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THE NEXUS BETWEEN ORGANIZED CRIME AND TERRORISM: THE CASE OF MEXICO AND WMD

Abstract

The past two decades have witnessed several alarming trends among organized criminal elements, primarily those involved in the illicit narcotics market. Criminals are increasingly willing to resort to extreme forms of violence against competitors, national government officials, and military and border control units of neighboring states. In addition, there is a clearly discernible escalation in the degree of ruthlessness and blatant use of terrorist techniques by these organizations. The prevailing concern to date regarding organized crime and terrorism has been largely limited to the fear that criminal networks may be used by autonomous terror organizations to facilitate the movement of people and arms across borders. However, this article focuses on criminal organizations using terrorist methods and techniques in their own right, the possibility of these organizations acquiring weapons of mass destruction (WMD) materials, and the serious implications this portends for intelligence, law enforcement, and other security organizations.

The trajectory of unrestrained confrontation, violence, weaponry, and ruthlessness prompts a question: At what point will such organizations cross the threshold and employ weapons of mass destruction to raise the cost of border control and counter-drug policies with the intent of coercing populations and governments into making political and policy changes?

This article draws examples from ongoing experiences with Mexican drug violence and offers an assessment of the likely places where criminal organizations may acquire WMD materials, particularly biological organisms, and which organisms would have the greatest efficacy for criminal/terrorist groups. It continues with a discussion of some key indicators and warnings that may prove effective in identifying dangerous patterns of behavior and concludes with suggestions of cooperative areas of engagement among regional governments to mitigate and preempt potential threats before human and economic losses occur.

1. INTRODUCTION

The continuing spiral of drug-related violence in Mexico combined with the metastasizing of criminal drug cartels throughout that nation provides a fascinating backdrop against which the evolution of "non-ideological/ market-share" terrorism can be studied. The common term for this form of terrorism, which began in Colombia during the 1980's and reached new heights in Mexico in the 1990's and continues to grow and evolve in the second decade of the 21st Century, is called *Narco-Corporate Terrorism*. It is the most recent variant in a long and tragic succession of forms of terrorist motivations that includes: Nationalist, Religious, State-Sponsored, Right-Wing, Anarchist, Domestic, Special Interest and Narco Terrorism. The distinction between Narco Terrorism and Narco-Corporate Terrorism is the more sophisticated level of complexity of vertical integration in the later, to include: the management and control of an extensive network of distributors, the development of increasingly sophisticated military capabilities, and the evolution of an enduring organizational structure capable of sustaining significant leadership and personnel losses.

Unfortunately for nation-states and the populations and territories they represent, the appearance of new terrorist motivations and organizational structures is an additive or cumulative problem. The rise of a new actor does not necessarily displace a prior form of terrorism instead it complicates the threat picture by creating yet another contemporary adversary that places new demands on already strained resources. The evolution as well as the simultaneity of terror typologies is depicted in Figure 1 below.

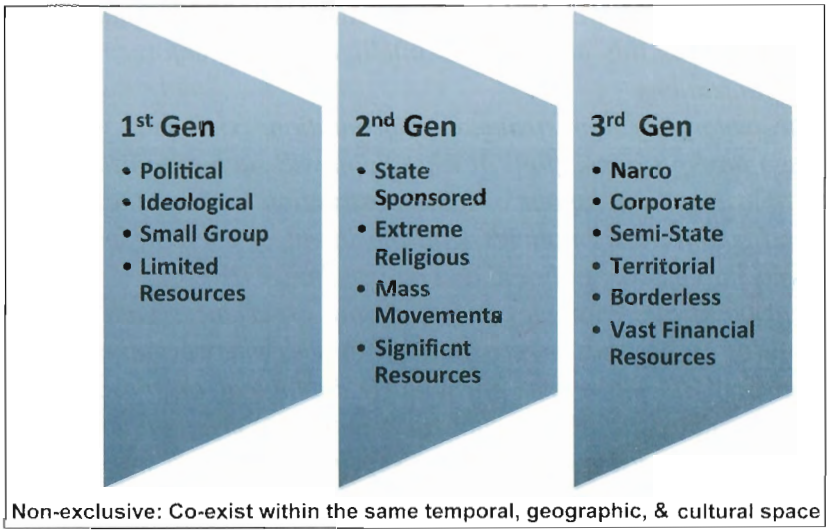

Figure 1: Generations of Terrorism Chart One[1]

1 Original work of author

2. GENERATIONAL TERRORISM

The employment of terrorist tactics as a political instrument has proven itself to be a long-lived and adaptable phenomenon over the course of the past century. There are many potential approaches one may take in creating a typology of terrorism spanning this time period. For the present analysis, terrorism is categorized according to three distinct generations. While individual motivations and approaches within each generation certainly exhibit significant overlap and repeated appearances over time, they do not necessarily spawn the next generation. However, newer generations can coexist in the same time and space with earlier forms of terrorism. Thus a cumulative threat in a given period of time presents itself rather than a series of successions and superseding tactics. As a result, societies are presented with an ever-changing tapestry of threats of increasing diversity and complexity.

The first generation, as depicted in Figure 1, is characterized by relatively small groups, possessing few resources, driven by political and ideological concerns and engaging in hit and run attacks, hijackings, hostage-taking using small arms and improvised explosives to target government, business, and financial institutions. The Anarchist movement, in the early part of the 20th century, the Japanese Red Army, Shining Path, the Tupamaros, the Baader-Meinhoff Gang, Ingrid Schubert Commandos, Irish Republican Army, Red Brigades, Red Army Faction, and the Weathermen branch of the Students for a Democratic Society are examples of such organizations. Another important type of group is oriented around a form of religious nationalism, such as is characteristic of many of the Palestinian terror organizations such as the PLO, PFLP, and Black September.

