industry in the United States. There are currently more than 2.2 million people incarcerated in American prisons (more than in any other nation in the world)—a 500% increase in the last forty years—a population made up of mostly the poor, minorities, and uneducated classes, people (The Sentencing Project 2013). Their labor is no longer needed in the new society, except
globalizing neoliberalism seen the world over, promoted within hegemonic institutions like the World Bank, the IMF, media, and other proponents. Yet ignoring these globalized homogenizing “egregious forms of inequality” (Kingfisher and Mascovsky 2008), as being part and parcel of neoliberalism, would be a mistake. Matti Bunzl (2008:57) makes this point quite clear when he states that in recent decades, contemporary anthropology has been on a quest to find the perfect representation of human reality, one that is free of all essentialisms and generalizations. What it does not realize is that such a representation—if it could be had at all (and, of course, it could not)—would be entirely unwieldy. Even worse, it would be altogether useless, not because it would be false but because it would be true.

As David Harvey (2008:viii) in the forward to Neil Smith’s third edition of *Uneven Development: Nature, Capital, and the Production of Space*, also argues:

…the penchant for tough critique in academia has notably waned over the years as the reputation of Marxian theorizing, of political-economic analysis, and of politically targeted critical geographical theory has been diminished not only by events (such as the end of communism) but also subject to dissolution in the tepid wash of identity politics and cultural theorizing. This so-called radical thinking amounts to thinly veiled apologetics for either doing nothing or offering mild support to either toothless communitarian oppositions or, even worse, covert neoliberalization.

Indeed, the “tepid wash of identity politics and cultural theorizing” is limiting and partial. It can itself become a mere depoliticized “cultural logic of late capitalism” (Jameson 1991) reinforcing and ultimately unable to grasp the global and totalizing nature of capitalism. Thus, focusing solely on the multiplicities of neoliberalisms becomes an “analytical straightjacket” for observing global macro-level processes (like neoliberalism) that are, indeed, at work (Bunzl 2008:54).

Following these observations, a cautious approach in examining how neoliberalism works on the local level is necessary. Although neoliberalism is a global phenomenon, it is neither necessarily a homogenous project to roll back the state, nor simply a set of specific
political and economic practices deployed in a uniform manner all across the planet (Collier 2011; Comaroff and Comaroff 2006; Ferguson 1990, 1999, 2006). Rather, neoliberalism should be understood as a nexus of heterogeneous social, political, and economic (and unevenly developed) projects that also work on “ideological practices that legitimize a specific system of social relations and the forms of subjectivity amenable to it” (Peck 2008:7). It can also be conceptualized, Aihwa Ong (2006:3) suggests, “as a new relationship between government and knowledge through which governing activities are recast as nonpolitical and nonideological problems that need technical solutions.”

In this context then, neoliberalism is reconceived as a conceptual apparatus that encourages—through the deployment of a multitude of discursive and disciplinary techniques—a specific form of depoliticized ‘common sense’ rhetoric, conducive to particular market logic. Taken from this perspective, neoliberalism is a range of ideas and practices that seek to produce “desire and expectation on a global scale yet to decrease the certainty of work or the security of persons; to magnify class differences but to undercut class consciousness; above all, to offer up vast, almost instantaneous riches to those who master its spectral technologies—and, simultaneously, to threaten the very existence of those who do not” (Comaroff and Comaroff 2000:298). This story also belongs to Kazakhstan.

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53 Ong (2006) suggests that neoliberalism is rooted in the emergence of biopolitics. As such, it is simply “…the most recent development of such techniques that govern human life, that is, a governmentality that relies on market knowledge and calculations for a politics of subjection and subject-making that continually places in question the political existence of modern human beings (Ong 2006:13).
International organizations who monitor economic, political, and social progress of the so-called developing nations, consistently celebrate Kazakhstan as Central Asia’s miracle, clearly on the path to meet all of the eight United Nation Millennium Development Goals (MDGs). Its success, of course, has much to do with its resource-based economy. Being one of the richest nations in the world in terms of natural resources, Kazakhstan has vast oil reserves and mineral commodities such gold, copper, magnesium, coal and more importantly, uranium.

In 2011, Kazakhstan surpassed Canada, Australia, and Russia to become the largest uranium producing country in the world. The natural resource-base economy did indeed propelled Kazakhstan toward economic prosperity. Since the end of the Soviet Union, in terms of its Gross Domestic Product (GDP), Kazakhstan went from veritable economic stagnation to one of the fastest growing global energy markets. According to a 2011 report published by the Organisation for Economic Co-operation and Development (OECD), “Since 2000, the economy of the Republic of Kazakhstan has been growing at an annual rate of between 8 and 9%, making it one of the 10 fastest growing economies in the world. Indeed, Kazakhstan attracts more foreign direct investment than all other central Asian countries together” (2011:3). Taking a regional and even a global perspective, the young nation of Kazakhstan is touted as an economic

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54 The term dikii literally translates to wild, barbarous, savage, feral, and natural (as in, being in a state of nature). In Post-Soviet Chaos: Violence and Dispossession in Kazakhstan, Joma Nazpary (2002) has used this term to refer to the advent of capitalism and its manifestation in Kazakhstan. I frequently heard people living on the Polygon refer to the national economy as being “wild” and Koyan as being representative of dikii zapad (Wild West).

55 These goals are: 1) eradicate extreme poverty and hunger; 2) achieve universal primary education; 3) promote gender equality and empower women; 4) reduce child mortality; 5) improve maternal health; 6) combat HIV/AIDS, Malaria, and other diseases; 7) ensure environmental sustainability; and 8) global partnership for development (http://www.un.org/millenniumgoals/).
miracle because of its commitment to the free market and now serves as an example to other nations that neoliberal restructuring works.

Reports from the World Bank are filled with positive assessments for the country—its promising future economic outlook, “impressive reduction in poverty,” “commendable progress” in managing the environmental impact of industries, and its ability to transform the command economy to one dictated by the wholesale privatization as defined in the “ease of doing business” rankings (World Bank Group 2014).\textsuperscript{56} According to the World Bank Group Snapshot (2014:4), Kazakhstan’s ease of doing business ranking is improving well beyond expectations—the country moved up from number 74 in 2010 to 50 in 2014.

Not surprisingly, Nazarbayev frequently incorporates these accolades in his Address to the Nation. In a January, 2014 speech he said:

According to the global ranking, Kazakhstan has joined the group of countries with the most favorable conditions for doing business. We have to reinforce this trend. Small and medium-sized business is the economic basis of our Universal Labor Society. For its development we need to comprehensively address private property rights. It is necessary to repeal all the outdated legal norms impeding business development. (http://www.kazakhembus.com/document/address-by-kazakhstan-president-nursultan-nazarbayev-strategy-kazakhstan-2050)

Perhaps not surprisingly, the need for further privatization was mentioned in the World Bank report when it suggested that Kazakhstan is still in a state of becoming. To achieve full development, Kazakhstan remains in need of loans, economic strategies aimed at further market restructuring through privatization provided by international assistance programs, Western advisors, and multinational corporate investments. Modernity, prosperity, and equality are just around the corner, they argue, possible so long as neoliberal capitalism is wholly embraced.

\textsuperscript{56} Economies are ranked from a scale of 1 to 189 on their ease of “Doing Business.” The rankings refer to how conducive the regulatory environment is for starting and maintaining a private business (http://www.doingbusiness.org/rankings).
But these celebrations highlight only a part of the story. Kazakhstan had little choice but to enter the web of neoliberal governmentality (a shift from government, characterized as having “state power on its own”) inherently based on the logic of uneven capitalist development (Harvey 2005:77). It was indeed transformed, rather quickly, from the Soviet high-modernist, welfare state command economy to a free market economy. Like other newly independent post-Soviet states, Kazakhstan has been systematically reconfigured and reassembled along neoliberal lines. Nazarbayev consistently sponsors legislation to move the country toward wholesale privatization of previously state controlled enterprises—media, healthcare, education, transportation, and utilities. In the post-Soviet context, neoliberalism in Kazakhstan took a “pervasive form of political rationality whose formal and ‘global’ character allow it to enter into novel relationships with diverse value orientations and political positions” (Ong and Collier 2005). In 1991, the radical policies of the so-called “shock doctrine”—developed under the terms of the Washington Consensus—were implemented in nearly all of the newly established independent nations that operated within the Soviet command economy. Western advisors, multinational corporations, and researchers arrived to dictate the terms of the restructuring of the programs, including the complete overhaul of state social protections in favor of a rationalized welfare program (Verdery 1996).

As will soon become apparent, the global economic market forces produced conditions for the legitimization of a locally specific system of unequal social relations and the distribution of wealth. At the same time, however, Kazakhstan entered a global economic system of capital

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57 The Washington Consensus (1989) generally refers to the economic policies implemented by the International Monetary Fund (IMF), the World Bank, and the U.S. Treasury to spur modernization schemes throughout the globe. This fundamentalist “market-only” approach emphasized wholesale market liberalization, privatization of the public sector, and fiscal austerity measures in what were considered to be “developing” regions of the world, including the Global South and post-Soviet independent states (Goldman 2005).
equalization—where capital naturally exists as a universal “leveller,” that is, in the words of Marx, a system where capital “exacts in every sphere of production equality in the conditions of the exploitation of labor” (Marx 2003[1867]:375). In Kazakhstan as elsewhere, we see this most explicitly in the transformation of the division of labor and the commodification of natural resources to those of universalizing/leveling of subject positions through neoliberal principles of organization of the means and conditions of production maintaining the so-called underdevelopment of nations (Smith 2008[1984]).

Not surprisingly, unlike developed (core) nations in the world today, Kazakhstan has been restructured along the lines of peripheral capitalism (Coronil 1997; Frank 1967) dependent on extractive raw material exports. As Neil Smith (2008[1984]:151) observes, “In the center, development revolves around the production of “capital goods” and the encouragement of mass consumption; in the periphery, however, it is production for export and the consumption of luxury goods that form the basis of the economy…” In this context, Kazakhstan has become a service provider, a proletarian state where land and labor is exploited for consumption by the rest of the world. To put it another way, the global economic pressures reoriented Kazakhstan’s economy toward the export of raw materials, a market of quick returns and stratospheric profits for foreign investors and the small, but extremely wealthy, Kazakhstan elite. The regime has also embraced this “global ecumene” (Hannerz 1989) by branding itself as a source of raw materials, an importer of toxic materials from the richer nations, and in the words of Nazarbayev, a “Universal Labor Society” (Saunders 2008).58

58 Kazakhstan has offered to become the global nuclear fuel bank. The US backed project approved by the International Atomic Energy Agency is said to help prevent the spread of nuclear weapons by locating reserves of low-enriched uranium in one place. Countries without enrichment technologies would obtain their fuel from the bank.
Indeed, Kazakhstan offered its cheap natural resources, labor, and other commodity markets to privatization by enthusiastic global investment capitalists, speculators, multinational banks and corporations, and venture businessmen ready to penetrate the previously untapped economic “treasure trove” of the formerly isolated market space.\textsuperscript{59} Some of the world’s largest global multinationals today directly invest in Kazakhstan. These include: ArcelorMittal (Western European and Indian), the biggest steel producer in the world with mines and steel plants operating in Karaganda and Temirtau; Canada’s Cameco (a joint venture with Kazakhstan’s state owned Kazatomprom) and a major supplier of conversion and nuclear fuel services; and the most established of the multinationals dating to 1993—the Tengizchevroil (a joint venture between Chevron, ExxonMobile, the Russian, US, and British LukArco, and Kazakhstan’s KazMuanayGas)—a company with a majority stake in the exploration and development of the Tengiz oil field located in Northwestern Kazakhstan.\textsuperscript{60} An export-based economy, trade (exports of mostly petroleum products and uranium, as well as imports of toxic waste, as well as other goods and services) account for 77.4\% of Kazakhstan’s Gross Domestic Product (GDP)—nearly 60\% of all exports are crude petroleum with smaller shares of export materials including, but not limited to, uranium, petroleum gas, ferrous and non-ferrous metals (including copper, iron, coal, gold, silver, aluminum, and lead), and some agricultural products like wheat and livestock (http://wits.worldbank.org/CountryProfile/Country/KAZ/Year/2012/Summary).\textsuperscript{61} The majority

\textsuperscript{59} Kazakhstan has been in negotiations for the past fifteen years on its accession to the World Trade Organization (WTO).

\textsuperscript{60} Some of the other companies include HSBC Bank Group, Microsoft, Philip Morris International, The Royal Bank of Scotland, and Siemens AG.

\textsuperscript{61} MIT’s Observatory of Economic Complexity website has an interesting “visual narrative” of national economies around the world: http://atlas.media.mit.edu/explore/tree_map/hs/export/ind/all/show/2011/.
of these raw materials are exported to China, Russia, Italy, France, and the Netherlands. Given Kazakhstan’s resource-based economic existence, deindustrialization, urbanization, diminished agricultural production (accounting for only 5% of the GDP today, unlike in the Soviet period when Kazakhstan produced enough grain to feed the Soviet Union) are trends on the rise (Junisbai 2010; Nazpary 2002; World Bank Group 2014).

For many people, the transformation of the Soviet command economy beginning in 1991 was “shocking” for the majority of people in Kazakhstan. Shortly after the collapse of the Soviet Union a large class of dispossessed people appeared. Although the Soviet economy was certainly characterized by systemic shortages of consumer goods and agricultural products, it was during the era of wholesale restructuring of the post-Soviet space in Kazakhstan that people were dispossessed of their property, work, social protections, and divested of their social status. Countless individuals not only lost their jobs, money, housing, land, livestock, machinery, access to health care and education, but also watched in a state of alarm as state property was plundered, becoming possessions of former administrators.

It is no wonder that Burkut refers to the plunder and blatant theft of state owned property of the Oktyabr sovkhoz by former administrators, as nothing more than another form of “repression,” similar to that occurring during the Stalin era all-out collectivization drive and the purging of class enemies. After all, when all state social protections were removed with the Soviet Union’s collapse, poverty rates skyrocketed, the standard of living decreased significantly (especially in the rural areas of the country), and severe shortages of food and other consumer goods became commonplace. Indeed, unlike in the Soviet period after Stalin’s reign of terror, the development and the distribution of wealth in Kazakhstan have become considerably less
Today, instead of state guaranteed protections, the systemic overhaul of the economic system gave rise to an assemblage of non-state entities—global and local NGOs, scientists, and multinational corporations—that have come to regulate social life on behalf of the state, by proxy (Collier and Ong 2007; Goldman 2005). And what they offer as help is more of the same: more free market strategies for the future reduction of poverty and development of Kazakhstan.

Joma Nazpary (2002) rightly observes that the local metaphor, “wild/savage capitalism,” captures a great deal of what is going on in Kazakhstan. This is because following the breakup of the Soviet Union, Kazakhstan disintegrated into chaos, becoming a target of Western style imperialism managed by the World Bank and the IMF (Nazpary 2002; Verdery 1996). With no state oversight, those who had best access to formerly state owned resources seized the nation’s economic assets through privatization. So at the same time as privatization of the state apparatus was occurring, including its natural resource base—producing higher tax revenues for the state—a new class of Kazakhstan elite emerged. Indeed, as Nazpary (2002:13) suggests, “tax evasions, fraud in customs fees, creating private monopolies, illegal distribution of credits between friends and relatives, extraction of bribes and tributes are some of the standard methods which are deployed by the new rich groups.” In their pursuit of vast wealth, under the guise of following IMF market-oriented policies, the new elites capitalized (and still do, as various stories in local

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62 As relates to the Millennium Development Goals set for Kazakhstan by the United Nations Development Program, “Notwithstanding some progress in the reduction of income poverty, there is a certain risk for a quite considerable proportion of the population living near the poverty line to fall into poverty. Virtually 80 percent of the population in the country have an income twice the level of the subsistence minimum. Earned income remains at a level insufficient for a decent income, thus reducing the attractiveness of productive employment. Regional differences in poverty remain and rural poverty is deeper in all regions. Levels of rural poverty are still almost twice as high as urban poverty” (http://www.undp.kz/en/pages/9.jsp) Accessed 05/30/2014. According to the World Bank Kazakhstan Snapshot (2014), statistics based on a nationally based poverty line show that the population living in poverty decreased from 47% in 2001 to 3% in 2013. However, these same numbers set against a benchmark of higher poverty line ($5/day), a “more appropriate [benchmark] for countries with a higher level of income per capita,” suggest that more than 42% of people in Kazakhstan are still living in poverty (World Bank Group 2014:5). Poverty rates in Kazakhstan during the last decade as a Soviet republic were significantly lower (0% at purchasing power parity (PPP) set to $2.15/day threshold to 3% at $4.30/day threshold) (Slay 2009).
and international media attest) on the disintegrating command economy and lack of transparency, by establishing local and global, legal and illegal networks of power to build their private mini-empires (Humphrey 2002; Nazpary 2002). Ironically, as Nazpary (2002:49) also shows, the new elites justify their wealth by claiming that the Soviet economy was exploitative and unnatural while capitalism is a “natural order of society” where social suffering and high levels of poverty are crucial, albeit a temporary byproduct of building a new utopian future (Nazpary 2002). In essence, they have come to reverse the Leninist dictum.

Today, people who have benefited from the post-Soviet era changes and are secure financially seem to welcome privatization. They see the “shock doctrine” approach to market liberalization as a necessary “evil” and the only solution to dealing with the aberration that was the Communist system. A director of one of Kazakhstan’s many NGOs, explained this by way of an anecdote:

Two men meet on the street walking their dogs. The dogs’ tails are bandaged from recent amputation. One man asks the other: “how did you cut off your dog’s tail?” The other answers: “I chopped it off in one quick move.” Shocked, the man exclaims: “Isn’t this a bit sadistic?” “No! Of course not,” the man answers, then asks in turn: “how did you cut off your dog’s tail?” The other man answers: “I was gentle—I cut it off slowly, one day at a time.” (Interview 2011, translated from Russian by the author)

Like the tail of the first dog, the Communist system in Kazakhstan was lopped off. The quick loss, as the anecdote suggests, means that society has suffered less. As the director explained to me in all seriousness, unlike state owned enterprises, private companies are more accountable for their actions—all that is required is a phone call to the “company headquarters in Luxembourg and they will adjust their behavior.” Perhaps his explanation is not at all surprising, given that the NGO benefited greatly from research funding that attempts to have opposite and contradictory ideological positions about support of opening the Polygon for commercial uses and, simultaneously, doing research against it. The NGO’s survival depends on this funding and
whether or not the studies contradict the organization’s mission is inconsequential. After all, I was told, how else would the NGO survive?

For people who live in poverty, the countless World Bank development progress graphs, statistics, future projections, coupled with Nazarbayev’s proclamations about the positive development of the country, are an abstraction. But among the rural poor on the Polygon, there seems to be a refined awareness of the differences between political rhetoric and reality. Ironically, the same people who are seen by the state as the bearers of Kazakh traditions and spirit happen to also be the most nostalgic and devoted to the Soviet system and ideology. Thus, when Nazarbayev says, as he did in a January, 2014 speech: “We must continue reducing poverty and tackling unemployment. At the same time, it is important not to allow welfare mentality to grow. For all recipients of state allowances and aid, it is necessary to introduce a rule for mandatory participation in employment programs and social adaptation.” Koyan residents hear the hollow rhetoric in a message that is not intended for them.

At this point, let me return to the village and show how the post-Soviet socio-economic fallout manifests itself on the local level. What does it mean to live sami po sebye (relying on oneself) in “Koyanistan,” as local Polygon residents like to refer to Koyan? How have local residents of the former sovkhоз and the victims of Soviet era Cold War nuclear testing come to support plans for the reopening of the Polygon for their own commercial and private uses?

Sovkhoz Dismantled and the Rise of Radioactive Capitalism

Those who were once on the road to building a utopian future now find themselves at the dystopian “short end of the neoliberal stick” (Ortner 2011). In villages like Koyan, the catastrophic economic decline is blunt. There the implementation of a new economic regime not only exposed and magnified class differences, it also returned Koyan (once again) to the
periphery, a place with little state oversight and one of physical and social ruin (Stoler 2013). Now they live—in the words of Altynai, sami po sebye—alone, yet ironically somehow free and self-sufficient, (compared to those who live in the cities), but nevertheless, struggling to maintain their rural livelihoods along seemingly socialist lines. In Koyan today, there is no deliverance in the free market enterprise, no utopian future to look to, no freedom of movement, but rather, a fractured social order where feelings of loss, apathy, and nihilism seem to reign supreme. In the following pages, I trace the very real lack of economic opportunities and the intensifying social marginalization of rural Polygon populations in the cities, as shaping paradoxical survival strategies, that is, novel citizen-state-market formations (and the tensions between them) where exposure to radioactive pollution becomes more desirable than the alternative. Despite their struggles to maintain their livelihood, the people of Koyan refuse to move.

