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Edited By: J. Amber Scherer and John P. Jarvis

The Future of Law Enforcement:

VOLUME 7

A Consideration of Potential Allies and Adversaries

Police Futurists International

Behavioral Science Unit — Training, Research, Consultation — FBI Academy

Futures Working Group — PFI / FBI

THE FUTURE OF LAW ENFORCEMENT:

A CONSIDERATION OF POTENTIAL ALLIES AND ADVERSARIES

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A WORD FROM THE CHAIRMAN

Since its inception, the Futures Working Group, an ongoing collaboration between the Society of Police Futurists International (PFI) and the Federal Bureau of Investigation, has assembled numerous bodies of work relating to the future and policing. Many of these can be found at http://futuresworkinggroup.cos.ucf.edu. The entries in the present volume were initiated at a FWG meeting held in St. Louis, Missouri in the fall of 2008. I wish to thank Dr. Hayley Cleary and all of the attendees for making this meeting and endeavor fruitful in the short time we had to discuss and outline these contributions.

In doing so, a group of police managers and futurists as well as academics and military personnel gathered to consider the potential allies and adversaries that may impact the future challenges and opportunities that law enforcement may experience. The goal of this endeavor was to draw upon past experiences, recent research and publications, and lessons learned to examine various dimensions and associated dynamics that may assist in defining allies for law enforcement to leverage as collaborators and partners as policing in the 21st century unfolds. Conversely, some attendees also contemplated the growing and changing challenges, or adversaries, that law enforcement is and will experience alongside these other developments. The resulting perspectives regarding concerns for building allies and confronting adversaries while striving to protect public safety in a global 21st century are what is contained herein.

At that time, we could not imagine a timelier topic in light of the potential necessities that would become realities in the economic difficulties that the world has experienced since this meeting. To be sure, much has been written about these topics; however, little has concerned itself with these dynamics from a law enforcement perspective. As discussions of this topic progressed, it became clear that many possible futures exist with regard to this very important area. This volume is an attempt to consider some of them and, further, to articulate strategies to bring about what futurists refer to as "preferred futures."

As you read the entries contained herein, remember that the goal of futurists is to make others think. As such, some entries are quite detailed exploring various aspects of the complexities of forging partnerships and developing strategies to confront new crimes and criminals. In contrast, other entries are brief observations of what we believe contributes to the discussion of emerging trends and potential future threats that police must be empowered to confront. All of these entries serve to remind us of the old, new, challenging, and at times, disconcerting ideas that the future often holds. You may agree with some authors and disagree with others. You may even feel somewhat unnerved by what has been written. Often considerations of the future breed these emotive responses. These words vary little from previous introductions to prior FWG volumes, but that is because this volume, in common with its predecessors, reflects a fundamental goal: "ultimately, it is our fervent desire to devise ways to motivate individuals to create their own preferred future….for yourself, for your agency, and for the communities you serve."

That goal continues to be reflected here. We hope this volume and the efforts that went into it are helpful toward that end.

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Chairman, Futures Working Group

Money Makes Friends and Enemies

William R. Maki[1] and Richard Myers[2]

Even though the uncertainties of the new economy are becoming better defined, managing a police agency is still as difficult as ever, just with some new twists. The "bubble" has characterized the economic climate of the past few years and is likely to continue. The resulting damage to selected areas of our economy but relative health of others is resulting in pockets of deprivation for some, while others remain relatively functional. Some communities are devastated by economic shifts and others merely inconvenienced. Globalization continues to create change for communities as jobs and industries, also known as taxpayers, move to more favorable political, regulatory and economic climates. The police executive must be prepared to confront problems involving decreased funding with a resulting decrease in service capabilities. While branching out into increased service opportunities for the community is appropriate during bountiful times, identification and prioritization of core services to preserve during lean times becomes the task at hand.

The trend towards downsizing has been ongoing for several years. Traditional federal funding has steadily been drying up as political priorities change but also as federal budget deficits rocket past previous highs. Most states that provided funding for policing are finding their budget resources are shrinking at the same time state and local agencies are competing more for what's left. Many local governments are finding themselves facing lowered revenues from their traditional tax sources. A few years ago it was remarkable that the number of officers on the streets was declining but today that norm is pervasive. Consider the fact that despite the increased mission of Homeland Security, there are fewer police in the U.S. today than the day before September 11, 2001. Moreover, support personnel positions are being eliminated in an effort to provide funding to staff the street. Paradoxically, police officers are pulled from patrol to cover critical tasks previously handled by laid-off support staff. When more than ninety percent of most police agencies' budgets cover personnel related costs, any funding cuts quickly start to affect the jobs of employees.

Some of the economic instability has grown due to the maturing globalization of commerce and finance. U.S. businesses have become increasingly dependent on local economies in countries

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[2] *Richard Myers is currently the Chief of the Colorado Springs Police Department*

that are historically less stable. As their financial network expands into these less stable regions, overall risk increases. Traditional means to assess risk are less effective, as the international laws, varied mores and norms, and local cultures defy simple definition. The economic playing field is almost endless, and the game increasingly complex. One failure anywhere in the supply chain can throw an entire system into turmoil. The globalization influence is most apparent when considering how world markets have responded to the recent U.S. financial challenges. The old saying goes, "when General Motors sneezes, Detroit catches a cold." Now, the entire world has pneumonia!

Government, particularly local government, had a tax base that was relatively stable. But the world's instability is affecting the traditional fiscal resources of even local government. As taxpaying businesses and people expand the footprint of their organizations over the world, their world become more volatile and that volatility affects their ability to pay taxes. When their income or sales decrease, tax revenue decreases follow. The usual sources of revenue for local government are showing signs of instability. Some cities rely primarily on property taxes. For many communities, this historically provided a stable cushion of reliable income. However, in the most economically ravaged cities, property values are diving, taking the property tax base with them. The housing bubble has popped and the artificially inflated values of homes are returning to marketplace values more in line with historical norms. In other communities, the balance is tipped on local sales tax. With the recession (more likely history will call this a depression), consumers are spending less and the dramatic decline in sales tax revenue has been destroying the predictive models around which budgets are built. Add to this the urban sprawl that has drawn sales tax revenue away from cities and out into more rural areas, and the exponential growth of Internet sales where no local sales taxes are captured, and some communities have experienced a downward spiral that could lead to cases of local governmental bankruptcy.

As the police executive faces these challenges and navigates the path to the future, how will the usual compliment of allies and adversaries change? Financial stress undermines the foundation of the hierarchy of needs Maslow defined as "safety and security." When a person or an organization's foundation begins to crumble, behavior follows unpredictably. Relationships with elected leaders, politicians, appointed managers, unions, co-workers, subordinates, superiors, interested parties, advocacy groups, family and friends all become new and different, most likely in a way that is more unstable and possibly adversarial.

As stated earlier, many police agencies have seen budget reductions resulting in a smaller workforce. Previously stable government jobs with robust retirement systems often attracted people seeking lifetime employment. Today, retirement systems are stressed to the point of failure and workers looking for careers with security are increasingly without options in any venue. Defined benefit retirement pensions are being replaced by the portable 401k. Private sector jobs saw declining stability several years ago causing the worker of today to adapt to a life of job changes and starting over. What will be the effect if many government jobs follow this trend? Adapting the police function and its various supporting roles to accommodate an increasingly mobile workforce will be a challenge for the police executive today and in the future. Recruiting, selection, training and retention of competent police workers who can quickly work in a solo capacity in an unfamiliar community will increasingly become a primary core activity of the future police manager.

The process of continual prioritization of everything government does poses an interesting dilemma for the future police executive. Our most visible "product" is "you are under arrest." When officers arrest people, most officers are able to smoothly handle the interaction with verbal directions and the suspect's acquiescence. However, national studies show in about 1% of the police interactions with the public, the police have to use force. Forced arrests are more difficult for some citizens to accept, creating adversaries for the future. While this has been a component of police and public interactions for many years, tough economic times add more stress to the arrest interaction. Perhaps the future will hold more negative reaction on the part of adversaries and perhaps less support on the part of allies. One could characterize the use of an arrest as a failure of the system to prevent what led to the arrest. Arrests are, and should be, the action of last resort in public order maintenance but this goal is opposed by the likelihood financial stressors will create a climate for more public disorder. The leadership challenge will be shifting the police culture away from the metrics of counting arrests as a measure of success.

Policing also encompasses activities beyond the street interactions between officers and the public. Increasingly, the financial problems we are facing have a component of fraud on the part of some members of the financial industry. A number of writers have expressed frustration with law enforcement's failure to enforce banking and finance laws designed to prevent fraud and maximize confidence in financial markets. While policing has many aspects that involve management of community issues, policing cannot ignore our responsibility to enforce laws fairly, impartially and diligently. When the police do this, they are a legitimate extension of civilian authority and a partner

with the people they are sworn to serve. When the police ignore financial crimes, the public rightly becomes frustrated with their inaction. There is a public need to take action when financial crimes have occurred and when the police do so the public is likely to be our ally. If the police turn their head and ignore the financial crimes that have contributed to our current financial problems, the police are correct to expect the public to develop into adversaries. Courts and the judicial process can be slow, but the public accepts and wants this. The alternatives are vigilantism and a decrease in social order. Law enforcement must fulfill our role to bring law breakers to the bar of justice.

In the highly scrutinized social environment where police work is done, the police need to focus on ALL of their public interactions. Many citizens interact with the police at some time in their lives and have an opportunity to form an opinion about the police. Many officers don't fully appreciate how their interactions with people have ramifications far beyond the moment, and can push people into the adversaries or allies camp. While many officer think there is no way to win in the court of public opinion, all of this serves to illustrate that, in spite of the above mentioned budget woes, the need is high to invest more into the most critical asset of policing – our employees. Recruiting, selecting, training and sustaining effective "people persons" capable of handling the varied tasks that require many different personal skill sets remains one of the most critical tasks today and for the future.

In government, budgeting can be inflexible and a hindrance in a world that changes fast. Restrictions such as fiscal year, approval processes, purchasing guidelines, pay plans and labor contracts lock police managers into certain methodologies. What will change is the planning and prioritizing of what gets done. An actual critical evaluation of the effectiveness of what gets done, identifying core responsibilities and how the current organization accomplishes core functions is a necessary exercise for setting priorities about what will be retained. Criteria for identifying the most effective services will help select those services to be abandoned. That will help articulate the justification of doing certain activities to city management and elected representatives but also to the police officers and support employees. If the police are going to have to operate with reduced capabilities they need to know what works best in their community. This is going to force the police away from doing business as it has always been done just because it has always been done that way. Inertia has kept policing from changing a number of things. Police often have an informal mission statement of being the "keepers of the status quo." It appears that bad economic times are going to force some uncomfortable changes in policing, just as many in the private sector are remaking

themselves and repositioning to be able to do their business in a more volatile economy. Ultimately this exercise may lead the police to become far more effective! But how will that increased effectiveness be measured? Compounding the mind-boggling need to change is the police profession's strong bias towards the status-quo. Police hate organizational change. Cops are highly adept at coping with change in the external environment, but they fiercely cling to the comfort of "how we do things around here." Perhaps this is to cope with the stress from the dynamic world in which they work.