Second Generation Terrorism is significantly different in that its hallmarks are state sponsorship, predominant religious motivations, proxy actors channeling the foreign policies of their benefactor regimes, are well funded and often are intended to act as the catalyst of a religious mass movement. Examples of such organizations are the Muslim Brotherhood, Hamas, Hezbollah, Al Qaeda, and the Taliban.

Third Generation Terrorism – where Narco-Corporate terror group exist, is markedly different from the earlier two generations in that it is generally apolitical, business oriented, and geographically territorial while at the same time transnational, engaged in violent struggles with competing non-state actors and concurrently combating national governments. Such organizations also command unprecedented financial wealth which they use to fund and expand their activities.

It is this third category to which the current generation of Mexican drug cartels belongs. Having learned from and significantly improved upon the mercurial examples of their Colombian drug cartel forebears, the Mexican cartels have

raised the bar in terms of the ability to accumulate wealth and seize geographic territory, and in their seemingly unlimited readiness to inflict harm and terror upon their business rivals, government officials, and civilian populations.

While the Narco-Corporate terror threat is still evolving throughout Mexico, it is their willingness to engage in full-spectrum violence that not only makes their activities noteworthy but also should raise alarms due to their seemingly unlimited level of ruthlessness of a type not seen since the communal genocide perpetrated in Rwanda in 1994. Unfortunately, the financial, technological, and human resources controlled by the Narco-Corporate terrorist organizations in Mexico are vastly greater than those that were at the disposal of the machete and torch wielding murderers of the Tutsi community in Rwanda.

3. NATURE AND LEVEL OF CARTEL VIOLENCE

According to Government of Mexico figures, 34,612 people have been killed in narcotics-related violence in Mexico since December 2006.[2] More than 15,000 narcotics-related homicides occurred in 2010.[3]

In fact, it is the escalating level of violence and the invocation of terrorist tactics that raises the question of not necessarily if, but when, one or more of these actors will introduce a weapon of mass destruction into their killing and intimidation repertoire.[4] While it is difficult to predict the nature and direction of escalatory violence, particularly where a step-function or radical shift in tactics and risk is involved, it is nevertheless possible to obtain a better understanding of the potential for crossing a certain threshold, in this case the employment of WMD, by analyzing patterns of behavior, access to the necessary resources, as well as the level of ruthlessness displayed by the subjects' themselves.

Figure 2 represents one way of approaching this analytical problem. This figure depicts in a notional fashion the increasing aggressiveness of the Mexican cartels as a whole. These drug trafficking organizations have been around in one form or another since at least the 1920's. Unfortunately, however, in recent decades they have gone far beyond their traditional practice of bribing local, state, and federal government officials and engaging in internecine feuds and warfare with rival gangs. Beginning in the 1980's they crossed a threshold into the arena of targeted killings of government and military officials, and eventually into the kidnapping and murder of US government officials. Throughout this period,

2 http://www.huffingtonpost.com/2011/01/12/mexico-drug-war-deaths-2010_n_808277.html

3 http://travel.state.gov/travel/cis_pa_tw/tw/tw_5440.html

4 June S. Beittel, Mexico's Drug Trafficking Organizations: Source and Scope of the Rising Violence, Congressional Research Service, R41576, January 7, 2011.

they increased their wealth from the successful penetration of the United States[5] with direct marketing, distribution, and manufacturing operations in over 230 cities.[6] Cartels were able to amass significant arsenals of military weapons and began engaging the Mexican federal police and military in conventional armed combat operations. There have been dozens of reports in the press of armed cartel paramilitary units crossing into the United States as well.[7] A Texas department of Agriculture report states, "They use military and terrorist tactics and weaponry . . . and there is no limit to their depravity. They employ horrific tactics to intimidate their adversaries and the public such as decapitations, acid baths, skinning people alive, torture and Improvised Explosive Devices and they have expanded their criminal operations to profit from kidnappings, robberies, human trafficking, extortions and theft. During the past several months we have seen reports of mass graves and self-censorship of the Mexican press."[8]

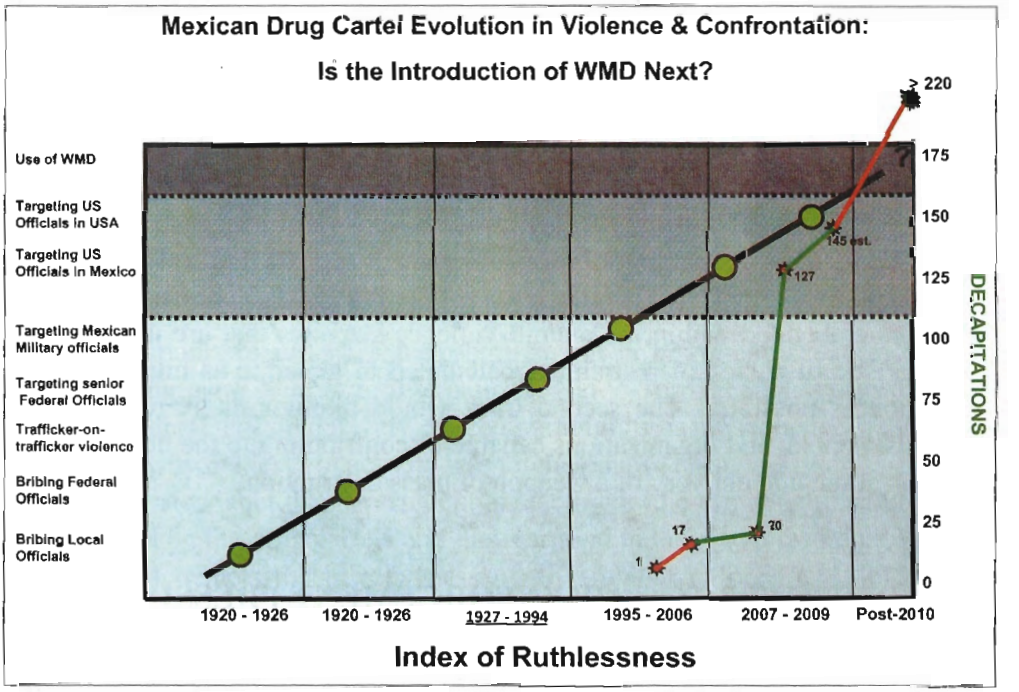

Figure 2: Mexican Drug Cartel Evolution[9]