For a host of reasons, Koyan residents today encounter more difficulties in selling a cow or a sheep than they did a decade ago. Of course, selling anything was prohibited during the Soviet period, and the term kommersant (business person, seller, or trader) captured a great deal of the moral and ethical problems associated with economic activity. The term is still used today and carries with it much of the same negativity and accusation—it refers to a person who exploits others for profit and, is, by default, a thief. Thus, saying someone is a kommersant means that they are morally suspect because they own a business only to “make money for themselves” through sheer exploitation. Those who barter, sell livestock, or other goods in order to support their entire family or the village are not kommersanty (plural) (Caldwell 2004).

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63 The small home-based storeowners in Oktyabr are consistently critiqued for their business practices. They are often accused of price gouging and of attempting to get rich without considering other peoples’ economic circumstances. In defense, the storeowners claim that shuttling products from the city is an expensive endeavor and prices of food simply reflect that. Furthermore, they also point out that most of the people who buy in their stores do so on credit that they pay off whenever they are able.
Nevertheless, selling is a relatively new phenomenon in Koyan, dating back only to the fall of the sovkhoz. Until recently, people relied on stepnye biznesmeny (steppe businessmen) for access to certain goods. The stepnye biznesmeny were different than the local kommersant in that they were external to the everyday life of the village. Thus, disagreements about a particular transaction did not cause the kinds of long-term resentments, as would likely be the case between local residents.

*Stepnye biznesmeny* appeared on the Polygon shortly after the post-Soviet regime change. A few of them came from as far south as Balkhash or even Almaty to trade among the Polygon villages during summer months. Rolling up in a large kamaz (Soviet brand truck), they carried everything including diesel fuel, kitchen cabinets, couches, tables, rugs, television stands, clothes, and even electronics that they swapped for sheep, goats, cows, horses, milk products, or metal. From time to time, cash was exchanged, but this was mostly circumstantial and never amounted to much. The benefits of dealing with traders were that no one had to leave the village to conduct commercial activities. But today all of this is very much on the decline. During fieldwork, there were only two such trucks in the village selling mostly kitchen cabinets, living room sofas, and clothes. Increasingly, people from Koyan are obliged to travel long distances to a city bazaar, maneuvering through various kinds of unwieldy bureaucracies, corrupt buyers, state officials, and local police in the process.

Scholars of post-socialist transformations generally agree that the end of the Soviet Union is not a uniform event (Burawoy and Verdery 1999; Collier 2011; Gal and Kligman 2000; Grant 1995; Humphrey 2002; Kligman 1998; Kotkin 2001; Nazpary 2002). Indeed, Koyan is an acute example of how this disintegration was localized and uniquely place specific. Unlike large cities throughout the Soviet Union—Moscow, Leningrad (presently Saint Petersburg), Karaganda, and
Chelyabinsk—the rural areas saw the exodus of large numbers of people. In the first decade following the collapse, nearly all Ukrainians, Byelorussians, Germans, Poles, Tatars, and other Russian-speaking minorities left the sovkhoz, anxious about their future economic prospects in a state increasingly dominated by ethnic Kazakhs. They either resettled in large urban centers, or departed Kazakhstan entirely to settle in their respective countries of origin. Ethnic Kazakhs also left en masse. Some families moved to the more populated Oktyabr, or opting for the burgeoning urban slums on the periphery of Karaganda or other large cities where family members had already established themselves. There was however an in-migration too. In 1997, several Kazakh oralman families settled in Koyan from Mongolia. Tursynbek’s older brother, Ramazan, describes them in the following way: “They were so backwards that the first time they saw noodles they ate them dry! They drank tea with salt and lived in yurts. The family slept together and went to the bathroom together. They lived near Erzhan’s zimovka, there on the Polygon and got rich by growing a large herd!” Perhaps because of their isolation from the close-knit Koyan community, most of the oralman left after only a couple of years living on the Polygon. Today, in the once multi-ethnic sovkhoz, only ethnic Kazakhs remain; most of them are kin, belonging to the same clan that initially migrated to the region centuries ago who are related in some way by blood or marriage.

The numbers of people who moved away is indeed astonishing. To put this exodus in perspective, according to the Ministry of Environment Protection (2010:22), in the Karaganda oblast at the start of my fieldwork in 2010, the majority of people lived in urban areas, with 78.1% of people in the cities and 21.9% in villages respectively.\(^{64}\) Koyan is representative of

\(^{64}\) The entire region (a subdivision of the oblast) that includes Koyan and Oktyabr continues to experience dramatic population decline. In 2009 for example, there was a total of 40,042 people living in the regional territory. One year later, this number dropped to 38,969 (these figures are based on official local statistics I obtained in a regional hospital in 2011).
this dramatic rural to urban population shift: in 1991, Koyan had around 700 inhabitants; in 1999 the population dropped to just below 200; and in 2012, I counted 50 men, women, and children in total, living in nine separate extended family households. Only five individuals are of retirement age, that is, over sixty-five years of age. The numbers of people who left are similar for Oktyabr. According to a local administrator with access to demographic statistics for the former sovkhoz administrative center, only one Tatar and one Russian still live in the former sovkhoz administrative center. All other non-Kazakhs left in the first decade after independence.

Before the Soviet collapse, the population of nearly 3000 residents in Oktyabr dwindled to barely 900 people by 2012.\textsuperscript{65} With the great out-migration, there are few explicit signs of the former non-Kazakh inhabitants, except for two. In a meadow located just outside of Oktyabr lies a large, overgrown Christian cemetery where Russians, Germans, and others are buried in hardly identifiable plots. No one really visits here anymore. Halfway between Oktyabr and Koyan stands a badly weathered headstone, topped with a rusted Orthodox cross. At this spot, I was told a Ukrainian man was killed having been thrown from his motorcycle after colliding head first with a rock. Aside from this spot, the once multi-ethnic landscape of the sovkhoz is not forgotten, but rather is lacking in objects through which the vibrant history could be narrated.

Accompanying the exodus, state oversight and the economic system disintegrated, leading to the collapse of the sovkhoz infrastructure. The road to ruin was short and exacerbated by the fact that people were not the only ones leaving the sovkhoz—they were taking whatever

\textsuperscript{65} In general, statistics pertaining to the demographic structure of Kazakhstan’s villages and cities, although reflective of general trends, are nearly useless in terms of indicating the number of people living in any given area. For example, in official documents located at the town hall, Oktyabr is registered as having nearly 900 people living in the village as of 2012. In reality, this number is closer to 380 people, a significant difference in the total population of the village. This discrepancy is a result of how people choose to register their domicile status. Frequently, those individuals who move to the city remain registered as living in the village to avoid paying municipal taxes. In addition, they can also avoid meeting specific criteria necessary for registering in the cities, that is, having a job and a place to live.
significant capital there was with them. Thousands of animals, tons of grain, countless tractors, combine harvesters, plows, trucks, and other industrial-agriculture machinery were stolen and removed by the former sovkhoz administrators (mostly non-Kazakhs). Likewise, residential homes and other buildings disappeared in the process, adding to the landscape of artifacts and ruins. These were dismantled entirely—the brick (kirpich) was either reassembled elsewhere as residential homes or sold at the bazaar.

Seemingly overnight the once celebrated animal herders, hay collectors, tractor drivers, and other laborers, the supposed backbone of the sovkhoz, became a class of rural poor. That is, their fates depended on the benevolence of former sovkhoz administrators who “allowed” them to keep a couple of cows, maybe a horse or two, a dozen sheep and goats, and one tractor to be shared among all residents of the entire sovkhoz. As Burkut explained in 2010, “it wasn’t long ago, 1991, I believe, when repressions started again in Koyan. People did whatever they wanted—they took tractors and animals, and the smarter ones took both. The former sovkhoz directors, brigade leaders, and everyone else who worked in the upper administrative posts during the Soviet period took everything and moved away.” In other words, the sovkhoz was plundered. Meanwhile, the poorest of Koyan residents—not asked how state property was to be redistributed—watched in horror as their herds dwindled and their food supply ran out. It is no wonder that many refer to this time period as one of repression.

The shift to free market economy was indeed catastrophic. In Koyan, government infrastructure ground to a halt and coal, diesel, electricity, food deliveries, bus service, emergency services, and road maintenance stopped. In short order, Koyan’s food store, cafeteria, medical facility, and part of the school (the upper grades) closed. There was no work and no cash income. Only in Oktyabr could people obtain some limited goods—leftover
medicines or grain. But because roads were inaccessible, people from Koyan had to walk long
distances to reach the former sovkhoz administrative center. I listened in shock to stories of how
individuals froze to death or were eaten by wolves as they tried to make their way to Oktyabr on
foot in the dead of winter.\textsuperscript{66} What these local stories suggest is that following Soviet
disintegration, existence in Koyan was dangerous and people’s lives literally teetered on the edge
of death—there was, after all, little food, no electricity, and no heating.

During my sixteen months of fieldwork, I had ample opportunity to speak with people
about the end of the Soviet Union. Many stories centered on unexpected extreme financial
hardships that resulted from the devaluation of the Russian Ruble currency and the IMF policy to
shift the monetary system to the Kazakh Tenge in 1993. While sawing a telephone pole for
firewood, Tursynbek told me how in just one day he lost his entire life savings. Thus, adding to
the loss of one’s entire ideological structure, the financial collapse was utterly devastating to
families in the village. With no resources and without the ability to self-manage the once
promising collective, people survived the only way they knew how—on their diminished animal
herds and on the new economy that developed on the Polygon.

In 1991, Kazakhstan inherited (and closed) the Polygon and entered the international
community as a new state with nuclear weapons. Between 1993 and 1998, however, Kazakhstan
was formally divested of this status because the United States and Russia refused to see another
nuclear power emerge on the world stage. With their oversight, warheads, uranium reserves,
Inter Continental Ballistic Missile (ICBM) launch pads were eliminated and underground testing
tunnels at the Degelen site were sealed (Werner and Purvis-Roberts 2006). Nazarbayev staked
Kazakhstan’s sovereignty on rejecting nuclear weapons. He transformed Kazakhstan into an

\textsuperscript{66} Today, wolves continue to be a problem in Koyan. Although they are an endangered species in
Kazakhstan, wolves frequently attack sheep, goats, and calves in the village. This especially happens during winter
months when food becomes scarce. During fieldwork, there were three such attacks.
“epicenter of peace”—the Polygon a reminder of past Soviet oppression (Nazarbayev 2001). At the same time, however, becoming a non-nuclear state allowed Nazarbayev to embrace peaceful nuclear power, the development of which worked to sustain his vision of the nation’s modern future.

In May 1992, the National Nuclear Center of the Republic of Kazakhstan (NNC) was established on the headquarters of the Semipalatinsk Nuclear Test Site military-industrial complex (Moscow-400, presently the city of Kurchatov). With the help and financial support of international experts, including the International Atomic Energy Agency (IAEA), the national center was charged with removing radioactive pollutants from the territory and enacting some degree of environmental rehabilitation, establishing radiation monitoring of the area, starting biomedical research on the effects of radiation contaminated environment, creating a research infrastructure for the development of atomic energy, and diversifying the economies within the Polygon. Although in the next chapter I will detail what the transformation of the Polygon meant for informing paradoxical subjectivities in Koyan, let me consider here the systemic lack of oversight and push toward privatization that transformed the Polygon into a chaotic free-market entrepreneurial space.

It is ironic that the Polygon could provide some reprieve to Koyan residents from financial hardships. This reprieve, however, was not without its own costs. As the Soviet era nuclear military complex broke down and the army disbanded, what was left of the test site was a landscape littered with conceivably millions of tons (no one is exactly sure how many) of scrap metal. No longer confined to a military zone and subjected to its surveillance, Koyan residents scavenged the site for these scrap metals (often contaminated) and dismantled any infrastructures left over. These sites were also places where encountering radioactivity is likely. A market for
salvaged metal has thus developed into a new economy for the region and the village residents told me that several numbers of people died trying to obtain metal from the highly radioactive Degelen test area tunnels or from other sites. To their own detriment, copper telephone and electricity cable were also sold on this market. Therefore, from the mid-1990s until 2006 the village deprived itself of electricity. While metal collection is no longer quite as economically viable, it still continues, albeit, less frequently. I only saw metal scavenging on a few occasions, such as when the seasonal fires burned large swaths of land and exposed what was previously hidden beneath the tall grasses.

Aside from metal, the Polygon land continues to be used for other economic activities, mainly as pastures for livestock, hay provisioning, and less frequently, farming. Furthermore, people still live in zimovki located within the official boundaries of the test site. In 2011 there were 80 active zimovki sites on the Polygon, where local residents from around the Polygon were holding 30,000 sheep, 4,000 cows, and 3,000 horses (NNC Institute of Radiation Safety and Ecology 2011:46). None of these economic activities are currently legal, but local populations continue to use the land in much the same way as they did during the Soviet era—when this sort of work was wholly sanctioned. What is a motivating factor now is the free land and resources that would otherwise make life in Koyan impossible. Indeed, most of these local economies are officially unauthorized, and there are virtually no mechanisms in place to control people’s access to the site. It is furthermore no secret that stepnye biznesmeny, unlicensed mines, prospectors, poachers, livestock thieves, locals, tourists, anthropologists, and other individuals are free to travel the test site as they wish.

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67 A particularly poignant example of note here occurred in the village an hour’s drive from Koyan. Since the early 1990s until 2012, the village existed without electricity because cables were sold for scrap.
But there are also many businesses with licenses to legally operate on the Polygon. These are often the multinational companies working in the region with authorization from the National Nuclear Center of the Republic of Kazakhstan in Kurchatov. A host of economic activity has been developing around the significant stores of gold, silver, manganese, beryllium, fluorite, copper (already mined in late 1800s), nickel, lead, and coal found throughout the site. The Karazhyra coal mine is one such business venture located near some of the most radioactive areas found on the Polygon territory. Although radiological assessments by the NNC’s Institute of Radiation Safety and Ecology show that radiation levels are safe, a number of individuals responsible for environmental monitoring told me otherwise. The coal deposit at Karazhyra sits above the site of an underground nuclear detonation and in the vicinity of countless cratering explosions. Today, this coal is used as heating fuel by hundreds of thousands of people, including everyone from Koyan. Although investigative journalists in Kazakhstan exposed Karazhyra’s coal as radioactive coal, the company sued the journalists for discrediting its business reputation (Chernyavskaya 2010; Kratenko 2011; Vasiliev 2010).

There is also the multinational Frontier Mining LTD—founded in 1998 (incorporated in the Cayman Islands) by a former Senior Foreign Service officer of the US Department of State—specializing in the extraction and development of copper, gold, and molybdenum. Although not immediately clear from its advertising or its website, most of the company’s mining operations take place on the Polygon, in areas known to have extreme radiation levels (NNC Institute of Radiation Safety and Ecology 2011). In a Special Advertising Section of BusinessWeek

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68 The company was established in 1991 and began operations in 1996.

69 The mining operations are licensed to commercially operate 425 square kilometers of territory distributed among various sites on the Polygon with exploratory license expanding to Northwest, Central, and Southeast zones of the Polygon (Wardell Armstrong 2013). The NNC scientists working in Kurchatov have concluded that this activity poses no danger to human health (Interview 2012).
(2007), for example, the former company CEO enthusiastically said: “To my knowledge, there aren’t too many foreign firms that have built a mine out of a grass field. We’ve brought in the equipment, processed the gold, shipped it outside the county, sold it at the market and repatriated the cash for new development.” Abundantly clear in this message is that most of the capital does not make it into the local economy. What is less obvious, though, is that mining gold and copper on a nuclear test site is inherently dangerous, even more so for the wage laborers with no respirators or safety equipment necessary to prevent radioactive exposures and inhalation of wind-born materials.

The multinationals operating on the Polygon are managed by the new elites that have emerged since the breakdown of the Soviet Union. As Jean and John Comaroff (2000:303) suggest in writing about these financial elites:

This new elite is distinctive in several ways. Above all, its interests are vested primarily in globalizing forms of capital: capital whose shareholder-driven imperatives are unrelated to any particular local enterprise, metropolitan or colonial. Hence, while its business ventures might loop into and out of national economies, this does not, as Saskia Sassen stresses, make them “national” enterprises. The entrepreneurial activities of this class are conceived in terms of markets, monetary transactions, and modes of manufacture that transcend national borders. They seek to disengage from parochial loyalties and jurisdictions, thus to minimize the effects of legal regulations, environmental constraints, taxation, and labor demands.

So, too, is the case in Kazakhstan. Most of the multinational mining operations hardly employ local residents or engage with any locally based enterprise. When the companies do hire local workers, as is the case of a small number of men from Koyan and Oktyabr, the pay is low and working conditions are dangerous. These are the standards: people work twelve-hour, two-week shifts during which they are potentially exposed to toxic chemicals. The tools are old and often dangerous to use. Most employees are regularly threatened with termination. Yet today, Koyan residents depend on these jobs in tandem with their stockbreeding. Cash income from the mines
allows them to support their sons, daughters, and grandchildren who moved to the cities in search of work. Livestock and dairy products from the village supply the food. With no other employment opportunities available to the former laborers of the sovkhoz who lack the skills necessary to survive in the new market economy, Koyan residents are forced into a new proletariat class charged with extracting raw materials that is mostly exported abroad. Their only recourse in a harsh market environment is to thus exchange their labor for wages in dangerous mining work or risk being eliminated entirely from the national and international market flows.

In recent years, the NNC (with the support of the IAEA) has been supporting legislation to open most of the nuclear test site for a wide range of industrial scale economic activity. During an interview conducted with the NNC representatives in 2010 and 2012, I was told that privatization of the Polygon would create an economic boom for the economically depressed region. What privatization means for the Polygon is that all legal restrictions on farming rye, barley, wheat, potatoes, beets, and other crops, as well as industrial-scale livestock breeding would be lifted. Scientists, administrators, and radio-ecologists working for the NNC agree that the test site is mostly clean (95% clean, I was told) and poses no radiological threat to the population. This is because radiation levels are said to be minimal. Koyan residents are supportive of the move and feel that privatization will give them a chance to graze animals legally, perhaps even start farms, and thus provide resources necessary to continue their rural lifestyle. This is in spite of criticism from a local environmental NGO that pollution from radioactive plutonium (with a half-life of 24,000 years), cesium, strontium, and other radioactive materials

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70 People from Koyan would likely not be able to purchase land plots on the Polygon. According to a discussion paper from the Leibniz Institute of Agricultural Development in Central and Eastern Europe, in Kazakhstan “access to land and capital for agricultural producers continues to be constrained by strongly regulated and governmentally controlled allocation systems. While land sales are now possible in principle, such transactions require large capital investments and a long-term planning horizon. Rural entrepreneurs rarely fulfill these conditions, so that land sales remain few” (Petric, Wandel, and Karsten 2011:ix).
byproducts migrates and is found in soil, plants, animals, and more importantly, ground water. Environmental NGOs working in the region, medical doctors who research biological effects of radioactive exposure, scientists, as well as from the broader and usually urban public, worry that radioisotopes will enter the food chain and consequently the market. No one seems to be testing the extent of radiation in the food.

Damira, a biologist who researches the long-term genetic effects of radiation exposure in Kazakhstan is worried. As founder of an environmental NGO and coordinator of the National Anti-Nuclear Campaign in Kazakhstan, she has received many international awards for her successful grassroots campaign to thwart plans to commercially import and store radioactive waste. Having done extensive work on the Polygon, her unrelenting battle against the nuclear test site’s commercial development, has made her a target of various smear campaigns in Kazakhstan. Damira has even received death threats. But she won’t stop. Speaking over tea in her office, she said:

I am categorically against such a program. This development scheme is pure speculation and they are trying to legalize what is illegal. Show me that the test site is clean and radioactive particles don’t migrate. Show me the map of plutonium concentrations. It is crazy! It is not normal for people to live on a nuclear test site and grow food. But authorities don’t think so, they think I am illogical—it’s absurd!...For radio-ecologists this is a great opportunity to always have a job. They can make maps all the time, since radioactive pollution migrates. Miners will dig, pollution will migrate, and now they can make another map, get paid, or better yet, show that there is no radiation and get paid even more. For the researchers it is also a great opportunity. They can do experiments all the time—people live there, animals graze on pastures—you can do any studies you want…Look at Koyan. You have three generations of people ingesting radioactive food. This is a perfect opportunity to do a longitudinal study of intergenerational effects of radiation! For local authorities, privatizing the Polygon is also great. They will buy the land with a local budget and license the land for development. Then they can hire local villagers to work and expose them to radiation. And locals will work because it is good for them too. They will get paid and grow their herds. They already live on the Polygon, so why not work there too for money. I just don’t really understand why do this, on the Polygon out of all places. You saw how much land there is in Kazakhstan, why the Polygon? It’s business, it’s money. Coal, gold, silver, you can have it all. But I just don’t understand. (Interview 2011, translated from Russian by the author)
Frustrated, she links the economic development of the Polygon to greed and the absurdity of market driven development that fetishizes economic capital over human life.

