

Setting the Stage for Conflict : Soviet Ethnocide and Health Transitions in the Caucasus

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ABSTRACT

In the 1920s and 1930s, European and North American public health officials worked together with Soviet health authorities to control devastating epidemics of malaria that plagued temperate regions in the United States, Europe and the Caucasus. Many of these anti-malaria programs involved reconfiguring lowland waterways, improved drainage and aggressive mosquito control. In the Soviet Union, however, these public health programs were part of a larger modernization campaign that included forcible transformation of the “backward” cultural terrain of the Caucasus from a clan-based, rural, religious peasantry into a modern, secular Soviet outpost. The result of these trends was an authoritarian reconfiguration of the social order that included the elimination of traditional ethnic territorial divisions and the creation of new administrative boundaries under the central authority of the USSR. Almost immediately after the collapse of the Soviet Union, however, malaria resurged throughout the region, and armed ethnic militias fought to re-establish ancestral territorial boundaries. This paper will explore the transformation of social relations and population health in southern Caucasus during the early years of the 1990s. How did the Soviet collapse regenerate ancestral or “pre-modern” patterns of ethnic identity and health so quickly? Comparative research, combined with analysis of historical documents and remote sensing data suggest that an important part of the answer to this question can be found in the informal economy of the late Soviet period. This clandestine economic space was critical in supporting Soviet power structures, yet was also essentially unregulated. As such it had the potential to sustain ancestral ethnic practices in the region, and to spark ethnic violence in the form of resource competition following the collapse of the Soviet polity. This paper argues that the invisible space of the informal economy should be understood as a repository of vestigial social practices and beliefs from the pre-modern era that contributed to the “demodernization” of the region in the aftermath of Soviet collapse. Unfortunately, this process resulted in the parallel demodernization of health patterns, and the return of ancestral infectious and vector borne diseases, including seasonal malaria.

Prologue: Ethnographic Vignette, Cuba, 1997

In the summer of 1997 I sat on the front porch of a house in Santiago, Cuba talking with a repairman who had come to fix the hot water heater. There had been no hot water for the entire duration of my field research—over six months. This was not a significant hardship, however, as the weather was quite warm, even in the winter months. But the owner of the house wanted me to have “modern amenities” and had used her personal connections to find someone with access to spare parts and mechanical knowledge necessary to undertake repairs.

The repairman, like most Santiagueros, was relaxed and friendly. I had long learned that there were no impersonal business transactions in Cuba. Everyone was connected and every transaction presented an opportunity to exchange gossip, sip coffee and share news. The repairman, in fact, spent about fifteen minutes diagnosing the problems with the hot water heater, and over an hour talking with me on the porch about his work. This ratio of work to social visiting was not unusual.

“Are you a cuentapropista?” I asked him. Starting in the early 1990s, Cuba had allowed for limited privatization of its economy. Self-employed workers (termed “cuentapropistas”) were given opportunities to pursue entrepreneurial activities on a small scale. Family run restaurants, hair salons, knife sharpeners, and other artisanal and service were permitted to operate independently of the state, provided they paid hefty taxes and applied for a license.

He laughed dismissively. “I don’t work for Fidel,” he said with a wave of his hand. In other words, he worked exclusively in the informal economy, rather than operating in the limited space of self-employment developed by the state. This was interesting to me, as I was unaware that there were different levels or models of self-employment in Cuba. It was also intriguing that he considered work in the privatizing sectors of the economy equivalent to subservience to the country’s longstanding dictator, Fidel Castro.

Further investigation revealed an important linguistic distinction. Cuentapropistas, despite being self employed, were still understood to be controlled by the Cuban government through bureaucratic taxation and licensing. Truly independent entrepreneurs like the repairman, on the other hand, were called “bisneros,” or businessmen, and they worked exclusively in the informal economy. Bisneros did not identify as political dissidents, but they expressed their disdain for the government by pilfering raw materials from the formal state sector of the economy. They either resold or repurposed these goods through their own personal networks, and there was no social stigma attached to these activities. To the contrary, the prestige of bisneros was high. In the 1990s, no Cuban family could survive on the meager foods or income provided by the state. Connections in the informal economy were often the only way to procure supplemental food, medications and scarce consumer goods.

Additional conversations revealed more interesting facts: the key to operating a successful business in Cuba in the 1990s, was having a friend or relative with political

power or Communist Party membership. These political connections gave businessmen (or bisnesmen) protection from predatory taxation, extortion or asset seizure from government officials, and stabilized the regime by excluding political dissidents from accumulating wealth or power through private economic activity in the informal economy (Hirschfeld, 2008). These relationships were also marked linguistically. The term for friend in Spanish is “socio,” and Cubans often joked that their political system was actually soci-o-lismo, or government by friends, family and political patronage. Over time, these trends meant that the most unregulated sector of the economy—the informal sector—was inextricably linked to the formal polity and the local functionaries of the Communist Party.