5 Texas Department of Agriculture, Texas Border Security: A Strategic Military Assessment, September 2011, pp 25-30. http://www.texasagriculture.gov/Portals/0/DigArticle/1725/46982_Final%20Report-Texas%20Border%20Security.pdf

6 http://www.usatoday.com/news/world/2009-02-22-mexicoborder_N.htm

7 Op. Cit., Texas Department of Agriculture, pp. 82-84.

8 Ibid., p. 98.

9 Original work of author

While these developments are disturbing by themselves they are not necessarily indicative of a trend in the direction of the acquisition and employment of weapons of mass destruction. After all, most threat scenarios of WMD crossing from Mexico into the US are focused upon Middle East terrorists *partnering* with drug cartels to smuggle such materials along with personnel via the drug smuggling networks.

However, there is one underlying trend among the murder statistics that may indicate that the cartels could consider deploying WMD in their own right and for their own purposes. This trend is the introduction and rapidly rising use of decapitations by the cartels to terrorize their enemies, the surrounding civilian populations, and potential defectors within their own organizations. Decapitation serves no purpose other than to terrorize a general and targeted audience. As seen in Figure 2 above, the number of such acts has skyrocketed from 17 in 2006 to more than 220 in 2010.[10] These acts are perhaps the best indicator of an increasing degree of ruthlessness in drug cartel operations as well as their propensity for greater and more unrestricted levels of violence. Such an index of ruthlessness may perhaps serve as an important indicator or warning of the potential inclination to introduce WMD into their operational planning. Of course such an indicator cannot stand on its own as conclusive evidence that such a direction may be underway. It may however be a valid trigger to study other trends and patterns so that a systematic assessment may be performed. Such an index could focus upon two parallel tracks. The first track identifies underlying behaviors embedded within the overall violence statistics that are judged to be characteristic of a lack of restraint -- calculated to generate as much fear and retribution as possible. The second track would monitor likely reservoirs of materials, people, and organizations capable of contributing to the development, weaponization, and delivery of a weapon of mass destruction.

4. RESPONSE TO LAW ENFORCEMENT PRESSURE

A complementary set of indicators to the Index of Ruthlessness focuses on the reaction of Mexican cartels to increasing levels of pressure asserted against them by governmental authorities. The pairing of stimulus and response or in this case force and counterforce represents an analytical approach that may be more revealing than aggregate murder, arrest, and interdiction statistics. Figure 3 provides a summary view of the general response of the cartels to the law enforcement efforts of Mexican authorities according to the level of government and their increasing and cumulative impact.

10 Data compiled from individual news reports by author.

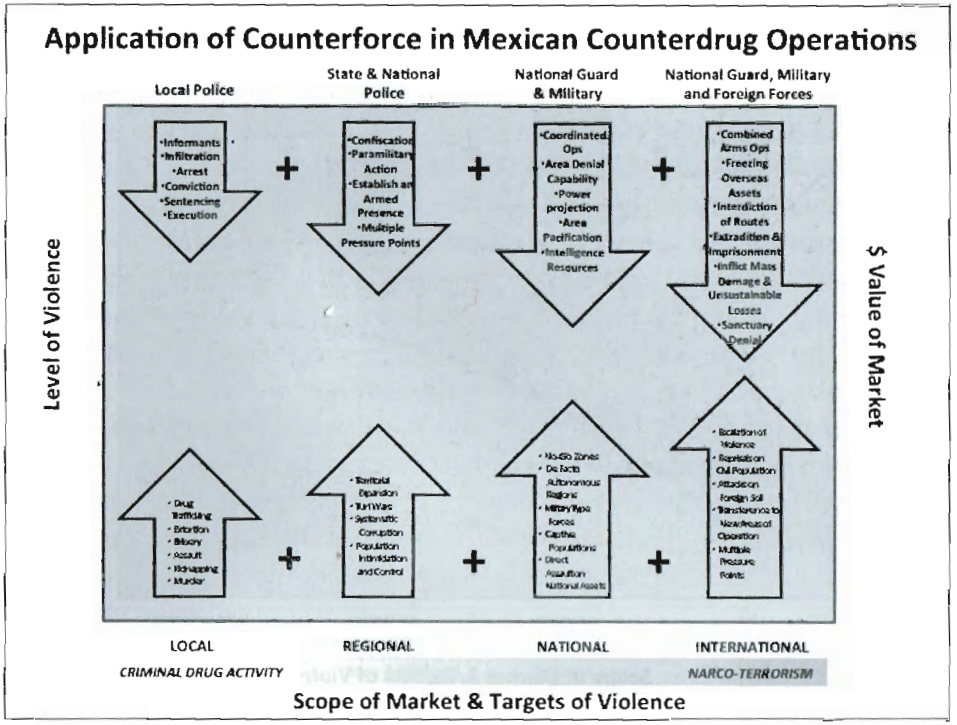

Figure 3: Stimulus and Response in Mexico[11]

Figure 3 displays many relationships simultaneously. In addition to the stimulus/response relationship, the progression from commonplace local/regional criminal drug gang activity to international Narco-Terror cartel is also depicted. What is not depicted conclusively, due to its ambiguity, is the sequence of escalation in terms of why the level of activity was ratcheted up. The underlying assumption in this analysis is that the government is reacting to the growth and nature of the threat posed by the drug cartels and they respond in their own fashion.

