

# HABITUAL RISK TAKING IN DZERZHINSK: DAILY LIFE IN THE CAPITAL OF SOVIET CHEMISTRY ☆

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Two astronauts land on the moon. One of them has no space suit. "Are you crazy?" the other one asks him. He answers, "Nonsense! I am from Dzerzhinsk." (Anecdote from the 1970s.)

## INTRODUCTION

In both natural sciences and social sciences, there is relative agreement about the fact that the 20th century saw great diminishment of the earth's natural resources. In addition to dwindling materials and space for human activities, our industrial mode of natural resource consumption brought various ecological problems, including waste, and pollution of water, soil, and air.<sup>1</sup> The specifics of any given social system influence an individual's perception of pollution of the surrounding environment and its consequences, and also influence the reaction of a society in general to ecological problems. In other words, different societies develop different collective and individual strategies for coping with problematic situations related to "technogenic"

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pollution of the environment. This article, based as it is on an in-depth case study, analyzes the peculiar relationship of people to ecological issues in Russian society. Research was carried out in the city Dzerzhinsk, which, throughout the Soviet period, was proudly called the "Capital of Soviet Chemistry." This city is thus a demonstrable example of the Soviet period, and the history of the city will serve as a lens through which we will analyze contemporary ecological problems of the city and the relations of its citizens to these problems. Dzerzhinsk was selected for study after it was described in newspapers as "the dirtiest (i.e., most polluted) city in Russia."

In contemporary Russian society, sensitivity to ecological problems is generally relatively low. During the late 1980s and early 1990s, a period of sharp societal change, the USSR saw a flash of interest in ecology. At that time, truly massive environmental movements appeared. These were some of the most powerful and influential protests and political movements of the Perestroika period. At the same time, there was a wave of media publications concerning environmental topics. After only a few years, the public's interest in these topics began to wane next to other issues. However, the environmental movement did not disappear completely in those foggy times of economic crisis. Activists managed to create sustainable NGO networks that remained connected to each other through informal contacts.<sup>2</sup> Currently, between 25,000 and 30,000 people are involved in some Russian environmental organization.<sup>3</sup>

During the Soviet period, closed, mono-industrial cities like Dzerzhinsk served the military-industrial complex.<sup>4</sup> According to experts' assessment, pollution of the environment often reached catastrophic levels (Fedorov, 1995). However, this legacy of contamination has not proven to be the subject of deep public concern. People try not to think about it. Similar denial characterizes the response of the city's power structure, which unanimously chose to ignore the problem, and, in general, keep quiet about ecological issues. Their inaction was supported by developments in the 1990s, principally the shutdown of many industrial plants due to the collapse of militarism and the economic downturn, with a resulting dramatic decline in air pollution. These conditions favored the prevailing and reassuring rationalization "nyet problem" (i.e., no problem).

There is a huge gap between the dire assessment of the situation in Dzerzhinsk made by outside (Russian or Western) experts and the daily awareness carried out by a majority of the city's citizenry. In Western Europe or the US, no doubt, available information suggesting even one-tenth the pollution problems in a city similar to Dzerzhinsk would suffice to

ignite a powerful environmental protest movement. In post-Perestroika Russia, environmental protest in such cities is rare. Ordinary citizens prefer not to know about the status of their environment. Explaining the public's "blind eye" to the environment, therefore, is the major research question for this investigation.

Material needs are currently the most poignant problems for many people in Dzerzhinsk. It is tempting to conclude that more abstract issues of environmental risk are ignored because peoples' consciousness is focused on survival, financial security, and dealing with materialistic needs. However, this is a simplistic conclusion. For one thing, it is notable that even affluent residents do not show concern about the environment. The Russian roots for ignoring risk are much deeper than simple "Maslovian" economic explanations.

The social history of Dzerzhinsk has played a significant role in the development of this risk acceptance. Of specific importance are the absence of any "public space" for discussing risk and the strategy of ignoring the problem adopted by the power structure. In these ways, Dzerzhinsk is representative of all of Soviet society, especially the formerly closed cities such as Dzerzhinsk, which served the military-industrial complex. The creation and functioning of these technological systems and the problems they caused resulted directly from the core characteristics of Soviet technocratic society, specifically the long-lasting atmosphere of secrecy, neglect of worker safety issues, and inattention to the needs of citizens. Dzerzhinsk demonstrates how 70 years of Soviet technological experimentation established a dangerous legacy for present and future citizens of the country – not just in creating environmental hazards but also in deadening people to their consequences.

Information was gathered using a qualitative approach. Field research occurred during two site visits, in 2002 and 2003. In total, 28 in-depth interviews were conducted with citizens of Dzerzhinsk selected through a snowball approach. The sample included five interviews with long-term residents, three with experts, two with environmental activists, six with other socially active residents, and the remaining 12 with ordinary Dzerzhinsk citizens of varied age. Overall the sample was biased in favor of older informants in order to assure a historical perspective. Our investigation also uses information from a roundtable discussion conducted in August 2002 as part of the Russian-American project "Contaminated Communities of Russia and the United States." In addition, we collected a large archive of public material about the city and its citizens.<sup>5</sup>

## ECOLOGICAL RISKS AS COLLECTIVE CULTURAL CONSTRUCTS

Contamination of the natural environment is not an objective phenomenon, even though it is possible to study it using strict scientific methods. Modern society often creates risks that are invisible and cannot be assessed by the human senses (Beck, 2000). We accumulate information about these risks on the basis of expert assessment and interpretation. However factual in form this information appears to be, this expertise is itself very much the product of historical, political, and social process.

But is expert subjectivity better equipped to see invisible contaminants than is the public's perception? Here we return to our core questions. How is it that, in Russia, little public concern over environmental problems is manifested, even in those regions where pollution levels are viewed by experts as catastrophic? In such cases, the experts, who represent a scientific type of rationality, are more likely to be concerned than local citizens that deal with the risks everyday and who have an on-the-ground knowledge and rationality of a different type. How is such a discrepancy in risk perception possible? What are the social roots of different interpretations of risk, and, in particular, the tendency to ignore risk?

Risk is a term with somewhat varied meaning across different branches of science, engineering, psychology, economics, sociology, and anthropology. In the post-modern era, risk reflects the systematic interaction between society and the different threats and dangers caused by modernization and magnified by uncertainty and fear (Beck, 1992). Widespread social mobilization in the west against environmental threats is explained by such perceived risks and fears. This does not mean that all fears are recognized and lead to action or that an ignored risk is an unfeared risk. Fear may itself result in the neglect of some danger (Beck, 2000).

There are many other possible reasons for inaction. People may know of a risk and yet not be conscious of it. This lack of active awareness may be due to the hazard's invisibility, a lack of reminders about the risk, a lack of any perceived ability to control it, and/or the fact that risks have become the realm of experts possessing tools for measurements and means of action (see Beck, 2000).

Because risks are collective cultural constructs, it follows that the risk that threatens one group might have a very different meaning and urgency for another. Societies, having different characteristics of social life, might adopt very different strategies for dealing with the same type of risk (Douglas &

Wildavsky, 1983). Thus, the comparison of varied societies offers a ripe potential for illuminating the subjectivity of risk.

One finds perfect material for comparative analysis of risk perception in the contrast of socialist and capitalist systems. Both societies contain large-scale, risky enterprises oriented toward industrial development. However, significant discrepancies are evident in the perception of pollution between socialist and capitalist countries. That these differences are due, in part, to social dynamics is suggested by the contrast of public perceptions of risk between citizens of the former West and East Germany. While technological risk played a major role in political discourse in the west, East Germans lacked any public forum for such debate and risks were seemingly unimportant to East Germans (Hunnus & Klieent, 1993).