Introduction

This vignette from Cuba provides a useful starting point for assessing the collapse of the Soviet Union and the subsequent regeneration of ethnic conflict, environmental change, and ancestral vector borne disease in the Caucasus region during the 1990s. First of all, it illustrates that some of the most important economic actors in the late Soviet period—coincidentally termed *bisneros* in Cuba and *biznesmen* in the Caucasus—were largely invisible to outside observers. With few exceptions, external scholarship by foreign Sovietologists did not include analysis of the informal economy in the USSR during the Soviet period **(1)**. Second, this story highlights the strategic interconnections that prevailed between the formal Soviet polity and entrepreneurs operating in informal economy. These connections offer an important analytical bridge for understanding the dynamics of the post Soviet transition process, and the complex patterns of armed conflict, instability and environmental change that developed in the 1990s. What role did *Biznesmen* play during the Soviet collapse? How did their activities transform the natural environment to regenerate sustained transmission of *P. vivax* malaria in Armenia and Azerbaijan for the first time in many decades?

Research and Research Methods

Research and travel constraints have made it difficult to explore these questions using traditional anthropological methods. Instead, a mixed methods approach was developed that includes historical research in archival document collections, review of secondary sources and environmental analysis provided by remote sensing specialists **(2)**. These indirect methods combine to generate a unique vantage point for exploring events in the Caucasus in the 1990s. Specifically, the spatial and temporal distance provided by combining historical research with remote sensing allows for partial

reconstruction of key social and environmental changes that contributed to the parallel emergence of ethnic violence and *P. vivax* malaria in Armenia and Azerbaijan due to Karabakh conflict as well as in the neighboring country of Georgia.

These research methods lead to some interesting preliminary conclusions about the Caucasus conflicts of the 1990s: 1) Soviet era *biznesmen* played a significant role in the organization of ethnic armies in the late Soviet period, and these activities were financed by entrepreneurship in the informal economy; 2) these armies generated patterns of violence that had a lasting impact on productive enterprises, infrastructure and the natural environment throughout the region; 3) conflict ecologies—especially conflicts waged by non-state actors financed by activities in the informal economy—create ideal social and environmental conditions for the re-emergence and expansion of preventable infectious and vector borne diseases. Following a brief overview of the history and social geography of the Caucasus, the remainder of this paper will explore how each of these three elements developed and combined to create the *syndemic* **(3)** of protracted violence, environmental destruction, and epidemic vector borne disease in the Karabakh region in the 1990s.

Background: The Caucasus

The Caucasus region consists of a mountainous land bridge that links Europe and Asia, occupied by dozens of distinct ethnic groups for thousands of years. The combination of rugged geography, strategic geopolitical importance and multiethnic complexity has given the region a good deal of historical mystique, as well as longstanding patterns of internal conflict and instability (Croissant, 1998; de Waal, 2013; King, 2008; Tishkov, 1997). Since the nineteenth century, various imperial powers—including Great Britain, Russia, Turkey and Iran—have tried to control the region and forcibly assimilate its diverse ethnic and religious groups into their expanding empires, but with little success. Russia's failed territorial incursions into the Caucasus in the late 1800s led to chronic violence, with "wholesale destruction of villages," and widespread torture of resistant populations (King, 2007:76). Russian troops also engaged in ethnic and religious cleansing, and a number of Muslim villages were forcibly depopulated in the 1860s (King, 2007:94).

Curiously, one of the most significant obstacles that prevented these external powers from maintaining control of the Caucasus in the 1800s was the presence of widespread epidemic malaria throughout the region. One public health report from 1913 noted the most “malignant” form of malaria was widespread along the Volga river, with over five million cases per year estimated to occur in the region. The author concluded that malaria was the “chief obstacle to successful colonization of the Caucasus and Turkestan” (*Public Health Reports*, 1913). Ten years later, another public health report estimated that malaria was still a “widely prevalent...scourge in the Caucasus republics...and...the most important of all communicable diseases in Armenia” (*Public Health Reports*, 1923). In districts with high rates of malaria, it was not uncommon for up to forty percent of the population to be affected in spring planting and fall harvest seasons (Johnson, 1988:34).