Although the NNC and local support for the commercial development of the Polygon may seem paradoxical at first, (after all, everyone will potentially be at risk of radioactive exposure), it makes sense in the context of a certain neoliberalizing logic, and perhaps provides an example taken to the extreme. Even though the NNC is a state institution, most of its funding, grants, and contracts come from a dozen international organizations (the IAEA for example) and multinational businesses such as nuclear power development and mining industries. Initially, such a cadre provided funding in order to encourage the Soviet era military nuclear scientists to refocus research on the peaceful applications of nuclear science. This changed over time, however, when the arsenal of nuclear weapons was gone, thus neutralizing the threat of a new and irrational rogue nation in the world community—a generally held perception in the West (Gusterson 2004). Today, most of the NNC’s funding is directed toward the development of advanced nuclear research studies such as radio-ecology, radiation dose reconstruction, as well as new technologies, such as the next generation nuclear power reactors (Bauer 2010; NNC Institute of Radiation Safety and Ecology 2011).

By western standards, scientists and administrators working for the NNC are poor and are constantly in search of funds to support their Institution. They live in a city where aside from some new construction, the streets are lined with hollowed out and abandoned buildings, and where the spring thaw of ice makes the roads barely passable. Speaking to this situation, a top-level NNC administrator remarked:

The Polygon is one of the most interesting places on the planet. It’s a natural scientific experiment, a laboratory. This uniqueness demands research and our Institute has the necessary tools to develop all of the research projects. Today, the financial situation of
Kazakhstan is not favorable. Therefore, we pursue grants of all kinds and would like to have equal partnership with the US in terms of research on environmental protection, as well as other developmental plans. (Interview 2011, translated from Russian by the author)

Indeed, the scientists’ economic survival depends on international grants and the rebranding of the Polygon not as a present day environmental catastrophe, but as a natural scientific laboratory, a place where radiation research and economic activity work together to resuscitate the economically depressed region. Koyan’s residents would agree—their own survival has come to depend on the commodification of the Polygon.

Even though development strategies at the national level have some measure of success, in Koyan the economic restructuring and dismantling of Soviet state run collectives has been devastating. Today, while the government of Kazakhstan honors Soviet-era pensions, the monthly take-home pay is 16,000 Tenge or approximately 110 USD. To put this in perspective, it would be difficult to find a one-room apartment in the city of Karaganda for less than 30,000 Tenge (200 USD) per month—utilities, of course, being extra. Moreover, with the unreliability of the mail service to rural areas and the impassibility of roads in the winter and spring months, the hardly sufficient government funds for retirees (redistributed among extended family members in the village) are often late to arrive. Although in 1992 a law was passed in Kazakhstan providing for the social protection of citizens suffering from the effects of nuclear testing (doling out monetary compensation and medical treatment, as long as residents were able to prove that they lived on the Polygon and were ill from radiation exposure) Koyan was deemed a zone of minimal risk and, therefore, in need of minimal help. Furthermore, those who remained in the former sovkhoz lack the education, skills, and training necessary to navigate an urban landscape, unlike those in previous administrative positions who left to secure new occupations in the city. For them, moving to Karaganda or anywhere else urban is a definite
risk: work is scarce and poverty among newer migrants is particularly high, in spite of their Soviet era “career training.”

Despite evidence to suggest otherwise, people who live in the cities generally perceive the Polygon populations—with their access to free land, their alleged ability to invest all of their capital in the supposedly gigantic herds, and their access to metal—as rich. Frequenting Karaganda during fieldwork, people often spoke to me of the villagers living near the nuclear test site (Polygonskiye as they are known colloquially) as being “rich” (bogatiye) and therefore, not in need of special government assistance. Perhaps judging from the cramped urban living spaces in Karaganda typified by Soviet style khrushchovki, villagers on the Kazakh steppe could be seen as wealthy. Although this perception contrasts sharply with the everyday reality of living in the nuclear zone, it has nevertheless become a way for the urbanites to reject the Polygon communities’ claims that they live in poverty and are in need of government help to improve their lives. Although the Polygon is indeed an economic asset for some, it doesn’t generate the kind of local wealth some people may imagine. The money made in the former sovkhoz is simply not enough to allow people to move to the city or to significantly improve their standard of living. Yet this perception of rural wealth, coupled with a general contempt for rural communities, adds to their further marginalization.

The feelings associated with being outsiders are common to Koyan residents. In June 2011, as a token of gratitude for help with my fieldwork, I took several people on a vacation. Luckily, the decision of who would go was not difficult; children were not permitted and elders

71 There are two terms to explain here as they refer to villagers on the former nuclear test site. As I understood their usage, both are extremely derogatory. Polygonskiye denotes any person who lives or has lived near test site and likely carries the meaning that there is something abnormal, genetically mutated, or polluted about them. Bogatiye, while in Russian meaning “wealthy,” in this case seemed to suggest “thief,” “cheater,” “squatter,” or “bandit.” On occasion when I heard bogatiye, it was assumed that villagers performed a certain level of poverty, especially in appearance, in order to disguise their wealth.
were not interested. I had heard about a resort several hours from the village, and we became enthusiastic about the idea. Built in the mountains, this pleasant retreat was initially conceived of as a Soviet era all-inclusive holiday destination for families employed in the coal mines of the Karaganda region. Today, mostly middle-class Kazakh and ethnic Russian city dwellers visit the health spa during the warmer months of the year. The amenities include several dozen rooms, an indoor swimming pool, Ping-Pong, billiards, a dance hall, hiking trails, as well as breakfast, lunch, and dinner. It was there that it dawned on me what I knew all along: that people from the Polygon region not only stand out (even among same ethnic groups and class of people) but are actively shunned. I had not anticipated that immediately upon arrival it was as if the entire staff was alerted to our presence. Members of our group were approached, asked where they were from, and told bluntly by staff of the hotel that they belong somewhere else. It was clear that I was funding this excursion. In short, our party was treated with unnecessary rudeness. They were instructed to behave themselves and enjoy a short stay.

The resort experience solidified my impressions gathered over sixteen months of fieldwork in the area. Rural Kazakhs, especially those from the Polygon region, are identifiable. When our group registered with the resort, it was clear to me that the rural populations are different. They are perceived as being “backward.” After all, it’s not that they can’t eat with forks, they just typically don’t. Their demeanor was strange for this public—it was something to do with the volume of their speech, their gait, the fact that they wore all the wrong clothes, like cheap jeans and sunglasses together with brightly colored shirts, and just generally behaved in a manner unbecoming of resort guests. Treated as such, my group was embarrassed at being

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72 Rural Kazaks are generally perceived by urban dwellers (across ethnicities) to be much darker in complexion, a trait attributed to working outdoors and inbreeding. As such, rural Kazakh populations are considered more backwards, even more so than their ethnically Russian rural counterparts.
“backward” and apologized to me, while I was embarrassed at their apologies and felt guilty for putting my friends and colleagues in this situation. Aside from being considered as “backward,” coming from the Polygon carried an additional stigma. They are seen as polluted, biologically degenerate, and ill. Simply put, the staff and city guests at the resort had very specific perceptions about rural folk, and to be clear, we spent our few days overcoming the pariah status and did our best to enjoy what was truly a remarkable place.

In Kazakhstan, the rural-urban divide can be acute given the level of migration in the post-Soviet period. Generally, urbanites hold a certain level of contempt for rural populations that attempt to mix with city folk. According to Saulesh Yassenova (2005:666):

The overall urban perspective on urban migration formed over the past few years is that villagers should stay in the village where they belong, have skills suitable to dealing with the rural environment and production, and will be happier there than in the city anyway. From this standpoint, migrants’ liminal condition is not a stage in the process of adaptation to the city environment, but an indefinite predicament or fate. I argue that such an image of recent urban migrants, who figure in the press as “they” [the “other”]—that is, unprepared to deal with social and economic challenges in the city—is a powerful rhetorical device, employed (self-consciously or not) to distance them from the urban cultural realm. Communicated through mass media, the derogatory representation of migrants in which they are discursively set apart as unwanted elements in urban society is replicated in scholarly analysis.

The treatment of Koyan residents at the resort nicely reflects Yassenova’s analysis. While what I describe here was not in the city, it was certainly an upscale destination. The urban clientele anticipate this and the staff caters accordingly. Regardless of the fact that spatially the resort is far closer to Koyan than to Karaganda, it is not a place for rural people, and especially not those from the Polygon region. What we have in this instance is something similar to a post-Soviet reading of Raymond Williams’ The Country and the City. Urban elites have reclaimed and redefined what the rural is and are at liberty to move back and forth, into and out of nature, as they like. With this too, the villagers from Koyan were treated at the resort as the ultimate
“Other”—childish, unprofessional, and alcoholic village dwellers (Said 1978).

There are countless examples of social marginalization that people from Koyan experience and now I have an experience I shared with them that validates this sense of things. Other instances include abuse at the regional hospital, schools, and public institutions. NGO workers do little to assuage this, describing Polygon residents as “rich,” “backward,” “uneducated,” and “stupid.” In the city of Karaganda, I observed some of the villagers treated as thieves, as well as berated and pushed around by urban residents. The Polygon, therefore, is a place where these veritable outcasts are able to live without experiencing the multitude of stresses that encounters with the outside world provide. In the village, they retain not only a semblance of control and connection to their ancestral homeland, but also know a sense of belonging. Moving to the city, they fear (rightfully so), would destroy any sense of community and family they have left, and would most likely plunge them into poverty even greater than that which they already know. In the new Kazakhstan, the people of Koyan live sami po sebye—they make do on their own. Their role in urban Kazakh society is limited to how much labor they can perform. Therefore, supporting the NNC proposal to reopen the nuclear test site reflects their hopes for preserving their community, their rural way of life, and their sense of belonging in a hostile and changing world.

To live sami po sebye is a survival strategy—a novel citizen-state-market formation shaping the economic environment within which people operate. In Koyan, this resembles what some scholars refer to as “neosocialism” (Humphrey 2002), a local social environment not dictated principally by the free market profit motive, but rather, by the concern for the survival of the village. Given that people’s lives in Koyan are on the margins of social, economic, and

73 People from Koyan also often cited the importance of their ancestral birthplace as reason not to move from the area. Although this may be so, if there are real opportunities to increase the standard of living, people will move, as many did from Koyan.
geographic order, as they are denied access to the most basic economic and social resources (but are deemed to be well suited for the most dangerous, low paying jobs available), the village now operates as a collective unit. Family resources are pooled together. Networking, often based in reciprocity, secures access to limited resources. Stock herding and hay collecting is a cooperative endeavor in Koyan where duties rotate between village males. One tractor is shared among the entire village, as are the pastures. Everyone is expected to contribute to Koyan’s overall wellbeing and all help is returned in kind. In the case of an emergency, for example (like a seasonal grass fire I will describe in the next chapter), everyone from the former sovkhoz and the surrounding villages come together to extinguish it. The same goes for finding missing livestock or relatedly, to search out the thief.

Although situated on the periphery, Koyan is tied into various city networks and for whatever lack of a system there appears to be, the residents have one and they work it. Throughout fieldwork, I shuttled countless numbers of sheep, goats, and cows between Koyan and Karaganda. Together, residents and I visited family, friends, and doctors in adjacent villages or in the cities. People refused to give up living in Koyan and made sure that the village was tied to Oktyabr through established social networks as well as by placing demands on the Oktyabr akim (mayor). Thus, the akim had to plow the Oktyabr-Koyan dirt road at least once every winter and restore electricity whenever it was off.

But people’s refusal to give up meant that their lives were often cut short. Some individuals died from diseases like cancer or other so-called “natural causes.” Others died from suicide, from freezing to death, or falling off a roof. There was also a murder, according to some people. In March 2011, Burkut’s youngest son, who was twenty-three years old at the time, went missing. When the local police refused to help find him, residents of surrounding villages began
a search on their own. After three weeks of scouring the steppe, they located his body lying in a ditch beneath the snow. The police established the official cause of death as hypothermia. The way the body was positioned, I was told, did not suggest freezing to death because his arms were stretched outward and had defensive wounds. Although life in Koyan is fraught with difficulties—perhaps unimaginable to those who live in their urban cement blocks—for village residents this rural life, even with its limited access to food and electricity, is a better alternative. After all, would their life really improve living elsewhere?

Conclusion

In this chapter, I have sketched out many of the broad themes and events that have contributed to what Kazakhstan looks like today, while at the same time attending to the complex ways in which lack of economic opportunities created by the neoliberal restructuring programs and social marginalization of the rural Polygon populations inform the decision-making process of Koyan residents. Here I have described how the lack of economic opportunities and persistent social marginalization of rural populations have pushed the people of Koyan to accept policies that may prove to be detrimental to their well-being. It is ironic and in many ways tragic that the Soviet nuclear/military zone that once was the source of terror continues to be an economic and socio-cultural lifeline. For those individuals whose lives I have come to know well, the Soviet nuclear disaster never ended. In many ways, this disaster is sustained by the “will not to know” (Fortun 2012), that is, the will to ignore radioactive pollution, only to see the Polygon as a place of new economic development and opportunity, and thus a place of past injury. Indeed, to speak of a former Semipalatinsk Nuclear Test Site, as if the toxic landscape somehow belongs to the past, is to be part of a persistent and discursive erasure process of the people compelled to make a life there, who endure the temporally prolonged effects of poverty and of radioactive exposure.
Thus, today, in unprotected areas of the nuclear test site, high concentrations of radioactive plutonium, strontium, americium, tritium, cesium, and countless other toxic elements presently continue to pose a potential health hazard to the local villagers. However, given the current socio-economic context and marginalization experienced by rural Polygon populations, the villages turn their hopes toward the Polygon.

Peoples’ fortunes in Koyan are now controlled by an assemblage of local, national, and global networks that distance governmental responsibility from their own citizens. The neoliberal restructuring programs in Kazakhstan (as well as in other post-Soviet states subjected to drastic economic reforms) produced ‘wasted lives’ to use Zygmunt Bauman’s phrase, a literal process of permanent and deadly exclusion of the marginalized who have little labor value within the global economy. The post-Soviet “zones of abandonment” found on the edges of the nuclear test site in Kazakhstan, “accelerate the death of the unwanted” (Biehl 2005:20). Those living in Koyan insist there is a history and logic to their abandonment by the Kazakh government. Making sense of the post-Soviet reality, many people blame dikii kapitalism, a brand of capitalism they argue, that forced Koyan residents to live sami po sebye.

In the current economy, Koyan residents have thus become a collection of surplus, experimental, and marginalized bodies in a system that excludes them from neoliberal market flows. The powerful states of the world have actively transferred their environmental degradation “in the form of hazardous waste, polluting transnational factories, or industrial/waste disposal practices that would be unacceptable at home to poorer nations of the world” (Dawson 74). The greatest threat comes from unmarked highly radioactive spots found throughout the site. As a result, people who regularly venture into the Polygon have no way of knowing which areas are polluted. The highest radiation reading I obtained with a Geiger counter from an unmarked ‘hot spot’ on the Polygon was 11.000 mR/hr (milli-Rem per hour). In the state of Colorado for example, the average background radiation is 0.021 mR/hr. This means that in 17 minutes, a person standing in this particular area would receive a year’s worth of allowable radiation exposure according to U.S. standards.
and Darst 2005:18). Shadowing the powerful defense and energy programs are peoples whose lives are deemed unworthy and unimportant. Koyan residents are victims of what Paul Farmer (1999, 2005) has called structural violence, a form of violence that is perpetuated by an historically, politically, and economically situated social structure that does violence to people by preventing them from having access to resources that alleviate suffering (Petryna 2002). But this structural violence is also mostly invisible. Aside from poverty, people in rural areas around the Polygon suffer from a decreased life expectancy due to the onset of a variety of illnesses, such as cancer. Numerous scholars continue to link these afflictions to radiation exposure during atmospheric nuclear tests (Dubrova 2002; Gusev 1997; Kassenova 2009; Sakaguchi et al., 2006). Yet interestingly, Koyan residents have come to see their own survival in a nuclear zone as proof that they are biologically adapted to a radioactive ecosystem, so much so in fact, that they come to believe that “clean air is their death.” I discuss the formation of this new and emergent subjectivity, tied to neoliberal restructuring and post-independence scientific discourse on genetic mutation, in the next chapter.
CHAPTER IV

“I am a Radioactive Mutant”: Mutant Biologies and Subjectivity in Post-Cold War Kazakhstan

“Now hear this Earth! I am Mutant Man, Homo Superior! I have been created by radiation forces out of the loins of you, the human race, after your great terrible Atom War. Yes, I am a step up and beyond you, and I am now your master for better or worse. You created me in your blind, savage, senseless war of atomic radiation. You have only yourselves to blame if I turn out to be your — Frankenstein Monster!” (O.O. Binder, 1953 “How Nuclear Radiation Can Change Our Race,” Mechanix Illustrated)

Between 1949 and 1989 at the Semipalatinsk Nuclear Test Site (SNTS) a total of 468 nuclear explosions were carried out, comprising 125 atmospheric and 343 underground blasts. The aggregate yield of the nuclear device tested in the atmosphere and underground at the SNTS (in a populated region) exceeded by a factor of 2,500 the power of the bomb dropped on Hiroshima by the Americans in 1945 (Hamid Ismailov in “The Dead Lake,” 2011)

“I am a radioactive mutant (Я радиоактивный мутант)” (A button sold in the city of Kurchatov, Kazakhstan, the present-day location of the National Nuclear Center of the Republic of Kazakhstan)

Introduction

On March 11, 2011 the first major nuclear disaster since Chernobyl occurred at the Fukushima Dai-ichi Nuclear Power Plant in Japan. The 9.0 magnitude Tohoku earthquake triggered 45-foot tsunami waves critically damaging reactors at the plant. Three of the six reactors experienced catastrophic meltdowns, releasing unknown quantities of toxic radioactive elements into the air. In order to prevent further explosions, the incapacitated reactors were purposefully vented, releasing another quantity of radioactive particles into the atmosphere. As of yet, is still unclear how much radiation escaped. Also unclear, are the number of people who were exposed to low-levels of ionizing radiation and what the future health implications of these exposures may be.

A study published on August 9, 2012 in the Nature’s online journal Scientific Reports titled “The Biological Impacts of the Fukushima Nuclear Accident on the Pale Grass Blue Butterfly,” indicates that one of the effects of the Fukushima disaster is the emergence of mutant butterflies near the damaged nuclear plant (Hiyama et al., 2012). The study belongs to a growing, although intensely contested, body of scientific literature linking chronic low-level
radiation exposure in the past, to potentially lethal genetic abnormalities in the future. Not surprisingly, the published mutant butterfly findings is raising alarms about the potential long-term effects of low-dose radiation, not only among some scientists, but also to those who faced exposure in the days following the Fukushima accident.

The mutant butterfly discovery deserves a proper summarization. The article appeared a little over a month after a Stanford University study estimated that the global health impacts of the Fukushima nuclear accident “may result in 15 to 1300 cancer mortalities and 24 to 2500 cancer morbidities worldwide” (Hoeve and Jacobson 2012). The mutant butterfly study, led by a team of scientists from the University of Ryukyus in Okinawa Japan, also discovered something more: that negative radiological impacts appears generations later and are transmitted parent to offspring—at least among the butterflies. The Japanese research found that butterflies exposed to chronic low-level radiation, for example, are developing unusual, potentially fatal, genetic and physical aberrations, such as wrinkled wings, deformed legs, and broken antennae and are transmitting these products of a mutant genotype and, subsequently, a mutant phenotype from one generation to the next.

To ensure that indeed radiation was causing genetic mutations and physical abnormalities, the Japanese researchers exposed healthy butterflies to low-dose ionizing radiation in a laboratory. The pale grass blue butterfly is a common species in Japan and thus it

75 The controversies about the effects of low-dose radiation began in the 1950s when the Atomic Energy Commission (AEC) sought to develop radiation safety standards for protecting public health at the same time as it promoted the development of civilian uses of nuclear technologies. As Samuel Walker (1994:57) points out, “the debate was partly over scientific questions about the severity of radiation hazards and the bases for radiation standards. But it also concerned political questions, both inside and outside the AEC, about how best to protect the public and about confidence in the AEC’s commitment to doing so.”

76 The Stanford University study contradicted a United Nations Science Committee on the Effects of Atomic Radiation (UNSCEAR) report that claimed Fukushima fallout poses no serious threat to public health (Richter 2012). Even though the study acknowledged uncertainties about the biological effects of chronic-low level exposure as they relate to people, plants, and animals, the conclusions have been heralded as proof that nuclear energy is a safer alternative to fossil fuels (Goldstein and Stawkowski 2014).
was easy to compare those from Fukushima and the surrounding areas to those found in other regions of the country. Researchers found that butterflies collected near the Fukushima plant two months after the accident (first generation) had genetic mutations and physical abnormalities (deformed legs, broken antennae, and wrinkled wings) at a rate 12% higher than the control group. When these butterflies mated, the mutation rate of offspring rose to 18% and then rose to 34% in the next generation—a direct correlation indicating that genetic mutations were being passed forward.