Figure 4 depicts the effectiveness of government enforcement, interdiction, and disruption activities upon the income stream for the cartels and highlights their response with escalations in the level of violence targeting government and civilian personnel. Government interdictions efforts are displayed as having a negative impact upon cartel income generation and appear to limit their ability expand earnings beyond a certain level despite their continued efforts. While losses due to interdictions are undoubtedly factored into their operational planning it is not passively accepted and generates a response in the form of increasing levels of violence.

11 Original work of author

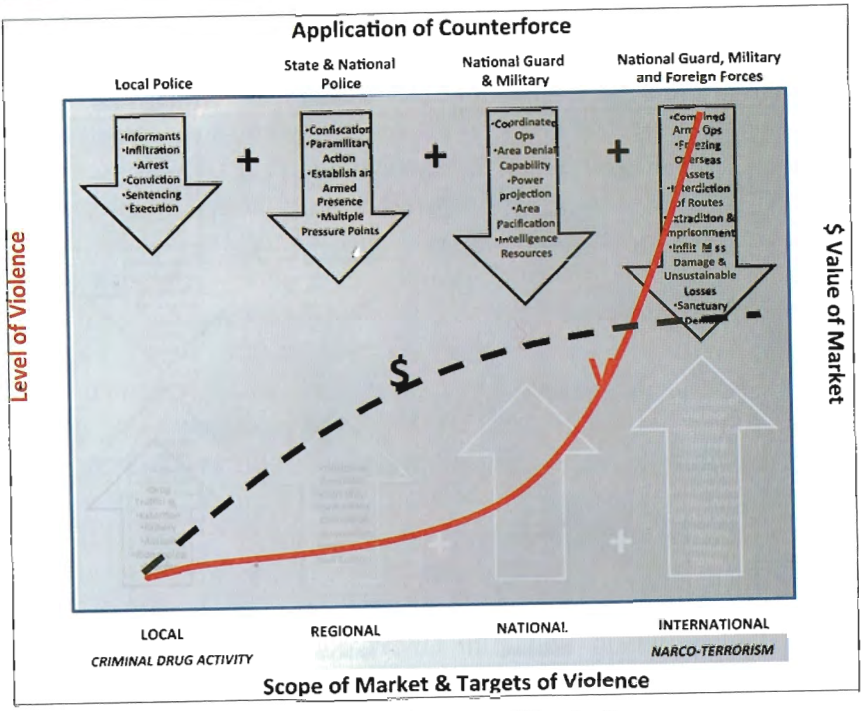

Figure 4: Escalation of Tactics[12]

Figure 5 below reveals the success of government interdiction activities, which resulted in losses of upwards of 40% of the drugs being trafficked, which in turn invites an increase in the level of ruthlessness, or lack of restraint, as discussed earlier in Figure 2 and detailed in Figure 6 below.

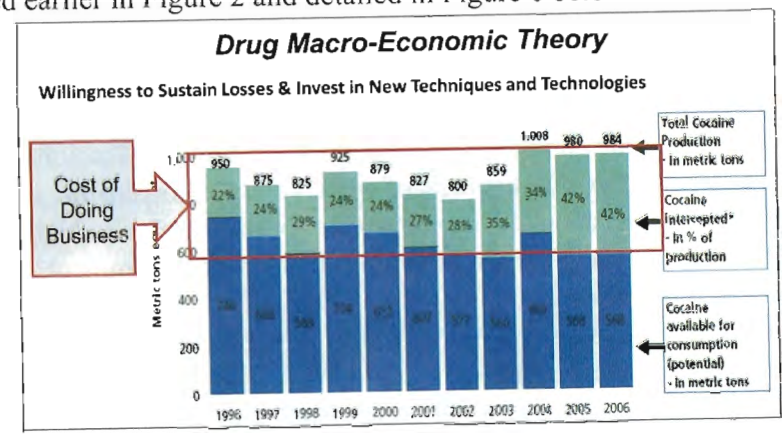

Figure 5: Mexican Government Impact on Illegal Drug Business[13]

12 Original work of author
13 Strategic Forecasting, Inc.

Another take on the nature of the violence problem can be seen in Figure 6, which arrays the evolution in the types of weapons and tactics employed by the cartels. Readily seen is the escalation in firepower, strategies, and loss of restraint accompanying each step in the ratcheting up of the scope and area of influence of cartel activity within Mexico. This figure suggests that the next major level of escalation may be the introduction of Weapons of Mass Destruction into their arsenal. Unfortunately this is not a far-fetched notion but one with great potential to offset the combined conventional military and police effectiveness of Mexican interdiction and antipersonnel activities upon cartel operations and survivability.

As Mexican counterdrug operations have focused on the search and destroy model in response to murderously successful cartel tactics, keep in mind that individual cartels will experience an extreme but limited life cycle that often ends in the deaths of their leadership. These realities increase the probability that the all-out war mindset will result in WMD being an attractive option for those with nothing to lose.