Background: Malaria

Malaria is commonly regarded as a “tropical” disease, but that designation has come about largely as a result of the successful eradication of seasonal malaria from temperate zones in the early decades of the twentieth century (Packard, 2007; Snowden, 2006). In reality, there are many variants of malaria parasites, with *Plasmodium vivax* historically most prevalent in temperate regions. *P. vivax* can hibernate in the human body over winter, and re-emerge in the spring coincident with the hatching of mosquito larvae to facilitate transmission to new hosts (Galinski, Meyer and Barnwell, 2013). In northern Russia, specialized arctic strains of *P. vivax* have been known to incubate in the human body for over a year (Johnson, 1988). Reactivation of dormant malaria decades after the initial infection is not unknown (Johnson, 1988).

The historical epidemiology and clinical picture of *P. vivax* infection is somewhat clouded by the development of immunity in populations with consistent seasonal exposure. The disease usually produces mild symptoms in familiar populations, but can be deadly to new arrivals or vulnerable migrants. This is one of the reasons malaria created barriers to foreign colonization in the Caucasus: invading forces inevitably included soldiers without prior exposure and these individuals suffered debilitating malaria infections while local populations were still able to fight. Fluctuations in weather patterns also interrupted seasonality of *P. vivax*, so that collective immunity

was never fully established in the Caucasus, and devastating epidemics could appear after years of minor outbreaks (Johnson, 1988; Hackett, 1937).

The Caucasus: Ethnicity and Health Patterns in the Soviet Era

The Soviet Union completed its takeover of the Caucasus region in 1924, and immediately began campaigns to control infectious diseases and to subjugate the unruly ethnic groups that had historically proven so resistant to colonization. These campaigns persisted for several decades, and took on darker qualities during the Stalin era. In the 1930s ethnic minorities in the region were targeted for aggressive cultural “modernization” that included suppression of many ancestral cultural practices in the region. Traditional subsistence practices, marriage patterns, clan affiliations, and religious practice were denounced by Soviet authorities as “crimes of custom” punishable by property confiscation, fines or prison (King, 2008:190). Ongoing resistance to Soviet control eventually led to wholesale deportation of thousands of Chechens, Balkars, Ingush and other groups from their ancestral lands to barren regions of Central Asia (King, 2008; Tishkov, 2004:23). More than 300,000 Chechens and 80,000 Ingush were forcibly relocated in the 1940s, and their depopulated villages were resettled by Russian migrants, increasing local pressures for assimilation and Russification (King, 2008).

Ethnic populations remaining in the Caucasus were eventually assimilated into quasi-ethnic administrative states that tolerated minor expressions of identity but outlawed any real challenges to Soviet homogenization. As Christopher Zurcher described,

Most of the larger ethnic groups in the Soviet Union were assigned a territory and equipped with institutions for cultural and social development: borders, national symbols, self-administration, a constitution, education and research institutions and a mass media. These institutions helped mold a national elite, which in turn could be incorporated into Soviet rule through the affording of material privileges or the opening up of opportunities for social mobility within central Soviet hierarchies. On the surface, the Soviet type sovereign nation-states that were created as building blocks of the Soviet Union looked ‘modern’ but as with many other Soviet modernization projects, they were, in fact, more of a simulacrum of modernity (2007:31).

Soviet public health programs were developed with similar ideology. Health campaigns in the first and second Five Year Plans were designed to rapidly “modernize”

rural areas under Soviet rule. Much effort was placed on the construction of hospitals and health facilities, and the generation of favorable reports detailing rapid progress in the control of preventable infectious diseases. Population health indicators were commonly used as proxy indicators for successful modernization, and Soviet authorities were under considerable pressure to report favorable trends in the control of smallpox, typhus and cholera—diseases that were ideologically linked to primitive “pre-modern” conditions (Gantt, 1936; Cockerham, 1999).

Malaria control was also a high priority for the Soviet government, but was not subject to the same level of aggressive politicization as campaigns against typhus, plague or cholera (Cockerham, 1999; Johnson, 1988). Instead, Soviet malariologists undertook complex environmental engineering projects designed to reduce seasonal flooding along the Volga basin in order to reduce breeding grounds for *Anopheles* mosquitos. These efforts were paired with programs to improve housing, screen windows, and limit outdoor sleeping (a common practice in peasant communities in summer months). Medical stations were established to provide regular doses of quinine to rural peasants in order to eliminate dormant parasites hidden in human bodies, but with mixed success (Tchnesova, 1998). Many peasants did not trust the Soviet government, and there were constant shortages of quinine due to limited imports (Johnson, 1988).