How then do Russians perceive risk? Yanitsky explains the tendency to appear apathetic to environmental risk by citing the demands on Russians living under the strain of material need to address their own security and survival. But his point is not just that they are distracted by more basic priorities. Rather, for Russians, all of life is a fight for survival. As a result, people accustomed to being continually forced to mobilize under extreme circumstances become desensitized to risk. The result is a society with an extraordinarily high tolerance of risk (Yanitsky, 2003).

Modernization brought with it a new class system largely unnoticed in a society focused upon removing all vestiges of traditional stratification. Yanitsky (2003) writes that this new type of social inequality was between the producers and consumers of risk. He might better have argued that it was between those that profit from risk production and those victimized by it (Edelstein, 2004).

Before shifting to our case study of Dzerzhinsk, it may be useful to also consider the phenomenon of Russian's acquiescence to risk. This acquiescence reflects basic personal and cultural tendencies for dealing with bad news. Environmental crises seem so difficult and complex and often so depressing and hopeless that it is easiest to adapt a strategy of ignoring unfavorable information. Then, there is the importance of Soviet history. During the entire existence of the USSR, the ruling Soviets paid very little attention to the issues of industry and its effect on the health of the population and the environment. The system as a whole ignored environmental risks, hiding them, keeping them quiet, and deeming information about environmental problems' secret. For an entire society, such issues came to be viewed as inappropriate for discussion and action. As a result, individuals were forced to develop their own strategies for

adapting to the resulting problems, often with help from their relatives and friends.

The perpetual lack of public space for open discussions about problems clearly influenced the perception of environmental risks among Dzerzhinsk's citizens. Risk discussion appeared only after Perestroika, when the city changed its closed status and the regime of secrecy softened somewhat. In place of a severely limited and controlled press, a whole wave of environmental coverage appeared in newspapers. However, widespread interest in these topics waned, and the space for risk discussion once again shrank. As media increasingly became the voice of the new power structures, it came to reflect powerful business interests. It ceased to serve the role in a free society of a major channel for spreading information openly, providing the public with access to critical expert systems, giving the public information about the state of the environment, and offering an arena for discussion of different assessments of risk. An informational vacuum was created.

The historic lack of opportunities for direct political action on behalf of communities and causes also served as a constraint. Lacking were the legal and political strategies of recourse upon which grassroots responses might mobilize. In sum, in a society in which secrecy and maintaining a quiet passivity toward environmental problems is a phenomenon of the system, people incorporate the strategy of ignoring dangers into their individual lives, and so have little protection against these dangers.

## AN ECO-HISTORY OF DZERZHINSK

Edelstein (2004) posits that the "eco-history" of a community is an important starting point for understanding how pollution problems are addressed. Dzerzhinsk is a city of a quarter million in Nizhny Novgorod Oblast, 30 kilometers from the city Nizhny Novgorod. Founded in 1930, Dzerzhinsk was built as an industrial city dedicated to chemical enterprises, which employed the majority of its citizens during Soviet times. Over much of its history, Dzerzhinsk produced chemical armaments and poisonous gas. Today, 3 of 15 enterprises involve chemical processing.

We identify three distinct historical stages in the development of Dzerzhinsk. These are the Stalin era of the 1930s and 1940s, the Cold War Period (particularly the 1960s and 1970s) when large-scale socialist industrial and social development occurred, and pre-Perestroika to the present (from the middle of 1980s) when chemical plants declined and social and economic crisis hit the

city. These three stages will prove useful in understanding the foundations of environmental perception in Dzerzhinsk.

## STRATEGIC BUILDING CONSTRUCTION OF THE SOCIALIST CITY OF DZERZHINSK

*Now, on the site of this abandoned place, the Soviet power has decided to build a big industrial city. In a number of years, you will not recognize your small settlement.*

*M. I. Kalinin, "All-Union Governor," from his speech to the meeting of laborers of the future City of Dzerzhinsk (1927).*

By the end of the 1920s, Russia had been weakened by the lengthy period of civil war, there was much destruction, and many citizens faced hunger. The government decided to force industrialization of the country. Chemical industry was given the highest priority. An infrastructure for industrial chemistry was viewed as necessary to defense production in order to prepare for another war and eliminate dependence on imports.

The "City of Big Chemistry" was to be located nearby pre-revolutionary workers' settlements, notably the local village Rastapiino. By 1929, the decision was reached to combine several of these working settlements into an industrial city named Dzerzhinsk.<sup>6</sup> This site offered several strategic advantages. First, transportation costs were reduced due to the proximity to rail, the river Oka, and to the regional capital, Nizhny Novgorod. Second, the site was far enough from national borders to allow defense in the case of war. Third, there was a pre-revolutionary base of chemical enterprises that could serve as a foundation for building new enterprises. Fourth, the surrounding villages became an important source of labor for the new proletariat as hungry peasants flocked to the city to earn money.<sup>7</sup>

Decision making in Stalin's times failed to take into account ecological factors that, in retrospect, suggest that the site was really not so ideal. The locality can be characterized by sand and limestone deposits with high levels of diffuseness. The sand layers are near the surface and serve to quickly disperse contaminated liquids through the water table, concentrating surface pollution in the Oka River.<sup>8</sup> At the same time, the dolomitic-limestone bedrock below the sand is Karst topography, riddled with solution cavities allowing pollution to move easily down into groundwater. In short, the environmental features of the site could not hold greater potential for environmental harm.

The new industrial city was to produce enamel for metals, phosphorous for matches, and poisonous gases for military weapons. Technology and equipment for the chemical enterprises were acquired from abroad. By the start of World War II, eight chemical production facilities operated in Dzerzhinsk. Because the main emphasis at that time was the production of poisonous substances, bombs, weapons, and other means of chemical defense, the city was veiled in an atmosphere of super secrecy.

The peasant workers relocating from failed collective farms came with no qualifications for their jobs. Already traumatized, they were willing to accept low wages and a harsh quality of life. If they were unable to walk to work from their own villages, they were forced to live nearby their factory in barracks housing 40-50 families and lacking indoor plumbing. Some workers lived in earthen huts, even in the wintertime (Kotlyar, 2001).

The intention was not to create hard living conditions for laborers. But promises of good housing, transportation, utilities, and cultural institutions were delayed by the state of emergency in the pre-war and the war years. All industrial enterprises were required to work at full capacity, as suggested by the slogan, "the plan must be completed at any cost." Not only were all other needs relegated to a minimum level, but worker safety was also ignored and many mishaps occurred.

The quality of life in the 1930s was further reflected in the high level of mortality from diseases and malnutrition. An engineer describes worker conditions in Dzerzhinsk:

The tram going to the city around 8 o'clock in the morning comes to a stop at Ignomovo. It was half filled with workers returning from the night shifts, tired, with pale overruled faces. Many of them were coughing the whole way. They were squinting from any light that shone upon their sick, red eyes. At the stop Kallinskaya, they were joined by another group of the same overruled, tormented people. Many of them had faces and hands colored a bright yellow. It was possible only to guess that their skin is penetrated by nitrogen oxide. (Kotlyar, 2001, p. 10).

As better housing was finally built, "temporary" worker settlements were created in close proximity to the factories. This design allowed a longer workday by eliminating the inefficiencies of commuting. It is said that in Russia, there is nothing more permanent than the temporary. As a result, residents today can still plainly see nearby factories from their orchards and homes.

Beyond the workers, other social groups included the administrative personnel of the enterprises and a class of technocrats called the "young specialists." These ranks were filled by young graduates of universities and middle level chemistry institutions from across Russia who were assigned

mandatory jobs in Dzerzhinsk. A series of chemical, technical, professional education institutions was also created to help fill the need for specialists (Shalnov, 1999, p. 88).