Exploring non-traditional sources of funding will increasingly be a function of the current and future police manager. For example, what level of the funding burden can drug asset seizure offset? And if relied upon, what are the consequences of adopting this as a mainstream source of funding the police organization? Some cities and states have long counted on this strategy to supplement operation budgets. However, what will be the corrosive effects of funding police operations with monies seized from drug dealers. Since the emergence of asset forfeiture years ago, some drug units have changed the way they do business to concentrate on just seizing assets because of the potential revenue. This is bad public policy and likely to lead to the loss of this tool, or worse yet induce opportunities for police corruption. Even if the moral ground stays firm, there will be ample opportunity for adversaries to exploit even legitimate practices with accusations of impropriety. A similar scenario is writing traffic tickets to generate revenue. The best reason to write a traffic ticket is to increase the likelihood of increased voluntary compliance with the law in the future, not to fund government operations. History has shown that just like some schools "teach to the test", some police agencies have arrested for the money. This only serves to erode public trust and confidence in the police mission, diminishing allies and empowering adversaries.

A non-traditional source worth exploring is police foundations. A foundation is an organization where local benefactors join to provide both the governance through a board of directors and the leadership to pursue donations and to disburse proceeds. Foundations are currently financing more advanced training needs, helping to acquire high tech solutions, and even underwriting out-of-the-box strategies that a police department's budget would never fund. Experience with foundations has shown that committed board members are critical to getting the work done in the early days. As the foundation matures, paid staff may be added to carry out the benevolent work of the foundation. When organizing the foundation, the bylaws and charter for the foundation will likely require legal approval at the state and federal level to ensure tax exempt status is available for the foundation and

donors. The foundation clearly can identify the allies in the community and empower community input to the police agency. However, the opportunity to influence the work of a police agency through donations can e perceived as and actually can increase corruption. Care must be taken to ensure transparency in a foundation's work to avoid fixing one problem such as funding and creating an even larger problem such as corruption. The law of unintended consequences is pervasive in life's activities.

Outsourcing and insourcing are additional practices that can generate savings or revenue and sustain core services. Outsourcing might include contracting for lower cost private providers of traditional police services, e.g. crime scene guards, school crossing guards, animal control and other ancillary services. Insourcing often includes "selling" excess capacity. Sheriffs have been "selling" jail space to federal and state authorities for years. Local police may be able to "sell" crime lab services, investigative resources, communications, data management, training academies, etc. The police, out of necessity, build capacity into their organization to handle emergencies that often exceeds the needs of their daily demands. If the Parks department can run a golf course for profit, why not turn a police DNA Lab into a source of revenue?

Faced with reduced budgets, many police managers are reducing their workforces while still facing the expectations created by 911 calls for service and crime victims in the community. During the strain of workforce drawdown, the police leader always needs to remember the human toll. In "normal" times before the economic collapse of local governments in the U.S., police culture has always experienced a high "rumor mill" environment. That phenomenon has soared with the pressures of scarcity. The basic preservation of one's livelihood trumps logic and common sense when employees are panicked. Police leadership needs to proactively address such employee behavior in a nurturing and transparent manner. Success can help your employees remain allies. Failure to address these human needs may turn your employees into adversaries.

In past decades, information sources within police agencies were limited. Today, police employees typically all have their own email addresses, carry either their own smart phones or agency devices or both, and can access any and all social media sources through ubiquitous computers in their work locations and vehicles. There is no silver bullet solution to organizational communication. Police leaders and their staffs must apply an overlapping networked strategy of using ALL available communication methods to get as much factual and timely information to

employees, especially when it pertains to their personal and the organizational future. For example, an effective police leader may widely disseminate summary information as soon after a budget meeting with the Finance/Budget department as possible, posting the info through wide broadcast emails, blogs, websites, even agency Twitter or Facebook accounts. Using the ―high tech, high touch‖ approach, the effective leader will also maximize their face-to-face time with employees, welcoming their questions and providing a calm and honest assessment of their situation. During challenging times, leaders can ill afford having employees shift from allies to adversaries of the organization. In policing, the core and meaningful work is done by people. Attending to people's needs both inside and outside the organization is a leadership strategy that remains consistent with the mission of policing, and maximizes the allies needed for the complex partnerships that define contemporary policing.

Whether the traditional allies and adversaries for the police will remain or be replaced with new players driven by different concerns, police leaders still need to quickly discern who's who and manage the impact of both. Our current financial troubles are likely to continue or worsen in the near term. The methods employed to stem the downturn are not producing the results desired. Public disorder is becoming prevalent in some countries and is likely to become a worldwide problem. The future for policing is often one of uncertainty and the near future will be true to that pattern. The police executive who realizes that money matters in more ways that just the budget will be better prepared to shape the future of their police organization.

Issues Facing Law Enforcement Concerning the Elderly

Al Youngs[3] & Hayley Cleary[4]

The "Millennium Conference" sponsored by the FBI at Quantico, VA in July of 2000 identified five areas of concern that must be addressed: The Future of Technology and its effect on Law Enforcement, The Future of Leadership and Management in Policing Agencies, Future Crime/Future Law, The Future of Policing Practices and Philosophies, and The Changing Face of America-Demographics and Policing. Among the latter issues are those resulting from the aging of the population at large.

Persons 62 years or older numbered over 42 million in 2000 representing 14.7% of the U.S. population. In 2010, the number of older Americans increased by over 8 million representing 16.2% of the population – a nearly 20% population increase over the ten year period. The population aged 45 to 64 increased 31.4% between 2000 and 2010, while the population under 18 grew at a rate of only 2.6 percent. The growth rate was even slower for those aged 18 to 44 (0.6 percent). The age group 60 to 64 was the five-year age group with the largest percent increase (55.6 percent) followed by the 55 to 59 age group (46.0 percent). The five-year age group with the largest percent decrease was the population aged 35 to 39 (11.1 percent decrease).[5]

The U.S. Census Bureau estimates that the nation's population age 65 or older will more than double by 2030. The first boomers are turning age 65 in 2011 and then 10,000 per day will turn age 65 thereafter. There will be 72 million of them, a full 20% of the U.S. population, and they're going to live longer. The IRS estimates that a person who is age 62 today is likely to live another 23 or so years. It is estimated that 25% of the 65+ population are unprepared for retirement and will be dependent on government programs; 25% may see a decline in their standard of living after they retire. Only half will maintain their pre-retirement standard of living.

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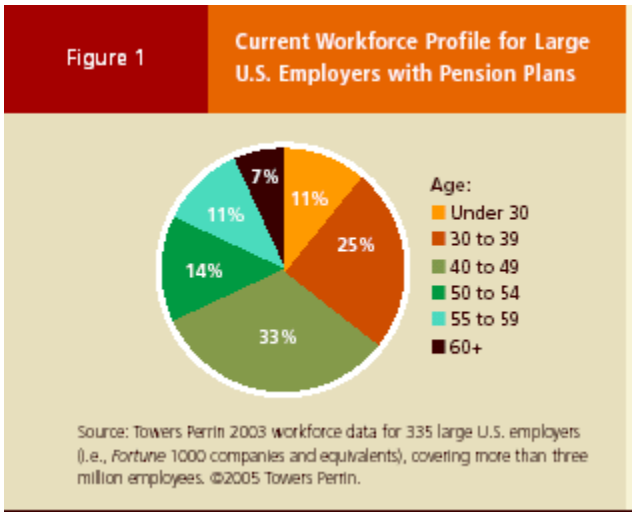
[4] *Hayley Cleary is currently an Assistant Professor of Psychology at Virginia Commonwealth University in Richmond, VA.*
[5] U.S. Census Bureau Age and Sex Composition 2010 (http://www.census.gov/prod/cen2010/briefs/c2010br-03.pdf)

Federal spending on seniors (over age 65) constituted 22% of the budget in 1971; by 2000, the proportion had risen to 33% of the budget.[6]

What effect will the aging of the population have on law enforcement? First, there could be a shortfall in the general workforce due to the aging population and the decrease in the age group 18 to 44. Competition will be great for the well-trained and educated employee. The decline in the workforce will affect recruiting and training of law enforcement personnel.

According to a study commissioned by AARP, *The Business Case for Workers Age 50+*[7], by 2012, a full 20% of the workforce will be age 55 or older and the number of new workforce entrants will not be large enough to replace those who can retire. Despite the predictions that many of this generation will not be able to retire, many analysts predict a growing labor shortage and a potential significant loss of experienced talent in key positions, especially in professional and skilled trades. Two thirds of the 700 *Fortune 1000* companies and organizations of similar size in this study still offer defined benefit plans. One in five workers in these companies is retirement eligible today and another third will become eligible in 5 to 10 years.[8] Some industries such as healthcare are already suffering from a lack of personnel.



[6] Society of Certified Senior Advisors Working with Seniors Health, Financial and Social Issues
[7] www.aarp.org/research/work/employment/workers_fifty_plus.html
[8] Ibid

While this trend will vary significantly by company and position, many HR managers interviewed for the AARP study found older workers to be preferable because they find the new workers lacking in written communication and analytical skills as well as professionalism and business knowledge.