These Soviet anti-malaria programs mirrored those undertaken in the southern United States and Italy during this time, and scientific experts from all of these regions regularly shared their knowledge with Soviet specialists. Soviet entry into the League of Nations in 1934 led to additional international collaboration with US and European public health specialists dedicated to malaria control. Correspondingly, malaria cases in the Soviet Union, Europe and the United States declined consistently through the 1920s, as the combined effort of these medical, public health and engineering programs reduced transmission of the disease. There was a notable resurgence of malaria in the USSR in the mid 1930s, however, with over nine million cases recorded in 1934 and 1935 (Johnson, 1988). The disease was not declared eradicated until the 1960s, and complete control required years of intensive spraying with the now-banned pesticide DDT, along with mandatory dosing of rural populations with anti-malarial drugs (Tchnesova, 1998). Soviet authorities reported overall malaria rates declined from 43.1 per 10000 population in 1950 to 9.8 per 10000 population in 1952 (Tchnesova, 1998).

Late Soviet Political Economy

Over time, the centralized economic system of the USSR began to take on very different qualities than those envisioned by the original architects of the Soviet system. Specifically, the formal economic sector became an increasingly hollow shell and the majority of goods and services were siphoned into exchange networks organized by entrepreneurs in the informal economy. This happened for a variety of reasons, but most significantly from the inability of the state economic system to supply industries or individuals with basic goods essential for survival **(4)**. In the Soviet system, factory managers were faced with rigid production quotas, even though the state could not provide the raw materials required for manufacturing. Criticizing supply chain failures was risky—equivalent to expressing political dissent—so a variety of improvised solutions developed that maintained the facade of Soviet socialist success, but further eroded any vestiges of institutional honesty or compliance with the dictates of the central government.

These improvised solutions included elaborate systems of informal exchange organized by extended kin groups and hierarchical patronage networks. As Friedrich and Brzezinski described, “[Soviet] Managers...maximize their achievements by taking shortcuts on standards or by actually falsifying records; they organize informal arrangements among themselves, based practically on bribery, to avoid control and to exchange necessary items...” Over time, these practices expanded into proxy expressions of political dissent. One anthropologist stated succinctly, “the [Soviet] regimes were constantly undermined by internal resistance and hidden forms of sabotage *at all system levels*” (Verdery, 1996:20, emphasis in original). Daniel Chirot has also described how these conditions “created a massive potential for corruption...” since there was no “public scrutiny at any level of management or leadership” (1994:162). Chirot goes on to describe how Soviet economies turn into “vast patronage pyramids” due to the fact that “each [factory] leader and administrator in the chain of command was trying to build up a personal clique of followers who could be counted on for support...” (1994:162).

A number of scholars have described the effect of these developments on Soviet institutions and Soviet ideology in the 1970s and 1980s (Berger, 1986; Chirot, 1994;

Davis, 1989; Feschbach and Friendly, 1992; Gleason, 1997; Koehler and Zurcher, 2003; Kolakowski, 1992; Malia, 1994; Verdery, 1996). A common theme in these analyses is the inevitable ideological decline that resulted from widening gaps between official versions of Soviet reality (as represented in state-controlled mass media) and observable dynamics of everyday life. Leszek Kołakowski described this duality as highlighting “the ridiculous emptiness of the official ideology,” and accelerating popular disaffection with Soviet rule (1992:46).

The ideological decline of the late Soviet period further energized the informal economy as a space of political resistance and successful entrepreneurship. Political dissent remained criminalized, but diversion of goods from the state sector to private hands remained a popular and lucrative activity—a profitable way to undermine the repressive apparatus of the state. Many analyses of this time period describe a powerful “shadow economy” operating within various sectors of the Soviet system that served to redirect valuable goods (including military equipment and construction materials) into private hands (Chirot, 1994; Dudwick, 1997; Handelman, 1995; King, 2008; Koeler and Zurcher, 2003; Zurcher, 2007). In the Caucasus region, local Party leaders were described by one journalist as “feudal lords who paid homage to the court in Moscow but ran their own fiefdoms at home” (de Waal, 2013:146). In Armenia, trusted kinship and family connections became an essential tool for accessing scarce resources (Dudwick, 1997).

In other words, the extensive informal economy of the late Soviet period led to the revitalization of traditional kinship and patronage patterns in the Caucasus region, though with the added dimension of bureaucratic subjugation and control by officials in the Communist Party. This hybrid social organization had unique elements of traditional ethnicity and kinship mixed with modern Soviet mechanisms of social control, as well as a curious mix of free-market capitalism (in the unregulated sector of the informal economy) and anti-capitalist centralized planning. As Charles King observed,

One important effect of these features of Soviet life was the strengthening of familial and patron-client relationships, the networks of debt and responsibility that are often given the label ‘clans.’ Clan networks were traditionally an important element of Caucasus society, both north and south of the mountains...One would have expected the importance of such premodern social

conventions to decline with time, but in many ways the Soviet system strengthened them. In an economy of scarcity social networks were critical in providing access to goods and power, and the clan networks of the past served that purpose (2008:202).