Living conditions for qualified personnel was slightly better than for workers. They lived in hotels or in multi-level apartment houses with bathrooms and other standard luxuries. However, as one of the veterans of "Dzerzhinsk Chemistry" recalled:

Life in the emergency conditions, where we were placed, could seem to one like heaven if he does not take into account the air in the settlement, filled with poisonous gases and steam discharged by the plants. In this "heaven," people were permanently sick, and some of them slowly died. (Kotlyar, 2001, p. 10)

But what forces make people tolerate such hardships of life? The majority of the workers and engineers were relatively young. The Soviet regime relied upon the stamina inherent in their youth to motivate them to work with enthusiasm. Propaganda was used to intensify their belief in the ultimate progress of the socialist system despite "temporary difficulties." Indeed, the myth of "the bright future" was one of the most influential ideas in the Soviet Union in the 1930s. In Dzerzhinsk, as in the rest of the country, worker motivation was further spurred by "the Stachanov Movement." Named after a record-setting laborer, this government designed and maintained productivity program proposed the need for workers to go beyond the formal plan of production and become "labor heroes," earning special rewards. Local officials often inflated their production numbers in order to show many "Stachanovsky workers" and thus acquire additional resources for their enterprises. This form of "paper heroism" encouraged violations of worker safety measures, as laborers sought to become labor heroes.

## HARD TIMES: A PLAN AT ANY PRICE

By the mid-1930s, a more complex system of labor was established for chemical production facilities that dramatically increased the pressure on workers. Production goals were further separated from reality. Ideological propaganda was used to directly stimulate superhuman efforts. In combination with repression, there was an atmosphere of great fear.

Socialist economic planning was increasingly used to enhance the industrial power of the USSR. Industries were given quotas to meet. The major slogan of the time was "the Plan at any Cost." Failure to complete the plan could cause punishment, not only for the individual violator, but also for the

data from enterprise number 96 (now known as Kaprolaktam). At just this one plant, there were 2,397 cases of poisoning by Yperite and another 89 by another poisonous gas, Lewisite (Fedorov, 1995).

Work in a special chemical weapons' production unit had the most serious consequences for health. Within a special unit, Yperite concentrations often exceeded current permissible standards. This air was ventilated directly into the atmosphere without any cleaning or treatment. There was no sanitarian protective zone around enterprises. Living quarters were adjacent to the plant. As a result, workers were exposed not only at work, but also with their families at home (Fedorov, 1995). Young engineers of the time later reported that they ignored safety instructions, not appreciating that their exposures were cumulative. "We understood that only much later when rehired workers from our special unit began to die while still young" (Kotlyar, 2001, p. 11). Workers were denied any choice. They had to work where they were assigned. Given the intolerable conditions, it is no wonder that more than 500 people are recorded as having escaped from Dzerzhinsk during the war (Fedorov, 1995).

In the period after World War II, the revitalization of Russia's industry continued to hang like a knife above the heads of industrial laborers, along with severe military secrecy and threats of repression. Living conditions continued to be very hard, and the health of the workers of chemical enterprises continued to be damaged by exposure to different chemical substances released during permanent violations of worker safety and frequent emergency disasters. Beside the severe conditions of life, people were working very hard. It was necessary to rebuild the country after the war, and a majority of people continued to believe that the socialist system would reward their work and that the proverbial "bright future" would come soon. After the death of Stalin, the political situation in the country changed significantly. Life and working conditions also changed.

### "BRIGHT PRESENT: IN DDTGRAD"

"Yes, know, we were more working than living." (From an interview)

After the war, the production of chemical armaments in Dzerzhinsk was decreased and production of poisonous gasses such as Lewisite and later Yperite ceased. As the Cold War period commenced, the military-chemical orientation continued to dominate the industry of Dzerzhinsk even as some

whole work collective. The result was a "whole encyclopedia of falsifications" aimed at salvaging the reputation of an enterprise and the safety of its workers (Kotlyar, 2001, p. 28).

Workers at the chemical enterprises in Dzerzhinsk, as in the whole country, were exposed to large-scale repressions. Industrial sabotage was a major excuse for arrest, and failure to fulfill the plan was deemed equal to sabotage. The secrecy of military enterprises provided authorities with freedom to quickly "clean out" all "bad elements." People lived under the permanent fear of being arrested. These pressures were increased by the military context. Given the inexperienced and increasingly disillusioned work force and volatile work environment, actual completion of the plan was only possible with widespread violations of worker safety. Emergency situations and accidents were ordinary occurrences. The health of the worker and of the environment held a comparatively low value under the circumstances (Kotlyar, 2001, p. 28).

By the end of the 1930s, feelings of impending war permeated Soviet society, from the country's leadership to the everyday lives of ordinary citizens. Everyone lived with the thought constantly in mind "if there is a war tomorrow." The country's preparation for the war included emphasizing enterprises of chemical armaments. At this time in Dzerzhinsk, three enterprises for the production of chemical armaments were functioning. They produced tetraethyl lead for airplanes, explosives, and a big quantity of chemical defense supplies. Later, during the war the slogan "plan at any cost" was replaced with a new slogan, "everything for the front, everything for the victory." Now even more superhuman efforts were demanded of the industrial workers.

Spurred by the urgency of the war effort, the industrial environment was rife with environmental crime and worker injury. As an example, Kotlyar (2001, p. 15) writes of his experience working in Dzerzhinsk at a production unit for the poisonous gas Yperite:

The production of Yperite where we were sent was pretty much primitive without modern technological measures of protection. The air in the enterprises was filled with Yperite fumes. Frequent discharges of Yperite were covered with saw dust and the floor was cleaned with Chlorize chalk. Masks against gas, and rubber suits, shoes, and gloves failed to prevent harm to the skin, eyes, and trachea. That is why every shift had twice the number of people, half for working while the others were in the hospital, or in proflactoriums.

The double-staffed shift was a cynical solution to the problem of existing present diseases among the staff. The scale of harm from poisonous substances at a Dzerzhinsk chemical industry at this time is suggested by 1942

defense enterprises were reoriented to "peaceful production." New scientific research institutions and new industries were founded.

Here as elsewhere, an active new war was declared on pests as part of an effort to rebuild the agricultural productivity of the nation after the war. For instance, in 1965, two plants producing chemical armaments switched to producing the pesticide dichlorodiphenyltrichloroethane (DDT), referred to as "dust." Ironically, the environmental harm caused by production of DDT was comparable with the prior production of chemical armaments. And, instead of being known as the "Capital of Soviet Chemistry," Dzerzhinsk received a popular new nickname, "Dustograd" (i.e., "DDT City"). While Dzerzhinsk continued to be a secretive and closed city, the 1960s and 1970s were a time of pride in the city's status as a chemical center. Old-timers recall this as a period of stability and prosperity when the lives of citizens became significantly easier. The fear of repression disappeared and the system of social welfare improved. New technologies for the chemical enterprises appeared, as did better living conditions and cultural institutions.

In the 1950s, officials had developed a plan to reduce the harm caused by chemical exposures for workers by creating "sanitarian protection zones" around various plants. Implementation began a decade later. Later plans were even more protective. Worker settlements were to be relocated, and green buffer zones created around the enterprises. The result would be three rings around the plants. The sanitarium zone was not to be inhabited at all; the buffer zone was to be used only for recreation, and the settlement zone was for living.

In the late 1960s, Premier Khrushchev undertook the "habitat" program of intensive apartment construction to give all Russians housing. At that time the living conditions in Dzerzhinsk were a very pressing problem. For example, plant 96 (i.e., Kaptrolaktam) was totally surrounded by settlements consisting mainly of barracks or private houses without bathrooms. Four settlements stood only 1-2 km from the plant. A kindergarten for workers' children stood only 500 m away. Data from the early 1960s revealed that the concentration of toxic substances in the sleeping rooms of this kindergarten equaled and at times exceeded concentrations in the plant itself (Petrov, 1995). Extensive building under the Habitat Program allowed many of the workers living just "under the fence" of the chemical factories to move into the city, 7 km away. They moved into multiple-apartment houses with cramped, low-quality apartments derogatorily called "Khrushchevka."