So, how will this affect law enforcement agencies and their communities nationwide? Like the *Fortune 500* companies mentioned above, many law enforcement agencies offer pensions. Those with many years of experience on the job are beginning to look at their retirement options. Some are taking retirement from their departments and re-entering the job market as law enforcement agency consultants, speakers, criminal justice professors, private sector security advisors, or head of security for large corporations. Others are taking their well-deserved retirement and enjoy splitting their time between their home states and second homes elsewhere. While the recent economic recession has slowed the movement into traditional retirement areas such as the Southeast, retirement areas are still growing. Stanley K. Smith, director of the Bureau of Economic and Business Research at the University of Florida, states that Florida's population is still climbing. The Bureau forecasts a continued slow-down in Florida's growth rate through 2030, when the state's population is predicted to hit 26.5 million—a 42% jump from today.[9]

What will the law enforcement agencies do to replace professionals with years of knowledge leaving their departments? There may not be enough recruits to fill these positions. Consider these projections by the U.S. Census Bureau and the Monthly Labor Review:

[9] http://www.rinr.fsu.edu/issues/2008spring/cover02_a.asp

Actual and Projected Distribution of United States Population by Age, 1900-2050

Year	All Ages	00-04	05-19	20-44	45-64	65-84	85+	00-19	20-64	65+
1900	100.0%	12.1%	32.3%	37.7%	13.7%	3.9%	0.2%	44.3%	51.4%	4.1%
1910	100.0%	11.6%	30.4%	39.0%	14.6%	4.1%	0.2%	41.9%	53.6%	4.3%
1920	100.0%	10.9%	29.8%	38.4%	16.1%	4.5%	0.2%	40.7%	54.5%	4.7%
1930	100.0%	9.3%	29.5%	38.3%	17.4%	5.2%	0.2%	38.8%	55.7%	5.4%
1940	100.0%	8.0%	26.4%	38.9%	19.8%	6.6%	0.3%	34.4%	58.7%	6.8%
1950	100.0%	10.7%	23.2%	37.6%	20.3%	7.8%	0.4%	33.9%	57.9%	8.1%
1960	100.0%	11.3%	27.1%	32.2%	20.1%	8.7%	0.5%	38.5%	52.3%	9.2%
1970	100.0%	8.4%	29.4%	31.7%	20.6%	9.1%	0.7%	37.9%	52.2%	9.9%
1980	100.0%	7.2%	24.8%	37.1%	19.6%	10.3%	1.0%	32.0%	56.7%	11.3%
1990	100.0%	7.4%	21.3%	40.1%	18.6%	11.3%	1.2%	28.7%	58.8%	12.6%
2000	100.0%	6.8%	21.8%	37.0%	22.0%	10.9%	1.5%	28.6%	59.0%	12.4%
2010	100.0%	6.9%	20.0%	33.8%	26.2%	11.0%	2.0%	26.9%	60.0%	13.0%
2020	100.0%	6.8%	19.6%	32.3%	24.9%	14.1%	2.2%	26.5%	57.3%	16.3%
2030	100.0%	6.7%	19.5%	31.6%	22.6%	17.0%	2.6%	26.2%	54.2%	19.7%
2040	100.0%	6.7%	19.2%	31.0%	22.6%	16.5%	3.9%	25.9%	53.6%	20.4%
2050	100.0%	6.7%	19.3%	31.2%	22.2%	15.7%	5.0%	26.0%	53.4%	20.7%

Source: U.S. Census Bureau, *Demographic Trends in the 20th Century* , Census 2000 Special Reports, CENSR-4, Table 5, November 2002.

U.S. Census Bureau, "U.S. Interim Projections by Age, Sex, Race, and Hispanic Origin," released November 18, 2004.

Law enforcement agencies, like the companies noted in the AARP study, must attract and retain older experienced personnel by offering the right combination of benefits. Consideration must be given to forming public private partnerships with private companies who will provide personnel to perform many functions done now within law enforcement agencies by sworn personnel. Private firms may hire retired officers to perform similar jobs to those they left on the force and may even place them back into law enforcement agencies as non-sworn personnel.

An additional factor to consider is the migration of retired people out of their home communities into their preferred retirement communities. These desired retirement communities will have more experienced seniors available for part-time or flex-time work. Law enforcement agencies in these communities should look at tapping this source for recruitment into positions that can be performed by non-sworn personnel. Law enforcement agencies should take advantage of volunteer organizations.

The Society of Certified Senior Advisors outlines five myths of aging: **1. To be old is to be sick.** Advances in healthcare and healthier lifestyle choices favorably impact how seniors age. **2. You can't teach an old dog new tricks.** The aging brain actually retains the ability to learn even at an advanced age. **3. Choose your parents wisely.** We can control social and behavioral factors that shape the state of our health. **4. The horse is out of the barn.** With

lifestyle changes people can decrease the risk of disease and disability. **5. The elderly don't pull their own weight.** As educational levels have increased and the guaranteed retirement becomes more uncertain many seniors are working well past normal retirement age. Also, seniors engage in many productive roles within their families and as volunteers in their communities.[10] This illustrates that employers need to drop the preconceived notions and recognize that the face of aging has changed.

What changes will law enforcement have to make to accommodate the aging population base? The types of services law enforcement agencies provide will also reflect the aging population. Law enforcement will need to partner with various agencies on aging and faith based organizations. They need to provide training to officers on how to handle various cases of elder abuse as well as how to communicate with the elderly victim and elderly citizens. Communicating effectively with seniors and their families is ethical communication and ensures the senior citizen receives the highest level of service. Training in ethical communication requires the officer learn to recognize some of the preconceived notions about the elderly and how different communication skills are needed to effectively convey and obtain information from seniors.

It is often frustrating for some to interact with the elderly. Recognizing the developmental drivers for older adults helps overcome this frustration. Seniors have two developmental drivers: maintaining control and searching for a legacy.[11] The elderly look backwards to try and make sense of their experiences and the legacy they will leave behind, unlike those in middle age who look forward by setting and achieving goals. There are five brain functions that change as we age: Speed of processing, cognitive flexibility, capacity to draw inferences for information, multitasking, and ability to focus attention. Seniors exhibit verbal behaviors that may be judged as mental decline but in reality are indicators of their developmental needs.[12]

The elderly as victims of crime is another major concern for law enforcement agencies. Becoming a victim of crime is one of the biggest fears of the elderly. This fear equaled the fear of not having enough money to live on and exceeded the fear of loneliness. Seniors suffer

[10] Society of Certified Senior Advisors Working with Seniors Health, Financial and Social Issues pg.104
[11] David Solie, How to Say it to Seniors: Closing the Communication Gap with Our Elders (New York: Prentice Hall, 2004), 13-20
[12] Effective and Ethical Communication with Seniors Web CE LP, LLP www.webce.com

greater mental physical and financial injuries than other age groups when they are victims of crime. In 2009, Persons age 50 or older had the lowest rates of violent crime while persons age 12 to 24 had the highest rates. In 2009 property crimes were experienced by members of elderly households at a rate of 57.2 per 1,000 households.[13]

The National Center on Elder Abuse defines seven different types of elder abuse:

Physical abuse: Use of physical force that may result in bodily injury, physical pain, or impairment.

Sexual Abuse: Non-consensual sexual contact of any kind with an elderly person.

Emotional abuse: Infliction of anguish, pain, or distress through verbal or non-verbal acts.

Financial/material exploitation: Illegal or improper use of an elder's funds, property, or assets.

Neglect: Refusal, or failure, to fulfill any part of a person's obligations or duties to an elderly person.

Abandonment: Desertion of an elderly person by an individual who has physical custody of the elder or by a person who has assumed responsibility for providing care to the elder.

Self-neglect: Behaviors of an elderly person that threaten the elder's health or safety.[14]

Elder abuse often goes unreported. The American Psychological Association estimates that over 2 million cases of elder abuse happen every year.[15] Elder abuse costs seniors over $3 billion a year. Often the senior citizen is afraid to report the abuse or does not want to report a family member or friend. Elder abuse happens most often in the home, not in nursing homes. Renowned actor Mickey Rooney testified before the U.S. House of Representatives in March 2011 that he was a victim of elder abuse by his stepson and his stepson's wife. Rooney said he was afraid to seek help because he was "overwhelmed" with fear, anger and disbelief. The Senate Special Committee on Aging has been examining the prevalence of elder abuse in America, and Senate Aging Committee Chairman Herb Kohl (D-Wis.) wants to file legislation to create an Office of Elder Justice in the U.S. Department of Justice seeking up to $20 million to strengthen local law enforcement and protection efforts. However, funding does not come easily in these economic times. No dollars have been appropriated to implement the Elder Justice Act

[13] http://bjs.ojp.usdoj.gov/index.cfm?ty=tp&tid=92
[14] National Center on Elder Abuse/Elder Abuse Information Series No. 1
[15] Elder Abuse and Neglect: In Search of Solutions http://www.apa.org/pi/aging/resources/guides/elder-abuse.aspx#

passed as part of the Healthcare law in 2010. [16] This Act set aside $777 million dollars over four years. The law is powerless one year after passing due to lack of funding, according to the Elder Justice Coalition.[17] States are suffering as well. Prosecutors' jobs are made difficult by the lack of state and national funding. Their ability to effectively investigate and prosecute an ever-increasing load of suspected elder abuse cases is derailed by a lack of money. These cases are complicated. They require experts in issues concerning capacity, competency, financial instruments and complicated medical issues.[18]

As the elderly population continues to grow and as seniors stay in the community longer, so grows the need for programs to deal with the varied issues of aging. Training is a must for law enforcement and justice personnel to dispel the myths of aging, to provide effective communication with seniors in an effective manner and to recognize the signs of elder abuse. State laws and practices relating to elder abuse need to be studied. A process for collecting uniform national data on elder abuse, including; developing a method for such data collection and developing uniform data collection forms, is also needed. Funding on the State and National level is imperative to let law enforcement and prosecutors keep pace with this growing problem. The Elder Justice Act (S.2010) and Elder Justice Act (HR.1783 S.1070) is a step in the right direction as it provides many of these need items including establishing an Office of Elder Abuse within the Department of Justice.[19]

How does law enforcement work hand in hand with other agencies and community based organizations to detect and prevent elder abuse?

Prior to the Elder Justice Act being passed, communities had taken the lead on fighting elder abuse and fraud against senior citizens. There are agencies on aging and adult protective services in every state that assist the elderly with all their needs. And some communities have gone the extra step.

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[16] Mickey Rooney Claims Elder Abuse http://www.aarp.org/relationships/caregiving/info-03-2011/mickey-rooney-claims-elder-abuse.html

[17] EJA Update May 20th http://www.elderjusticecoalition.com/

[18] Mickey Rooney Claims Elder Abuse http://www.aarp.org/relationships/caregiving/info-03-2011/mickey-rooney-claims-elder-abuse.html

[19] Comparison of Elder Justice Provisions in 109th Congress' Elder Justice Act(S.2010) and the 110th Congress's Elder Justice Act (HR>1783 S.1070) http://www.naela.org/App_Themes/Public/PDF/Advocacy%20Tab/Other%20Advocacy/Elder%20Justice%20Toolkit/4.%20Elder%20Justice%20Act%20Bill%20Comparison.pdf

Denver's District Attorney's Office instituted the CASE Program (Communities Against Senior Exploitation). The program provides an ongoing partnership between prosecutors or law enforcement agencies and faith-based communities; faith-based Power Against Fraud prevention seminars led by prosecutor or law enforcement staff; monthly fraud alerts sent to the faith partners for congregational distribution and fraud prevention assistance and victim support. This program provides a detailed toolkit for replicating the program. Faith communities are successful partners because a significant number of older adults are active participants and receive much of their information and social support from their church, synagogue or temple. Older adults also have high level of trust and respect for clerical authority. [20] The Power Against Fraud seminar focuses on seven predominant areas of elder fraud and exploitation: Identity Theft, Telemarketing Fraud, Mail and Internet Fraud, Home Improvement Fraud, Predatory Lending Scams, Investment Fraud and Caregiver Exploitation.