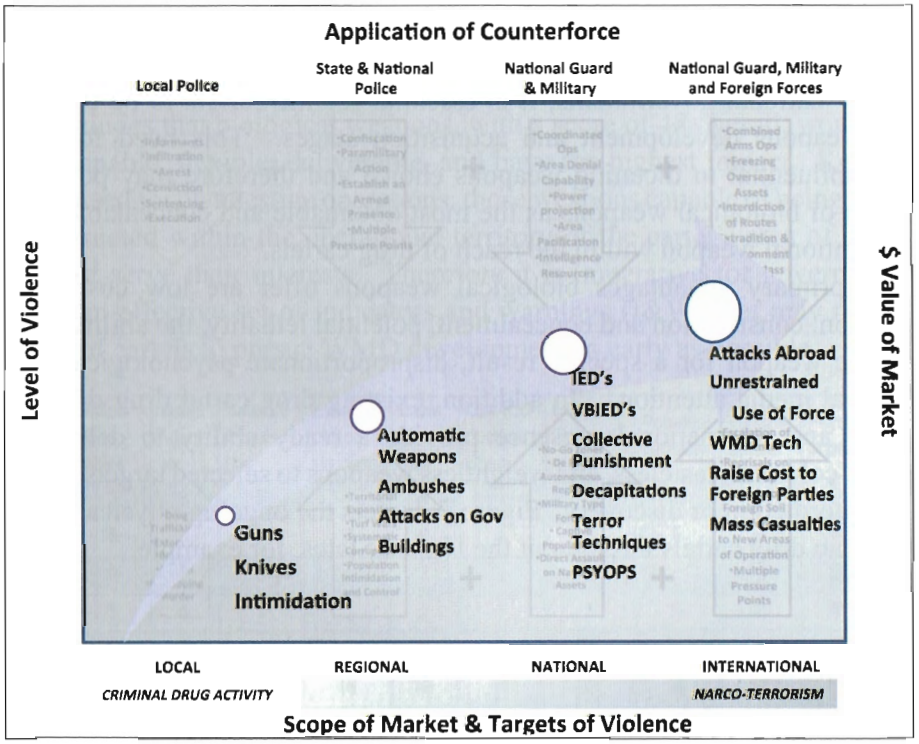

Figure 6: Increase in Lethality of Tactics[14]

14 Original work of author

5. WHY WMD?

Weapons of Mass Destruction offer a range of possibilities for those cast into a desperate struggle who also command the technical and material resources required for the attainment of such a weapons capability. The technical and material capabilities, while not necessarily native to the criminal organization itself, may innocently reside within their area of influence or control and may be readily obtainable. WMD offer a range of capabilities heretofore unseen within either terrorist or criminal organizations. Essentially these capabilities include but are not limited to:

- The ability to raise the costs of government anti-cartel successes by generating mass casualties in response
- The ability to generate global media attention
- The ability to terrorize vast numbers of people as leverage against government policies
- The ability to increase their market share by threatening competitors
- If executed anonymously, the ability to wage psychological warfare and successfully manipulate governments

For any of these benefits to be achieved, and to avoid a devastating preemptive action by national governments, it is essential for the cartels to be clandestine in the weapons development and acquisition stages. This need for secrecy will be influential in dictating weapons choice and therefore may point to the selection of biological weapons as the most obtainable and concealable form of unconventional weapon within the reach of drug cartels.

The primary advantages biological weapons offer are low cost, ease of acquisition, construction and concealment, potential lethality, the ability to select a specific weapon for a specific result, disproportionate psychological impact, and global media attention. In addition, existing drug cartel drug distribution channels and international presence provide a ready ability to deliver these odorless, colorless, tasteless, and weightless weapons to selected targets with little risk of interdiction or discovery. Figure 7 depicts the ongoing physical presence of Mexican drug cartels throughout the United States, for example.

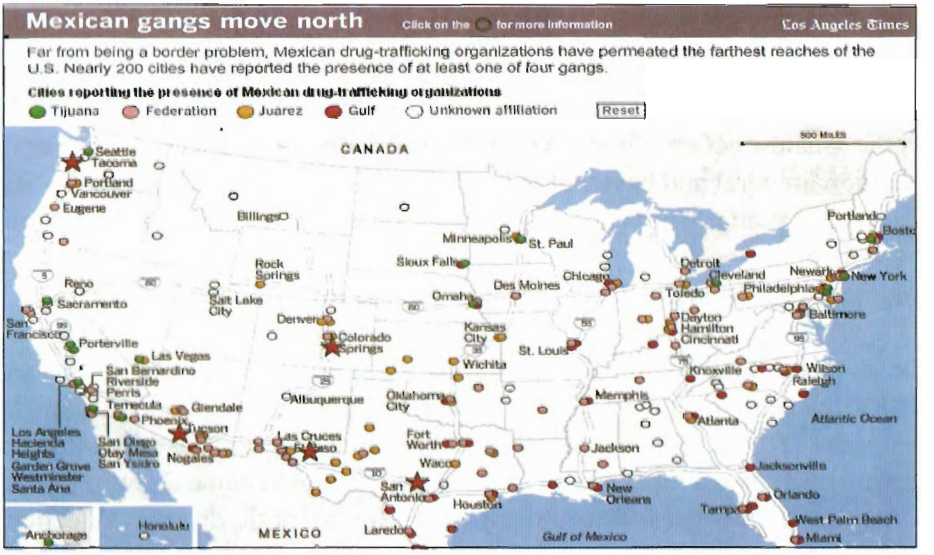

Figure 7: Cartel Presence in the United States[15]

Table 1 below displays a ranking of the most influential acquisition factors a cartel may consider in selecting the type of WMD it might choose. This notional chart concludes that biological weapons, with a score of 48 overall, would be the most obtainable, flexible, deliverable, and have the highest impact. Keeping in mind the need for clandestine operations, those weapons capable of being obtained and constructed within the operational territory of the cartel's area of influence would best serve their interests. Therefore it is imperative for governments to establish an effective set of indicators and warnings (I&W) that may reveal the intention of cartels to pursue WMD development as early as possible.