This program of relocating industrial settlements continued until the end of the Soviet period but was never completed. Success was achieved with the primary objectives. A majority of workers in Dzerzhinsk's factories set

resettled away from the industrial zones and chemical plants slightly decreased the levels of air pollution. However, in present-day Dzerzhinsk, citizens continue to live in three settlements abutting chemical plants and long designated for replacement. Creation of green zones was also never completed. Often trees could barely survive because the soil was so contaminated.

The post-war period saw some recompense for Dzerzhinsk's previous privation. Old-timers recall that there was a "good" supply of food in the city in the 1960s and 1970s, compared both to the previous wartime period and also to the perpetual food shortages faced by conventional "open" cities during the Cold War period. This "elite" food supply drew people from as far away as Gorky who came to make purchases. Such recognitions boosted civic pride and the resident's sense of well-being. Under the Soviet system of social protection, such benefits were to be permanent. Employees of chemical factories regularly received vacation tickets to the Black Sea with all expenses paid. And for health, they were routinely sent to "profilaktoriiums," spas where they could eat, relax, and exercise, and "sanitariums," places in nature where people were sent to restore their health. By the 1980s, each big enterprise in Dzerzhinsk had its own health center where workers could periodically vacation free of charge.

In general the Cold War Soviet state became a "state of overall wealth." The state and the Communist party were major distributors of goods and services, paternalistically caring for the populous. Now, approaching 20 years after the end of the U.S.S.R., elderly citizens of Dzerzhinsk recall with a sense of nostalgia the time when the state was really taking care of them. But there was a downside to the era as well. The planned economy continued to force enterprise leaders and workers to violate safety rules in order to fulfill scheduled tasks. Negligence, a lack of security, and theft became systemic characteristics of Soviet industry (Graham, 2000). In the chemical factories, such lapses were quite dangerous. It was as if the good times invited even more risks. For example, one 65-year-old informant recalled her time working at the Sintez plant, where tetraethyl lead was previously produced:

People themselves were negligent. On the production of ethyl, people began to get employment through personal contacts and friends. There were good salaries, a wonderful schedule, three days of work, and two days of rest. Their special profitoriums were great, and there were pensions for men in their 50s and for women at 45 years old. And people were not paying attention to dangers.

In reality, people knew little about the potential harm to their health or about the polluted environment. After all, information on this topic was

strictly closed. For example, evidence that workers at chemical armament factories had been exposed to contaminants was suppressed under a 1933 order claiming "absolute secrecy" over such information.<sup>10</sup> Information was also distorted. Officially, the harmful substances in the air were presented as occurring at lower concentrations than the norm, and, therefore, of no threat to workers at the enterprise. Evidence of the threat due to bioaccumulation of hazardous substances was suppressed.

In sum, the Cold War period saw improved living conditions for many citizens of Dzerzhinsk. The system of social protection guaranteed compensation for harm to workers' health in the chemical industry. These positive changes gave residents a psychological sense of realization of the long promised "bright future." But with 15 chemical facilities operating in the city, environmental problems were accumulating. Through the 1970s, the increased volumes of industrial production combined with the startup of new enterprises created a situation where smoke was so dense above the city that the green protection zones were insufficient for plumes to be dispersed and treatment plants were overwhelmed.

### THE CRASH OF THE SOVIET CHEMICAL INDUSTRY

With the beginning of Perestroika in the Soviet Union, it became clear that the technical infrastructure of Soviet chemistry had become badly aged. Formerly powerful and long working chemical enterprises lost business. The near collapse of the Soviet Union's military-industrial complex brought down closely linked industries. Continuing state reforms further decreased production until many other enterprises stopped working altogether. While patriotic Dzerzhinsk citizens viewed this crash as the work of competition trying to steal their place in the market, the fact was that Dzerzhinsk's enterprises were no longer competitive. Their technology was outmoded, and they were economically inefficient.

This abrupt downturn fomented a crisis in the city. In post-Perestroika years, the quality of life among citizens fell dramatically. Once again material needs came into the picture. Pensioners who gave their lives and health to what they termed their "native enterprises" were now forced to live with miserable pensions averaging \$30-\$90 per month. Many returned annually to the local disease center to renew their "sick" status, entitling them to such benefits as a higher pension and tickets to proflaktoreums. In this way illness becomes a kind of symbolic capital. An individual's sickness can be converted to economic gain.

Youths also became severely disadvantaged. Young people sought to leave the city, partially because of its high level of unemployment and the lack of opportunities. Local universities were created to prepare students for chemical professions that were no longer in demand. Old people and other low-income groups focused on the challenges of survival in a time of hard economics. In the resulting atmosphere of social apathy, alcoholism and an acceptance of ill health prevailed.<sup>11</sup>

As the downturn spreads, the potential for catastrophe is never far from the surface. The current opportunity created by reduced factory operations, which limits new pollution production, does nothing to remove the huge repository of past contaminants vulnerably situated atop the Karst topography. Thus, there is an ever-present threat of disaster associated with past environmental sins that a period of abstinence cannot cure. The effect was seen, for example, a number of years ago when the Korund plant could not pay its energy bill. Facing the prospect that the plant's power would be shut off, environmental organizations were forced to beg the utilities and government to not throw the switch. As a former manufacturer of chemical arms and poisonous gasses, with huge remaining stockpiles that could not be controlled without inputs of energy, this shutdown would certainly have spelled disaster.<sup>12</sup>

In 2003, a special governmental commission was formed to assess the chemical enterprises of Dzerzhinsk and develop strategies and solutions. Options are limited by the antiquated technology and the large investment required for new equipment. Potential investors are additionally frightened off by the ecological problems that have accumulated over the years.

The positive side of the industrial crisis is the opportunity to create alternative types of development. Only leaner, smaller, and demand-oriented enterprises can survive the new conditions. As a result, a diversity of small businesses has blossomed, manufacturing products including domestic chemicals, detergents, and building materials.<sup>13</sup> These small businesses will never replace the economic base represented by the chemical industry. But they represent an important reorganization of the city's economic structure.

The civic life of Dzerzhinsk is also modest. Of the 200 registered NGOs, only one standing organization, Social-Legal Environmental Association (SPEs), actively addresses ecological issues. The Regional History club is also of interest because it attracts seniors who reminisce about the area prior to industrialization, when it was a cottage district. The records of such clubs reflect a strong nostalgia for not only the long-lost ecological health of the region stretching back to the early 1900s, but also the material security of the late Soviet period.

Another observation about Dzerzhinsk applies nationwide. As industrial production dropped in the 1980s, concern over environmental problems eased. This relaxed concern directly reflects the fact that air quality visibly improved with plant slowdowns and shutdowns. On the other hand, the invisible legacy of soil and water contamination remained. But, lacking a concerned public constituency, it has not been in the interest of political and economic forces to recognize these problems. They are instead pushed under the rug. It remains for small groups of activists to make claims to largely indifferent audiences that the city is a chemical time bomb ready to explode. But is there such a time bomb?