Paul Hodge, Chairperson National Health Care Law Enforcement Alliance, who believes that national model enforcement programs should be established and made available to local jurisdictions that desire to institute and enhance their elder abuse law enforcement efforts, outlined other innovative programs in his speech before the U.S. Subcommittee on Aging: [21]

- The Mississippi Attorney General's Office of Consumer Protection developed a consumer awareness television program called "The Consumer Connection" which covered fraudulent and deceptive practices targeted to elders.

- The Washington State Attorney General's Office formed the Elder Rights Project as a proactive effort to respond to the needs of Washington's elder population. The project has included the creation of training with the AARP and legislative programs designed to increase the effectiveness of law enforcement efforts to protect Washington's elder citizens.

[20] http://case.denverda.org/case/Aboutcase.htm
[21] UNITED STATES SENATE HEARINGS OF THE SUBCOMMITTEE ON AGING Statement of Paul D. Hodge, JD, MBA, Chairperson National Health Care Law Enforcement Alliance ELDER ABUSE: A NATIONAL SCANDAL

- In Los Angeles, the FAST (Financial Abuse Specialist Team) program was started. When a difficult case of elder financial abuse is being handled by adult protective services ("APS") or the Los Angeles police department which has a financial exploitation unit, FAST is often used to advise the police or APS on how to handle these complex matters. FAST members represent a diverse group of professional disciplines from, to mention a few, the police exploitation unit, APS, mental health, gerontology, the private practice of law, accounting, etc. Because of their success, FAST programs are now operating in Orange County and San Diego, California."

It is imperative that the provisions of the Elder Justice Act (S.2010) and the Elder Justice Act (HR.1783 S.1070) be funded. To delay longer puts more seniors at risk. As the elderly population continues to grow and as seniors stay in the community longer, so does the need for more programs to deal with the varied issues of aging. Training is a must for law enforcement and justice personnel to communicate with the senior citizen, to provide a venue that is consistent with their needs and to recognize the signs of elder abuse. Laws that protect Seniors, programs that inform Seniors, and laws that consistently sentence offenders are a must.

Relationships and Residence: Effects on Coppery

Bud Levin[22]

Changing housing patterns do not happen by magic. They reflect socio-economic and demographic characteristics as well as safety concerns. The nature of the house is tied to the nature of the household. These factors, in turn, influence the demand for and shape of policing services.

Household size in the U.S. has been declining for many years, from 4.60 in 1900 to 2.59 in 2000 (www.census.gov/statab/hist/HS-12.pdf). That is a 44% drop. The implications of that drop have been nontrivial. That downward trend in household size will moderate or reverse because of three forces. The first is extended adolescence (through age 30). The young are increasingly leaving the nest only when propelled at point of gun. The second force is children moving "back home" when the real world turns out to be less hospitable than the home of origin. The third force is parents moving in with their children. The parents will be moving because of economic necessity on their part (rising cost of health care, reduced income, increased housing costs, etc.) and because of the need for personal care from their children. Forces pushing in the other direction include institutionalization of the elderly, inability of elderly denizens to climb stairs, and related drivers.

Still, most of the over-55 population will continue to live independently. The wealthiest age segment of our population is the group aged 65-69 (http://www.census.gov/prod/2008pubs/p70-115.pdf). They will remain the wealthiest demographic overall and thus will retain disproportional political influence, including on that most political of our institutions, policing. The elderly are a huge and largely untapped potential source of help for policing agencies. That help may take the form of political support, financial support and even light office work. If, of course, we bother to tap that potential.

Households and income: Although it seems obvious that there is a relationship between household income and other demographics, many people are not aware of the stark differences in median income between various groups (see Table 1.)

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Race/Ethnicity	Household Income
Asian Alone or in Combination	$65,876
White Only	$54,920
Hispanic of any Race	$38,679
Black Only	$29,470

Table 1. Median household income 2007
(extracted from http://www.census.gov/hhes/www/income/histinc/h05.html).

Household wealth is much more difficult to evaluate, and even more depressing (See Table 2).

Race/Ethnicity	Household Net Worth
Asian or Pacific Islander	$59,292
White not of Hispanic Origin	$87,086
Hispanic Origin	$7,950
Black	$ 5,446

Table 2. Median household net worth 2002. (extracted from
http://www.census.gov/hhes/www/wealth/2002/wlth02-1.html)

Unfortunately, we have more than point data for tables 1 and 2. The present data are not only not aberrations, but they are points on an established downhill trend. Specifically, if one peruses 1991 and 1993 data, one sees a ratio of black to white household net worth of approximately 1 to 10 (Levin, 1998). The present data show a ratio of approximately 1 to 16. This divergence in wealth by race/ethnicity augurs ill for all social services including policing. It also augurs ill for the integrity and viability of the larger society.

The most depressing data, the icing on a very sour cake, come from data on congregate living of a particular sort: governmentally-imposed.

Race/Ethnicity	Incarceration Rate per 100k Population
White	773
Hispanic	1747
Black	4618

Table 3. Estimated total male population incarceration (prison, jail, state and federal) rate per 100,000 population as of 1 July 2007. (extracted from http://www.ojp.usdoj.gov/bjs/pub/pdf/pim07.pdf)

Incarceration of males, while useful for purposes of incapacitation, has massive impact on demand for policing services. Among others:

1. Incarcerated males are not employed and thus their households of origin are impoverished.
2. Most of the children of incarcerated males will be reared in (at best) single parent families, and thus be vulnerable to a variety of social problems.
3. Incarceration consumes tax dollars. In a "no new taxes" political environment, that means money for policing, prevention and treatment will be tight.
4. So many black males are incarcerated that many black females find themselves unable to acquire tolerable mates. Thus those females are more susceptible to the physical, psychological and social vulnerabilities secondary to social isolation and loss of occupational and educational opportunity.
5. Those same females may be disproportionately likely to have unwanted children. Unwanted children probably are more likely to engage in delinquent and criminal behavior (Jensen, Levin and Royster, 2001).

Overall, the rates of incarceration as well as in community-based correctional "services" are expected to level off and perhaps decline somewhat. Upward forces include increased labeling of activities as crimes and increased sophistication of "crime-fighters" via crime analysis, information sharing, community building and text-based and Internet-based Crime-stoppers-like programs.

Downward forces are cost, declines in high-crime cohort size and distraction from concerns about crime and safety to concerns about economics. Fudge factors include changes in

immigrant ejection policy and possible changes in the fee structure for immigration holding in correctional facilities, and the degree to which the drug "war" remains politically viable.

Single parenting remains high and will be reduced only by major changes in social policy or economics. Single parenting increases calls for service, albeit indirectly. Again, racial differences are substantial (Table 4).

Race	Percent Living with Both Married Parents
Asian	85
White	74
Black	36

Table 4. Percentage of children under age 18 who are living with both married parents, 2007. (extracted from http://www.census.gov/population/socdemo/hh-fam/cps2007/tabC3-all.xls)

Single parenting is tightly tied to poverty. Less than six percent of two-parent households are below the poverty level. In contrast, more than thirty percent of female-headed households with no husband present are below the poverty level (http://pubdb3.census.gov/macro/032008/pov/new02_100_01.htm). Impoverished households have fewer social supports and thus are more likely to call upon police to assist with their problems. Not unrelated, police calls for service come disproportionately from a very limited number of "hot spots" (Sherman, Gartin and Buerger, 1989).

The picture with out-of-wedlock births is more complex. Clearly, the numbers are going up dramatically overall, despite declines in mothers under 18 years of age (http://www.cdc.gov/nchs/data/nvsr/nvsr56/nvsr56_06.pdf). The effect of being born to and unmarried mother is not neutral with respect to demand for police services. Why? Because those children are vulnerable to all of the threats of single parenting in addition to potential issues with paternal identification and child support. Over time, the identification and child support issues may decline, but in the U.S. it will not be any time soon.

Alternative Life-styles

Prior to World War II, the likelihood of international travel was very low and the typical resident's knowledge of other cultures was limited to exposure to immigrants from those cultures. Times have changed. The world is a much smaller place, both geospatially and informationally. Cultural knowledge is much more widely shared. Barriers to travel are somewhat lower, but the biggest change has been enhanced communication. Ubiquitous television, the World-wide Web, and a multitude of social networking devices have brought the distant very near, making the strange familiar. Previously foreign concepts and practices are now more frequently encountered and familiar.

As this shrinking of our umwelts continues -- and it will -- the variety of "life styles" will increase inexorably. Consider the bar scene in Star Wars. Then think of that as the norm. Then think of your children growing up with that variety of social norms as within their perceived normal range, as models. "Alternative life-styles" will include far more than sexual variations.

That said, we surely expect varieties of sex-based relationships to flow across the social landscape. Heather's Two Mommies (Newman, 1989) will become no more notable than many other combinations and permutations.

"Occupied housing units with more than one person per room are considered crowded." (http://www.census.gov/hhes/www/housing/census/historic/crowding.html). Crowding within households has been an issue, particularly in immigrant households. According to the 2000 Census, 5.7% of households were crowded. (op cit.). We expect more crowding to occur as mortgage financing remains tight, international economic competitiveness remains high, and household size stabilizes or reverses its downward trend.

We expect the above trends to be manifest throughout the developed countries and eventually be reflected in developing countries. Similarly, "fuel poverty" and poverty induced by increased prices and increased demands for other commodities will spread throughout the world until the dramatic economic growth of China, India and Brazil eases.

Home ownership is a protective factor for many threats. Home owners are older, wealthier, better educated, safer, and less likely to be single parents. Put another way, single person households and householders under age 35 are disproportionately unlikely to be home owners (http://www.census.gov/hhes/www/housing/census/historic/ownerchar.html) and disproportionately likely to be both offenders and victims.

Whites are far more likely to own their homes than are blacks or Hispanics (http://www.census.gov/hhes/www/housing/census/historic/ownershipbyrace.html). Home ownership tends to reduce calls for service. Unfortunately, for the foreseeable future, home ownership rates are likely to be in decline as foreclosures remain high and rentals increase (e.g., http://finance.fortune.cnn.com/2011/05/25/winners-of-the-rental-economy/).