	Mass Casualties	Media Attention	Ease of Acquisition	Ease of Construction	Local Materials	Low Production Costs	Ease of Concealment	Potential Lethality	Variable Effects	Psych Impact	SCORE
Chemical	3	3	5	4	4	4	3	2	3	2	33
Biological	5	5	5	3	5	5	5	5	5	5	48
Radiological	2	5	3	4	3	4	2	1	2	5	31
Nuclear	5	5	1	1	1	1	1	5	2	5	27
Hi Explosive	1	3	5	4	5	4	2	3	5	2	34
Total	16	21	19	16	18	18	13	16	17	19	

Table 1: WMD Choices[16]

WMD Choices – Key Considerations (5 = Most Desirable 1 = Lease Desirable)

15 http://www.latimes.com/news/nationworld/nation/la-111608-na-cartels-f,0,3065437.flash

16 Original work of author

6. INDICATORS AND WARNINGS

Biological weapons fall within five basic classes: Viral, Bacterial, Fungal, Toxins, and Rickettsial. A sixth class, Bioregulators -- are organic chemicals that control cellular activity but are not biological organisms themselves. Those classes with the greatest potential for the initiation of widespread disease within a target population are viral and bacterial. Comprising these two most dangerous classes of agents are a range of pathogens some of which have proven to fatal in humans but are naturally occurring in animal populations as well. These are known as zoonotic diseases and are naturally transmissible from animals to humans. They are the easiest to acquire clandestinely because zoonotic agents are endemic, or naturally occurring, in animal populations worldwide. According to the World Health Organization, at least 61% of all human pathogens are zoonotic, and have represented 75% of all new emerging pathogens during the past decade. These include SARS, Avian Influenza, and Mad Cow disease to name a few. In general, there are three primary reservoirs or sources for zoonotic disease collection by those interested in developing a bioweapon: veterinary clinics, veterinary schools, and animal burial grounds. Table 2 displays the most common zoonotic diseases and their primary animal carriers. Most of these diseases are endemic in Mexico.

With respect to Mexico, over 29,000 people declare themselves to be veterinarians but the total number of veterinary clinics and hospitals is unknown.[17] Also unknown is the number and distribution of individuals engaged in individual practice as consultants or non-clinic bound veterinarians. As veterinarians would have direct access to diseased animals, blood and tissue samples, and possess the skills necessary to identify, isolate, and cultivate potentially dangerous biological weapon feedstock it is essential that this profession be closely monitored for contact with criminal organizations either as willing participants or, more likely, as targets of intimidation, blackmail, or kidnapping.

It should be kept in mind that an anti-agriculture use of biological weapons can result in devastating economic losses to a nation without ever infecting a single human. Costs associated with quarantining individual livestock herds or entire regions if necessary, culling (mass killings) of infected or potentially infected animal populations, loss of market confidence or banning products originating from infected regions, etc, can result in very large and damaging economic losses. Such a weapon may be very attractive to a cartel intent on retaliation against governments while probably avoiding the type of devastating response that would accompany an attack upon the human population.

17 http://www.fao.org/ag/againfo/resources/documents/Vets-l-2/3eng.htm

Common Zoonotic Diseases Capable of Human Fatalities	
Disease	**Animal Reservoir**
Anthrax	Cattle, sheep, goats, horses
Avian influenza	Poultry, pet birds
Brucellosis	Goats, cattle, swine, dogs, horses
Cryptosporidiosis	Cattle (typically calves)
Ehrlichiosis	Deer, rodents, horses, dogs
Equine encephalomyelitis	Birds, horses
Hantaviral	Rodents
Influenza A	Poultry, swine, ferrets
Listeriosis	Cattle, sheep, goats, pigs, birds, dogs, cats
Plague	Rodents, cats, rabbits
Psittacosis	Pet birds, poultry
Q fever	Goats, sheep, cattle, vector rodents, rabbits, dogs, cats
Rabies	Cats, dogs, cattle and other domestic animals; wild carnivores; raccoons; bats; skunks; foxes
Rocky Mountain spotted fever	Dogs, rabbits, rodents
Salmonellosis	Reptiles, amphibians, poultry, horses, swine, cattle, pocket pets, many species of mammals and birds
Staphylococcosis	Dogs, cats, horses, Swine, fish
Tuberculosis	Cattle, swine, bovis sheep, goats
Tularemia	Rabbits, pocket pets, aerosol wild aquatic rodents, sheep, cats, horses, dogs
West Nile fever	Wild birds

Table 2: Common Zoonotic Diseases[18]

In addition, there are at least 30 schools of Veterinary Science operational in Mexico. Unfortunately 24 of the 30 identified are located in areas vulnerable to, or dominated by, drug cartels. These realities create an environment where skilled professionals may be regarded as captive populations potentially under some degree of control of the dominant drug cartel in their geographic region. Table 3 displays these schools, their location, and the dominant cartel in their area.

18 National Association of State Public Health Veterinarians, Compendium of Veterinary Standard Precautions for Zoonotic Disease Prevention in Veterinary Personnel, 2010: 1418-19. http://www.nasphv.org/Documents/VeterinaryPrecautions.pdf