Transactions in the informal economy take place within the territorial boundaries of an established nation-state, but they occur outside of political space, with no government oversight or control. This creates challenges in that there is no one in authority to enforce contracts or punish thieves—essential activities for continuity in any system of exchange. Personal relationships and trust, especially kin relations become extremely important in this context. Kinship and family connections provide a pre-existing set of obligations that are life long and easily extended and modified in ways that support collective business (or *biznes*) endeavors operating outside control of the state. As Nora Dudwick described, “The pervasive shortages [of the Soviet economy] encouraged a sense of competition and mutual distrust, further increasing the importance of the family as a dependable and trustworthy safety net” (1997:74).

Several assessments of the Karabakh conflict specifically identify Soviet era extended kin networks, patronage systems and their respective activities in the “shadow economy” as key contributors to the violent conflict that developed in the late 1980s (Dudwick, 1997; Handelman, 1990; Kaldor, 2007; Koehler and Zurcher, 2003; Zurcher, 2007). Koehler and Zurcher, for instance, describe local *biznesmen* as contributing to the generation and amplification of ethnic conflict in the Caucasus during and after the Soviet collapse (Koehler and Zurcher, 2003). In this context, *biznesmen* were defined as individuals who maintained lucrative patronage systems within Soviet economies, organized through personal connections and extended kin groups (2003:149). In the Karabakh region, the exact nature of the *biznes* operated by these individuals is unclear. But the region’s status as a producer of desirable luxury goods (such as citrus fruit and brandy) likely made important contributions to the informal economy during the Soviet period.

One journalist estimated the shadow economy in Azerbaijan during the late Soviet period was valued at approximately 10 billion rubles, and in Armenia at 14 billion (de Waal, 2013:153). In neighboring Georgia, the 1980s were described as “a period of especially rapid growth in the shadow economy...since produce from the Abkhazian

agricultural sector, including tea, tobacco, wine and citrus fruits, brought huge profits on the Soviet market” (Zurcher, 2007:121). In Azerbaijan, there was allegedly a “thriving black market” in essential and luxury goods including fossil fuels, flowers and caviar, as well as marijuana plantations in the Karabakh region allegedly operated by Azeri entrepreneurs (de Waal, 2013:153).

The geography of the southern Caucasus—consisting of high mountain passes that form a critical land bridge between Europe and Asia—also makes the entire region valuable as smuggling territory. Transit corridors in mountainous regions are limited, and any group that controlled a remote mountain pass would be able to collect revenues for guaranteeing safe passage for valuable cargo. These practices had a long history in the Caucasus. As one historian noted, “Until the late nineteenth century the borders separating the many different political entities in the Caucasus were often opportunities for extraction—collecting tolls for safe passage...The goal of any political power was to control the locus of extraction, such as a key bridge, port, mountain pass or fortress” (King, 2008:21).

The Karabakh Conflict

As the Soviet system weakened and ultimately collapsed in the late 1980s and early 1990s, many *biznesmen* in the Caucasus emerged from the shadows of the informal economy and redefined themselves as *biznesmen-patrioty*, or “patriotic businessmen.” They increasingly used their influence and resources to support separatist movements and ethnonationalist militias (Koehler and Zurcher, 2003:149; Zurcher, 2007). The “national” issue in the Karabakh conflict was crucial since ethnic Armenians had been divided into two disconnected geographies as part of Stalin’s “divide and rule” approach in the 1930s. According to one analyst, the ethnic Armenian enclave of Nagorno-Karabakh was assigned to the neighboring Soviet administrative territory of Azerbaijan so that the Armenian inhabitants “could be used as potential hostages” to ensure Armenian cooperation with the Soviet leadership (Croissant, 1998:19). Correspondingly the presence of an Armenian enclave inside the territory of Azerbaijan could be used as a “potential pro-Soviet fifth column in the event of disloyalty by the Azerbaijanis” (Croissant, 1998:19).

During the Soviet era, Armenians repeatedly petitioned the Soviet Central Committee for ethnic territorial reunification. Lingering cultural trauma from the early twentieth century genocide (5) added urgency to these requests. When Soviet power began to falter in the late 1980s, renewed efforts were made to bring the Armenian population of Karabakh into the emerging Armenian state. This was done first by renewing petitions to Moscow to reassign Karabakh to the territory of Armenia. When these efforts were unsuccessful, tensions in the region increased. In 1987 local officials suddenly transferred land from an Armenian collective farm in Karabakh to Azeri ownership, sparking demonstrations and eventually riots as Armenian workers refused to accept the transfer. Soviet officials responded with violent reprisals, leading to further outrage and anti-Soviet protests that reverberated in urban areas of Yerevan and Stepanakert (Koehler and Zurcher, 2003:149).