Physical construction of housing also is related to crime and policing. Crime has influenced both size and floor plan of housing, and will continue to do so. As fear of forced entry increases, entry control devices also will increase. Steel doors are replacing wood doors. SWAT entries are increasingly explosive entry rather than battering rams -- the rams don't work very well on steel doors with 3" screws, reversed doorstops, jamb pins and other entry security devices.

Electronic surveillance of entryways is no longer limited to commercial properties. Sometimes the output of surveillance devices is made intentionally visible to police. That increases the burden on police resources but also increases the ability to detect intrusions early in the event. Secondary to progressive loss of confidence in public safety, these video surveillance practices, anti-intrusion devices as simple as motion-detection lighting, monitored alarms and even private or special public neighborhood patrols will become increasingly common.

Section 8 and Crime

In the interest of enhancing opportunity and diversity while breaking up urban ghettos, the Section 8 tenant-based housing assistance program (http://www.access.gpo.gov/nara/cfr/waisidx_00/24cfr982_00.html) has been applied in many communities, nation-wide. On the surface, the program has been successful -- poor people have moved away from central city slums and toward suburbs. As with other migrations of minorities, concerns about increases in crime have followed along.

Rosin (2008) points out that there is some degree of correlation between increased crime and the influx of poor people from inner cities. From that correlation, she implies causation. Janikowski (2008), one of the authors on whose work Rosin based her conclusions, urges caution. Levine (2008) urges even more caution, pointing out that many other forces are in play and that the data are far from compelling.

At this point it is safe to say that it is not safe to conclude much except that in recent years crime has been down in many places and up in a few others, and that housing patterns and service patterns might have something to do with that. [n.b.: in some places, e.g., Kansas City, the crime rate is either up or down, depending on which report one reads -- http://www.kansascity.com/703/story/811074.html). All in all, it is a morass.

Multiple Dwelling residences (condos, apartments, tenements , projects) -- grouped by socio-economic status and by race/ethnicity and culture) can have interesting effects. Consider homogeneity as a consequence of defensive congregation rather than as a result of assignment. As crime goes up, people are more likely to live with "their own kind." Seams defining turf boundaries may be sociological manifestations of gang enclaves. Gangs (aka "informal self-protecting organizations") can function as a low socio-economic status equivalent of private police. A frequently cited reason for joining a gang is, "I couldn't afford not to."

In higher Socio-Economic Status communities, other solutions to threat are found. Gated communities and private security are examples. Guarded high-rise apartment/condo buildings and business locations are frequently found. Green zones (golf courses and parks) with limited vehicular access are now being used to isolate and protect communities both from fire and crime.

House configuration has shifted due to, among other things, safety. Beginning during the late 19th century and obviously in the 1930's, the city was not as safe as the country and the designs of homes began to reflect the apprehension of the occupants. By the 1930's, the large, multi-story house with the front porch looking out toward the street that was popular in the country underwent drastic reductions in size and changes in design. The living areas facing the street were turned around and now look toward the rear of the property onto a large, fenced (or walled) back yard. The "back"[23] door that entered into a small porch-like area and then to the kitchen on the older homes was replaced by sliding or French doors between a family room and a patio at the rear of the newer homes. The upstairs bedrooms in the older homes were moved downstairs and to one end of a single-story structure. The large porches gradually shrank in size to only about twelve to sixteen square feet. Unlike the original porches, these "entry ways" were never designed for family functions but simply to channel visitors to an area where they could be screened before granting entry.

[23] More often located on a side of the house, especially the driveway side

Zoning has increased architectural, functional and economic homogeneity in the interest of safety and aesthetics, but at the cost of physical exercise, energy inefficiency and dependence on paved roads.

In the information age, more change is afoot. Cottage industries are moving back into houses, despite restrictive zoning. Enforcement of zoning is becoming very problematic -- these cottage industries are nearly invisible. Zoning is an artifact of the bygone industrial age.

Telecommuting also creates zoning issues, as well as changing traffic and traffic crash patterns. Telecommuting also reduces commuting distances and thus has a secondary effect on crashes. These factors will affect the need for traffic law enforcement.

High energy prices are changing the distribution of people in cities. Increasingly there is a push to live closer to work and to live near or above retail businesses and in downtown areas. Commuting from suburbs into cities will be reduced. There will be two likely scenarios. In one of them, businesses will abandon the city core in order to follow their employees. In the other scenario, where housing capacity exists in cities, suburb dwellers (primarily childless) will tend to move (back) to the city core. In any case, the built environment creates barriers that are costly to overcome.

Sociological Influences

Homes reflect sociological influences and values just as much as styles of dress or choice of vehicles. For determining floor plans however, they have one major advantage—they are more enduring. In fact, about three-quarters of all existing houses have been built since 1940[24] and almost 43% have been built since 1970. This means that about 70 percent of the 110 million housing units in the United States today will still be around two decades from now. The hundred year-old house is the exception, not the rule.[25] This simplifies the task of determining floor plans because it tends to attenuate older influences. Anyone who has ever remodeled a house will attest to the great expense and effort it takes and the task is greatly compounded if walls need to

[24] Rybczynski, Witold, Looking Around: *A Journey Through Architectur*e, Viking Books, New York, New York, 1992, p. 74

[25] Most of the older houses are in the Northeast, followed by the Midwest with most of the newer construction in the South and West portions of the country.

be moved. As a result, even houses that have been remodeled, refurbished or renovated[26] often keep their same or very similar floor plans. Nevertheless, there are some substantial differences between older and newer houses and an understanding of the sociological influences provides a conceptual framework of understanding.

One of the greatest sociological impacts on the size and design of our homes is our idea of family. When we lived on farms, large families were needed to attend to the multitude of chores. When people flocked to the cities during the industrial age, the concept of a family changed very slowly. Families remained large and often included grandparents. Consequently, the houses looked very similar to their rural counterparts. They tended to be large and multi-story with large porches that faced toward the street. The bedrooms were upstairs and the living room was downstairs at the front (street side) of the house.

But as time passed, families grew smaller and grandparents more often lived in their own homes. The need for large homes diminished and smaller homes became more popular. The trend was accentuated in the 1930s and 1940s with the Great Depression and World War II when people could not afford to build large houses. After the war, returning GIs wanted the "American Dream" and small cottage-like homes were relatively inexpensive and appealing. During this time the typical family had Dad, working at the office or factory, and Mom, staying home to take care of their two children. By 1989 the average number of occupants in a house was only 2.6 people.[27] With more affluence in recent times, the inclusion of home offices, great rooms, and multiple bathrooms, became popular and the trend has been reversed. The average size of a home built since the 1990s is now about 2,161 square feet.[28]

As we move into the future, other sociological influences are beginning to affect the design of houses, most notably the "cottage industry." The trend toward working at home is not new. Indeed, throughout the earliest part of our history, most people worked out of their houses. As we move from the industrial age to the information age the advent of telephones, fax

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[26] While most people believe that "remodel," "refurbish" and "renovate" are synonyms, there are subtle differences, and the building trades understand them to be distinct and different. Remodeling involves reconstructing to enhance appearance, provide additional room and/or functions or adapting to a social change. Renovating involves modernizing a structure to update it and/or exploit new technologies and appliances. Refurbishing or restoring requires reconditioning or rejuvenating a structure to its original condition. Of the three, remodeling is not only the most common, but the most likely to affect floor plans and interior design.

[27] Rybczynski, Witold, Looking Around: *A Journey Through Architectur*e, Viking Books, New York, New York, 1992, p. 75

[28] taken from a U.S. Census Report entitled, "These Old Houses," as reported by Rice, Alison, "Old Vs. New," *Builder*, April 2004, p. 61

machines, computers, and most importantly, the Internet, makes where a person is physically working less and less relevant. This is reflected in newer houses being equipped with fully functional home offices. Consequently, homes are becoming larger again. Home offices, a three-car attached garage, two or more bathrooms[29] and often a guest room are becoming the norm.

As a result of these sociological influences, American houses tend to be eclectic, that is composed of elements and influences of more than one style and period. While sales people will talk about a "ranch style" or "Cape Cod" house as if it were the latest model of automobile, American houses are nearly never purely one style and even if they began that way, the owners soon adapt them to their individual tastes. Thus, an understanding of the local culture and homeowner's interests, likes and dislikes can have a substantial influence when a house is constructed or remodeled. This is particularly so if the owner has lived in the home for a long time.

More generally, space designation within housing also is changing. Increasingly, housing designers are not only designing in work space, but segregating work space from other domestic living space. Emergent is the new business center, set up much like a hotel (desk space, offices, even kitchen space) for road warriors (the new nomads) and for those who telecommute or want to work local to where they live but not in the home itself. As the general population continues to age, pressure will increase for one-story living.

Some cities are built not as cores but as multiple centers of employment, with adjacent residential areas. An example is Houston. As fuel costs rise, people are inclined to move closer to where they work. In the cities with multiple centers, what results is moving from one house within the city to another house also in the city. If there is only a single center, then the housing demand moves from one jurisdiction to another. There are obvious implications for tax bases and thus ability to pay for services, including police services. Cities with single centers of employment are thus vulnerable and may be doomed (John A. Jackson, personal communication, 2008).

Municipal response to blight has included purchasing, evicting the occupants and bulldozing the properties. "Urban renewal," i.e., displacement of undesirables, has been with us for a very long time. Subject primarily to financial and political resources, it will burgeon as

[29] Nearly 94 percent of houses constructed since 1990 have more than one bathroom. (includes half-baths)

inner cities continue to deteriorate. In some areas, gentrification will follow. In others, the resemblance to Beirut will remain dominant. Some large urban centers, e.g., Detroit, will continue to decline despite expensive and expansive efforts to stem the implosion. As one former Detroit Chief said a few years ago, "Detroit – it's all one hot spot." That has not changed. Detroit and comparable deteriorating core cities will continue to be characterized by uninhabited space, challenges in capable governance, low quality services, and high demand for services. Given the immense variation in the social geography of what is policed, policing in the U.S. will likely remain local, customized, focused on local idiosyncrasies and subject to political whims. No two Police Departments will be alike.