### A TICKING CHEMICAL TIME BOMB

A group of children were taken to a summer camp to relax in a beautiful and clean place. When they started to get out of the bath, surrounded by beauty and nature, suddenly these boys lost consciousness. "What happened?" screamed one of the attendants. "Don't worry," said another, "they are from Dzerzhinsk. Throw them into the cesspool and they will recover." (Anecdote heard repeatedly in Dzerzhinsk)

During Soviet times, there were many environmental anecdotes about Dzerzhinsk. All focused on the challenges of surviving there under such extreme conditions with so little chance to breathe fresh air. The telling of such sad jokes by citizens of the city helped them live with the obvious pollution of the 1970s and 1980s, when Dzerzhinsk was practically engulfed in smoke. Citizens could tell which way the wind was blowing by identifying which plant's pollutants were in their nostrils. At this time, despite rhetoric about being the capital of Russian chemistry, officials of Dzerzhinsk fundamentally ignored the fact that the city was a mixing bowl for an unbelievably diverse chemical soup and did only the most limited chemical monitoring. As a result, only limited data now exists to characterize the harm to people and environment from 70 years of chemical production. Adding to the lack of pollution measurements was the legacy of arms development and testing, which demanded extreme discretion. Not only didn't people share what they knew, but they asked few questions and didn't expect to be informed. Thus, they often knew little about what even their own firm produced and its uses. Public information was not available, in many cases, until after 1997 when Russia ratified the international convention on prohibition of chemical armaments.<sup>14</sup> Most residents are still fundamentally uninformed of chemical armaments.

The biggest unresolved issue in Dzerzhinsk is the liquidation of wastes from the chemical armament enterprises. Past efforts to dispose of these

materials posed additional threats to residents and the environment alike. Beginning in the 1950s, waste from the production of Yperite and Lewisite was crudely burned in a large oven, exposing both workers and nearby residents to potential dangerous discharges (Fedorov, 1995). Unauthorized dumping occurred in the region's forests and settlements, with sacks of unknown substances, building debris and metal scrap still visible. Every hole in the ground was filled with wastes. Most often, wastes were also stored onsite at each chemical enterprise. At Kaprolaktam, for example, a huge lagoon was dubbed "the White Sea" by residents. The some 10 million tons of waste in this lagoon represents a "hellish mixture" of chemicals sitting in a hole in the sand.<sup>15</sup>

Predicting the fate of these wastes is complicated by the underlying Karst topography. A common feature of such dolomitic limestone formations are sink holes, caves, and solution cavities. Over the 70 years of industrial practice in Dzerzhinsk, some 5,000 sinkholes have been recorded, ranging from small to huge. In 1988, as a case in point, a large sinkhole opened suddenly, swallowing a newly built unit at the plant Kaprolaktam where 500 workers worked. In the absence of any plan for secure storage or disposal of wastes, these holes are invitations for dumping, many serving as industrial waste disposal sites. Neither covered to slow water infiltration, nor lined, these sites all represent sources for continuing groundwater contamination as liquids drain quickly through the Karstic rock formations. This very outcome was demonstrated after officials approved the dumping of the industrial waste ammonium sulfate. The compound quickly appeared in groundwater throughout the entire region.

Both activists and officials agree on the magnitude of this problem. A 1999 municipal report on the "state of the environment" does not mince words, concluding that the 15 local enterprises use powerful and active hazardous and poisonous substances. Of 190 chemicals discharged to the air, 40 percent were classified as highly toxic. Thirty-six of these compounds are described as being carcinogens or mutagens. Chlorinated compounds are found to be poisoning not only a large area of land surface but also to have penetrated the ground to a depth of 80 meters. Similar dispersal figures are reported for oxide ethylene, phosgene, hydrogen cyanide, acid nitrile, and ammonia. The waters and sediments of the Volganicha river, a tributary of the Oka and Volga, are heavily contaminated with DDT, hexachlorobenzol, and trichlorophenol.<sup>16</sup>

A worst-case scenario constructed for the 15 plants anticipates a chemical disaster at one that spreads to others through a domino effect. In this instance, it is projected that 100,000 people would die and twice that number

be injured. In fact, a series of smaller but significant industrial accidents occurred during the time of the chemical weapons' production.<sup>17</sup>

- In October 1941, an explosion occurred in the facility producing Yperite at plant number 96 (now Kaprolaktam), killing 24 people.
- Of seven people poisoned at plant number 148 (now Orgsteklo), two died.
- In July 1947, at Kaprolaktam, chlorine was discharged, poisoning 24 people.
- In June 1949, at plant number 148 (Orgsteklo), one person died of Phosgene gas poisoning.
- In February 1960, an explosion in the Yperite facility killed 24 people.
- In December 1967, a discharge of phosgene from the Chernorechensky Chemical Plant (now Korund) injured 78 people.
- In January 1974, a discharge of liquid chlorine at plant number 96 (Kaprolaktam) severely poisoned 11 people.
- In November 1987, a discharge of hydrocyanic acid at Orgsteklo killed one worker.

Less visible than such accidents is everyday consumption of chemically polluted products by citizens. Pensioners and others across Dzerzhinsk are forced to grow vegetables and build orchards for their subsistence. In fact, continuing the tradition of Soviet times, most families have dachas with orchards and gardens, many situated close to the Industrial zone and sometimes even inside the zone. Soils are polluted throughout the Dzerzhinsk region. Moreover, only contaminated water is available for irrigating plants.

The situation is most dire for the three settlements nearby the industrial zone that were never relocated. Carrots, beets, and potatoes grown in these settlements have been found to be contaminated with DDE, lead, and other pollutants. Despite the knowledge of these dangers, authorities have done nothing to prevent exposures, and the residents, themselves, evidence little concern. Local people continue to consume "gifts from nature." An estimated half engage in fishing, a third in gathering mushrooms, and many additionally collect berries. Not long ago, an English visitor took home a small gift package of harvested mushrooms from her hosts in Dzerzhinsk. Curious, she sent them out to be tested for dioxin, finding levels 556 times higher than permissible levels. Yet, residents continue to consume such foods over the course of their lives.

## TERMINALLY ILL VILLAGE

*"When people talk, they say 'in any way we will not die, anyway we will not die!'" (interview of a resident)*

The most tragic situation in Dzerzhinsk involves residents of Babino, Igumnovo, and Petryuevka, the three industrial settlements that were never relocated. Residents not only live out their whole lives within sight of chemical plants, but their bodies are also perpetually exposed to the influence of multiple chemical compounds. These residents also grow gardens and keep orchards. An official of the Ministry of Natural Resources described the situation:

*A nightmare! Their water is impossible to use even for industrial purposes, yet they water plants with it. They water it and then eat their tomatoes. That's why the sickness there is high. These settlements are certainly terminally ill!*

Water in the settlements was poisoned long ago. Efforts to pipe in water from new and safe sources largely failed, forcing people to rely on their polluted wells. An additional threat is the traditional reliance by residents of these villages on graphite blocks called "mazite" as a source of heating fuel. Mazite consists of blocks of industrial waste made available at low cost by the local firms. While this may have proven to be an efficient means for enterprises to get rid of the toxic wastes they generate, it is a major source of potentially dangerous environmental exposure. One source claimed that the 400 tons of graphite burned in the village of Igumnovo per year released 150 tons of dioxin, other chlorinated compounds, and other contaminants to the local air.<sup>18</sup>

Activists have recently succeeded in putting a stop to the burning of these graphite blocks. However, residents have not been relocated from the contaminated zones. Many factors continue to block action and contribute to a general lack of concern, even among residents of these villages. Two key factors from our prior discussion deserve further consideration as causal factors in this pollution acceptance: that risks in residents' everyday lives have become a routine, and thus mundane, and the influence of a culture of survey on the perception of environmental problems.

## ROUTINIZATION OF RISKS

*We all are chemists here! (Interview with 65-year-old woman)*

During the years when big chemistry flourished, citizens of Dzerzhinsk paid little attention to the smoke above the city because they were accustomed to

it. Yet, one recalled, "The smell was suffocating. The city was under a blanket of smoke." Citizens of the industrial settlements situated close to the enterprises drew particularly dangerous pictures. A 60-year-old man shared his recollection:

I remember how it was. Here in the house, in the yard, there was a fog from discharges. Often you would enter the yard and nothing could be seen. Everyone was closing their windows. Everyone was covering their windows and covering themselves with wet towels for the night.