The contraction of Soviet power during this time, however, meant that the Soviet response to Armenian ethnonationalist protests was disorganized, heavy-handed and ill conceived (for details see Corissant, 1998). The expansion of the informal economy in the region during the 1980s also meant that some *biznesmen* were powerful enough to subvert Soviet power through informal channels, and had sufficient resources and procurement networks to supply local militias with contraband weapons (Kaldor, 2007; Kohler and Zurcher, 2003:161). The waning of Soviet power also meant that longstanding patronage networks were destabilized, and valuable resources circulating in the informal economy were up for grabs.

The violence that erupted in the Karabakh region was originally articulated in ethnic terms, but several scholars have argued that economic competition between rival *biznesmen* and their armed followers also played an important role in amplifying the conflict. As Koeler and Zurcher described, "...[T]he initial conflicts [in Karabakh] were not new nor about ethnic belonging. Instead they were more about the control of lucrative segments of the 'shadow' economy by competing networks" (2003: 149). The intensification of ethnic identity in the context of resource competition converges with anthropologist Frederik Barth's famous analysis of ethnic boundaries (1969). The pattern of ethnic divisions intensifying to form an "emergent substate" during periods of political collapse is also documented for a number of other regions (Rotberg, 2003).

According to one analysis, the ethnic dimension of the Karabakh conflict emerged as a secondary effect of the longstanding patterns of ethnic intermarriage (Koehler and Zurcher, 2003). Despite living in neighboring towns for decades of Soviet rule, an important ethnic boundary was maintained in the region through these ancestral marriage patterns. These cultural practices created boundaries between ethnic groups that were of minor importance during the Soviet period. But kinship suddenly became extraordinarily important as Soviet power contracted. Kin relations became revitalized as they provided the institutional scaffolding for continuity in social and economic relationships in a time of great uncertainty, deprivation and existential risk. In this context, revitalized ethnic identity emerged as a logical extension of pre-existing kinship ties, linking families together in networks of shared beliefs, traditions and most importantly, trust. While there were examples of Azeri families providing shelter and aid to their Armenian neighbors during early outbreaks of ethnic violence in Baku (see Goltz, 1998), over time the geographic segregation created by ethnic removals, violence and forced migration made such relationships impossible to sustain.

Between 1988 and 1990, the territory of Karabakh was repeatedly assaulted by informal ethnic armies operating outside the Soviet system. The first phase of the conflict was low intensity, with poorly equipped militia groups patrolling various regions and engaging with other poorly equipped militia groups. The close connections between these communities, however, meant that reports of ethnic violence in Karabakh reverberated in the capital cities of Baku and Yerevan, leading to urban protests, riots and pogroms. These in turn led *biznesmen-patrioty* to increase their support for ethnic violence, mobilizing resources from diaspora communities and (allegedly) the “shadowy Azeri mafia” (Zurcher, 2007). When the Soviet Union underwent its final collapse in 1991, the Karabakh conflict intensified rapidly with sophisticated Soviet military weapons suddenly pouring into the conflict zone.

Armenia and Karabakh declared themselves independent nations in the fall of 1991, and the informal ethnic militias fighting in the Karabakh region attempted (with mixed success) to transition into professional nation-state armies. This process was not immediate. Several Azeri commanders developed reputations as “warlords” eager to loot and pillage, and there were instances of conflicts between rival paramilitary factions as well as between paramilitaries and the national government in Baku (Goltz, 1998;

Handelman, 1990; Kaldor, 2007; Zurcher, 2007). One Armenian commander allegedly “ruled over Karabakh almost unchecked” and built up “a small fortune...by stripping the occupied Azeri territories of all salable assets” (Zurcher, 2007: 171). In 1993, an aggressive Azeri warlord seized personal control of an entire village of Azeri peasants in order to extort concessions from the President of Azerbaijan (Croissant, 1998:90; Goltz, 1998).

The fragile new governments of Armenia and Azerbaijan also began enacting punishing sanctions against one another, including an energy embargo that cut off Armenia’s supplies of natural gas at the beginning of a freezing winter season (Croissant, 1998:45). In retaliation Armenia cut off all access to the Azeri town of Xodjali, leaving the Azeri inhabitants with no electricity, heating oil or running water (Goltz, 1998:120). By the spring of 1992, Armenia had gained the upper hand in the conflict, and had expelled most Azeri civilians from Karabakh, and seized territory through the region to create a land bridge with the rest of Armenia. Later in the summer, Azerbaijani armies regained some of the lost territory but with terrible human costs. This deadly back and forth of ethnic cleansing, territorial reconfiguration and mutual animosity continued until a cease fire was finally declared in 1994. Internal instability and corruption allegations (fueled by a wave of political assassinations) continued within the governments of Armenia and Azerbaijan for several more years **(6)**.