The most disturbing discovery came from the butterflies collected in September 2011, six months after the accident. This study showed a 28% increase in genetic and physical abnormalities, with the rate of genetic mutations and physical abnormality surging to 52% of the offspring. Although the new data led the scientists to conclude that the “present outbreak of abnormal individuals in the Fukushima area was caused by random genetic mutations in addition to physiological effects due to the artificial radionuclides from the Fukushima Dai-ich (sic) NPP” (Hiyama et al., 2012:8), it is difficult to replicate these same studies in human populations (Goldstein and Stawkowski 2014). As yet, not a single peer-reviewed scientific study has been able to show conclusively that the same is true for humans. In fact, even with positive data from irradiated animals (such as the Fukushima butterflies) that demonstrate the inheritability of genetic mutations, the general consensus among scientists is that people are more resistant than other animals to the effects of radiation. But even though humans are thought to be more resistant than other animals, the Scientific Reports study carries potentially alarming implications for our understanding of radiation and its biological effects. The butterfly findings are alarming because they suggest (despite issues surrounding the extrapolation of data from animals to humans) that perhaps humans too may be susceptible to transmitting their damaged heritable
germ-line DNA to future generations. As Hiyama et al., (2012:8) write: “heritable germ-line genetic damage caused by low-dose exposure due to radioactive contamination in a species of butterfly has invaluable implications for the possible future effects of radiation on animals.”

Nuclear disasters at Chernobyl, Three Mile Island, and now, Fukushima involve the unintended release of radioactive materials that have produced conflicting scientific findings about biological and environmental contamination. These conflicting studies create a whirlwind of uncertainty, especially among communities living nearby. This uncertainty casts doubt on the safety of nuclear power and the biological effects of low-dose exposure to radioactive elements. Engineers, physicists, and government officials counteract this doubt by underscoring the safety of nuclear power; that is, human error and not science per se, is the culprit of these catastrophes (Button 2010). Regardless of what the general scientific consensus is on the safety of nuclear power, the mutant butterfly findings are raising alarm among the evacuated residents of Fukushima in addition to producing anxieties in others who were affected by radioactive fallout from decades of nuclear testing or accidents such as Chernobyl.77

When the mutant butterfly study first appeared, I lived in Koyan. Everyone there was well aware that we were living on the Polygon and also exposed to radiation. After all, many residents regularly travel through the unmarked nuclear test site. More unexpected, perhaps, is that, unlike the scientists who found genetic mutations to be responsible for potentially lethal

77 Even though scientists are divided on the possible negative health impacts of low-dose radiation, the use of advanced imaging technology, one that relies on computer processed x-rays (as in the case of computed tomography (CT) scans), is on the rise. The implications of increased low-level radiation exposure have not been lost on the scientific community that is urging further studies on the health costs and benefits on the use of this technology. In June 2012 for example, the *Journal of American Medical Association* published a report that between 1996 and 2010 the use of advanced diagnostic imaging substantially increased, with CT scan use rising three fold, while the use of magnetic resonance imaging (MRI) increasing four fold. The authors found that the use of advanced imaging technologies increased the estimated average background exposure from 1.2mSV to 2.3mSv (two fold), with patients who received high (20-30mSV) to very high (more than 50mSV) radiation exposure, also doubling. The increase in radiation dose, translates to an increased cumulative radiation exposure and possibly negative health impacts (Smith-Bindman et al., 2012).
abnormalities (albeit, only in butterflies), the people I worked with came to believe something quite different. Not only do they see chronic exposure to radioactive elements as safe, but also, vital to life. In this context, the residents of Koyan see their own survival in a nuclear zone as proof that they are biologically adapted to a radioactive ecosystem, so much so in fact, that they come to believe that clean air is their death.

Broadly, I focus attention here on the scientific discourse on mutant biologies in Kazakhstan at a site of persistent nuclear testing during the Cold War and one that has received comparatively less scrutiny, at least in the general press, than the aforementioned accident sites of Chernobyl, Three Mile Island, or Fukushima. More specifically, I consider the ways in which the scientific discourse has shaped the lives of people who are faced with radioactive residue on a day-to-day basis. How do the consequences of radiation, human survival, and anxieties about low-dose exposure play out in places like Koyan where people continue to live on irradiated landscapes made “mutant” by Soviet era nuclear testing? How do scientific debates about the effects of low-dose radiation exposure, genetic mutation, and the mutant insert themselves and morph the everyday realization of the self in Kazakhstan’s post-Soviet context? In other words, how do these things work together to create new understandings of the human self (subjectivities) constructed in relation to health in Kazakhstan’s nuclear zone?

This chapter explores the cultural formation of nuclear subjectivities and emerging health strategies among Koyan residents who continue to live on and make use of radioactive land. I argue that one of the most powerful legacies of the Soviet nuclear bomb project is the emergence of what I refer to here as Homo Mutantus (the Mutant Man). This is a paradoxical socio-cultural formation and a survival strategy informed by a neoliberal, post-Soviet social order, as well as the scientific uncertainty about the biological effects of radioactive exposure. To understand this
new formation, I draw heavily here upon anthropologist Joseph Masco’s (2004) analysis of mutation in biosocial life. As Masco points out, genetic mutation refers to the permanent change in the DNA sequence that produces a new reproductive outcome. These mutations can be either inherited from a parent (also known as germline mutations, as they occur in germ cells: ova and sperm) or can be acquired throughout a person’s life (known as somatic mutations). The reproductive outcome of a genetic mutation can either be characterized by the following: 1) injury, as in deformity or cancer; 2) improvement, as in adaptation to a given environment; or 3) noise, or uncertain effect that a genetic mutation has on a living organism. In his “Mutant Ecologies: Radioactive Life in Post-Cold War New Mexico,” Masco explores the production of highly mutable, yet particular, social and biological ecologies through a theorization of mutation. Specifically, Masco (2004:518) explores these biosocial transformations as they manifest themselves in injury (radiation experiments on the Nevada Test Site), improvement (re-inscription of polluted environments as wildlife refuges, as is the case with areas located near the Los Alamos National Laboratory), and noise (ambiguity or otherwise unknown biological consequences of ionizing radiation’s genetic effects). Masco’s three distinct post-nuclear biosocial formations are all found in Koyan. I argue that the post-Soviet Mutant Man in Kazakhstan, simultaneously embraces all three genetic possibilities: 1) injury, 2) improvement, and 3) noise that thus produce a novel and roving subjectivity that makes survival on a nuclear test site possible.

I divide this chapter into three parts for analytic purposes. First, I investigate how on the one hand, the efforts in post-independence Kazakhstan to identify genetic mutation as a form of past radiation injury (degeneration) have resulted in the marginalization of individuals found to be “at risk” as a group belonging to a “genetic underclass” (Duster 1990). On the other hand,
this view of genetic mutation has, at the same time, allowed people to embrace pollution as a way to navigate a post-Soviet social order. Next, I examine how the discourses on nuclear pollution and Mutant Man’s survival have been refashioned as proof that Koyan residents’ mutant biologies have evolved. In fact, they fit a radioactive ecosystem in which they now thrive. Finally, I consider unique and mobile social responses by local Polygon residents, scientists, and the NGO workers tied to radiophobia (a term used by the International Atomic Energy Agency to describe the psychological side effects of an irrational fear of radiation) rooted in the scientific uncertainty about the effects of low-level chronic radiation exposure, that is, noise.  

I specifically focus on subjectivity because, as Sherry Ortner points out, it is an “ensemble of modes of perception, affect, thought, desire, fear and so forth that animate active subjects” and at all times includes “…the cultural and social formations that shape, organize and provoke those modes of affect, thought, and so on” (Ortner 2005:31). Subjectivities also have an “influential history, cultural specificity, political location, and economic position” (Kleinman and Fitz-Henry 2007). In the context of Kazakhstan, the history, economy, socio-cultural context, as well as the specific dissemination and implication of studies on radiation induced genetic mutation, shape and construct a new understanding of the human self in the nuclear zone. By embracing the sensibility of “mutant subjectivity,” the rural inhabitants of Koyan are able to navigate a post-Soviet world and its attendant cultural marginalization. As such, mutant subjectivity and the rise of the Mutant Man in Kazakhstan is a specific cultural construction that

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78 Many scholars make use of the term radiophobia, the irrational fear of radiation, as one of the psychological side effects of misinformation and popular culture representations of radioactive effects. The findings published by the National Research Council in the 2006 Biological Effects of Ionizing Radiation (BEIR) VII, Phase 2 report, cite evidence that people who experience radiation related trauma develop improper risk perception and irrational fear of exposure. Studies by the International Atomic Energy Agency (IAEA) and United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) also cite similar findings.
belongs to a discursive negotiation with the Soviet nuclear legacy on the one hand, contorted in turn, by the evolving social formations of post-Soviet neoliberalism on the other. What will become evident throughout this chapter is that this emergent subjectivity and with it, the lay understanding of genetic mutation, Koyan residents mirror Soviet radiation science, one that challenges the Western reigning paradigm regarding the genetic effects of low-dose radiation (Goldstein and Stawkowski 2014). Before I address the main points of this section, however, allow me to briefly focus on how genetic mutation became dominant in Kazakhstan for understanding radiogenic legacies of Soviet Union’s nuclear testing program.

**Antecedents to Mutant Consciousness**

As described in the earlier chapters, Kazakhstan is home to the largest terrestrial nuclear test site in the world. Although people in Koyan knew that bombs were exploded near to where they lived, the forty-year legacy of Soviet nuclear testing on the behemoth Semipalatinsk Nuclear Test Site really came into view only after the breakup of the Soviet Union. In fact, until the early 1990s, no one in Koyan heard of radiation or genetic mutations. To no small degree, President Mikhail Gorbachev’s attempted reinvention of the Soviet Union through *perestroika* (restructuring) and *glasnost* (openness)—programs that lasted from 1985 until 1991—exposed Soviet state cover ups that included details of ecological damage related to nuclear fallout and their entire nuclear program. For the first time, by releasing previously classified details into the nature and extent of the Soviet nuclear program with the Gorbachev Premiership, people were given the opportunity to learn about the forty years of nuclear testing that took place on the.

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79 The Nevada National Security Site (formerly the Nevada Test Site) is the only test site located on the territory of the United States. Located 64 miles from Las Vegas, the test site has an area of 3,500 square kilometers. Beginning in 1951 and lasting until 1992, it hosted over 900 aboveground and underground nuclear tests. In Kazakhstan, nuclear tests were also carried in areas outside of the Semipalatinsk Nuclear Test Site. In the western part of the country, for example, three other sites—Golit, Lira, and Vega—were used for testing the possibility of using nuclear weapons for oil and gas exploration, as well as seismic studies. After the fall of the Soviet Union, Kazakhstan inherited a large number of enterprises belonging to the Soviet military-industrial complex.
Polygon. Thus, with the transparency provided by perestroika and glasnost, a new space was created for dialogue about previously forbidden topics. Of note, when media accounts about the health consequences of the 1986 Chernobyl disaster in Ukraine began to reach Kazakhstan, Kazakh intellectuals began to see similar health effects in populations living near the test site. Consequently, three years later in 1989, Kazakh poet, writer, and activist organizer Olzhas Suleyменov founded the Nevada-Semipalatinsk anti-nuclear movement, the first environmentally based NGO in Kazakhstan. Some 5000 demonstrators came to Almaty to hear Suleyменov condemn nuclear testing, call for the closure of all nuclear facilities in Kazakhstan, and ask for medical compensation for those who are ill due to long-term exposure to ionizing radiation. In addition to the 1992 legislation that created compensation programs, studies on radiation-related genetic damage became the focus of epidemiological studies in assessing environmental risk. Research found the frequency of genetic abnormality identified in exposed populations in the area of the Polygon translated into increased dose estimates and therefore proof of radiological damage (Durbrova 2002).

In the Soviet Union, research on human genetics did not officially begin until the mid-1960s. This is because at the end of the 1920s Stalin banned Mendelian genetics in favor of Trofim Lysenko’s theories on the inheritability of acquired characteristics. Lysenko’s scientific arguments fit neatly with Leninist-Stalinist ideology. For one, Lysenko promised Stalin he could quickly industrialize and enhance Soviet farming by utilizing Lamarckian evolutionary ideas to growing cereal crops, the idea being that plants acquired certain characteristics from

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80 Most of this research was and continues to be classified, especially as it pertains to Soviet nuclear testing and its effects on populations living near the Polygon.
environmental conditions that they pass on to future generations. Second, while Lysenkoism has been rightly understood by numerous scholars as a caricature of science, it had aspects of understanding “the social” that are worth noting. Lysenko’s view, for example, stood in opposition to the popular eugenics science of the time informing social welfare policies in Germany, Great Britain, and the United States (among others). In the Soviet context, eugenics was seen as a “bourgeois perversion of science,” a racist and imperialist worldview designed to exploit the oppressed peoples of the world (Goldstein and Stawkowski 2014). In contrast, Soviet-style Lysenkoism promoted a view that heredity has a limited role in shaping human development. The anti-Mendelian propaganda campaign seeking to cleanse the Soviet Union of bourgeois perversions, including biologically deterministic philosophies contradicting the Leninist-Stalinist worldview, meant that geneticists opposing Lysenko were arrested, deported, or shot (Soyfer 1994). Nevertheless, even with the official ban on Mendelian genetics, Stalin was not about to miss an opportunity to utilize all resources necessary for the development of the Soviet nuclear bomb project. The military branches of science used whatever kind of banned science they needed (like quantum mechanics) to accomplish their goals and kept their research secret. Alongside the official Soviet scientific dictum, a vast network of NKVD run secret prison laboratories (known as Sharashka) was designed to carry out research related to the nuclear project. There, Mendelian genetics flourished. Laboratory B in Sungul, for example,

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81 The rise of Lysenko can be traced to Stalin’s First Five-Year Plan that devastated the Soviet agricultural sector. Lysenko offered a solution to the grain crisis claiming that winter wheat can be induced to behave like spring-wheat through the process of vernalization. Lysenko’s approach to agriculture, however, proved to do little in terms of producing greater yields. Nevertheless, the ban on Mendalian genetics was only officially lifted in 1964. (For a discussion on the Lysenkoism see: Graham 2002; Krementsov 1997; Pollock 2006; Soyfer 1994).
was a prison complex that housed Soviet and German scientists who conducted studies on the
genetic effects of radiation on plants and animals.82

Radiation biology and research on radiation exposure related mutation rates only began to
officially take off in Kazakhstan after 1991, when the Soviet Union came to an end. A product
of the shifting political conditions in the region and the international funding opportunities that
promoted scientific collaboration with Western nations, radiation biology focused on the
mutagenic effects of radiation both in terms of high-level and chronic low-level exposure
(Akanov et al., 2009; Bauer et al., 2005, 2010; Gusev et al., 1997; Kawano et al., 2006;
Zhumadilov et al., 2000). According to environmental scientist and epidemiologist Susanne
Bauer (2010:209),83

Mutations were a key argument when local scientists called for more international
attention to Semipalatinsk — both in terms of humanitarian aid and further
radiobiological investigation of the relationship between radiation and cancer, for
example. For western radiation biologists, the situation of past—and largely unstudied—
exposures in the former Soviet Union brought about the “unique opportunity” to derive
direct risk estimates from data for a human population exposed to multiple radiation
doses due to fallout.

But clear risk assessments from epidemiological data on the effects of low-level radiation
exposure on humans are still uncertain and difficult to interpret. As medical anthropologist
Donna Goldstein (2012) explains in a recent article titled, Experimentalité: Pharmaceutical
Insights into Anthropology’s Epistemologically Fractured Self, specific practices embedded in
scientific methodology that are in place to produce a more rigorous science also make it difficult
to effectively connect cause and effect. Extending this to the human experiments carried out

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82 Laboratory B in Sungul was located near the Maiak plutonium reprocessing plant located near the town
of Ozersk from which scientists obtained highly radioactive materials for their research. Famous laboratory
prisoners included the Soviet geneticist Nikolay Timofeev-Ressovsky and German chemist Nikolaus Riehl.

83 Susanne Bauer is currently an Assistant Professor of Sociology at the Johann Wolfgang Goethe
University in Frankfurt, Germany where she focuses on the sociology of science. Bauer has done extensive work on
the post-Soviet genetic mutation science and the ways in which it became central in epidemiological studies at the
Semipalatinsk Nuclear Test Site in Kazakhstan (Bauer 2010).
with the goal of increasing our understanding of low-level radiation exposure and the effects on populations, she wonders whether scientists eager to improve the early twentieth century control group design and those working in the context of Cold War secrecy, eventually led to a heightening of interest in future populations at the cost of—at the time—contemporary human beings.

The difficulty of effectively connecting cause and effect has led the few anthropologists who study individuals and populations exposed to radiation, such as Adriana Petryna (2002), Cynthia Werner and Kathleen Purvis-Roberts (2007), and Hugh Gusterson (1998), to also be reluctant to support claims about radiation sickness from low-level exposure in some of the most affected populations (for example, victims of Chernobyl), particularly since no peer-reviewed scientific study by the IAEA or any other international organization fully supports this claim. It is challenging to obtain direct cause and effect data, as there are in fact many factors that contribute to diseases such as leukemia or lung cancer. Furthermore, radiation exposure (even in high doses) and illness are dislocated in time and space: the effects of past exposure may take years or even decades to show up as cancer or other related illnesses. In other words, even with positive data from irradiated animals, such as with the Fukushima butterflies, demonstrating that genetic damage is inheritable in these insects, the general consensus among scientists is that people are more resistant than other animals to the effects of radiation (Byrne et al., 1998; National Research Council 2006; Neel et al., 1990; Neel 1998; UNSCEAR 2008), a finding that has stayed with us since the Hiroshima studies of the atomic bomb survivors (Goldstein and Stawkowski 2014). Since radiation science is unable to resolve the multiple questions associated with the biological effects of low-dose exposure (at least how this risk applies to humans), the
conflicting scientific and public discourse create cultural anxieties about radiation exposure and further reinforces uncertainty about radiological effects (Button 2010).

In the Kazakh context, two studies pertinent to the issue of low-dose radiation exposure are important: one assumes biological effects of low-dose radiation on the human body are negligible and pose no harm to current Polygon populations, while the other attempts to show that even in small doses, exposure could potentially be dangerous. First, in 2009, the National Nuclear Center of the Republic of Kazakhstan Institute of Radiation Safety and Ecology in Kurchatov made a case that the northern portion of the Polygon could be safely returned to agriculture usage, because there is “little to no” residual radioactivity. This is despite the fact that ground zero for atmospheric tests, as well as other highly radioactive areas on the Polygon with high concentrations of radioactive plutonium, strontium, and cesium, remain unprotected and are easily accessible to anyone. Even though adequate mapping of hazardous areas is still lacking, the IAEA supported the NNC’s findings and commended the NNC scientists for their rigorous scientific methodology. Those who reject the IAEA stamp of approval cite journal articles presenting evidence that low-dose radioactive exposure may lead to genetic abnormalities in future generations. The IAEA argues that these studies are inconclusive and that higher rates of thyroid cancers (one variety they seem to link to radioactive exposure) in the affected territories are a result of Soviet nuclear testing that altered the genes of developing

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84 I chose these two studies because the ways in which each understands the effects of low-level chronic radiation exposure on humans, will inform policies regarding the remediation program on the Polygon.

85 Migration of radioactive particles is wholly dependent on a variety of environmental processes. Wind, water, fire, and burrowing animals spread radioactive elements well beyond the borders of the nuclear test site. A number of prominent Kazakh scientists argue that since radioactive particles migrate in the soil, it is impossible to decontaminate the irradiated land. Arguments against the NNC proposal to open the Polygon for economic development came from environmental NGOs, local medical doctors, Kazakh epidemiologists, as well as other Kazakh scientists. I heard very little protest from people who live in the villages near the test site, who claim that rejection of the proposal will constrain various economic activities taking place on the test site.
children only. Most other disorders found in the nuclear zone, the IAEA emphasizes, are most likely the products of behaviors related to anxieties associated with radiophobia [or irrational fear of radiation] or lack of proper “risk perception” (Bauer et al., 2005; Chernobyl Forum 2006; IAEA 1991, 1996; Petryna 2002; Werner and Purvis-Roberts 2007).

A second research article published in 2002 in *Science*, complicates the matter of mutations further when it announced that human DNA mutations found among people living near the Polygon are linked to Soviet atmospheric nuclear tests. Ukrainian geneticist Yuri Dubrova in the 2002 piece “Nuclear Weapons Tests and Human Germline Mutation” cited evidence that radioactive fallout increased genetic mutations among populations living near the test site and that these mutations are linked to past radiation exposure (Dubrova et al., 2002, 1996). Dubrova and colleagues (2002) studied “minisatellite mutations”—often referred to in scientific literature as Junk DNA found to be sensitive reporters of radiation exposure—as a detection tool—for germline mutations in parents and offspring. Germline mutation, also known as hereditary mutation, is a genetic change in a body’s reproductive cell that is then incorporated into the DNA of every cell in the offspring line. The researchers found higher rates of germline mutations (similarly to the Fukushima butterfly study) in children of populations living around the Polygon as compared to the unexposed control group, and claim that this damage is related to radiation exposure. What exactly the findings signify continues to be up for debate, however.