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Immigration and Crime: Examining the Past, Predicting the Future

Lin Huff-Corzine[30], Tina Jaeckle[31], and Jay Corzine[30]

Introduction

Scholarly writing relating immigration and crime in the United States (U.S.) began in the late 1800s (Hart, 1896). Since that time, the level of interest among social scientists, as well as police, politicians, and the general public, has often varied in response to changes in the volume and characteristics of immigrants entering the country, e.g., nationality, race, and ethnicity. Periods of large-scale immigration have typically generated waves of anti-immigrant scapegoating in the media and among the general public that focus on the alleged criminal victimization of U.S. citizens by both legal and illegal immigrants (Martinez, 2006). At the height of European immigration in the early 20th century, there was some support for these expressed fears because certain immigrant groups, in fact, did have higher crime rates than native-born citizens for some types of crimes (Adler, 2006; Lane, 1986, 1999; Shaw & McKay, 1969[1942]). Early researchers noted that crime rates were lower for 2nd generation immigrants than for their 1st generation parents (Shaw & McKay, 1969[1942]).

Following the curtailment of European immigration, there was little research on immigration and crime for several decades. Interest in the influence of immigration was revived in the 1960s and 1970s when a new wave of immigrants began arriving from Asia, Latin America, and the Caribbean.

Since 2000, over 10.3 million immigrants, over half of whom are here illegally, have arrived in the U.S. (Camarota, 2007). To illustrate how immigration is affecting the look of U.S. residents, Camarota explains that in 1970 there was 1 immigrant for every 21 native-born citizens. By 2007, the ratio was 1 immigrant for every 8 natives. Thus, immigration reform is a major national issue, and unprecedented steps are in process to control the U.S.-Mexican border (Kil & Menjivar, 2006). Current border control efforts may have as much or more to do with the relative frequency of drug market-related homicides near the U.S.-Mexican border as they do with immigration. Whether the understanding of police, politicians. and the media is influenced

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by these drug-related incidents; earlier studies and experiences of higher crime rates among immigrants; or some more fundamental issue, such as prejudices held toward the groups now most likely to immigrate; there are growing concerns about the negative effects of immigration on crime in the U.S. Much of this attention focuses on specific criminal organizations, such as MS-13 and the Russian Mafia.

Scholarly research comparing the criminal involvement of recent immigrants with native-born persons in the U.S. generally finds that immigrants commit less, not more, crime (Lee, 2003; Lee, Martinez, & Rosenfeld, 2001; Martinez, 2002; Polczynski, Laurikkala, Huff-Corzine, & Corzine, 2009; Rumbaut, 2005; Sampson, Morenoff, & Raudenbush, 2005).

In this paper, we begin by examining the demographics of the current wave of immigrants into the U.S. Then, in light of these demographics and recent research exploring the influence of immigration on crime, we predict how we expect immigration will be related to crime and the need for policing in the future**.**

Immigrant Demographics: The New Wave

Congruent with the fact that the earning power of immigrants is generally less than that of native-born citizens, Camarota (2007) reports that 31% of all adult immigrants have not completed high school compared to just 7.5% of natives. Nonetheless, immigrants work at higher rates than do U.S. natives. Eighty-two percent of the immigrant population have at least one person in the household who works compared to 73% of all native households.

The problem is that in spite of having more people working, when compared to native-born citizens immigrants are nearly twice as likely to live below the poverty line (Camarota, 2007). The jobs they qualify for simply do not pay well. Yet the finding that immigrants commit most crimes at a lower rate than native-born citizens, e.g., Sampson, Morenoff, & Raudenbush (2005), is somewhat surprising because it conflicts with a fundamental assumption of most sociological theories of crime; that is, poverty underlies criminal behavior. Immigrants are notoriously poor; the median full-time income for immigrants is just $31,074 compared to $40,344 for native-born citizens, which means that 40.1% of immigrants compared to 28.0% of natives live in or near the poverty level (Camarota, 2007).

With little education or money, immigrants are most likely to settle in urban areas where they have family or friends (Smith & Edmonston, 1998) and where jobs requiring modest skills

are more plentiful. Thus, they are frequently concentrated in neighborhoods with high levels of poverty, crime, gang activity, and drug dealing (Lee, 2003), a fact that may lead the general public to believe that these are activities immigrants are involved in as well.

In the past, the vast majority of immigrants were young men. Now, women make up over half of all immigrants entering the U.S. legally (Smith & Edmonston, 1998). This shift away from the male-dominated look of immigration, combined with the fact that women commit crime at a much lower rate than men, is likely to be one of the reasons the immigrant population currently has an overall lower crime rate than that of immigrants studied by researchers such as Shaw & McKay (1969[1942]) circa 1905 through 1940. The increased percentage of women should also influence the marital status of immigrants, who, in fact, are more likely to be married and less likely to be divorced than native-born U.S. citizens of the same age (Smith & Edmonston, 1997). In addition, for all age categories and "…for every ethnic group, the foreign-born have more children, and earlier, than do U.S.-born…" women (Rumbaut, 2005, p. 1054).

Immigrants who have arrived in the U.S. between 2000 and 2007 on average tend to be younger (29.4 years) than natives (35.9 years); however, when all immigrants are included, the average age of immigrants is 40.5 years compared to 35.9 years for natives. When predicting crime rates, age is normally an influential variable, and may be in this case as well.

In order, the states that immigrants are most likely to settle in are California, Florida, Texas, New Jersey, Illinois, Arizona, Virginia, Maryland, Washington, Georgia, North Carolina, and Pennsylvania (Camarota, 2007). Starting at the bottom and working up, we find that the states immigrants are least likely to settle in are North Dakota, Wyoming, West Virginia, Montana, and South Dakota (Camarota, 2007). In addition to knowing where immigrants settle, it is also important to know what countries they immigrate from so that predictions can be informed, in part, by their past cultural experiences. Figures available from Camarota (2007) show that in 2007 over half (54.6%) of the new immigrants to the U.S. came from Latin America. By far, the greatest percentage of immigrants 31.3% (116,710 individuals) came from Mexico. After Mexico, the percentage of immigrants by country drops sharply. Those sending 2% or more include the Philippines (4.4%), India (4.1%), China (3.9%), El Salvador (3.1%), Cuba (2.8%), and the Dominican Republic (2.3%) (Migration Policy Institute, 2006).

Another characteristic of immigrants that may influence their crime rates is whether they have entered the U.S. legally or illegally. Illegal immigration is a central and pivotal issue

influencing the policies and practices of federal, state, and local law enforcement agencies and is expected to continue to be so into the foreseeable future. It is also a universal topic, which is at the foundation of political arguments and often the research of legal and civil rights scholars. Police, who are charged to protect the safety and civil liberties of all community members, while respecting cultural and ethnic identities, may find that they cannot meet all of these objectives at the same time. "The nation's immigrant population (legal and illegal) reached a record of 37.9 million in 2007" (Camarota, 2007, p. 1). More specifically, Camarota notes that more than half of the people immigrating to the U.S. since 2000 have done so illegally.

In summary, the "typical" immigrant is a working, low-income, low-educated, married, 29.4 year-old woman, who entered the U.S. illegally from Mexico, settled in California, and is more likely to be a victim of a crime than a criminal offender.

Research on Immigration and Crime

As noted above, the effect of immigration on crime rates received attention through the beginning of the 1940s and then waned. With the more recent wave of immigration, interest has recently revived. Still, recent studies are relatively narrow, with a primary focus on homicide in border cities, such as San Diego and Miami. These cities are located in states where relatively high percentages of immigrants reside, so replications in other geographical areas are necessary to unravel generic processes from factors that are idiosyncratic to a handful of cities. In addition, there are exceptions to the pattern of a negative relationship between immigration and crime in the U.S. (Lee, Martinez, & Rosenfeld, 2001). Finally, social forces may occur that change the look of immigration to the U.S. For example, the current downturn in the U.S. economy may mean that fewer Mexican natives cross the border seeking work and, depending on the outcome of the fighting in Iraq and Afghanistan, we may see more persons immigrating from that area of the world. For all of these reasons and more, predictions of future crime among immigrants should be accepted with caution.

That said, criminological research (Shaw & McKay, 1969[1942]) predicts that residents of neighborhoods with high levels of poverty, population turnover, and population heterogeneity are unable to exert collective measures to control public behaviors and, therefore, suffer from relatively high crime rates. Recent extensions and reformulations of Shaw and McKay's social disorganization theory have identified the lack of networks binding community residents with

each other and with external institutions as the basis for an inability to regulate shared public space (Bursik & Grasmick, 1993; Sampson, Raudenbush & Earls, 1997).

Social disorganization theory does not necessarily predict a positive relationship between immigration and crime, however (Lee, 2003). Shaw and McKay viewed neighborhood population mobility and heterogeneity as disruptive influences on community institutions and networks, but these effects would vary according to the rate of immigration and the similarity between the newly-arriving immigrants and the established residents of a neighborhood. Persons who move into areas where they share few similarities with existing neighborhood residents perhaps not even a common language, would inhibit the maintenance of interactional networks necessary for social control of public space. However, immigrants settling in neighborhoods with a high concentration of others like themselves, e.g., Cubans in Miami's Little Havana, may in fact help to maintain cultural traditions and population homogeneity, thus enhancing the neighborhood's ability to achieve and maintain social control of the community's members. Both segmented assimilation theory (Portes & Zhou, 1993) and the immigration revitalization perspective (Martinez, 2006) are consistent with this interpretation of social disorganization theory. Thus, we assert that social disorganization theory provides a basis for understanding the inconsistencies in findings on immigration and crime and is likely to be very useful in the prediction of future crime rates among immigrants and the resultant need for policing.

In addition to social disorganization theory, the existence of cultural differences between newcomers and longer-term residents was offered as an explanation for increased levels of crime among immigrants during the early 20th century (Sellin, 1938). The common finding that crime rates dropped sharply among 2nd generation immigrants (Lane, 1986; Shaw & McKay, 1969[1942]) lends some credence to the cultural interpretation, but it is difficult to conceptually separate cultural and social disorganization theories.

Following a lengthy period during which the influence of immigration on crime fell off the radar screen for criminologists, a series of studies by Ramiro Martinez and others (Lee, Martinez, & Rosenfeld, 2001; Martinez, 2002) re-energized interest in this area of inquiry during the last decade. Contrary to findings of studies of earlier waves of immigration into the U.S., this body of research has generally shown that immigrants are less likely to be criminals than are U.S. citizens (Butcher & Piehl, 2008; Lee, 2003; Martinez, 2002; Rumbaut, 2005). An important study by Lee and colleagues (2001) focuses on the impact of immigration on Latino and black

homicide rates at the census tract level in Miami, El Paso, and San Diego. With the exception of black homicides in San Diego, the relative size of the new immigrant population has either a negative or an insignificant effect on the rates of killing for both groups; a finding replicated in most other recent investigations (Lee & Martinez, 2006; Reid, Weiss, Adelman, & Jaret, 2005).