Conflict Ecologies: Statelessness, Parasitism, Predation

The Karabakh conflict generated violence and human suffering throughout the Caucasus on a scale that the region had not experienced for many decades. Around the same time, similar conflicts and crises were also unfolding in Georgia and Chechnya (Zurcher, 2007; Gall and de Waal, 1997). Farther away, protracted internal conflicts were also underway in Tajikistan and Moldova (Zurcher, 2007). In Russia—the heart of Soviet power—rival organized crime groups fought one another for control of a number of industries including banking, energy and telecommunications (Glenny, 2008; Handelman, 1995; Satter, 2003). In the midst of this noisy cascade of instability and violence, an outbreak of malaria was easy to overlook. In fact, none of the scholarly

writings about Karabakh in the fields of political science or international relations even mention the malaria epidemic that emerged out of the Karabakh conflict (7).

In some ways this oversight is understandable. Malaria parasites are invisible to the naked eye, seldom fatal and less worrisome than immediate wartime threats of missiles, bullets, hunger, and homelessness. But of all of the axes of suffering that afflicted populations in the Caucasus during the 1990s, re-emergent malaria has the potential to create the most lasting damage. Malaria is a parasite that literally drains the life from families, communities and economies, and is well adapted to thrive in the Caucasus region. It is a sophisticated predator of human blood cells, with thousands of years of experience evading immune defenses and exploiting human hosts. It can even transform human biochemistry in ways that summon anopheles mosquitos (Cornwall, 2018). In the 1930s, noted malariologist L.W. Hackett described *Plasmodium vivax* as “...a tolerant and self-perpetuating parasitism which aims to enslave rather than destroy the populations which succumb to it” (1937:xi). More recently, Sonia Shah described it as, “...imposing a constant and unrelenting tax in [human] blood.” She went on to summarize the aggregate effects of endemic malaria as follows,

Infected babies withered, with stunted immune systems that rendered them vulnerable to diarrhea and pneumonia. Under the spell of chronic *vivax* infection, grown men and women weakened to the point that their ambitions drained away and they became anemically prone and wan, just vital enough to make more blood cells available for a later parasitic feed (2010:38).

The success of twentieth century malaria control in the Caucasus means that contemporary populations are highly vulnerable to more severe manifestations of disease. If malaria were to be come endemic again, it is also unlikely that the disease could be eradicated a second time. The authoritarian public health measures that were so successful in the 1930s and 1940s required decades of sustained political will, international cooperation, economic investment and a spirit of profound optimism about the benefits of a malaria free future. All of these features were embedded in the ideologies of social modernism that shaped public policy and public health work in Europe, the United States and (to some extent) in the Soviet Union during the first half of the twentieth century. And all of them have become rare in the contemporary era of anti-government austerity and privatization.

For all of these reasons it is essential to understand the ecological dimensions of the Caucasus conflicts, and the process of niche formation that the region underwent in the 1990s. Remote sensing is an ideal tool for this task, as it allows for empirical analysis of key environmental indicators such as forest disturbance, agricultural activity, and the dynamics of water systems. It is very likely that patterns of change in land use and land cover are different for ethnic conflicts than regular warfare. There are no formal rules of engagement, for instance, governing warfare between non-state actors. Intentional destruction of the built environment, including punitive attacks on hospitals, clinics, schools and civilians have been described for many of these kinds of conflicts (Gilman, Goldhammer and Weber, 2015; Trabulsi, 2015). The tendency of warlords or “warlord-entrepreneurs” to create their own monopolies on violence within the territories they control also makes it difficult for public health or humanitarian relief agencies to reach vulnerable populations in these areas (Bunker, 2015; Sullivan, 2015).

Conclusions

This paper proposes that the conflict over Nagorno-Karabakh that developed in the late 1980s originated with Soviet era *biznesmen* operating in the shadowy space of the informal economy during the late Soviet era. These entrepreneurs expanded their operations to fill the vacuum left by collapsing Soviet power, and extended kin groups competed for monopoly control of key economic enterprises. In other words, the retreat of Soviet power allowed the region’s informal systems of exchange and governance to expand and formalize at the same time that the state’s monopoly on violence was no longer in effect. This allowed ambitious *biznesmen* or “entrepreneurs of violence” (see Trabulsi, 2015; Volkov, 2006) to gain monopoly control of key economic activities and productive enterprises. Rivalries between different groups led to cleavages along kinship and ethnic lines so that consolidating an economic monopoly meant literally expelling individuals associated with rival groups from contested territory.