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86 IAEA (1991), UNSCEAR (2008), BEIR VII Phase 2 (National Research Council 2001) reports argue that the fear of radiation produces anxieties that then lead people to smoke, drink, and engage in unhealthy behaviors that lead to cancer.

87 Yuri Dubrova and colleagues conducted the Semipalatinsk study because of a controversy that ensued after the controversial 1996 publication of a Chernobyl study on the genetic effects of low-level radiation. Published in *Nature*, Dubrova et. al., (1996) found that people exposed to the Chernobyl accident had more genetic abnormalities than people who were not exposed. The findings were criticized for lack of methodological rigor—his control group consisted of people who lived in Northern England, a research design that broke the rules of proper scientific experiment protocols (Goldstein and Stawkowski 2014; Neel 1996). In the Semipalatinsk study, Dubrova et al., (2002) relied on both experimental and control groups in Kazakhstan.
Do more mutations, for example, produce cancers or physically deformed children in the future? Or are these radiation-induced genetic changes harmless and not the best source of data for evaluating the effects of human exposure to radioactive elements? Answers remain elusive. Indeed, correlations between radiation dose and effect prove difficult to establish.

The contradictory research findings entering the public sphere still continue to create uncertainty about real and potential risks to humans. In the following section I explain the ways in which efforts in Kazakhstan to render genetic mutations as a form of radiation injury (degeneration) results in the marginalization of those individuals found to be “at risk” for genetic mutation; in essence, forming a “genetic underclass” (Duster 1990).

Radioactive Mutant Part One: Homo Inferior

All nuclear explosions that took place on the Polygon were compound experiments in the sense that different sets of data were collected by a variety of actors. The nuclear proving grounds were actually large, open-air laboratories, workplaces for thousands of researchers who were essential in carrying out clandestine Cold War experiments. In addition to analyzing the effects of a nuclear blast on inanimate objects like tanks, planes, houses, and bridges, a sizable amount of research was allocated to investigate the biological effects of radiation exposure. Every aboveground nuclear explosion, for example, was a highly orchestrated event that included fabricated urban environments (to be destroyed), as well as mammalian life to “inhabit” these places. Pigs, dogs, mice, among other animals, were placed in cages or tied up at calculated distances from the epicenter of the explosion and subjected to flying debris, heat, and gamma radiation. At the same time, many unsuspecting Soviet citizens also became tools for

88 During the first nuclear test in the Soviet Union in 1949, horses, pigs, and cows were placed at different intervals from ground zero. Their irradiated body parts (hearts, stomachs, and lungs) were embalmed and placed in jars for future research. These jars are currently on display at the Nuclear Testing Museum located at the National Nuclear Center of the Republic of Kazakhstan in the city of Kurchatov (Moscow-400).
radiation research in the unfolding grisly, biomedical experiment. Their bodies were purposefully subjected to nuclear trauma in an effort to calculate how human biology stacks up against the effects of high-dose radiation (Boztayev 1994). In all, this was considered to be a serendipitous “opportunity” to conduct such compound studies, because in the event of a nuclear war, humans would be the ultimate targets. Because people were already living on the Polygon, their bodies could be examined immediately after a nuclear explosion and over longer periods of time as the awaited mutagenic effects of radiation exposure set in. These clandestine studies were systematically carried out from the beginning of testing in 1949 (Balmukhanov et al., 2006). But it was only from 1957 onwards that a secret clinic was specifically established for the purpose of tracking longitudinal and intergenerational effects of both high and low-dose radiation exposure on the human body.

Not long after nuclear tests started, Soviet authorities began to receive numerous letters from local Polygon residents complaining of strange symptoms like nosebleeds, fainting, hair loss, blindness, and burns that would not heal (Boztayev 1994). The letters eventually reached Kanysh Satbayev, the President of the Kazakh Academy of Sciences in Almaty. Beginning in 1954 (also the start of the Virgin Lands Project) until 1960, Satbayev sent out several medical expeditions to the Polygon conducting studies of six thousand individuals in villages located in three separate districts, one of which included Koyan (Balmukhanov et al., 2006). Two renowned scientists, Bahiya Atchabarov, the director of the Research Institute for Local Pathology in Almaty and Saim Balmukhanov, a radio-oncologist, were appointed to lead these expeditions. Their findings proved to be controversial, at least to the top brass military personnel. For one, the Atchabarov-Balmukhanov expeditions found large numbers of people exhibiting clinical symptoms related to radiation pathology (hemorrhaging of mouth, nose,
changes in skin, and severe weakness), as well symptoms of Chronic Radiation Syndrome (CRS) (Guskova and Baysogolov 1971). Furthermore, the team produced an exhaustive 12 volume classified study that found a direct correlation between radiation exposure and illnesses. These findings contrasted sharply with earlier conclusions reached by the Soviet military doctors who blamed poor health of villagers on unsanitary living conditions (Kassenova 2009).

Because nuclear testing was a state guarded secret, the Kazakh Academy of Sciences researchers could not openly attribute any of the strange symptoms they found among exposed populations to radiation exposure. In fact, they euphemistically called the newly discovered symptom-complex the Kainar Syndrome, a name they borrowed from one of the most irradiated villages located on the southern border of the Polygon (Boztayev 1994). Officially, Kainar Syndrome was not attributed to nuclear tests, but rather, to the animal borne disease Brucellosis. Unofficially however, during secret meetings with Soviet military officials in Moscow, the team of Kazakh doctors insisted that illnesses in the region were caused by exposure to radioactive fallout. Soviet authorities disagreed (claiming that nuclear weapons are safe and posed no health risks to village residents) and forced the Kazakh team of doctors to sign a confidentiality agreement forbidding them to speak or write about their findings. By 1960, the team was disbanded and officially forbidden to conduct further research on the Polygon (Balmukhanov et al., 2006).

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89 Medical doctor Angelina Guskova first recognized Chronic Radiation Syndrome (CRS) in the 1950s. Guskova’s research on this disease began when she started to treat individuals working at the Maiak plutonium production plant, a secret complex of nuclear production facilities located in the Russian Urals (Brown 2013). She found that many of the workers exposed to chronic radiation exhibited symptoms associated with nervous and endocrine system damage, autoimmune diseases, osteoporosis, tumors, psychiatric problems, and so on. The etiology of CRS has only been described in Russian medical science. It is not clear why CRS has not been recognized in Western peer-reviewed scientific literature.
In 1957, eight years after the first Soviet nuclear test and after the initial Atchabarov-Balmukhanov research missions, the Soviet Ministry of Health established a top-secret medical research institution in the nearby city of Semipalatinsk, present day Semey. The goal of the ambiguously named Dispensary No.4 was to conduct longitudinal and intergenerational studies on the radioactive effects of the nuclear bomb on the human body. Reporting directly to Moscow, medical doctors (some of whom most certainly belonged to the Soviet secret police) working in the gray three-story building, gathered data on illnesses and the frequency of death among those most exposed linked to radiation exposure from any of the aboveground nuclear explosions. Because of the secret nature of these studies, neither information nor medical assistance was given to those examined by the medical staff. If a disease could be linked to radiation, a diagnosis was invented that would contain no mention of it.

Doctor Boris Gusev, a former member of the scientific team at the Dispensary and a one-time director of the Institute of Radiation Medicine and Ecology, describes his work there in the following way:

When I was a doctor, a neuropathologist, back then all our life was on the road. We observed the population. We returned for a quick wash and a shave and then we were back out again. On the first floor where the hospital is now, we had an enormous laboratory that processed this work. We precisely knew where the radiation was. We knew precisely how much of the different types of radiation people were being exposed to. What dose the population was receiving. That is, we were not idle. We knew everything…They [the Soviet authorities] were thinking about a preventive nuclear war—that if there was going to be one, they had to know what would happen to people.

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90 The full name of Dispensary No.4 was Anti-Brucellosis Clinic Dispensary No.4. The name suggested that the clinic treated diseases like Brucellosis, an infectious disease that is transmitted by contact with infected cattle. Since 1991, the Dispensary has been renamed to the Institute of Radiation Medicine and Ecology in the city of Semey, Kazakhstan.

91 Between 1949 and 1951 the Soviet Union detonated a total of four nuclear weapons aboveground. In 1953 that number was five, the following year nine, increasing significantly thereafter. The year 1958, a year after the Dispensary was opened, marked a period of the highest rates of testing. In March of that year, for example, there were 30 nuclear detonations on the Polygon, all aboveground (Balmukhanov 2006). But the highest number of tests carried out in one year occurred in 1962 with a total of 42 aboveground explosions (Mikhailov 1999).
Therefore, no one was evacuated. Instead they were observed to see how many would die, how many would become ill, and so on (“After the Apocalypse” 2010). In essence, Gusev’s descriptions of his participation in the biomedical experiment show that those “unlucky” enough to live and work near the Polygon at the time of atmospheric testing (from 1949 until 1963) became casualties in a different manner than those vaporized in Hiroshima or Nagasaki. Indeed, the people who were observed by the medical doctors frequenting their villages became the victims of a practice nuclear war—people who were exposed to high and low-levels of radiation and whose illnesses and deaths became valuable scientific information, archived at Dispensary no. 4, and accessible only to those with the highest levels of security clearance.

Many of the records detailing human radiation experiments, however, did not survive the breakdown of the Soviet Union. In the chaos that accompanied national disintegration, the Soviet secret police struggled to insure that classified material did not become public knowledge. Perhaps this is because the secret radiation studies broke every rule of the 1947 Nuremberg Code forbidding experimentation on human subjects without first obtaining consent. At Dispensary no. 4, members of the secret police frantically collected the most covert biomedical studies and transferred these to Moscow. Gusev was ordered to burn the rest. He was determined, however, to preserve as much of the historical and scientific record as possible. To do this, he took three bags full of classified documents intended for incineration and hid them in a relative’s house (Thompson 2001). To the Soviet authorities, Gusev presented bags stuffed with old newspapers,

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92 Doctor Boris Gusev still works at the Institute of Radiation Medicine and Ecology. A number of individuals who worked with Gusev at the Dispensary in the past, claim that he was a member of the Soviet secret police, the KGB. However, Gusev has neither denied nor admitted this claim.

93 In 1963, in order to prevent excessive release of radioactive particles into the earth’s atmosphere the Soviet Union, Great Britain, and the United States signed the Limited Test Ban Treaty. The potential hazards associated with global radioactive fallout were already recognized by 1954.
as well as an official list of purged archives, burning those instead. In 1991, thanks to his actions, with the declassification of many of the clandestine Soviet documents after the fall of the Soviet Union, the details of diseases and physical deformities linked to radiation exposure were made public for the first time. As I will soon describe, unlike Western peer-reviewed radiation studies, these documents pointed to intergenerational transfer of radiation induced genetic abnormalities.

After the official unveiling of Soviet crimes in 1991, in Kazakh and Western media outlets the most publicized victims of the nuclear tests became those who live with deformities and those who died as a result. Local and international journalists and filmmakers covering the Polygon frequently make a stop at the anatomical museum in the Academy of Medical Sciences in Semey (formerly Semipalatinsk) in order to provide their viewers with a proper dramatic effect. The one room museum houses a macabre collection of human fetuses from Semey maternity hospitals. Inside many display cases arranged in neat rows according to the types of deformities present, are embalmed human fetuses swimming in glass jars. In one of these, a Cyclops, in another, a two-headed creature with a tail—seemingly, half human half animal. But there are still others, alive, whose birth defects are also on display. They are the targets of documentary filmmakers and journalists. Born without arms or other severe physical abnormalities, they are the children of the Polygon; their bodies are marked by Kazakhstan’s medical establishment as proof that long-term genetic damage is occurring. This is because the physically deformed individuals—captured by media exposés—often share similar physical deformities with their parents. In the Kazakh context, the studies on irradiated Japanese butterflies and germline mutations in human DNA of test site inhabitants further strengthen the claim that these physically deformed individuals inherited radiation damage from their parents.
who suffered extensive genetic damage from fallout during aboveground testing. The media has helped a great deal to bring all of this to the public. As an example, I provide the following set of events.

On January 12, 2011 “Mutants of the Polygon” (*Mutanty Poligona*) appeared in the Kazakh newspaper *Vremiia*. The article was a syndicated, albeit sensationalized, byproduct of a short interview I gave to a local television station in Karaganda in December. Channel 5 (*5-Kanal*) News is broadcast nationally in Kazakhstan and specializes in investigative reporting and presenting topics to “socially active residents of Kazakhstan with higher education and incomes who have successfully adapted to modern life and do well in it, and are interested in what is happening in the country and the world” (http://www.5tv.kz/?do=cat&category=about). My story fit perfectly with that mission. As a freshly minted fieldworker, eager to please my interlocutors, I succumbed to pressure from a number of sides to speak publically about my work. From one side, Igor and the representatives of his environmental NGO asked me to further the cause of environmental justice in Central Kazakhstan. From the other, the mayor (*akim*) of Koyan (and Oktyabr) wanted me to discuss and explain the hardships people face living in rural areas.

Unbeknownst to me at the time, the presence of an American researcher (and not a journalist or a scientist) was an anomaly in this part of the country; especially one travelling around the Semipalatinsk nuclear test site conducting the kind of work I was doing. The fifteen-minute interview was ready that day for the evening broadcast and aired again the next morning. In it, I described what it is that anthropologists do (fieldwork) and why I was living in the village next to a nuclear test site (collecting interviews and history). After emphasizing the lack of doctors, nurses, and teachers in the rural areas and the myriad of problems people face every day,
I ended the interview by briefly discussing the current scientific debates about the effects of low-level chronic radiation on the human body. I cited a 1999 International Association for the Promotion of Cooperation with Scientists from Independent States of the Former Soviet Union (INTAS) epidemiological study that showed how people in the area had five times more chromosome mutations than those found in the control group. Whether these mutations were a result of chronic radiation exposure or not was still being debated among the authors and this debate was reflected in the conclusion of the study, which claimed that although the village population had more mutations, the reasons behind those mutations were still not clear. Initially, both the NGO members and Koyan residents received the interview positively, that is, until an article, “Mutants of the Polygon,” appeared.

The Chanel 5 News interview was the only one I gave throughout my entire fieldwork in Kazakhstan. However, weeks, months, and even years later, I heard all types of reports from friends and acquaintances about subsequent articles in other newspapers throughout Kazakhstan and even in Russia that summarized my work. Though most of them accurately described my interview, one of the articles struck a nerve with the people whose villages overlap the nuclear test site territory. “Mutants of the Polygon,” as the title put it, was meant to be sensational. According to the one paragraph summary, I not only planned to write a scientific work on the mutations found in the village, but I also reportedly determined (by collecting blood samples from all village residents) that the people living in the area have five times more mutations than those living further away from the nuclear test site. The piece was supplemented with a series of generic photographs: a physically deformed child, radiation warning sign, crumbling ruins of Soviet collective farms, and a picture of a distinct mushroom cloud rising in the distance. It wasn’t so much the content, as the title and the photographs that proved to upsetting. Even
though the people from the village where I lived made it clear to me that they are “used to radiation” (a point I will discuss in the next section of this chapter), the news article, “Mutants of the Polygon,” and the accompanying photographs, represented to Koyan residents the most unsettling post-nuclear creature born out of a genetic mutation—a deformed humanoid monster.

In Kazakhstan, the stories and photographs of post-apocalyptic, irradiated landscapes inhabited by physically deformed people (especially those with strange tumor growths or those who are born without arms or legs) are presented to the general public ad nauseum—as part of the Soviet legacy and as part of national propaganda—in the national press and broadcast television.94 Stories of biological “mutants,” both human and animal, emanate from the same area: the villages and winter pastures located on the very land upon which the Soviet “geography of sacrifice” (Kuletz 1998) was mapped. As Susan Sontag (2003:6) points out in Regarding the Pain of Others, “photographs of the victims of war [and other violence] are themselves a species of rhetoric. They reiterate. They simplify. They agitate. They create the illusion of consensus.” In other words, the photograph is a process of normalization of the Other’s suffering, a “creation of a moral complicity that destabilizes public discussion, making clarification and eventual resolution ever more unattainable” (Biehl, Good, and Kleinman 2007:5). Furthermore, photographs, according to Sontag (1977), create a distance between object and subject, limiting our understanding of the pain of others by creating victims we don’t know and perhaps, we don’t really want to know. Thus, the lust for horrific imagery—famine, war, and genocide—she

94 News outlets, including CNN, BBC, MSNBC, and Al Jazeera, featured stories about the biological effects of nuclear tests showcasing interviews and/or video footage of physically deformed Polygon villagers. One of the more poignant documentary films is Gerald Sperling’s “Silent Bombs: All for the Motherland” (2009) featuring a women whose six children died at an early age, deformed individuals, and infants with congenital defects abandoned at a children’s home. In Kazakhstan, one of the more famous victims of nuclear testing is Kuyukov Karipbek. Born without arms, Karipbek is an artist and an anti-nuclear crusader. He spent his life calling for the establishment of stricter global non-proliferation regime, as well as a halt to all nuclear tests. Like many medical doctors in Kazakhstan, Karipbek believes that genes exposed to radiation have been passed to future generations (http://www.kazakhembus.com/article/the-atom-project-i-have-only-my-heart-to-hold-you-the-art-of-karipbek-kuyukov).
argues, is desensitizing. Our sense of sympathy for other people’s pain is therefore diminished by participation in the apathetic culture of spectatorship that is inevitably dislocated in reality, time, and space. Sontag’s harsh critique of “violent photography” is well deserved given the media’s fascination with brutality. But the photographs and the everyday images of violence don’t simply create a distance between object and subject as Sontag suggests. The relationship between the observer and the observed is a more complex affair. Perhaps it is also important to consider the question of what happens when subject and object of the photograph are one and the same?

For many biomedical researchers working on radiation related illnesses in Kazakhstan, the genetically corrupted figure of the Mutant Man embodies the suspension of mental and physical development. For those doctors, the mutant is an unwanted human being, a cancer-riddled body born out of inferior genetic stock. For them, the Mutant Man represents the ultimate catastrophe of the Kazakh nation—a nation that is desperately in need of, in the words of Doctor Mikhail Simyonovich Panin, a “new generation of people whose intellectual capital should be on an entirely different level” (“After the Apocalypse” 2010). The uncertainty about genetic effects of radiation has resulted in a “new political, economic, and social formation” (Button 2010:11) in which damaged human genes play a central role. Through genetic screening, the Mutant Man is exposed to the scrutiny of the biomedical gaze, a target of eugenic policies that seek to make it essentially illegal for those with a genetic deformity to reproduce.

Antony Butts’ 2010 documentary film “After the Apocalypse” is worth considering here, as it powerfully articulates an evolving social formation of the Mutant Man underclass. The film follows the life of an elderly Kazakh woman with severe congenital skull deformity of vague origin. Her daughter, Bibigul, who has the same disfigurement, is pregnant with her second
child. Although it is not certain if both the mother’s and daughter’s disfigurement is caused by radioactive fallout and whether Bibigul will give birth to a deformed child, in Kazakhstan her deformity is seen as inherited from her mother. A local doctor, the Head of Maternity Clinic in Semey, Toleykhan Nurmagambetov wants to make it illegal for people like Bibigul to give birth. In the film, he is portrayed as a strong-minded man, a victim of Soviet era nuclear testing himself, whose wife died at an early age from cancer. He is accompanied by a couple of nurses who discipline frightened pregnant women from the Polygon who are too far along in their pregnancies to get an abortion. At one point in the film one of the nurses exclaims: “We don’t have permission to let Bibigul give birth. Until now, she has been hiding herself from us. People such as Bibigul should not be allowed to have babies, it should be forbidden to let her proceed with the child.” Although there are no internationally recognized peer reviewed scientific journals that give support to the claim that these women give birth to children whose genes were altered by radiation, Nurmagambetov wants everyone in Kazakhstan to carry a genetic passport, a document that he claims, would insure that current generation of Kazakh citizens does not breed with what he sees as the genetically “mutant stock.” Looking into the camera, he says: “You remember that Hitler in Germany also wanted to do this kind of thing. The thing is in how these ideas are applied. When they are applied to ethnicities, it is genocide. When it is applied to diseases, it is medicine. That is what I think.”

The supporting evidence for genetic passports comes from the Institute of Radiation Medicine and Ecology in Semey, the same institute that carried out clandestine human radiation research during the Soviet period. Gusev, the same medical doctor who for decades supervised

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95 Abortions in Kazakhstan can be legally performed up to the twenty-second week of pregnancy. After the twenty-second week mark, even if a woman is carrying a deformed child, it is illegal for her to get an abortion.
the secret radiation experiments at the Dispensary, still works there and at one point in the film, summarizes his findings as follows:

Over the last fifteen years, we have thoroughly analyzed all the material in these archives. We have made our conclusions and published our research. And at the same time, we have continued our planned research of the population. Now, a new huge group has appeared of 250,000-270,000 people—these are the children of parents who have been irradiated. We thought that everything would go smoothly, that chromosomal damage and genetic effects would be confined only to the generation of people who were irradiated, and they would not [emphasis mine] be inherited by future generations. But it turned out that this was wrong. (“After the Apocalypse” 2010)

In spite of the fact that Gusev’s conclusions are still intensely debated in Western scientific literature, in Kazakhstan’s Semey Maternity Clinic they are taken as fact. This is why, for Nurmagambetov, the deformed human being inhabiting the Polygon is a “face of the future.” And according to him, “if we do not get down to work, there will be people with three heads, six fingers, and so on” (“After the Apocalypse” 2010). There is much to say about this film, and the fact that it never conclusively links the genetic deformity of its main character to nuclear fallout is just the beginning. Nevertheless, the film shows how biomedical discourses and practices in Kazakhstan, that is, biopower, operate at both the local and national levels shaping subjectivity, bodily practices, and politics of identity (Foucault 1976; Whyte 2009).