Recent findings on immigration and crime have led to a change from the earlier image of immigrants as a "criminal element" to a focus on how they have become a key source of neighborhood revitalization (Lee, 2003; Moore & Pinderhues, 1993). This changed perspective is nowhere more apparent than in Robert Sampson's (2008, p. 29) statement that, "… immigration−even if illegal−is associated with lower crime rates in most disadvantaged urban neighborhoods." As suggested by Sampson (2008), social selection may be a partial explanation for immigrants' dampening influence on neighborhood levels of violence. The argument here is that persons who wish to enter the U.S. legally are subject to criminal background checks prior to being allowed to immigrate (Butcher & Piehl, 2008), which in turn should reduce the potential criminal behavior among legal immigrants.

In their study of Chicago immigrants, Sampson, Morenoff, and Raudenbush (2005, p. 231) find that for "individuals living in neighborhoods that are 40% immigrant, the relative odds of violence are about four fifths lower… than for otherwise similar individuals living in neighborhoods with no immigrants…." Contrary to most criminological theory, they discover that "socioeconomic status is not directly associated with violence" (p. 229) and attribute this finding to a "combination of married parents, living in a neighborhood with a high concentration of immigrants, and individual immigrant status" (p. 231).

Both Butcher and Piehl (2008) and Sampson et al. (2005) find that 1st generation immigrants have lower crime rates than native-born citizens. Specifically, the crime rates for the 2nd generation are somewhat higher than those for the 1st generation, but still not as high as that for natives. These results suggest that with time the children and grandchildren of immigrants will have crime rates similar to those of U.S. natives.

In summary, research indicates that earlier waves of immigrants into the U.S. increased crime rates. The current wave of immigrants, however, appears to reduce crime rates, especially serious, violent crime. The sad story for illegal immigrants is that their criminal involvement is more likely to be that of a victim and, because of their illegal status, they have few outlets for dealing with their victimization (Burcher & Tarasawa, 2007). The sad story for all immigrants to

the U.S. is that eventually their grandchildren's criminal involvement can be expected to reach similar rates as other native-born citizens.

Immigrant Influenced Future Policing Needs

So what can we learn about the effects of the current wave of immigration on future policing needs?

Because we are currently seeing a large influx of 1st generation immigrants, the U.S. is experiencing a period when the effect of immigration is one of reducing crime rates. However, if immigration continues on the same track as it is at the current time, we can expect that police work will increase substantially over the next 15-20 years in states where immigrants are most likely to settle, that is, California, Florida, Texas, New Jersey, Illinois, Arizona, Virginia, Maryland, Washington, Georgia, North Carolina, and Pennsylvania. Recalling Rumbaut's quote above that all immigrant groups begin having children at an earlier age and have more children than U.S. natives, we predict that increased numbers of law enforcement officers will be needed, in part, due to the sheer numbers of immigrants' offspring. In addition to the numbers of people who will require protection by law enforcement, contemporary research tells us that 2nd generation immigrants are more likely than the 1st generation to commit crime at rates closer to native-born citizens. Assimilation theory suggests that the third, fourth, and fifth generations can be expected to behave in ways quite similar to longer-term natives. Thus, as time progresses, more police will be needed. It's like the old saying goes, "A good thing never lasts."

There are indications that the trend toward increased criminal behavior may be slower than expected, however. As noted above, the current wave of immigrants tends to be comprised of people who are more likely to be married; a fact that generally reduces the amount of crime committed. Also, more women are now immigrating, which will reduce the overall rate of criminal behavior among immigrants simply because women universally do not commit crime at the same rate as men. In addition, immigrant girls are more likely to aspire to and attain higher status occupations than their male counterparts (Feliciano and Rumbaut, 2005), a fact that is likely to lead to lower birth rates for immigrant populations over time.

On the down side, there are also indications that the offspring of current immigrants will engage in higher rates of crime resulting in the need for more police. The flip side of the finding that immigrant girls aspire to and attain higher status jobs than boys is just that; immigrant boys

are not aspiring to and attaining higher status jobs. Combined with the fact that men commit crime at a higher rate than women, the finding that boys are not even aspiring to, let alone achieving a step up in status, suggests that we can expect even higher rates of criminal behavior among this group.

Finally, after the 1st generation's hope for a better future for their children, if not themselves as well, is worn thin, there may be little to pass on to subsequent generations. In the U.S. economy today, an economy that is in serious recession, it is quite understandable that hope is having trouble staying alive in many new immigrant homes. Once hope is gone, we predict that the influence of poverty, long work hours, and little time to nurture marriages and families will result in increased frustration followed by a higher rate of criminal behavior. In brief, the lack of advancement will begin to take its toll on this population and increased criminal conduct will result.

The future of policing as it relates to immigration will no doubt continue to be complicated and ambiguous. Nonetheless, the requirement for closer inspections and protection of U.S. borders as well as internal locations is warranted. We do not support building a fence spanning the length of the border between the Southwest U.S. and Northern Mexico. However, greater border surveillance to screen out persons with a criminal history and those attempting to enter the U.S. illegally is mandatory. To meet this need, the future is likely to entail complex collaboration between all levels of law enforcement near the U.S.-Mexican border. This is the primary entrance for illegal immigrants in the U.S. Thus, the Bureau of Immigration and Customs Enforcement (ICE), under the auspices of the Department of Homeland Security (DHS), will likely continue enlisting the assistance of state and local law enforcement agencies to enforce immigration law in this area. Close cooperative ventures between police departments, sheriffs offices, jail personnel, prosecutors, and other legal groups is not only wise, but it will benefit the agency staff themselves.

An excellent example of a best practices model for effective collaboration of federal, state, and local policing agencies is presently taking shape in the form of regional and corridor based intelligence meetings in one U.S. southwestern state. The United States Border Patrol (USBP) office in this U.S.-Mexico corridor is actively advocating for the inclusion of all agencies with any illegal immigration involvement and invites these officers to attend a monthly meeting to update them about new challenges, share resources, and discuss ongoing criminal

alien investigations. Given the often extensive and challenging territory delegated to the supervision of USBP, illegal immigration policing effectiveness can only be approached from a multi-agency perspective.

A preferred future in the policing of immigrants, especially illegal immigrants, is also one in which all levels of law enforcement, social service agencies, and others will attempt to serve the needs of legal immigrants and safely return persons attempting to enter, or who have entered, the U.S. illegally to their home countries. To accomplish these diverse goals, we suggest hiring people from neighborhoods who are proficient in the home-country language, where immigrants are known to settle in relatively large numbers to serve as "police officers" for that community. Using a community policing style, these police officers could be charged with maintaining contact with leaders in the neighborhood and keeping watch for anything unusual that would then be reported to their supervisors. In this way, the police could maintain closer contact with new legal immigrants and assist them as they adjust to their new home, while keeping track of and working to deport persons in the U.S. illegally.

As the police develop the style of community policing to use in neighborhoods where high percentages of immigrants live, we suggest that they use resources in their cities and towns to assist them rather than trying to do it by themselves. Working closely with social service agencies that provide assistance to children and families in need is a must for police working in most immigrant neighborhoods, for example.

Another source of assistance that may also benefit police departments working in neighborhoods with large percentages of immigrants is the local school and university systems. Teachers may find it useful to set up times to work closely with entire families so that the teacher can better understand the child's culture and language. And, social scientists who specialize in understanding the culture and language of the immigrants settling in the area can be helpful not only to new immigrants as they attempt to assimilate into the community, but also to the larger community as they try to understand their new neighbors.

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Criminal Organizations: Traditional Adversaries and New Threats

Nicholas E. Libby and Jay Corzine

In the future, most criminal offenses in the United States (U.S.), including murder, aggravated assault, robbery, sexual assault, and so on, will be committed by an individual or a small group who are not members of a larger organization. These "common crimes" will continue to consume police resources and cause significant physical and economic pain for victims. There will be changes as the tools of the trade for criminals evolve in response to technological developments and social trends. With information on homicide investigations being made more available to the public, particularly the potential and problems of DNA matching, some murderers will take additional steps to avoid apprehension. As security systems for residences and automobiles improve, so will the tools designed to defeat these systems (for an early study of the spiral of technology related to crime, see Letkeman, 1973). Computers will be increasingly used in a wide range of financial crimes and certain personal crimes such as stalking. Law enforcement agencies must be prepared to continually adapt to these new developments and employ increasingly sophisticated methods of investigation and, hopefully, prevention in their work. Budgetary constraints aside, law enforcement agencies must strive to keep up with the technological curve and also be aware of upcoming advances that could prove useful to themselves and/or criminals.

Similarly, the underlying social dynamics that drive crime rates will evolve. The highest rates of "common crimes" will continue to be concentrated in urban neighborhoods and other areas characterized by low economic status, low educational attainment, unstable family life, weak social attachments, illegal economies, and so forth. Offenders and victims will continue to be concentrated among groups with lower socioeconomic status. The primary motivation for "common crimes" will continue to be personal gratification, whether the primary motive is revenge, thrill-seeking, or financial. Given the current economic turmoil within the U.S. and the likelihood that the road to recovery will be long and arduous, it is probable that these issues will be exasperated, forcing law enforcement agencies to develop innovative policies to keep these

"common crimes" in check while simultaneously adapting to their own increasing budgetary constraints.

Although they are less numerous, frequently invisible to most citizens, and don't generate as much public fear and concern as the "common crimes" of murder and robbery, offenses committed by established criminal organizations more directly impact the general populace and, arguably, have a more negative impact on social institutions, including government. "Mob" control of the trade unions in large cities increases prices for public and private construction projects alike with no added value. Street gangs and drug crews are involved in drug marketing that has caused the rapid deterioration of entire sections of our inner cities. The financial resources available to organized crime facilitate corruption of the police and other government officials, both in the U.S. and abroad.

The focus of this chapter is on criminal organizations in the U.S. In the following section, we briefly review "traditional adversaries," the "Mafia" and other groups that have an established presence in the U.S. We then identify hybrid criminal organizations that combine financial ambitions with a political agenda and have the potential to significantly impact crime in the immediate future, i.e. the next 20 years. Finally, we discuss trends that will impact the nature of organized crime and present both opportunities and obstacles for law enforcement efforts to control the activities of these organizations.

Traditional Adversaries

Dozens of definitions of organized crime are available in the research literature and legal statutes, but the one offered by Albanese (1995, page 3) incorporates the major components of other definitions, thus highlighting areas of consensus:

> Organized crime is a continuing criminal enterprise that rationally works to profit from illicit activities that are often in great public demand. Its continuing existence is maintained through the use of force, threats, monopoly control, and/or the corruption of public officials.