The result was a protracted conflict with mutual cycles of violent ethnic removal, followed by resettlement and repeated transfer of property and productive enterprises from one group to another. Over time, these dynamics led to a good deal of physical destruction of the landscape, with agricultural regions, dwellings and other key components of the built environment irrevocably damaged and often abandoned.

Thousands of trees were burned for fuel (see Isaryan, 1994). Irrigation systems became clogged and neglected, and large populations of impoverished refugees were left without adequate shelter. In other words, the conflict resulted in expansive niche formation for endogenous anopheles mosquitoes at the same time a critical mass of epidemiologically vulnerable people were left without adequate housing and forced to sleep outdoors. As soon as an outsider (in this case most likely a foreign combatant recruited by the Azeri army) carrying dormant *P. vivax* arrived in the area a new epidemic was sparked. The absence of any public health surveillance system meant that the initial cases were undetected, and malaria continued to spread undetected until it reached urban areas.

Notes

1. There are a small number of studies detailing the economics of the informal sector in Soviet economies, including Mars and Altman, 1983. Also some very good analysis from the post-Soviet period, when information became more available. These include Ledneva, 1999; Kohler and Zurcher, 2003; Perez-Lopez, 1995.
2. Specific historical document collections reviewed for this project include RG 90 Records of the United States Public Health Service and RH 0826 Records of the United States Agency for International Development. These collections are located at the National Archives Records Repository in College Park, Maryland. Documents contained in RG 90 include correspondence, data, maps, photographs and epidemiological reports from the League of Nations Malaria Commission in the 1920s and 1930s, as well as detailed descriptions of anti-malaria public health research undertaken in the United States in the 1920s and 1930s. Documents contained in RG 0826 include correspondence from several organizations and humanitarian assistance groups sent to Armenia in the aftermath of the devastating earthquake in 1989. These records include surveys of health infrastructure in Armenia, and correspondence from US based lobbying organizations such as the Armenian Assembly Relief Fund, the Armenia Consortium, and the Armenian National Committee of America. Representatives from several of these groups remained in the region during the conflict with Azerbaijan and their reports to Washington, DC include observations about troop movements, violence, refugees and plans for reconstruction after the collapse of the USSR in 1991.
3. The term “syndemic” comes from the work of medical anthropologist Merrill Singer, who developed it describe the way social variables such as inequality, discrimination and poverty contribute to disease clustering and co-infection in vulnerable populations. See Singer, Bulled, Ostrich and Mendenhall, 2017; Mendenhall, 2017.
4. The most comprehensive analysis of the problems created by centralized economic planning comes from Hayek’s famous text (1944) *The Road to Serfdom*.

5. The Armenian genocide resulted in the deaths of over 1.5 million Armenians in the waning days of the Ottoman Empire. Multiple massacres took place between 1915 and 1923. For details see Kifner:

https://archive.nytimes.com/www.nytimes.com/ref/timestopics/topics_armeniangenocide.html?source=post_page-----. Accessed 23 April 2021.

6. There was a good deal of intrigue in the region in the 1990s due to the discovery of major oil and gas reserves in the Caspian sea worth around \$US 30 billion. Russian, British, Turkish, Iranian, Saudi and US oil companies were allegedly involved in complex deal-making around the time of the cease fire agreement in 1994. In 1995 an event referred to as the “Turkish coup” took place in Azerbaijan, allegedly due to activities of “rogue elements” in the Turkish security services (see Goltz, 1998). The construction of a pipeline to carry the oil to Western markets was also a source of much intrigue, as it was originally routed through the Karabakh conflict zone. For details about the oil deal and pipeline negotiations, see Croissant, 1998; Goltz, 1998; Isaryan, 1994; Kaldor, 2007; Tishkov, 2004. A few months after the oil deal was signed in Azerbaijan, several high profile assassinations took place in Armenia, including the December 1994 death of former Karabakh Committee member Hambartsum Galstian, allegedly at the hands of a terrorist cell operating with one of the leading national political parties. For details see Dudwick, 1997; de Waal, 2013.

7. In 2018 I had a phone conversation with journalist Thomas Goltz, who was embedded with Azeri troops during several key conflicts in the Karabakh war. He was surprised to learn that an epidemic of malaria had occurred in the region while he was there. None of the extensive and well documented analyses authored by Thomas Croissant (1998), Christopher Zurcher (2007); Nora Dudwick (1997) or Mary Kaldor (2007) mention epidemic malaria in the context of the Karabakh conflict.

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