I screened Butts’ documentary together with people from Koyan. They found the film upsetting, but not for the same reasons that I found it upsetting. Here I was lambasting genetic passports and an overly invasive and abusive medical system seeking to control sexual reproduction among the Polygon populations, while they were upset that an elderly woman was shown visiting a nuclear crater and whose son was drinking vodka to stave off radiation. In

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96 Gusev’s findings continue to be controversial (see also his co-authored article Tanaka et al. 2006 for a discussion on the unstable-type chromosomal aberrations). Although similar conclusions in Western scientific literature have been reached in animal studies (drosophila and mice), there is no evidence that transmission of genetic damage occurs in humans. This is because “the elevation of the U.S.-constructed Japan data and research and the relative denigration of the Soviet-constructed Chernobyl data and research in genetic scientific circles during and after the Cold War have co-configured our contemporary understanding of the genetic effects of low-level ionizing radiation exposure” (Goldstein and Stawkowski 2014:3).
hindsight, I learned while screening the film that their dissatisfaction with this particular representation of the Polygon victims was rooted in the fact that a community not entirely dissimilar to theirs was shown in a derogatory way and painted as a picture of a failing and “backward” society, a perception that adds to Koyan residents’ marginalization. After all, the Polygon region and its villages are often represented in the Kazakh media in a negative light and the communities would like to see positive representations of their life. “After the Apocalypse” diminished their claims that things are okay in the village, despite how it might look. My interlocutors made it explicitly clear throughout my fieldwork that despite the failure of the Soviet Union, economic hardships, and sparse to nonexistent medical care in the region, that they are used to these conditions. This is also true with regard to radiation.

**Radioactive Mutant Part Two: Homo Superior**

In order to navigate a post-Soviet social world and its attendant cultural marginalization, Koyan residents have come to embrace nuclear pollution as something natural in their environment and see their survival—compared with the demise of others who leave the area—as proof that their genes have adopted to a toxic ecosystem. The embrace of radioactive pollution refashioned as evidence that individuals have evolved to become Mutant Man, Homo Superior can be understood as a survival strategy, one inexorably linked to historical links to ancestral lands, the state sanctioned medical discourse on the biological effects of radiation, the drastic neoliberal restructuring reforms beginning shortly after the fall of the Soviet Union, and people’s survival in the nuclear zone. The claim that Koyan residents are biologically different has enabled them to make lives on the Polygon, to avoid moving into impoverished urban ghettos, and continue their use of land that others see as too polluted to have any real use-value.
Koyan residents started hearing about genetic mutations associated with radiation exposure in the early 1990s, when the Polygon became a new collaborative research venue. Medical doctors, biologists, geologists and other scientists began to arrive in the region conducting studies on radiation’s effects on soil, plants, animals, and people. According to many area residents, for example, throughout the 1990s, Japanese, American, Russian, and Kazakh scientists conducted studies of the villages, collecting blood, urine, and feces samples of local populations. Although most of the time people were told nothing about the final conclusions of these studies, a number of individuals I interviewed claim that the scientists said that everyone living on the Polygon is “mutated” and that women, especially, are prone to genetic damage, that is, they have a higher chance of giving birth to a deformed child or being sterile. These conclusions—that radiation induced genetic mutations manifest themselves in subsequent generations—were also circulated in various media outlets and continue to find support among Kazakh government officials.

In 2012, the Kazakh President Nursultan Nazarbayev launched the Abolish Testing: Our Mission (ATOM) project, an international campaign aimed at permanently stopping global nuclear testing by highlighting the devastating human effects of radioactive exposure. In 2013, the ATOM project began a worldwide tour. Photographs of children born with deformities were displayed in Moscow, Vienna, Berlin, Madrid, Tokyo, New York City, and Washington D.C., to showcase the intergenerational effects from past radioactive exposure (http://www.theatomproject.org/en/current-threat/). But even while some deformed human and animal bodies have been selected by Kazakhstan’s medical establishment and the media to show that long-term genetic damage is occurring, for the people who deal with the daily effects of

97 The Kazakh artist Kuyukov Karipbek has become the leading voice and an ambassador of the ATOM project.
radiation exposure and uncertainty, the image of a humanoid monster—people born with large
tumors covering their faces, deformed skulls, enlarged heads, no arms or legs—provides a
curious body of evidence that their own irradiated biology is genetically improved, that is, it has
evolved. After all, individuals in Koyan don’t exhibit these physical deformities. None of them,
for example, look anything like the photographs of individuals put on display during the ATOM
project’s worldwide tour, or Bibigul from “After the Apocalypse.”

Speaking to this biological “evolution,” Burkut, one of the few surviving village elders
who shared many life stories with me about everyday survival during Stalin’s collectivization
drive (mentioned in chapter 2) said:

Our organism is different. What we eat is poisonous. But we only eat food that is well
cooked—boiled or grilled—so that radiation can evaporate, at least a little. But our
organism is now accustomed to radiation. For many years we were exposed to
radioactive fallout and now, we eat it. Slowly, slowly, quietly, quietly, our bodies got
used to it. Why do you think people don’t die in Koyan but only get a little sick? Those
who move to the city away from Koyan can only survive for a maximum of two years.
Many people moved away from the village to start a new life in the city and only two
individuals out of that large group of people are still alive today. Why? It’s simple.
Most of us can’t live in clean air—we need radiation to survive. Clean air is our death.
We are not deformed, just a little sick. (Interview 2010, translated from Russian by the
author)

I heard similar stories throughout my fieldwork. In 2010, before Zhanbolat died from cancer, he
said: “We will never leave Koyan. We can’t. Don’t you know how this works by now? We’re
used to radiation; our bodies can’t live without it. Clean air is our death. If we will leave here,
we’ll die. You are probably used to it too. Let’s hope you don’t die when you leave.” I found
that most Koyan residents have come to believe this to be true and experienced a general feeling
of malaise upon leaving the village. In fact, whenever people travelled to the nearest small town
to buy the necessary monthly supply of flour, sugar, rice, or carrots, they complained of
headaches, feeling dizzy, and stomach cramps. These symptoms usually went away once they returned to Koyan.

Koyan residents are not the only ones supporting the view that adaptation to radiation is possible. There are many others who have also come to the same conclusion. During my fieldwork, I spoke with biologists, area medical doctors, and individuals working for various environmental NGOs in Kazakhstan who also came to support this particular genetic adaptation theory. During the summer of 2012, for example, at a conference located at the Medical University in Karaganda—sponsored by the Museums & Community Collaborations Abroad (MCCA) program titled “Nuclear Weapons Legacy: The Tale of Two Cultures”—a biologist on the panel addressed the audience of mostly scientists. He was angry with some of the discussants who promoted ideas suggesting that all Polygon residents suffer from genetic injuries and transmitted a deformed genetic code to future generations. In a booming voice forcing the rowdy room into subdued silence, the biologist said: “If we are the people who live on irradiated land, then we have survived, we have adapted. If we are the mutants, like you describe, I say we are more than okay! Look at Magda—she lived on the Polygon for years now, and she is still fine.” Although I did not live on the Polygon for years as the biologist suggested, like Koyan residents, I became living proof that adaptation to radioactive pollution is possible. According to the biologist, I did not look ill, mutated, or somehow damaged by eating radioactive foods. In fact, I was a picture of perfect health. But for the people of Koyan, the perceived adaptation to radioactive particles is not simply a biological improvement. After all, many people see themselves as “victims of the Polygon,” who were once regularly exposed to illness causing radiation (Werner and Purvis-Roberts 2014). They also see themselves as victims of Soviet era nuclear testing, now adapted to an environment that is poisonous only to those who don’t
frequent the area. This view—that people of the Polygon are biologically different—can also be seen as a way to survive in a harsh post-Soviet economic climate and the resulting systematic marginalization of poor, rural, and the mostly Kazakh population.

As described in the previous chapter, the collapse of the Soviet Union in 1991 meant that the entire socio-economic system of sovkhozes dissolved, foreclosing the large-scale agricultural operation on the Polygon. What this swift dismantling meant for many people, including those living in Koyan, is loss of jobs. Today, life in Koyan continues to be fraught with difficulties. In winter the village is completely cut off. Electricity is intermittent (especially during adverse weather conditions). The nearest store is an hour’s drive, and spring flooding and seasonal fires are common. Added to that, those who continue to live there lack the proper skills and are not able to acquire any new training with which to navigate a new economic social order. After all, the majority of Koyan’s current inhabitants were trained during the Soviet era to work on the collective farm. They are skilled at being animal herders and breeders, sheep shearer, tractor operators, hay cutters, and grain collectors—expertise understood to be impractical, even maladjusted, to the greater free-market Kazakh economy. For former sovkhoz employees then, work in the cities is scarce and poverty among newer migrants is especially high considering their level of training. A majority of them end up in urban slums on the peripheries of Karaganda. Having visited with extended village families on countless occasions, destitution is obvious and there is a high incidence of alcoholism.

Even though in Kazakhstan development strategies at the national and international level have had some measure of success, in Koyan economic restructuring and the rapid dismantling of Soviet state run collective farms left people in the village to rely on themselves. That is, neoliberal restructuring programs have left rural populations to make do on their own—subsidies
for education, healthcare, and infrastructure can no longer be counted on. This money is now redirected to large urban centers. In short, the neoliberal reforms initiated in all post-Soviet states, including Kazakhstan, transferred previously centralized powers of decision-making to individual citizens, effectively abandoning the ethics of the Soviet welfare state. In Koyan, people are at a great distance from the cosmopolitanism and economic opportunities characteristic of the glamorous new capital, Astana. Instead, poverty rates remain high, especially in rural areas.

One advantage that rural Kazakhs in Koyan claim to possess is access to land, especially the fertile areas of the Polygon legally off limits for animal grazing. Since 1991, when Nazarbayev abolished nuclear testing, there has been no official policing agency tasked with patrolling the nuclear test site and Koyan residents have had unrestricted access ever since. Although the moratorium on nuclear testing was hailed as a success, the Polygon continues to be a land administration and security issue. Before, the nuclear test site was a regulated and policed space—the Soviet secret police and the military were always present in the area. The end of the Soviet Union, however, occasioned withdrawing the budget for maintaining this strict security regime. Consequently, the test site is no longer secure and is, therefore, accessible to anyone. During my fieldwork, I saw tourists, villagers and city dwellers, journalists, travelling businessmen and merchants, all wandering freely through the test site. 98 In 1992, the National Nuclear Center of the Republic of Kazakhstan (NNC) was established in Kurchatov and charged with the oversight of the Polygon. As described in the previous chapter, part of the Center’s mission was to conduct radiological assessment, monitoring, and remediation of the site and the Institute of Radiation Safety and Ecology was created to fulfill this task. International experts...
from the IAEA have collaborated with the NNC for over two decades, providing scientific and technological assistance. Overwhelmingly, the IAEA and the NNC joint research and policy consulting support opening the Polygon for further agricultural and industrial uses, claiming that ninety-five percent of the test site is clean.\(^{99}\) As I also described earlier, in addition to radiological research facilities at Kurchatov, farming, as well as animal grazing, are already widespread on the Polygon. Therefore, NNC’s proposal to officially open the site for commercial use is at this point simply a formality.\(^{100}\) In Kazakhstan there has been resistance to this position from a wide array of environmental NGOs, medical doctors, scientists, as well as from the broader public. In Koyan, however, there is near unanimous support for the NNC and IAEA backed proposal. It is no surprise. Everyone in Koyan (and the NNC) is of the opinion that the alternative to officially opening the former nuclear test site is to foreclose the entire economic viability of the region.

Since 1991, people in Koyan have been making use of the Polygon on a daily basis for its prime grazing pastures, its scattering of scrap metal (later sold in urban centers) and as a main thoroughfare to the cities of Semey and Pavlodar, as well as to the numerous villages found in

\(^{99}\) According to an IAEA (1998:32) report titled “Radiological Conditions at the Semipalatinsk Nuclear Test Site, Kazakhstan: Preliminary Assessment and Recommendations for Further Study,” “it is considered that there is sufficient evidence to indicate that most of the area has little or no residual radioactivity from the nuclear tests. The Ground Zero and Lake Balapan areas, both of which are heavily contaminated, are clear exceptions (emphasis theirs).” The report further suggests that background radiation levels in villages around the Polygon are similar to global averages. This conclusion is problematic. Even though radiation levels in villages are deemed safe, the reported estimates do not take into account all of the factors that may lead to excess radiation exposure. As anthropologist Cynthia Werner (2006) observes, the IAEA conclusions are based on the presumption that people do not leave the village or access the Polygon areas for scrap metal, hay, and wood that they then bring back to the village. During my fieldwork, I witnessed people entering the Polygon on a regular basis, traveling through ground zero for atmospheric tests to go between villages and to the cities of Kurchatov and Semey, as well as collecting scrap metal, wood, and wild berries. Furthermore, when I visited the Balapan testing site on the Polygon in 2012, I observed people living in the area, about two kilometers from the infamous atomic lake.

\(^{100}\) Any mine operating on the former nuclear test site is a legally sanctioned enterprise. In an interview I conducted in the summer of 2012 with Sergey Lukashenko, the director of the Center for Radiation Safety and Ecology in Kurchatov, mines are a legal “grey area.” On the one hand, they are licensed to operate, but are charged with their own radiological monitoring. For example, the Karazhyra coal mine, located near the “Balapan” experimental field—one of the most contaminated areas of the site—is required to regularly inspect its coal for radioactivity. Whether this happens or not is not one hundred percent verifiable.
the region. Since the official closing of the nuclear test site as a weapons proving ground, the Polygon was also reopened to various mining ventures. Any mine operating on the Polygon is now a legally sanctioned enterprise and many individuals from nearby villages have taken employment in open-pit gold, copper, coal, or manganese mines operating there. In a broad sense, since the fall of the Soviet Union the Polygon became, and continues to become, a field of new possibilities, both for Kazakhstan elites and the area poor. The nutrient rich pastures provide free feed for livestock; streams and lakes provide access to drinking water; mines provide wages. Several people from Koyan and countless others from Oktyabr, work two-week shifts at one of the pit mines located on the former Polygon land. To make ends meet, Koyan’s inhabitants have to expose themselves to potentially harmful levels of radiation by grazing their animals on the nuclear test site territory. They are trapped in the “dark underbelly of neoliberal globalization,” a free market economy that makes demands on the bodies of the marginalized (Scheper-Hughes 2011:85). The commodification and exploitation of poor people is made more complicated by the collusion of scientific discourses on radioactivity (genetic mutation) and an emergent subjectivity. Amid economic and political reforms, social suffering, and nuclear violence, an embrace of mutant subjectivity is constantly being reshaped. Highlighting this point is a series of events that occurred during my fieldwork.

Recalling Moments from the Field

I headed toward the burning grasses with Ramazan, Tursynbek’s older brother, in the only large car the village had. An elder with a badly healed broken hip, Ramazan finally decided that we must have a look into the extent of the fire that’s been smoldering for a couple of days. On that clear October morning, two months into my fieldwork, the tall grasses of the Polygon ignited fifteen kilometers from the village. Smoke billowed in the distance spreading outward.
Who knows what caused of the fire.\textsuperscript{101} It could have been lightning, a cigarette carelessly thrown out the window of a moving car, or the sparking exhaust of an old Lada. Fires on the Kazakh steppe are common and regularly burn through large swaths of land until they eventually stop. That day, something profound occurred to me, however, something that everyone else already knew: that this fire, the first one of 2010, would pass right through the Polygon. This also was common. In fact, fires on the nuclear test site are quite frequent, and many times per year, they darken the sky with smoke, sometimes for weeks. But it was the first time that I realized how the borders shown so clearly on the map of the Semipalatinsk Nuclear Test Site, hanging in my little house, meant absolutely nothing. Neither the radioactive particles nor the fire obey boundaries. As is probably the case with other fires, the smoke was visible from Koyan, from Oktyabr (the former sovkhoz center), and other villages further afield. It is entirely conceivable that the radioactive particles are re-suspended in the air and migrate to the Polygon villages where they settle.

Every year, stock herders collect hay in this rural part of Central Kazakhstan to feed herds of sheep, horses, and cows during the harsh winter months. Without it, the animals would starve. Fire is a particularly threatening event to the income and livelihood of the village and if left unchecked, wreaks havoc on the everyday survival of the community. On that otherwise clear day (save for the growing columns of billowing smoke), and on land that during Soviet times produced a million tons of wheat a year, the fire approached haystacks dotting the landscape. When we arrived, the grass was steadily burning together with many haystacks that couldn’t be saved. Dried cow dung (kizak), normally used as fuel during the summer and fall

\textsuperscript{101} Many people have told me that not all fires on the Polygon are accidental. When prices of metal go up, some people purposefully set fire to the steppe in order to expose previously uncollected metal that can be sold for scrap at the nearest city bazaar.
months, fed the blaze. Word spread quickly about the fire to surrounding villages and more people came to help. With sheepskins attached to long poles, in a region where water is scarce and the nearest fire department is two hundred kilometers away, we began to fight the fire the only way possible, that is, we hit the flames directly with our sheepskins to snuff the flames. At the time, all I could think of was how with every strike, the radioactive particles burrowed somewhere in the layers of earth, were re-suspended in the air once again, only to cover our clothes and enter our lungs. But the firefighting approach proved to work relatively well considering that we were left to deal with the problem on our own. There would be no fire truck or a brigade of firefighters to help us—Koyan is too distant from the nearest fire department for that. Nevertheless, high winds and hilly terrain made the fight against the spreading blaze futile. Without much recourse, the goal became only to protect the remaining haystacks and winter pastures located on the periphery of the village. My Mitsubishi Delica was soon transformed into the only available fire truck. With the car packed full of people and milk drums sloshing water on everyone, we drove from one fire line to the next late into the night.

For four days we chased and battled the fire that eventually entered into the nuclear test site, burning in lines stretching to the horizon and passing through areas where radioactive cesium-137, strontium-90, plutonium-239 (that has a half-life of 24,100 years), and other radioactive elements all known to exist in ‘hot spots’ (NNC Institute of Radiation Safety and Ecology 2011). The blaze fanned out in all directions and the burning grasses were visible for nearly a month after the initial fire. It went over craters left from underground nuclear explosions too, right by Erzhan’s winter farm Bulak. It ran up the slopes and hills of the steppe where twenty years ago Tursynbek found the stones with painted camels, people, wolves, and horses, through the most toxic places of atmospheric nuclear tests, only to finally stop at the
outskirts of Kurchatov—the former administrative center for the secret Soviet nuclear bomb project. With my face hidden behind a sanitary mask bought at a pharmacy two months earlier, I felt my eyes burning, but continued alongside others, all determined to continue fighting the fire. Ash and smoke was everywhere but few seemed to care.

Figure 4. The first of many fires that occurred on the Polygon in the fall 2010 (photo by the author).

“My pryvykli k radiatsii” (we are used to radiation) was a reply I would hear throughout my fieldwork. But none of us really knew if there was radiation in the area—it is an unmarked terrain and there were no signs to tell us if we entered a danger zone. “This is how we inhale radiation that makes us sick,” Ramazan would say, “but it doesn’t kill us, we need it to live.” We worked hard but laughed occasionally at the fact that in this seemingly isolated part of Kazakhstan the fires produced an impression of city lights. “Look, from here you can see Las Vegas!” Ramazan laughed while pointing to a blaze far away in the distance. It was an eerily
beautiful sight, a mirage of sorts that did in fact look as if a real city appeared on the seemingly desolate Kazakh steppe. But once the fire moved on, the mirage disappeared and only a smoke covered sky remained. When the flames no longer threatened the surrounding villages’ livelihood, everyone who came to help dispersed, and the people of Koyan had to make do on their own—collecting their remaining haystacks and snuffing out smoldering dried cow dung. In retrospect, the fire was just one of the many problems that people had to face that year.

Throughout my fieldwork, the major conversations in the village were mostly about ill health and economic survival.