Mexican Veterinary Schools in Drug Cartel Influenced Territory

Veterinary School	Location	Cartel of Influence
Centro Universitario de Ciencias Biológicas y Agropecuarias, Universidad de Guadalajara	Jalisco	El Chapo
Facultad de Ciencias Naturales, Universidad Autónoma de Querétaro	Querétaro	None
División de Ciencias Biológico-Agropecuarias, Universidad Michoacana de San Nicolás de Hidalgo	Michoacan	El Chapo and the Gulf Cartel
Facultad de Medicina Veterinaria y Zootecnia, Universidad Nacional Autónoma de México	Coyoacan	None
Facultad de Medicina Veterinaria y Zootecnia, Universidad Autónoma Agraria Antonio Narro Unidad Laguna	Caohuila	Los Zetas
Centro de Ciencias Agropecuarias, Universidad Autónoma de Aguascalientes	Aguascalientes	Los Zetas
Escuela de Medicina Veterinaria y Zootecnia, Universidad del Valle de México Campus Coyoacán	Coyoacán, D.F.	None
Facultad de Medicina Veterinaria y Zootecnia, Universidad Autonoma de Nuevo Leon	Monterrey	Los Zetas
Instituto de Investigaciones en Ciencias Veterinarias,Licenciatura en Medicina Veterinaria y Zootecnia, Universidad Autonoma de Baja California	Baja	Tijuana Cartel
Benemérita Universidad Autónoma de Puebla	Tecamachalco	Non-specific
Centro de Estudios Universitarios de Monterrey	Monterrey	Los Zetas
Universidad Autónoma "Benito Juárez" de Oaxaca	Oaxaca	Oaxaca Cartel and the Tijuana Cartel
Universidad Autónoma de Campeche	Campeche	Los Zetas and the Gulf Cartel
Universidad Autónoma de Chiapas	Chiapas	Oaxaca Cartel and the Tijuana Cartel
Universidad Autónoma de Ciudad Juárez	Ciudad Juárez	JuárezCartel
Universidad de Colima	Tecomán	Guadalajara Cartel
Universidad Autónoma del Estado de Mexico, Facultad de Medicina Veterinaria y Zootecnia	Toluca	Beltrán-Leyva Cartel
Universidad Juárez del Estado de Durango	Durango	Sinaloa cartel
Universidad de Guadalajara	Jalisco	Colima Cartel
Universidad Autónoma de Querétaro, Escuela de Medicina Veterinaria y Zootecnia	Querétaro	Beltran Leyva cartel
Universidad de la Salle Bajío	Leon	Unknown
Universidad Autónoma de Sinaloa, Escuela de Medicina Veterinaria y Zootecnia	Culiacan	Sinaloa cartel
Instituto Tecnológico de Sonora	Sonora	Sonora Cartel
Universidad Autónoma de Tamaulipas, Faultad de Medicina Veterinaria y Zootecnia	Ciudad Victoria	Gulf Carter/Los Zetas
Universidad Autónoma de Tlaxcala	Tlaxcala	Sinaloa Cartel
Universidad Autónoma de Yucatán	Mérida	Los Zetas
Universidad Autónoma de Zacatecas, Facultad de Medicina Veterinaria y Zootecnia	Zacatecas	Los Zetas
Universidad Juárez Autónoma de Tabasco, Escuela de Medicina Veterinaria y Zootecnia	Villahermosa	Los Zetas
Universidad Michoacana de San Nicolás de Hidalgo, Escuela de Medicina Veterinaria y Zootecnia	Tarímbaro	La Familia Michoacana
Universidad Nacional Autonoma de Mexico, Facultad de Medicina Veterinaria y Zootecnia	Coyoacán	None

Table Three[19]

19 http://www.worldvet.org/node/5248 and June S. Beittel, op.cit., pp 7-10.

The third major reservoir of potentially weaponizable diseases is animal burial grounds where sick livestock are disposed of. Unfortunately, few countries have mapped and assayed such facilities for their potential risk to public health and many of these facilities are informal affairs characteristically just a simple trench containing diseased carcasses. Livestock owners in most parts of the world are loathe to report animal disease outbreaks to their governments out of fear that their herds will be quarantined or destroyed. As a result, the numerous potential reservoirs of infectious diseases present throughout Mexico afford another potential opportunity to be exploited by interested cartels.

A recent example of such occurred in late-2010 in South Korea from its worst outbreak of Foot and Mouth Disease. Figure 8 below shows how South Korean net users created a Google map listing where the culled animals were buried – most while still alive.

Figure 8: South Korean Outbreak of Foot and Mouth Disease
South Korea: A Google Map of FMD Burial Grounds[20]

While many people expressed concern that the animal blood and carcasses could pollute nearby ground water, a similar concern should be expressed that the infected biological material in these simple, unguarded, plastic-lined, ditches may be exploited for unauthorized weapons purposes (see Figure 9 below). Unfortunately, such panic-driven, simple responses to disease outbreaks are commonplace throughout the world and severely compound the proliferation of disease reservoirs.

20 http://www.pebblemedia.org/2011/03/07/south-korea-a-google-map-of-fmd-burial-grounds/

Figure 9: Disposal of Diseased Pigs
South Korea: Up to 1.4 Million Pigs Buried Alive[21]

Potential Biological Agents

The mere fact that samples of endemic diseases may be obtainable does not necessarily mean that a particular agent is readily weaponizable. In fact, most pathogens are difficult to process into a weapon for a variety of reasons. Some of the key factors at play include the difficulty to cultivate, prepare, and aerosolize an agent that possesses the necessary infectiousness, mortality, environmental stability, and transmissibility. These factors are instrumental in selecting a particular agent from both manufacturability as well as weapons perspectives. Table 4 assesses four representative zoonotic agents based upon these factors and includes a non-zoonotic agent, smallpox, for comparative purposes. This comparison reveals that Tularemia and Plague, two pathogens endemic in Mexico, would have the greatest efficacy for weaponization, while Marburg, which has great weapon potential, is difficult to acquire and safely handle. Anthrax, although easily acquired, is difficult to process before becoming useful as a weapon and, in addition, it is not infectious.

21 http://news.sky.com/home/world-news/article/15887024 and http://www.huffingtonpost.com/2011/01/12/south-korea-buries-pigs-alive_n_808119.htm

Suitability of Biological Agents and Diseases for Narco-Terror Use

ZOONOTIC		Cultivation	Preparation	Infectiousness	Mortality	Stability	Aerosol	Environment	Transmissibility	
✓	ANTHRAX	++	+	--	+++	+++	+++	+++	–	15
✓	TULAREMIA	+++	+++	+++	+++	+++	+++	+++	+	22
✓	PLAGUE	+++	++	++	+++	+++	++	+++	++	20
✓	MARBURG	+	+++	+++	++	++	+++	+++	++	19
	SMALLPOX	++	+++	++	++	++	+++	+++	++	19

Scoring of preliminary suitability factors, where:

+++	high suitability
++	moderate suitability
+	low suitability
--	no suitability

Table 4: Weaponization of Zoonotic Agents[22]

7. CONCLUSIONS

The many factors and relationships explored in this article have broad applicability in dealing with escalating violence and especially in the abandonment of traditional restraints beyond the Mexican context. It is essential for the maintenance of public health, order and national security that government organizations establish surveillance programs focusing on the potential biological weapons threat originating within a particular nation state. This threat has long since migrated beyond the province of specialized government weapons programs and laboratories and now has the potential to move into the private sector.