To most, the smoke actually signaled something positive, the stable functioning of the chemical enterprises that provided work for citizens, reflected their accomplishments, and spelled their contribution to the nation. This benefit seemed to outweigh any concerns. A number of factors contributed to this attitude. Most residents were rank workers or service employees for the polluting enterprises and loyal to their employers. A professional class of engineers, scientists, and chemists believed that the benefits of technological production outweighed risks, which were controllable, in any case. Some people expressed bravado; to work at the most dangerous plant meant that you had the greatest skills; you were also paid better. A local journalist, one of the informants, captured the local work spirit in these recollections about life in Dzerzhinsk:

Workers at the enterprises were proud to work in the units where pollution level reached 100 times the maximum permissible concentration. And there was such a sense of God should not have let them. I had one friend, and his wife was pregnant. They lived in a dorm, in such a boiler - in a wooden barrack. She was happy when she was assigned to work in a unit producing Cyanide. And she was pregnant! She was so happy because (given her work assignment) they put her on line to get an apartment.

Everyone in the city was aware of their dependence upon the monoculture of large chemical industries; there was social resistance to protest and even to discussion. The lack of information and the climate of secrecy reinforced these tendencies.

And then there was the comparison of the work and residential environments. For plant workers, often forced to work in gas masks, the city seemed comparatively clean. As one 50-year-old man commented, "It is heaven here in the center of the city, even if at night you feel like you can't breathe." Dissent and concern only received expression through humor, evidenced in the nickname "Dustograd" and in the many anecdotes and through gossip, evident in rumors and in circulating reports about sick children. But humor and gossip did not raise the issues to a level of discourse; rather they helped maintain denial.

Of course, some indications of danger were hard to ignore. People knew of accidents or discharges from the smell in the air, their difficulty breathing or by hearing the stories of their friends. A 65-year-old woman retailed, "All discharges were done at night. At night it was absolutely impossible to breathe." She shared the experience of her friends who lived behind the Sintez plant. Some days they would awaken in the morning to find their chickens suffocated on the ground. Thus, they knew both that the toxic discharges had occurred that night and that the gasses released were heavier than air. Had the gasses not tightly hugged the ground, the family, asleep in raised beds, would have also died. This was just a fact of life.

People adjusted their lives as best they could to the patterns of contamination. In the 1970s, when all the enterprises were discharging smoke, residents found ways to lower their exposures by modifying their activities. The worst releases of the week routinely occurred on weekends so residents tried to go to their dacha then. Discharges were also bad after dark, so they put wet gauze over their faces at night. If the smell was intolerable or a lot of gas was being released, they closed their windows.

Yet, the citizens of the "City of Chemists" never questioned such industrial release practices. This was normalcy. Residents never assessed whether it was right or wrong. Before they began to encounter pollution as an issue in the media during Perestroika, it was only salient for them when they could directly smell or see it. Risks were only what you might sense or perceive. Invisible risks did not exist in their consciousness because they had no information about them. As this woman reports, people detected pollution, but it was so common that they did not ponder its significance.

In the morning, when we got up, the snow would be yellow. It would turn gray in the mouth or on the tongue. Fish were dying in the rivers. But maybe we were not really noticing that too much. I don't even recall that people would talk too much about all this.

After Perestroika, citizens suddenly confronted masses of information about the environment, their health, and the threat of toxic exposures. Suddenly they realized the dangers surrounding them. Now it became an issue that nobody had warned them not to swim here or to live there. But after a while, the novelty of even such information wore off. The knowledge that they were immersed in dangers either became too overwhelming or too oft repeated. People once again began to avoid the subject.

Nevertheless, a lesson remained for the workers' children, a generation who grew up covering themselves with wet towels to not smell the smoke. A woman of 20 reported:

*I would never spend my life working in chemistry. Both my parents worked in chemistry and both are dead. My mother died at 40, my father at 50. I don't want such a life for my child.*

### SECRET ZONE: DZERZHINSK – WHERE PEOPLE GET SICK AND DIE QUIETLY<sup>19</sup>

*The less you know the deeper you sleep. (Russian proverb)*

Extending from the rise to the fall of the Soviet Union, Dzerzhinsk was a closed city of extreme strategic importance to the military-industrial complex. Before 1991, foreigners could not go to Dzerzhinsk and Russians needed special permission. The only visitors allowed were involved in industrial chemistry or armaments, and they had to pledge to keep state secrets. Even to this day, former plant employees avoid talking about their work in Soviet times. In our field interviews, we encountered people who were circumspect in describing where they had worked or who would only talk off the record.

As a consequence of this strict secret regime, even residents of contemporary Dzerzhinsk are afraid to talk openly about environmental issues. Secrecy as a phenomenon is incorporated in both the thoughts and actions of the city's citizens. Reinforcing the effect of secrecy is the sense that individuals can do little to change the situation in a way that would reduce their risks. Risk reduction is greatly tied to changing where you live. But who can afford to move?

The natural way out of this uncomfortable situation, then, is a return to ignorance – pushing away information and not accepting it. Those in the local power structure who are responsible for solving the city's problems are instead focused on property and privatization issues with an eye to making themselves richer. All local newspapers have ties to the owners of the enterprises or to the power elite who have an interest in keeping issues quiet and dormant.

Despite the volatility in municipal leadership since the collapse of the Soviet Union, there has been no change in the environmental power structure. Observers claim that the approach has consistently been based upon lies, keeping things quiet, and doing nothing. Risks are controlled by

limiting information and thus knowledge, not by addressing problems. One informant, a male of 55, charged that:

*This approach is useless. Everything is about keeping quiet. It is all based on lies. Given the ecological situation in Dzerzhinsk, what is killing people is the lying from every side of every administration. And even when the administration changes, the approach to the environment remains the same.*

Given this normative structure, it is not surprising that those who try to call attention to the accumulated problems of the city are dismissed as "the voice of the enemy," as "competitors," as "spies," or as "antidevelopment and progress." Critics – eco-activists, critical publications in the Russian media, unfavorable city reports broadcast on central TV, and depictions by foreign journalists highlighting local ecological problems – are routinely dismissed as agents for competitors of the city's chemical enterprises. This post-Cold War version of the "enemy of the state" is used to neutralize negative ecological information. Citizens routinely accept the administration's characterization of journalists and activists as troublemakers.

These explanations were employed in the year 2000 after three reports on Russian national TV (NTV) highlighted the ecological problems of Dzerzhinsk. The city was depicted as in an "eco catastrophe" and its citizens as all sick from the long-lasting influence of the chemicals surrounding them. A counter attack by the local power structure charged that the involved reporters were working for unnamed competitors of the chemical firms in Dzerzhinsk who employed television reports and environmental activism as part of a campaign to discredit the city and its industries in order to capture the chemical production market. The mayor even sued NTV and local media outlets that followed its lead.

Dzerzhinsk's counterattack against defamation did not stop there. An environmental audit of the city and territory was ordered by the city administration to contradict the stigmatizing information and create positive publicity. The study was funded by 51,000 contributions from each of the local industries. A Moscow firm was hired to give an "independent" assessment of the safety of the local environment. The audit emphasized pollution indicators that were not significant (i.e. they were found at levels below health standards). These pollutants were examined individually, avoiding issues of cumulative effect. Declaring that the situation in Dzerzhinsk is much better than in other places, the report went to great lengths to compare the results in Dzerzhinsk to the environmental profiles of several other Russian and foreign cities. The audit emphasized higher levels of soil pollution in these cities chosen for comparison. And it stressed the sharp local

decrease in Dzerzhinsk's air pollution over the past decade due to plant closures and the slowdown in the chemical industry. In this way, the audit was "spun" so as to refute the NTV coverage and to invite new economic development in Dzerzhinsk. Particular emphasis was placed upon the goal of publicizing the city as an ideal location for resort development.