One month after the fires, Altynai, who was fifty-five years old at the time, developed a fever from a uterine infection she had been treating herself during the past two months. She was using Mumiyo (also known as Mumio or Shilajit), a special medicine Tursynbek collected and made for her earlier that year. According to Tursynbek, Mumiyo is a combination of minerals and vitamins processed from fossilized bat droppings found in the caves or rock outcroppings found in the hills near Koyan. It is a tar like substance with a consistency of asphalt that seems to ooze out of rock cracks. Soft to the touch and bitter in flavor, it can be diluted in water or simply eaten. Everyone in the village swears by it and uses it to treat anything from scrapes, rashes, and arthritis, to headaches, stomach problems, kidney stones, infectious diseases, and cancer.\(^{102}\) Where to find Mumiyo and how to process it into a concentrated tablet form is a closely guarded secret. Even though I went with Tursynbek to search for Mumiyu in the rocky outcroppings located not too far from Koyan, he made sure to hide its location from me. But the

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\(^{102}\) Mumiyo is a well known traditional medicine used for centuries in Russia, Kazakhstan, Kyrgyzstan, Mongolia, Iran, and India. There seems to be some debate as to whether Mumiyo has geologic or biological (or both) origins (Rakhmatullaeva and Aminov 2005). In Koyan, people say that Mumiyu are fossilized bat droppings compressed for centuries by rocks. Although a pill form of the medicine can be bought in pharmacies throughout Kazakhstan, people in Koyan believe that these pills are fake.
medicine Tursynbek prepared wasn’t helping Altynai, who blames her problems on the radioaktivne mikroby (radioactive microbes). Altynai believes that if she leaves Koyan for a prolonged period of time, she will die. “No one dies here; if we leave Koyan we die,” she said to me when we were ready to depart for the hospital. “Every time I go to the city, I get a headache, I feel weak, and ill. Plus, the doctors don’t know what they are doing. According to them we all suffer from kostnaya tuberkuloza (bone tuberculosis) and everyone knows that hospitals are places where people get killed,” she said.

Altynai’s list of undiagnosed health problems also includes constant headaches, bone pain, as well as kidney and stomach problems. At times, she had a difficult time getting out of bed, a problem she resolved by “walking the pain away.” Aside from using Mumiyu to treat illness that she believes is caused by exposure to radiation, Altynai also eats sweet gelatin candy, garlic, kurt (dried sour cream pellets) and drinks sorpa (meat broth), kumis (fermented mare’s milk), or vodka with lemon and honey. None of her symptoms have ever been properly diagnosed by a healthcare professional as it is difficult for her or anyone else in the village for that matter, to visit a doctor—the nearest hospital, after all, is almost two hundred kilometers away, an impossible distance to cover without proper transportation. In fact, most people in Koyan rarely visit a doctor. Because Kazakh law mandates that everyone in a job sector pass a yearly medical check-up (medosmotr), most people who are hired outside of the village choose not to get examined lest they fail, and risk being laid-off. For example, the two men from the village who work at a local Polygon mine told me that the last time they visited a doctor was in 1990. Instead, they prefer to purchase a fake medosmotr certificate for a nominal fee to insure keeping their jobs. Before going to the hospital, Altynai asked me to also take her to a Znahor, a
clairvoyant woman from another area village, who has healed many people, including Altybai’s youngest son.

Koyan does have a *medpunkt* (a medical one room office staffed by no one) but it is not equipped to treat severe infections. Its only employee is a rural nurse who lives in the village and lacks an adequate supply of drugs and proper training. Drugs available at the *medpunkt*, like *Novokain* (Novocain) and *Kalcija* (Calcium) are often expired and useless for treating severe infections. Interestingly, these same drugs are often used to treat ailments that don’t respond to these same drugs (stomach cramps for example). There are no doctors in the area except in a hospital located 190 kilometers away in a *raionyi centr* (regional center). Even there, all severe infections, cancer treatments, and most surgeries are deferred to Karaganda area hospitals, 495 kilometers from Koyan. While the regional hospital does have beds and a handful of doctors, it lacks technology, staff, and resources to treat anything serious. Most doctors have a salary of a meager 40,000 Tenge per month ($275). This larger health care picture—the lack of transportation, inadequate treatment options, the cost and scarcity of medicines, and the mandatory yearly *medosmotr* for those in a job sector—translates directly into structural framework that limits access to effective medical attention for the people from Koyan and the surrounding rural areas.

Every trip to the regional center found the car packed with people who also wanted to go to the city. On one occasion in early November, I left Koyan at six o’clock in the morning with six others who needed to buy food and supplies for the coming winter. Beginning from December and lasting until early April, the village is completely cut off—the road is either buried in snow or is muddy to a depth of 12 inches—and people need to stockpile food and fuel to last them through the winter. Five hours later I stopped at a regional hospital and spoke with
Dastan, an anesthesiologist trained at the Karaganda Med-Academy. I asked him about radiation-induced illnesses and about the possible treatment options available to people who are routinely exposed to radioactive particles. Dastan made it clear to me that although people from Koyan are ill from past radiation exposure, they also have adapted to their environment and as a result, he does not see many patients come from that region. He complained that the aulskie (backwards village people) know that “medical care is free in Kazakhstan so they don’t take care of their health until it is too late.” In all seriousness, Dastan also said something else that I found puzzling. “Of course they are sick. They are from the Polygon. But they are able to prevent serious radiation-induced illness completely by drinking fifty or one hundred fifty grams of vodka [to protect against radiation],” he said. Dastan and a number of other doctors I spoke with cited Soviet military studies (none of which I was able to locate) showing how vodka in particular protects from radiation. Nevertheless, people are routinely advised that when driving through the nuclear test site they should do so with a bottle of vodka in their car. For her illness, however, Altynai was not prescribed vodka, but rather, Aloe Vera and honey. On the way back, we stopped by the Znahor who prescribed a secret concoction of herbs.

Throughout my fieldwork, I often wondered how vodka became a “doctor approved” agent used to shield against radiation. Everyone seemed to drink it before entering the Polygon or after. I knew from Erzhan that when he lived on the Bulak winter farm, a Soviet doctor would often prescribe vodka as a means to protect against radiation when he ran out of the proper medicine. There were also the Soviet soldiers who were told to drink a mandatory shot of vodka after a nuclear blast. The secrecy that surrounded the Soviet nuclear bomb project created locally specific biomedical discourses. Secrecy “doesn’t simply produce or create—it sends effects out into the future it cannot predict” (Bratich 2006:507). For example, when the People’s
Commissariat of Public Health was on a quest to ban alcohol consumption in all of Soviet Union (Starks 2008), in the Polygon region, the drinking of alcohol was encouraged by military medical doctors and promoted as an anti-radiation cure. The same was true for the people living near the secret Soviet plutonium plant in Ozersk, Russia and after the Chernobyl disaster in Ukraine (Brown 2013). Secrecy, as Joseph Masco (2002:451) observes, is “wildly productive: it creates not only hierarchies of power and repression, but also unpredictable social effects, including new kinds of desire, fantasy, paranoia and—above all—gossip.” Even today, those who might come in contact with toxic elements on a day-to-day basis, for example, often use vodka medicinally. Kazakhstan’s medical doctors, like Dastan, argue that drinking vodka before venturing into the Polygon territory will nullify the effects of radiation exposure.

In the Polygon region, the clandestineness of the nuclear bomb project generated many unpredictable social effects, one of which is a regime of sustained deception—what first Jean-Paul Sartre (1956) and then medical anthropologist Nancy Schepet-Hughes (1992) calls “bad faith”—one that deliberately promotes a false radiation cure, a passive acceptance of status-quo and a refusal to take responsibility for one’s actions. Schepet-Hughes (1992:209) explains “bad faith” as a particular way in which

…people pretend to themselves and to others that they are not really involved in or responsible for what they are doing or for the consequences of their actions. In the existential view of things, bad faith is the refusal to “make oneself,” to strike out freely and responsibly, to take hold of one’s situation. Bad faith allows for “history” to be made by others; it entails a passive acceptance of the definition of one’s reality as proposed by others. In this instance, the “bad faith” is collective, and it exists on many levels: among the doctors and pharmacists who allow their knowledge and their skills to be abused; among the politicians and power brokers who want to represent themselves as community servants and benefactors, while on another level they know full well what they are doing; and among the sick-poor themselves, who, even while they are critical of the medical mistreatment they receive, continue to hold out for a medical solution to their social dilemmas and their political and economic troubles.
The “bad faith” of vodka radiation cure is the complete refusal to take responsibility for the situation, to recognize the hazards of radioactive exposure, to take control of one’s life, to demand change, to recognize a life teetering on the edge. Instead, medical doctors, village residents, NGO workers, mining operators are all complicit in the passive acceptance of a reality that denies pollution, denies harm, and denies a resolution to the toxic realities people find themselves in.

I was frequently told that venturing into the Polygon without drinking one hundred grams of vodka meant exposure to biologically destructive “radioactive microbes” that once swallowed, eat away at the stomach lining. At a mine where Tursynbek works, instead of respirators and protective clothing the workers are given one liter of vodka that they eagerly consume in full before they begin work inside a dusty open excavation pit. I visited this mine on numerous occasions. The operator whom I spoke with, like doctor Dastan at the local hospital, cited Soviet and Kazakh medical studies that prove vodka protects against radiation. With the proper dose of vodka he told me, Koyan’s inhabitants can expose themselves to potentially harmful levels of radiation. In effect, inside the Polygon mining zone, vodka has seemed to replace the need to establish an adequate system of radiation monitoring. Although companies are required to test their raw materials and surrounding environment for radioactivity, Kazakhstan remains ill equipped, perhaps because of the distance and inaccessibility of the region during winter months, to impose stricter safety standards on companies (many of them majority foreign owned) that have become the backbone of Kazakhstan’s global economic success. Although I have met radiation monitors in the area, I was told that the Polygon is safe. But I also learned that mining operators could pay a bribe to receive favorable radiation assessment and passively accept the vodka-as-medicine reality. Like the workers they oversee, the mine operators drink vodka to
protect their bodies from radiation. On numerous occasions during my fieldwork, NGO workers, scientists, and medical doctors working on the Polygon spoke of science being for sale in Kazakhstan and people doing business on the nuclear test site hiring companies that produce favorable environmental assessments. Employees, who complain about mining safety standards, or spread rumors about radiation exposure, are either threatened with disciplinary action or promptly fired. At the same time, those arriving from cities like Astana or Karaganda are often not told that they are working on a former nuclear test site.

The standardization of vodka as medicine—one hundred grams or more—has opened up a space for an alternative way of not dealing with Kazakhstan’s polluted environment. Indeed, in a number of ways, vodka has become an unexpected resource for those economically marginalized and others alike. Because vodka protects against radiation—a fact reinforced by Kazakhstan’s medical doctors and accepted as fact by many people regardless of class or educational background—I found Koyan’s residents often indifferent to the dangers associated with radiation exposure, even when they were critical of radiation monitors and mine operators; a bottle of the alcoholic beverage was sufficient to calm their fears. Mine operators also drank vodka to stave off radiation and so did the geologists, biologists, NGO representatives, and medical doctors who came to the area.

The new economic neoliberal order has structured much of human life in post-independence Kazakhstan. In the context of mining operations on the Polygon, illnesses experienced by workers are rarely associated with unsafe operations and are rather seen as a matter of choice—improper hygiene, smoking, excessive drinking, or bad diets. In other words and perhaps following neoliberal market logic, the poor health of mine workers is reframed in terms of choice and responsibility (Briggs and Mantini-Briggs 2003). If people die or get ill,
they are responsible for their own demise (Biehl 2005 channeling Richard Sennett). With little economic opportunities available elsewhere, Koyan residents have come to depend on dangerous mining work on the Polygon. This is because, as anthropologist João Biehl (2005:49) points out in his ethnography *Vita: Life in a Zone of Social Abandonment*, “there are too many people to include them all in the market and its flows. The question of what to do with these surplus bodies, with no apparent value and no way to survive and prosper, is no longer at the core of sovereignty and its outmoded populist welfare rhetoric.” People in Koyan are quick to point out that the economic reforms targeting state planning and social welfare in Kazakhstan have disbanded social protection and have created entire abandoned regions. Altynai for example, declared that since Kazakh independence, those living on the edges of a nuclear landscape lack social and economic support, battle ongoing health problems on their own, and are marginalized by the medical community.

By embracing the mutant subjectivity and by claiming, “clean air is our death,” the people of Koyan are able to live in the polluted environment and, paradoxically, they think they make their survival possible. They retain a semblance of control and ties to an ancestral homeland. Moving to the city, they fear, would destroy any sense of community and family, and would most likely plunge them into an even greater poverty. In the new Kazakhstan, the people of Koyan believe they live *sami po sebye*—they are alone, that is, they have no role in the new society except as sources of cheap labor and as such, are discarded at will. But living *sami po sebye* as I came to understand it, allows people to retain a certain level of security unavailable elsewhere. After all, as they point out, there are worse places to live in Kazakhstan. Nevertheless, the marginalization of Koyan residents becomes inscribed and internalized in other ways: scars of hard physical labor, alcoholism, physical abuse, neglect, and random violence.
Paradoxically, by embracing nuclear pollution as something natural in their environment, Koyan residents are able to affirm their lives. By saying that they are used to radiation and therefore unable to leave the village, they avoid engagement with a medical establishment that sees them as less than human, as well as an economic system within which they have no place. Faced with these circumstances, Koyan residents orient themselves away from mainstream society, refusing to be tied down by a set of scientific categories in a world of limited economic opportunities (Deleuze and Guattari 1987). By making their own rules, ordering and navigating their everyday life, they hide the chaos and instability in their lives.

Radiophobia: Mobile Subjectivity

In the previous sections we see that the secrecy of the Soviet Cold War nuclear project and post-Soviet political and economic reforms, produce new configurations of the self in Kazakhstan’s nuclear zones. Specifically, I examined how the scientific discourse on radiation and genetic mutation—as injury, improvement, and noise (the unknown effects of low-dose radiation)—has given rise to a specific subjectivity. This subjectivity is embraced in its three iterations by people, such as the medical doctors in Semey, who understand them as belonging to a genetic underclass. On the one hand, there is a belief among the Kazakh medical establishment that forty years of nuclear testing on the Polygon has produced human mutants, whose sexual reproduction will give momentum to a genetic and intellectual catastrophe if a regime of “genetic passports” is not put in place. On the other hand, those who have survived Soviet nuclear testing—those who still live in villages located near the Polygon—claim to have adapted to present-day radiation and cannot live without it, even though it makes them ill. This context, in tandem with scientific uncertainty about the meaning of mutations in human ‘junk DNA’ and the inability to link these to discernible health problems, has transformed regional human
populations in Kazakhstan into victims of perceived mental instability that is rooted in fear, anxiety, and trauma. In this section, I consider how the scientific uncertainty and debates about the effects of low-level chronic radiation exposure have created unique and contradictory mobile subjectivities in Kazakhstan.

In the 1955 Akira Kurosawa film *I Live in Fear*, an aging Japanese businessman becomes so anxious about the nuclear bomb that he decides to sell his company and move his entire family to Brazil—a place he believes is safe from nuclear fallout. His sons, afraid the father will bankrupt a well-established business venture, don’t want to move to Brazil and urge the court to declare their father insane. They don’t have to wait long. When the businessman hears from his son-in-law that no place on earth is safe from radioactive fallout, he spirals into madness and ends up in a mental institution. Confined, he spends days hallucinating that he lives on another planet, safe from radioactive particles, and away from nuclear weapons. Kurosawa’s film was released a decade after nuclear bombs destroyed the Japanese cities of Hiroshima and Nagasaki and is one of the first to seriously explore the psychic toll of shock and terror that followed these attacks.103 Shot in documentary style, *I Live in Fear* (1955) disrupts the boundary between sanity and insanity. Watching it, we are compelled to ask whose world is crazier—a world where people are numb to the sound of warning sirens, where bomb shelters are the norm, and fear of an imminent nuclear catastrophe is the rule? Or a world of the insane businessman who cannot rationalize living in a nuclear world? Kurosawa’s depiction of trauma induced psychic stress can perhaps be seen as an early foreshadowing of a highly contested psychological disorder known today as radiophobia.

103 Director Lambert Hillyer’s film *The Invisible Ray* (1936) is a story of a medical doctor who begins losing his mind when he becomes exposed to a radioactive meteor. Films like Godzilla (1954), Them! (1954), among others, represented a nuclear holocaust with the rise of biologically altered mutants and monsters with their DNA altered (in many instances, enhanced) by exposure to ionizing radiation.
When epidemiological studies fail to establish causality between exposure and illness, often the mental health of the suffering individual comes under scrutiny. Studies on health, environmental and socio-economic impacts of radiation, frequently refer to improper risk perception as an instrument of psychological distress. Some of the first references to radiation induced psychological trauma can be traced to studies on the Hiroshima and Nagasaki survivors (Lifton 1967). In the 1950s, Marshall Islanders were also found to exhibit similar psychological stress, and in the 1970s so were those living near the Three Mile Island nuclear power plant during the worst nuclear accident in the U.S. history (Collins, Baum, and Singer 1983). But a concise definition of what was to eventually be termed radiophobia entered the English lexicon only in 1987, one year after the Chernobyl disaster in Ukraine. L.A. Ilyin and O. Pavlovskij (1987) defined the term in the IAEA Bulletin titled “The Radiological Consequences of the Chernobyl Disaster in the Soviet Union and the Measures to Mitigate the Impact.” Based on research that included a health related questionnaires and physical examinations of people living in contaminated areas outside of the 30-kilometer Chernobyl exclusion zone, their study found that “tension and chronic state of stress are causing radiation phobia syndrome [emphasis mine] in part of the population and may, in the current radiation situation, pose an even greater threat to health than exposure to radiation itself” (Ilyin and Pavlovskij 1987:24).

Today, radiophobia is defined as an “irrational fear of radiation that is disproportionate to the real health risks involved and that trumps other, more familiar dangers” (Lasker 2007:64). The causes of this phobia are wide-ranging and may originate in the “loss of control, the fear of sterility and impotence, the fear of malformed offspring, and the fear of developing cancer” (Landauer et al., 2002). Symptoms may include anxiety, fear, panic attacks, nausea, inability to form thoughts, feeling of terror, and a desire to flee the contaminated area. Some investigators
also believe that there is a psychosomatic component to this disorder with symptoms ranging from fatigue, sleep, and mood disturbances, to body pain and memory problems (Pastel 2002).

Since its appearance in 1987 and even more so after the on-going Fukushima accident in Japan, radiophobia has become a contentious term. On the one hand, there are those who have come to believe this disorder is a real social problem, rooted in ignorance and blatant disregard of scientific data. For example, the former Minister of the Russian Federation of Atomic Energy, Alexander Rumyantsev (2003:17) believes that: “Our tragic experience of a large scale accident illustrates the fact that society is extremely sensitive to any radiation risks and is prone to various phobias, foremost among them radiophobia. Phobias are caused by lack of knowledge or by plain ignorance. Ignorance is caused by a lack of curiosity and by laziness.”

On the other hand, there are those who argue that radiophobia is an illness manufactured by the pro-nuclear lobby meant to silence opposition to nuclear power development. For Adolph Kharash (1998), the Science Director at Moscow State University, for example, radiophobia is a disparaging and offensive label. “For those who were at the epicenter of the Chernobyl cataclysm,” Kharash writes, “this word is a grievous insult” in that:

It treats normal impulse to self-protection, natural to everything living, your moral suffering, your anguish and your concern about the fate of your children, relatives and friends, and your own physical suffering and sickness as a result of delirium, of pathological perversion. This term deprives those who became Chernobyl’s victims of hope for a better future because it dismisses as unfounded all their claims concerning physical health, adequate medical care, food, decent living conditions, and just material compensation. It causes an irreparable moral harm, inflicting a sense of abandonment and social deprivation that is inevitable in people who have gone through such a catastrophe. (http://public.wsu.edu/~brians/chernobyl_poems/harash.html)

Critics, like Kharash, who claim that radiophobia supports the “blame the victim” mentality, are frequently dismissed by international organizations like the IAEA for lacking scientific evidence that proves otherwise. In fact, the Chernobyl Forum, a comprehensive 2005 study initiated by
the IAEA, maintains that the “mental health impact of Chernobyl is the largest public health problem unleashed by the accident to date” (2006:36). Attempting to counter radiophobia, the report shows for example, that even though there has been a steady increase of congenital deformities in both contaminated and non-contaminated regions of Belorussia, this increase “does not appear to be radiation-related and may be the result of increased registration” (IAEA 2006:20). Nevertheless, this increase of congenital defects in Belorussia is often cited by opponents of nuclear power as proof that chronic radiation exposure is producing hereditary effects, a claim, as I stated earlier, that is not intensely debated, but deemed to be fueled by an irrational fear of radiation. Curiously, the IAEA co-sponsored studies are always similarly aligned: they are able to show a causal relationship between radiation and radiophobia, but generally reject research that produces evidence that there is, in fact, a relationship between low-dose ionizing radiation and biological effects. Since the Chernobyl disaster, scores of radiophobia proponents, including Russian, Kazakh, American, British, and French psychologists, psychiatrists, physicians, and risk behavior analysts, argue that biological damage associated with low-level radiation cannot be detected by current science, and therefore, stress, anxiety, depression, and/or other medically unexplainable physical symptoms are psychosomatic in nature, located in the minds of a terrified population.