Key to an effective surveillance system is the establishment of an appropriate set of indicators and warnings to serve as a tripwire to alert authorities as early in the weapons acquisition process as possible. What this means is that, among other factors, it is imperative that national inventories of potential biological agent reservoirs be mapped, assayed, and monitored. Such reservoirs include animal burial grounds, veterinary clinics, veterinary schools, as well as individual veterinarians whose health and safety should to be monitored, particularly in high personal threat locations such as Mexico.

22 Suitability Assessment drawn from the recent work of Dr. Ken Alibek.

The ongoing violence in Mexico represents a level of complexity and ruthlessness that is unfortunately not unique to Narco-Terrorist organizations and has been seen in ethnic and religious wars as well. The potential for aggressors to exploit native or endemic contagious diseases for their weapons potential is very real and should be a concern for most governments.

Finally, the level of lawlessness and ruthlessness among criminal and terrorist organizations is of great concern and an ongoing monitoring network is essential to understanding the radicalization, propensity toward violence, and the degree to which these acts may or may not be the best indicator of an increasing degree of ruthlessness in drug cartel operations as well as their propensity for greater and more unrestricted levels of violence. Such an "index of ruthlessness" may serve as a valuable tool in detecting the movement of individuals or organization toward acquiring some level of WMD capacity as well as their willingness to use it.

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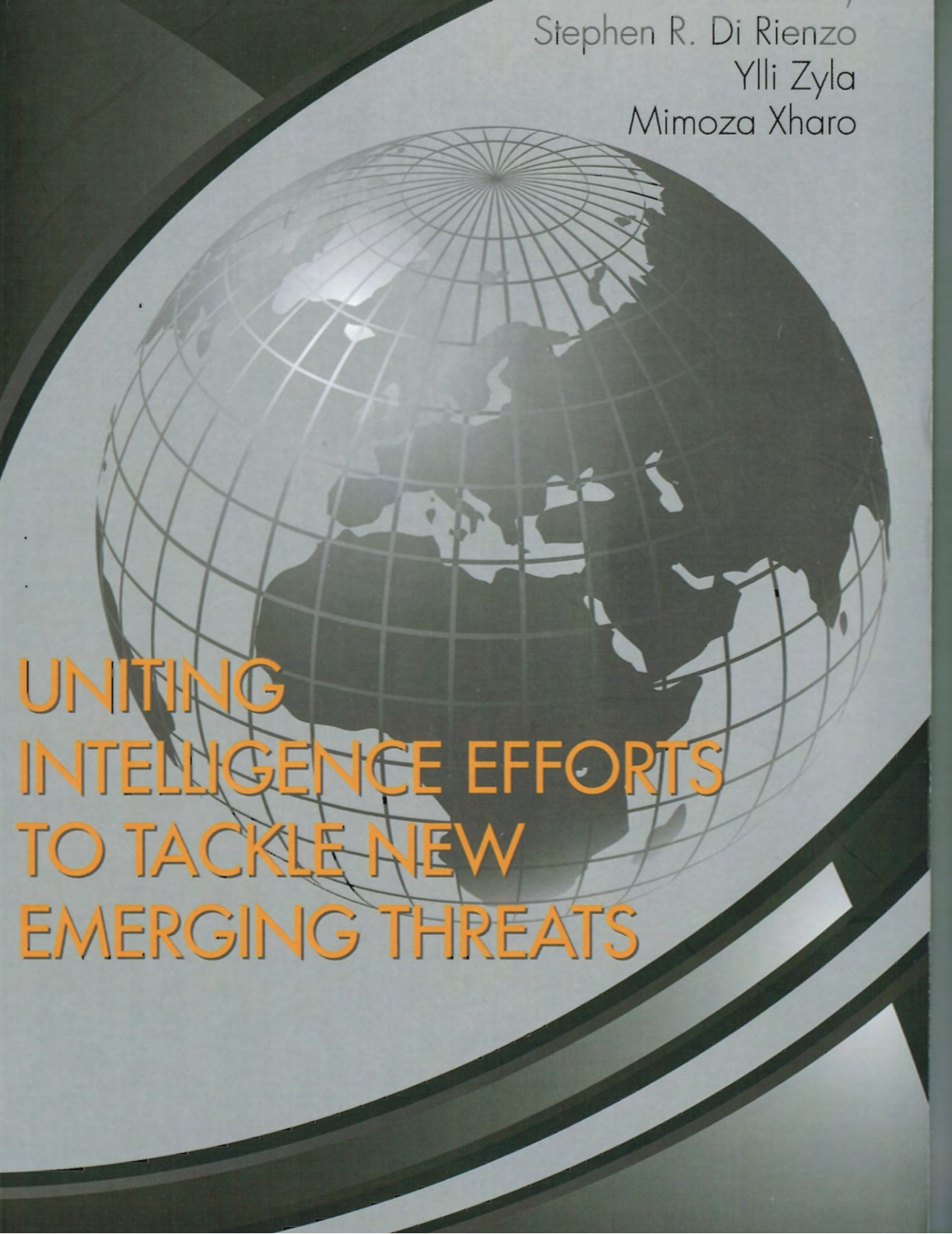

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