Environmental activists and independent thinkers found this effort to pitch Dzerzhinsk as a tourist destination to be laughable. A staff member of the Ministry of Natural Resources offered this characterization of the city's environmental report:

And they came up with this "independent" and "scientific" ecological audit which proved that Sostarskand is a dirty place compared to Dzerzhinsk, Bremen is a dirty landfill, and Kaliningrad is a wasteland. But Dzerzhinsk is a place that people come to for recreation. You will come to the city and it will cure you! Everybody bugged their eyes. Such lies didn't exist before. This was called an "independent eco audit."<sup>7</sup>

In contrast to such skeptics, "patriotic citizens" who trusted the administration and were accustomed to accepting provided information as unquestionable truth found the audit sufficient to assuage their concerns.

### A NEW BRIGHT FUTURE: BUT WHICH ONE?

These dynamics of Dzerzhinsk reflect more than adaptation to pollution and a culture of secrecy. They reflect the fact that there had been one consensual viewpoint governing the city for scores of years. A decade after the breakup of the U.S.S.R., Dzerzhinsk now evidenced at least four competing viewpoints reflecting some combination of focus on leftover problems from the past and the possibilities of a totally new future. It was clear that no consensual direction was at this time possible.

#### *Leftover Legacies - Ecological Spin*

The first of these viewpoints is focused on responding to the widespread environmental contamination that already exists. It is notable that this viewpoint is publicly represented by just one tiny organization, SPES, and its two staff members. As the only environmental NGO active in Dzerzhinsk, SPES has played a key role in educating the public and "burning the interest," as one staff member put it. They then added a cautionary note: "If there were no public organizations, then ecological issues would be absolutely hidden."

#### *Leftover Legacies: Capitalist Spin*

The contaminated legacy is less a problem than an opportunity in this second viewpoint. To the vestiges of the old military-industrial complex that must seek ways to survive now that there is no Cold War pumping millions into their budgets, buried contaminants appear as "gold in them over the hills." In Dzerzhinsk, as elsewhere in the former Cold War states, there is money to be made from environmental cleanup. The now downsized former defense enterprises can claim special expertise in this area given their direct role in creating the contaminants to begin with. As a result, Dzerzhinsk firms have actively sought project contracts from the European Union as part of the decommissioning of weapons' sites under the Convention on Killing Chemical Armaments.

#### *New Future: The Industrial Spin*

A third viewpoint consists of those seeking to improve the image of the city and boost the potential for investment in its industry. The leader of this development effort is the Mayor himself, the owner of one of the few large enterprises to survive the post-Perestroika period and become profitable. The power structure promoting new forms of economic development has generally sought to keep problems quiet.

#### *New Future: Post Industrial Spin*

A fourth viewpoint consists of those ready to break away from the contaminated industrial past and chart a new course for Dzerzhinsk. For this group, Dzerzhinsk no longer seeks to be "the city of chemists." Efforts to create a new strategic plan point away from redevelopment of the chemical industry. At the same time, there is little interest in dwelling on difficult environmental problems that present obstacles to this new direction.

Given these competing directions, the lack of a public space for discussing ecological problems has been a major constraint. The absence of discourse further helps to explain the low level of risk acceptance in Dzerzhinsk. The administration has recently formed a Public Environmental Council to involve interested citizens in decision making. It remains to be seen if this council will allow dialogue about contamination or if it is focused only on new development.

Despite such changes, the city evidences difficulty in overcoming the past legacy of the Soviet system. Journalists covering ecological problems continue to play a significant role in pushing the power structure. When environmental problems are revealed in the media, contrary to motivating responsiveness, publicity leads officials to be defensive, to keep the problem quiet, and to discount the views of critical actors. Dzerzhinsk remains burdened by old technology and the regime of secrecy. There is no indication that the problems of industrial pollution will ever be addressed.

Beck cautions that when serious environmental hazards do not generate simultaneous political activity, "the society of risks" has a tendency to become "a society of scapegoats." Blame is placed on those who spread concern rather than those who caused the danger (Beck, 2000, p. 91). This conceptualization is appropriate to Dzerzhinsk. As capitalism allows the private interests of industrialists or entrepreneurs to be reformulated under the guise of public benefit, this definition of public good competes with claims by SPES on behalf of the victims of environmental contamination. These competing definitions of public interest are contradictory and perhaps mutually exclusive. To recognize ecological problems is to discourage investment. And, investors are required to get the plants working again or build a tourist or alternative economic base, to generate jobs, improve quality of life, and improve material well-being. But is the health of people and environment contradictory to this path to a radiant future?

## CONCLUSION

In 1997, Dzerzhinsk was placed in the Guinness Book of Records as the "Most Chemically Polluted Small City in the World."

Soviet history was one of high promise and major disappointment. In the end, that system lacked a method of decision making that allowed for the promised radiant future to be attained. Rather, the achievements of the society entailed extraordinary costs, including the sacrifice of people's health and the health of nature. In Dzerzhinsk, invisible risks remained invisible because public information was suppressed. The city was closed within itself, not just from the outside.

The consequence is tragic. The past system of production met extraordinary quotas, particularly when the record was exaggerated. But the stretch for productivity was an excuse for a lapse in safeguards. The heroism of workers was genuine. But their sacrifice was much deeper than realized

The conundrum we have tried to examine is not that the land and waters were so polluted or the workers and their families put at risk. Instead, it is a seemingly more basic issue. *Once this havoc has been wreaked, can it be admitted? Do we face our self-caused problems and address them as best we can? Or do we look the other way?*

Dzerzhinsk's unwillingness to face the continuing problems from its past reflect many factors. Two stand out in importance:

- Secrecy, with its effect that most people lacked and lack any clear idea of just how bad things are. Moreover, in a closed society, there is a paucity of opportunities for sharing and discussing such information.
- Routinization, with the result that the everyday nature of risk exposure makes it mundane rather than frightening. We are already used to living with not having solved this problem. In fact, it is invisible and we want to keep it that way.

To these we have added several considerations. The health consequences of contamination are not easily proven and even an environmental audit can hide or distort such effects. Competing challenges, such as unemployment, and competing health threats, such as alcoholism, can readily distract the focus from environmental health issues. The economic crisis also deprives resources to address the problems and to modernize production. The social system makes citizen action and protest unlikely. Competing interests and concepts of development are threatened by too overt a focus on seemingly intractable problems of contamination. From this perspective, it is better kept quiet.

In sum, to create a society in Dzerzhinsk that would recognize its problems, a new set of political values are required. The leaders and citizens of Dzerzhinsk today face complex and difficult problems that prior leaders could not address. Instead, these problems were concentrated in space and time and left for the future. The question now is will current leaders do the same, hiding the problems for others to someday confront?

Clearly, there is an interest to not maintain a system that generates such innumerable problems. The new strategic effort may open up new patterns for development of Dzerzhinsk. This pattern will certainly abandon the mono-industrialism of the chemical era. The real question is whether economic development is really possible without confronting past problems, or whether in the end a new radiant future is only possible by facing these issues.