In the post-Soviet context of nuclear weapons testing, radiophobia has been deployed to counter illness claims of the Polygon populations. For Sergey Lukashenko, Kazakhstan’s IAEA representative and the current director of Radiation Safety and Ecology at the National Nuclear Center of the Republic of Kazakhstan, radiophobia is a big problem. In his early fifties, the well-

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104 The IAEA study was done with the cooperation of World Health Organization (WHO), United Nations Development Program (UNDP), Food and Agriculture Organization (FAO), United Nations Environment Program (UNEP), United Nations Office for the Coordination of Humanitarian Affairs (UN-OCHA), United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR), and the Word Bank.
spoken and charming Lukashenko is a familiar face in the country. He appears regularly on local television programs and in newspapers citing IAEA backed and NNC executed studies in support of returning 95 percent of the Polygon territory (except for certain highly radioactive sites) to agricultural and commercial use.\(^{105}\) Thwarting this plan, however, is the public outcry against the proposal. The critique comes from medical doctors, environmental NGOs, and people who see themselves as victims of the Soviet nuclear program. They believe that present-day radionuclide contamination on the Polygon will put them at risk of developing cancers in the future. Interestingly, the majority of dissenting views are predominantly voiced by urban residents, from cities like Almata, Karaganda, Semey, and the capital, Astana, cities located hundreds of kilometers away from the Polygon. Rural populations—the same people for whom the former nuclear test site is an economic opportunity and who are also labeled (by scientists and NGO representatives working on the nuclear test site) as being psychologically distressed—are eager to legally make use of these lands. When I asked Lukashenko how is it possible that many villagers come to support NNC’s call to open the Polygon for commercial uses and be radiophobic at the same time, he answered that most likely, their perceptions are circumstantial and depend largely on economic incentives.

Lukashenko attributes public resistance to opening the Polygon for commercial uses to radiophobia and mass hysteria, all fueled by well meaning but grossly uninformed NGO workers and medical doctors. For him, the portrayal of the Polygon as a dangerous place to live and work has devastating effects on the rural populations who end up paying the ultimate price when the economic development on the Polygon is thwarted. Citing NNC research, Lukashenko is quick

\(^{105}\) NNC’s Radiation Safety and Ecology section is responsible for monitoring radioactive particles within the borders of the nuclear test site. Once the land is deemed safe, it is available for commercial use. Once the land is leased for commercial activities, like mining operations (Karazhyra coal, Naymanjal gold, and others) NNC is responsible for the monitoring of radionuclide contamination.
to dismiss epidemiological studies that even slightly insinuate that genetic mutations are transmitted from one generation to the next and that low-dose radiation is dangerous. To prove that the Polygon is safe, Lukashenko is quick to point out that he has been working in the area for years and has never experienced deleterious health effects as a result. In a 2012 interview, he said:

Me: So it can be said that you are not afraid of radiation, that you don’t have radiophobia?
Lukashenko: Of course I am afraid of it. That is what I tell myself.
Me: But you swam in the atomic lake.
Lukashenko: Of course. I swam everywhere [on the Polygon].
Me: So how is it that you are afraid of radiation then?
Lukashenko: It’s a difference between a controlled and an uncontrolled fire. If radiation is under control, what is there to be afraid of? Are you afraid of a fire in the fireplace?

Fluent in English, Lukashenko is often interviewed for western documentary films, where, typically leaning on his cane and smoking a cigarette, he pronounces that besides a couple of highly radioactive areas that should be cordoned off and protected, the Polygon is relatively safe.

Lukashenko is not afraid to admit that he swam “everywhere on the Polygon” and he is no different for it. He says this as a retort and proof to everyone who questions his findings, that radiation should not be feared. “Radiation is an ideal enemy,” he said to me in his spacious office in Kurchatov that once belonged to a Soviet military general. “If you compare other parts of the world, relationships to radiation are more or less the same everywhere. There is a specificity to radiation—it cannot be seen or heard, and has an aura of being everywhere. Radiation has a specific image and in this image it is an ideal enemy of the world,” he said.

Since the early 1990s when the oversight of the Polygon diminished because of lack of funds in maintaining a security infrastructure, countless people I met in the region claim to have swam in lakes formed by underground nuclear explosions, ate fish caught there, and picked wild berries in the hilly regions of the site. Most of these individuals have come to believe that radiation on the
test site is negligible and will not cause any serious health problems, or alternatively, that their bodies are adapted to toxic elements and pose no harm.

In his interview, Lukashenko reiterated a few times that radiophobia comes from ignorance and is the fault of geneticists, medical doctors, local NGOs, and certain politicians in Kazakhstan who spread misinformation about radiation in order to garner financial support from international organizations, like INTAS, USAID, and others, for their million dollar projects. For Lukashenko, people like Boris Gusev, whose epidemiological studies show that effects of radiation exposure are intergenerational, exacerbate the problem of radiophobia further. He made sure to tell me that the majority of the rural population, who blame radiation for their ills, is actually suffering the consequences of poverty: unsanitary living conditions, excessive alcoholism, smoking, and inadequate diets. In effect, as Lukashenko pointed out, his research agenda is in the best interests of the people. After all, it is the medical establishment in Semey that sees the Polygon villagers as being genetically abnormal and ultimately puts these populations at risk, a stigma Lukashenko seeks to eradicate. He is not alone on the frontlines fighting radiophobia in Kazakhstan.

Even the most ardent opponents to the NNC plan are battling against radiophobia. In Semey, environmental NGOs specializing in issues surrounding the Polygon often develop programs to educate rural populations about proper risk perception and healthy lifestyles. Nina, the founder of one of those NGOs, has been working with rural Polygon populations for the last decade. Her goal is to “help people lift themselves out of poverty” through programs that teach rural Polygon populations how to become entrepreneurs, that is, how to create ethnic hand-made crafts that then can be sold at local bazaars to tourists. Nina’s main goal however, is to help rural populations deal with depression and psychosomatic illnesses brought on by radiophobia. To
deal with what she describes to be a dire situation, one of her NGO projects dispatched psychologists, pedagogues, and doctors to three of the most populated villages in the region to help people understand radiation and prevent them from living unhealthy and unproductive lives. They are “backwards and needed to be convinced that they needed help and that they have problems,” Nina said. The goal of this specific project was to support the villages and help them live better. “It’s all psychological with them and their happiness, unfortunately, has to come from within. The people cannot be moved,” she continued, “but they need information [about radiation] so that they can make decisions about their lives,” she said. Nina hoped that her education programs would make people understand that their illnesses are psychosomatic and not rooted in real effects of radiation exposure.

Paradoxically, even though Nina works to battle radiophobia on the Polygon, she herself has been labeled suffering from this mental disorder by a number of individuals I spoke with. This is because she staunchly rejects the NNC and the IAEA backed program that seeks to make the test site an economically viable area. “The IAEA are monsters,” she said to me in a 2011 interview in her downtown office in Semey. “They [the IAEA and NNC] lie about their research findings because they want to help Kazakhstan get rid of the Polygon once and for all.” Nina argues that by pronouncing the land safe for economic uses, the nuclear test site area will no longer be under the oversight of the Kazakh government, but rather, the land will be carved out between the three oblasts and sold. She is clear to point out that the oversight of the Polygon, as it is now, is already severely compromised. For example, Nina is quick to draw attention to the fact that the majority of slaughtered animals—cows, sheep, goats, and horses sold at the local bazaar in Semey—were all animals that grazed on nuclear test site pastures. She believes these animals are radioactive and fears developing cancer later on in life. For Lukashenko, Nina’s
fears are unwarranted and are rooted in ignorance. “This person most likely suffers from radiophobia,” he said.

According to the standard critique, framing radiation’s biological consequences in psychological terms has the effect of preventing rights of recompense to the many people who had suffered injuries from radiation exposure (Johnston 2007; Kharash 1998; Petryna 2002; Werner and Purvis-Roberts 2007). To expand on that, the discursive deployment of radiophobia in the Kazakh context is rooted in a narrative of neoliberal utopian hope, a hope that is disrupted and shattered whenever someone makes claims that present-day radiation continues to do violence to their bodies. The narrative of hope, however, and the deployment of radiophobia are closely related to the history of Stalinist terror in Kazakhstan and are not merely fixed in the socio-cultural pathology (Žižek 2008).

In what is arguably the most sophisticated legitimization of Stalinist terror, Maurice Merleau-Ponty’s (1969[1947]) Humanism and Terror, violence is justified in the name of a more egalitarian world. Marxism, as Merleau-Ponty (1969:98) would have it,

> Seeks, rather, to offer men a perception of history which would continuously clarify the lines of force and vectors of the present. Consequently, if Marxism is a theory of violence and a justification of Terror, it brings reason out of unreason, and the violence which it legitimates should bear a sign which distinguishes it from regressive forms of violence. Whether one is a Marxist or not, one cannot consistently live with or proclaim pure violence apart from any perspective on the future [emphasis mine].

In other words, if the final outcome of today’s horror is a bright utopian future, then this finale will, *ex post facto*, atone for the terror that the perpetrators had to do today. Soviet nuclear testing was terror carried out in the name of a bright future. It was justified—at least in the logic of the day—as a necessary evil, a grossly misrepresented Marxist evolutionary historical leap, on the road to pure communism. But the socialist future never arrived and the Soviet behemoth collapsed. Without an alternative, Kazakhstan became an independent nation and charted a new
utopian project—that of a free market economy, one that left limited space for irradiated bodies. In fact, radiation-damaged bodies slow down economic progress by demanding from the state free healthcare and protection from radioactive pollution.

Since 1991, President Nazarbayev turned Kazakhstan into one of the richest and most stable of the Central Asian republics, a fact that has made Kazakhstan a desirable destination for international capital. The former nuclear test site is big business today. Coal, gold, manganese, copper, and uranium mines are operating at full capacity with laborers brought in from surrounding villages and distant cities. Working for meager salaries and potentially exposed to high levels of radiation, these laborers are a wager, a sacrifice, for Kazakhstan’s future. The utopian project comes at a price—those who claim that they are ill and fear present-day radiation exposure will be silenced through the disciplinary language of rationality and madness frequently used to “make sense of political violence” (Good, Hyde, Pinto, and Good 2008:9).

Radiophobia is the denial of social, economic, and political, support by the state—but it is also a “bad-faith” denial that everyone and everything in Kazakhstan is potentially subjected to radioactive environmental hazard. Radiophobia can be conceived as the New World Order mental disorder established to maintain a distinctive post-Soviet social and political stability, a particular vision of economic progress, and a response to the breakdown of the welfare state. It is the de-linking and situating of radiation outside of history—not engineered—but rather a natural and global “artifactual entity” (Haraway 1997).106 The emergence and discursive deployment of radiophobia in Kazakhstan is linked to the national and global economic and

106 Baseline level of radiation refers to that considered naturally occurring in the environment. The background radiation figure is the amount of radiation an average person receives in a year. Standard is 620-millirems/per year, out of which half comes from cumulative atmospheric effects from nuclear weapons testing, nuclear power plants, nuclear medicine and other commercial and industrial activities (United States Nuclear Regulatory Commission 2014). Radiation has been naturalized.
political processes, and the inability to deal with millions of tons of hazardous waste and Soviet ruin.\textsuperscript{107} Claims to biological citizenship (Petryna 2002) disrupt the narrative of the Polygon as being rooted in the Soviet historical past and puts in jeopardy Kazakhstan’s development projects. Radiophobia, as a mental disorder, is rooted in Kazakhstan’s efforts to enact a particular post-Soviet social economic order.

In this context, we see the emergent mobile subjectivity at the core of my analysis: the simultaneous deployment of radiophobia, the denial of radiation induced biological harm, and/or the perceived adaptation to a toxic environment. In a region where pollution is widespread, welfare reforms have been stymied and neoliberal economic development takes center stage, all are logical outcomes. And people can choose which side to take. For example, overcoming the fear of radiation can be as simple as travelling to the Polygon. I visited the city of Kurchatov in late March 2011 where I toured the 	extit{Park Yadernoy Tekhnologii} (Park of Nuclear Technologies) together with representatives of the American Embassy. The Techno Park was established on August 12, 2005 on the behest of President Nursultan Nazarbayev. In his April 4, 2003 address to the nation of Kazakhstan, Nazarbayev emphasized that central to the development of the Kazakh economy, are high-tech firms that promote nuclear related technologies for peaceful uses. At a dinner sponsored by the Techno Park, we spoke of the ways one could overcome radiophobia. One of the administrators who attended the dinner raised a toast to radiophobia and said:

Let me tell you a story about radiophobia. I went to the Degelen Mountains where hundreds of nuclear bombs were exploded, an area that is most certainly radioactive. I ran into a 	extit{chaban} (sheep herder) who was sitting by a creek that was flowing out of one

\textsuperscript{107} Due to the Soviet Union’s clandestine operations in Kazakhstan, many of which continue to be classified, it is difficult to collect and establish a precise number of the total amount of industrial and toxic waste found in the country. By some estimates, the total industrial waste, including toxic waste, is 671 million tons (Bayekenova and Bazarbayev 2007).
of the horizontal tunnels where explosions took place. The chaban was boiling water and drinking tea. I asked him, “do you know that this water is radioactive? Aren’t you a bit worried about radiation?” The chaban looked at me and answered: “But I boiled the water.” (Interview 2011, translated from Russian by the author)

At that moment, the administrator went on to say, “I realized that my radiophobia makes no sense. People live here on the nuclear test site and they somehow survive. I no longer fear radiation.” The administrator claimed that radiation is not as dangerous as some people may believe. He actually has great respect for radioactive elements, he reassured me, but sees no problem with swimming in radioactive lakes, drinking water from streams located throughout the test site, and camping near radioactive hot spots.

**Conclusion**

Part of the title of this chapter was inspired by a button I bought at a small, family owned store in Kurchatov. The store such as this has actually no precise equivalent in the United States, as it sells anything from photo frames, paper, pens, pencils, books, notebooks, camera film, to Photo Shop program assistance, computer usage, and notary services. The button was behind a glass case, together with other kitsch items like refrigerator magnets of the Igor Kurchatov statue, an aerial view of Kurchatov city, and a photograph of an atom sculpture. On the bright yellow background in stark black letters, the text reads: “I am a radioactive mutant.” Superimposed to form a whole ensemble, is the trifoil, or the international radiation sign. Perhaps this seemingly ironic button is sold to the occasional tourist passing through town on a disaster sightseeing vacation, or conceivably, to local residents. I bought it because for me it seemed to capture issues that are at the heart of the debates about well-being and illness on the Polygon, ones revolving around the current understanding of radiation exposure in these parts of Kazakhstan. Like the understanding of the biological effects of past and present radiation exposure, the “I am a radioactive mutant” button could mean several things simultaneously,
depending on the context, and who is wearing it. It could mean, for example, that one is, in fact, mutated and, perhaps, even better for it. Or that it’s just plain absurd to think that there are such things as radioactive mutants anywhere, let alone inhabiting the Polygon. Whatever the intended message of the manufacturer of such buttons, everyone who saw it in Koyan found it quite funny. Nurzhan, who once worked as a nurse and then a medical doctor in the village, also found the button amusing, as much as the statement “clean air is our death.” Even though she laughs, Nurzhan seems to be uncertain as to what is really happening to the Polygon populations. In an off-handed way she told me that perhaps people can’t live in clean air or maybe people simply don’t want to leave the village because of “Kazakh mentality” that keeps people tied to ancestral lands. Whatever the “truth” is, Nurzhan knows that many people died and continue to die from cancer in the village, that animals were born with three or five legs, or one eye, and that women gave birth to “gelatin” babies that had all their organs on the outside. Whether these illnesses and tragedies were radiation related, she does not know. The only thing people can do now, Nurzhan says, is to eat enough fruits and vegetables to at least make their bodies stronger.
CHAPTER V

Concluding Remarks

“Cows don’t dig with their hooves, they use their heads. That’s why they all died. They couldn’t dig,” Tursynbek said. The winter before I arrived, the pastures around Koyan froze solid. As temperatures held steady at minus forty-centigrade, the animals were unable to punch through the thick sheet of ice. For months, everyone in the village tried uncovering the grassy fields with shovels, but to no avail—the ice was simply too deep for the tools available. Left without food, it wasn’t long before the cows began to die. By winter’s end some one hundred (an entire herd belonging to two families) starved to death, transforming the ice-covered fields into their macabre resting place. By spring, things turned worse. With the arrival of warm temperatures, the entire village began to smell with the intensity of one hundred decomposing corpses that were now black with millions of flies. “The stench was horrible. For weeks everything—our clothes, houses, air—reeked of rotting flesh. We had to deal with this situation quickly,” Tursynbek said. Before the animals sank into the knee-deep mud with the spring rains, the residents of Koyan hauled them to a garbage pile and set them on fire.

When I first arrived to Koyan in late September 2010, people were still reeling from this catastrophic “nightmare” (koshmar). This devastating winter not only decimated the animal herds, but had the residents literally struggling for survival. I was told that by February, the village had little food. Thus by springtime, everyone was significantly thinner than they were before. During the coldest months, people also ran out of coal and were unable to heat their homes as a result. There was no help from Oktyabr either. The frequent blizzards (buran) and the deep snow made walking to Oktyabr for supplies impossible. Koyan was completely cut off for four months. The September of my arrival, everyone in the village, harboring the memories
of the previous year, feared the worst and was busy preparing for the coming winter. They were gathering extra hay, purchasing additional Karazhyra coal, and buying various food products on the city bazaars. Most, however, did not have the money to buy all that was necessary and ended up borrowing cash from relatives or friends. Some of the men picked up extra shifts at the open pit mine on the Polygon.

When I returned to Koyan a year after my fieldwork in summer 2012, things in the village had turned even worse. The roads, already barely passable, were even more potholed and difficult to traverse. Koyan’s primary grade school was closed and so was its one-room medical clinic. The village was without power for nearly a month because one of the poles connecting Koyan to Oktyabr, the guiding line that I used to navigate the steppe, had overturned during a storm. Oktyabr’s administrators refused to fix the problem, claiming to be tired of helping people who choose to live in primitive conditions. Perhaps the most significant setback was when the director of the local Polygon mine fired most of the area employees. Those let go were offered an alternative: to work in a mine located a thousand kilometers away with significantly lower pay. Without much of a choice, many agreed, if only because the company offered transportation from Oktyabr. Surprisingly, even though life became more difficult for Koyan residents since the year I was there, no one elected to move away. Instead, they were even more determined to stay, claiming to never give in to the demands of the “lazy and money hungry local administrators who could care less about them.”

After sixteen months of fieldwork, I have come to realize that documenting life on the Polygon, through the lens of Soviet era nuclear legacies, is a privilege of Western researchers. Unless pressed, no one in the village spends much time thinking about the Polygon. Given their immediate problems and concerns, why should they care? After all, it is more important to have
food, shelter, and warmth then worry about the effects of invisible harms. In time, I too stopped worrying about the same things that had previously driven me—the Polygon, the poisonous radiation, or illness that may or may not come. Like all individuals living in Koyan, I had better things to do. With everyone else, most of my time was spent preparing food, washing clothes, keeping the house free of soot and mice, collecting cow dung for fuel, fetching water, driving to the store, stockpiling supplies, pulling out vehicles sunk to their doors in mud, searching for missing livestock, putting out fires, going to weddings, birthday parties, and funerals. In the small village that is Koyan, there was no time to ponder Soviet legacies or their consequences thereof. Those who do would have the resources and most importantly, the time, to contemplate such things.

Nevertheless, I began my research in Koyan with a goal of documenting how marginalized and poor people deal with the legacies of the Soviet Cold War nuclear era. What quickly became apparent to me is that in many ways, Koyan residents have much in common with the countless victims of nuclear weapons development living in the United States, the Marshall Islands, French Polynesia, Australia, or any other place where such weapons were tested, developed, or manufactured. Like people living with nuclear legacies elsewhere, many of them suffer from terribly debilitating illnesses and consequently, early deaths. Nearly all of the communities hosting the nuclear industry (whether it be military or otherwise) are poor—too poor, in fact, to force their governments to be accountable, to provide meaningful financial and medical assistance.

With this dissertation, I hope I was able to show that people living on the Polygon have developed their own strategies of survival, ones that are rooted in specific area histories and in equally specific social, political, and economic contexts and upheavals that structured much of
their lives. Although what many people on the Polygon have come to believe—that they are biologically adapted to their radioactive environment—may seem as a paradoxical survival strategy at first, it is a perfectly reasonable response given the circumstances people find themselves in, living on the margins of society.
Bibliography


Button, Gregory. 2010. *Disaster Culture: Knowledge and Uncertainty in the Wake of Human and Environmental Catastrophe*. Walnut Creek: Left Coast Press.


Document Two. 1959. Karaganda Regional State Archive. f. 1487, op. 1. d. 84, l. 5 and 17.


---------1996. One Decade after Chernobyl: Summing Up the Consequences of the Accident: Proceedings of an International Conference on One Decade After Chernobyl: Summing Up the Consequences of the Accident. Vienna: IAEA.


Zamiatin, Yevgeny. 1924. We. New York: Dutton.