## NOTES

1. It is obvious that alterations of the environment from previous epochs were the "other side" of civilization's development. However, contemporary societies have reached a stage of reflection and critical assessment of the impacts of people on their environments. Putting aside the inherent contradictions between people and nature, which was basic to many philosophical systems, this reflection is a turning point in the progress of human ideas. "Dichotomizing society and nature is a construct of the 19th century that has worked toward two goals - conquering nature and ignoring nature." (Beck, 2000, p. 7)
2. For more details about Russia's environmental movement, see Yanitsky, 1995, 1996, 1999, 2000; Pskvance, 1998.
3. According to Yanitsky's assessment, 2000, p. 1.
4. The military industrial complex in Soviet times was related to production of rockets, nuclear weapons, chemical armaments, artillery, aviation, and strategic objects. "Closed" cities were literally off-limits to outsiders, in contrast to all other cities, which were comparatively "open."
5. This material included books on Dzerzhinsk, its history, its older citizens, on the history of certain enterprises, and published memoirs of citizens, local, national and international newspaper publications, video materials, a BBC TV show about Dzerzhinsk, and a film made by local activists about environmental issues in the city.
6. The city was named after the first chair of the ChK (All Russian Emergency Commission on Fighting Contrary-Revolution Speculation and Sabotage), known for instigating the first wave of arrests and repressions in the Soviet Union and as a feared interrogator of prisoners (Vert, 2002). A monument to this bloody revolutionary leader remains today in a key city square.
7. Shaliov, 1999. Also interview with the chair of the Club of Regional History.
8. From interview with geologist, staff person of Ministry of Natural Resources.
9. A spot for respite and recovery at the workplace that facilitated continuing labor.
10. Lev Fedorov, Expert on Issues of Chemical Armament. From the Interview Radio Liberty, 26.04.2002, <http://www.svoboda.org/programs/eco/2002/eco042602.asp>
11. Don Janishevsky (2001, December 16). Disregard for health is killing Russians. <http://www.Rejnum.ru/allnews/159920.html>
12. By way of example, one informant described how her husband's efforts to start an ice cream business in Moscow failed due to the competition. By contrast, he was so successful in Dzerzhinsk that he now exports ice cream to Moscow.
13. This convention has been ratified by 140 countries. Russia was one of the biggest producers of chemical armaments. In 1997 Russia acknowledged 24 chemical arms objects (i.e., facilities) as part of 6 major chemical complexes in 5 regions: Novocheboksak, Chuvash (5 objects), Volgograd (8), Charyayevsk, Samarskaya Oblast (3), Dzerzhinsk, Nizhny Novgorod Oblast (7), Berezniki, Perm Oblast (1). According to the agreement, six objects needed to be decommissioned, one in Volgograd, one in Charyayevka, and four in Dzerzhinsk. The objects in Dzerzhinsk included two units producing Yperite, used for military weapon material and hydrogen cyanide and one object at the firm Kaprolaktam involved in the production of

Lewisite. For part of this work, the EU gave Russia 7 million Euro in 2000 (Nezavisimaya gazeta 6.09.2002). See also the chapter by Filatov in this volume.

15. From an interview with the staff of Ministry of Natural Resources.
16. From a speech of the administrator of Dzerzhinsk cited in the electronic bulletin: Problemy Khimicheskoi bezopasnosti (Problems of chemical security). Announcement UCS, 4, November 1, 1999, <http://www.ecology.zem.ac.ru/ucs/b507.txt>
17. Compiled using materials of I. Fedorov; Fedorov, 1995; Issues of Electronic Bulletin. Problemy Khimicheskoi bezopasnosti (Problems of Chemical Security); interview with Lev Fedorov on Radio Liberty (26.04.2002).
18. Ekologija i prava cheloveka (Ecology and Human Rights), *Bulletin*, 11, 2000.
19. "Ammonium and chlorine in milk of mothers." *Pravda*, 10.01.2001.

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## REFERENCES

- Beck, U. (1992). *The risk society: Towards a new modernity*. London: Sage.
- Beck, U. (2000). *The risk society: Towards a new modernity (Otscherennye riska: na puti k drugomu modernomu)*. Moscow: "Progress-Traditsiya." (Russian printing of the original).
- Douglas, M., & Wildavsky, A. (1983). *Risk and culture: An essay on the selection of technical and environmental dangers*. Berkeley: University of California Press.
- Fedorov, M. R. (2004). *Communitized communities: Coping with residential toxic exposure*. Boulder, Co. and Oxford: Westview Press.
- Fedorov, L. (1995). *The unannounced chemical war in Russia: Politics against ecology (Neob'javlennoje khimicheskaja vojna v Rossii: politika protiv ekologiji)*. Moscow: Center for the Ecological Policy of Russia (Centr ekologicheskoi politiki Rossi).  
(Priznat bezopasnostu tekhnere. Tehnologija i problemi Sovetskogo Sotserial. St. Petersburg: Harupian House (Evropelskij dom))
- Hannas, G., & Kliment, J. (1993). Risk as a social construction: The perception and communication of risk in the Federal Republic of Germany and the German Democratic Republic - a comparison between systems. In: B. Raetz (Ed.), *Risk as construct: Perspectives of risk perception* (pp. 221-236). Munich: Knesbeck.
- Kobylak, L. (2001). *The city of big chemistry (V gorode "bolshoj khimii")*. Moscow: Greenpeace.
- Radwaker, K. (1978). *Democracy and environmental movements in Eastern Europe. A comparative study of Hungary and Russia*. Boulder, Co. and Oxford: Westview Press.
- Shaliov, S. (1999). *Dzerzhinsk - Our home*. Nizhny Novgorod: "Litera".

- Vert, N. (2002). *History of the Soviet state (Istoria sovetskogo gosudarstva)*. Moscow: "Ves' mi".
- Yanitsky, O. (1995). Evolution of the ecological movement in contemporary Russia (Evolutsia ekologicheskogo dvizheniya v sovremennoi Rossii). Sociological investigations (Sociologicheskie issledovaniya), p. 8.
- Yanitsky, O. (1996). *The ecological movement in Russia (Ekologicheskoe dvizhenie v Rossii)*. Moscow: RAN.
- Yanitsky, O. (1999). Transnationalization of civil society: A case study of non-governmental organizations in three post-Soviet states (Transnatsionalizatsiya grazhdanskogo obshchestva: na primere nepravitel'stvennykh organizatsii v trekh postsovet'skikh stranakh). *Mir Rossii*, 1-2, 135-150.
- Yanitsky, O. (2000). *Russian greens in a risk society*. Helsinki: Kikumura.
- Yanitsky, O. (2001). The sociology of risk: Key ideas (Sociologiya riska: kluchevyye idei). *Mir Rossii*, 1(1), 3-35.

## HANFORD: THE CLOSED CITY AND ITS DOWNWIND VICTIMS

Michael R. Edelstein

### INTRODUCTION

The post-Cold War period allowed the U.S. nuclear legacy of ecocide to be declassified and made public. The policy of nuclear secrecy, evident in Russia (see Mironova et al., this volume), was not merely an eastern practice. Western nuclear releases were kept equally under wraps. In England, for example, the Windscale disaster was not fully disclosed until 1987.<sup>1</sup> Likewise, releases from the Hanford Nuclear Reservation, in Washington State, and other U.S. nuclear sites were kept undercover until the same period. The irony was that Americans learned of many of the nuclear skeletons in their closet around the time that Russians learned of theirs (see Mironova et al., this volume). It would appear that glasnost was contagious.

In 1986 and 1987, just at the cusp of public disclosure of these releases, the author was part of a team assigned the task of calculating the Social Impacts of siting a High Level Nuclear Waste Repository at Hanford. Of particular significance to this volume, from within the vast American military nuclear program, the Hanford Reservation is the site most often compared to the Mayak facility in Chelyabinsk (see Dalton et al., 1999; Edelstein & Tsyachniruk, this volume; Marshall, 1990b; Mironova et al., this volume). Both were the principal plutonium production sites within their respective countries in the Cold War. For this reason, a return to this 20-year old research offers a fascinating point of comparison to the Mayak chapters.

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## CULTURES OF CONTAMINATION: LEGACIES OF POLLUTION IN RUSSIA AND THE U.S.

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