There are several components of Albanese's definition that are noteworthy. First, financial profit is identified as the primary goal of organized crime, with violence, whether threatened or carried out, employed in the pursuit of money. Second, the definition emphasizes

continuity in the organization; three corner boys who join ranks for a grocery store robbery and then go their separate ways do not constitute organized crime. Third, there is an element of rationality in at least some organized crime activities. And, finally, the corruption of public officials is an important element in the success and continuity of organized crime. Notable by its absence is any mention of political ideology; most definitions that have addressed this issue have identified criminal organizations as non-ideological. As will be discussed below, there is strong evidence that this facet of organized crime is changing.

From the above definition, it is obvious that law enforcement in the United States has a long history of confronting criminal organizations. Those from the 19th and earlier centuries include pirates, Black Hand Societies, and outlaw bands epitomized by the James Brothers Gang. In part because of their portrayal in *The Godfather*, a plethora of other movies and novels, and the hit HBO series *The Sopranos*, La Cosa Nostra, Italian-American crime "families" modeled after the Sicilian Mafia, are undoubtedly the best known criminal organizations in the U.S., however. These families have been involved in numerous activities, including narcotics distribution, extortion, labor racketeering, loan sharking, fixing sporting events, and infiltration of legitimate businesses. Although expanded enforcement efforts by the FBI and a series of successful prosecutions under the RICO statute have weakened La Cosa Nostra in many cities, it has not disappeared and is still a major force in some locales, including New York City and Chicago.

Although Italians are the ethnic group most closely identified with organized crime in the public mind, other criminal organizations whose membership is based on ethnicity have been important players in the past and at present. Notable contemporary examples include current Russian and Albanian mobs in New York City, the Irish in Boston, and Mexicans and Mexican–Americans in the Southwest. In part, the weakening of Italian-American organizations in New York City since the 1980s has facilitated the emergence of other groups. Although there has been conflict between La Cosa Nostra and these newer organizations, there has also been significant cooperation, notably between Italian-Americans and Russians in New York City (Moore, 1995). It should be emphasized that ethnicity is not a cause of organized crime per se, and the strong majority of individuals in any racial or ethnic group are law abiding citizens. In some cases, the structure and value system of criminal organizations in immigrants' nations or

regions of origin are transported into the U.S., however. This has certainly occurred with the Sicilians and Russians.

Street gangs such as the Latin Kings, Crips, Bloods, and so on comprise a separate type of criminal organization. In some ways, street gangs are similar to ethnic-based organized crime; their membership is frequently restricted to a particular racial or ethnic group and/or tied to specific neighborhoods or cities. Drug distribution is the profit-making criminal activity most closely associated with street gangs, although involvement in stolen car enterprises and other crimes are also known. The racial homogeneity of street gangs and their linkage to a particular neighborhood, or "turf," are more common in established gang cities such as Los Angeles and Chicago than in newer gang cities such as Orlando and San Antonio. The development of "new" gangs whose memberships are not restricted by race or geography is a recent development among street gangs, and may be a trend that other criminal organizations will follow. Regardless, the public image of street gangs often depicts them as highly organized, national organizations, but the reality is that they are mostly a loose confederation of groups in separate cities that share a name, signs, and traditions. They are much less hierarchically organized than La Cosa Nostra and traditional organized crime families. Generally speaking, although gangs of the same name may appear in different cities, it is more likely that newer gangs adopt the names of popular gangs with an established reputation in order to enhance their own.

Although turf protection remains a function of some traditional gangs, many have evolved into money-making entities with extensive involvement in drug dealing and other illegal activities. Localized disputes between gangs or crews, whether over illicit businesses or symbolic issues, frequently turn violent with a resulting high body count. In recent years, over half of the murder victims and known offenders in large cities have had a prior drug conviction on their record. It is important to note that many profit-making ventures involve members of a street gang, or in some cases members of multiple gangs, but they are not a sanctioned gang activity. Again, the structure of many street gangs approximates overlapping networks of individuals more than a structured hierarchy.

As mentioned previously, turf protection may not be as important a concern of emerging gangs, because the diffusion of social networks and easier maintenance of social relationships outside immediate geographic areas tied to residence made possible by the internet and the proliferation of mobile phones facilitates the development of loosely structured criminal

organizations. For example, a group of teenagers involved in auto theft may not live in the same neighborhood, but go to the same school or meet online. One of the teens may have an uncle whose auto body shop doubles as a "chop shop." The "chop shop" owner has a business relationship with two junk yards in an adjoining state. And, the junk yard owners only sell the stolen parts to other junk yards through internet contacts to avoid attention from local law enforcement. The operation is loosely structured with some members never having face-to-face contact with each other.

Although sharing some similarities with street gangs and organized crime families, biker gangs should be considered a separate type of criminal organization. Their involvement in gunrunning and drug manufacturing, sales and trafficking, especially of methamphetamines, is widespread in some sections of the U.S. and in Canada. Biker gangs have been the focus of several state and federal investigations in the past. While the core activities of these groups may not change much, their specific activities may evolve. For example, there is the potential development of new designer drugs for these groups to use as a source of income. They are more geographically mobile than many other groups, and their ability to coordinate and increase their activities may be enhanced with the continued proliferation of new forms of communication.

In terms of political ideologies, it is important to note criminal activities of both traditional right-wing groups, e.g., the Ku Klux Klan, the Order, and left-wing groups, e.g., the Symbionese Liberation Army. Although they do not fit easily under most definitions of organized crime, many of them turn to robbery and other financial crimes to further their political agenda. These groups serve as early examples of hybrid criminal organizations who link a political cause with fund raising through economic crimes. Many transnational organizations, including Al Qaeda and FARC in Columbia, fit this model.

The involvement of corporations in financial crimes is well documented, although most U.S. citizens do not think of them as criminal organizations. The dollar amount from some of their crimes certainly rivals and often surpasses those from other illicit activities, with the drug trade being an exception. In some cases, corporations or corporate sectors (e.g., waste management in the Northeast) have traditionally been linked to organized crime, and traditional criminal organizations have become more involved in stock manipulations and securities fraud during the past 10 to 15 years. Profits arising out of linkages between legitimate corporations

and organized crime can emerge from traditional profit skimming, using legitimate businesses to launder money, and so forth. La Cosa Nostra families and other criminal organizations often use threats and intimidation to secure the cooperation of stock brokers and others in positions of financial trust. However, it should be noted that corporate financial violations are not dependent on the corrupting influence of organized crime, as evidenced by the Keating Five scandal.

In addition to financial crimes, corporations can also be involved in acts of illegal waste dumping, excessive pollution release, or other environmental crimes. Should these offenses continue in the future concurrent with growing concerns regarding the environment, global warming, and toxin-related health problems, there is a significant potential for these corporate infractions to become more of a threat to society. For example, water shortages are a current concern, and industrial pollution of water ways will only serve to expand the problem.

New Threats

There is no reason to believe that traditional criminal organizations will disappear, although their strength will rise and fall, both nationally and regionally within the U.S. Their activities will change dependent on law enforcement pressures and perceived opportunities for financial profit. There is already evidence that some La Cosa Nostra families, especially in New York City, are specializing in financial crimes and money laundering. We expect two major developments in criminal organizations within the U.S. First, although Italian, Russian, and Albanian criminal organizations in the U.S. have maintained ties with their counterparts in the native countries, transnational criminal organizations will become more of a threat in the future. Second, the distinction between criminal and political organizations that is already breaking down will continue to diminish in many cases. Hybrid organizations that combine money-making ventures with an expressed political agenda will become increasingly common. They will often cooperate with traditional criminal organizations, including La Cosa Nostra. As discussed below, these dual developments will be linked.

Transnational Criminal Organizations

Although there is increasing concern about trans-national crime, it is not a new development in the United States or in many other parts of the world. The Sicilian Mafia should be considered a separate group from La Cosa Nostra families in the United States, and their cooperation has a long history. Furthermore, the Sicilian Mafia has operated some illegal

enterprises in the U.S. independent of La Cosa Nostra (e.g., the Pizza Parlor Connection) and reputedly has collaborative relationships with other criminal organizations, including South American drug cartels. Of course, the leadership structure of the Sicilian Mafia is separate from Italian-American crime families. In addition to the Mafia, drug smuggling from South and Central America has traditionally involved foreign nationals, notably Columbians, Mexicans, and Jamaicans.

It has been the huge market for illegal drugs in the U.S. that has provided financial opportunities for both domestic and transnational criminal organizations, and there is no indication that this demand will change. Instead, hybrid groups in Central and South America, e.g., FARC in Columbia, who desire a steady source of revenue, have become involved with traditional criminal organizations in the drug pipeline. It is more difficult to predict the future involvement of transnational criminal organizations based in other parts of the world. Although Islamic terrorist groups have engaged in fund raising within the U.S., their involvement in crimes with a primary financial motive seems to be minimal. Groups linked to Al Qaeda and similar movements will remain a threat, but it will be primarily political and focus on the risk of further terrorist acts within U.S. borders. Given the level of surveillance devoted to these groups and the entrenchment of other criminal organizations, it would be very difficult for most transnational criminal organizations, including Islamic terrorist groups, to gain a foothold in the illegal drug economy within the U.S.

As the second decade of the 21st century opens, however, the threat posed to internal security by one type of transnational criminal organization should be viewed as a critical problem. During 2008, the level of violence by Mexican drug cartels directed at the government and each other began to escalate dramatically, with over 15,000 killings recorded in 2010 (Omer, 2011). In some areas of Mexico, the fighting between the Mexican national government and the drug cartels has become a virtual civil war with disruption or outright control of the regional government infrastructure as the ultimate goal. Killings of elected officials, police, and soldiers have become commonplace, with the large sums of money at the disposal of the cartels leading to widespread corruption of government officials at the local, state, and national levels within Mexico.

Given its position on the southern U.S. border, large-scale instability in Mexico would be a concern under any circumstances, but the immediate problem is heightened by two additional

considerations. First, the U.S.-Mexican border is porous and has been a mecca for large-scale smuggling activities since the middle of the 19th century. The current conflict is fueled by the cartels' ability to move drugs into the U.S. and facilitated by the smuggling of guns and ammunition across the border in the other direction. Gun control laws in Mexico are restrictive, and current estimates are that 90 per cent of the armaments deployed by the drug cartels originate in the U.S. Second, much of the violence is centered in Mexican states that are adjacent to the U.S., with the border cities of Ciudad Juarez and Tijuana having especially high murder rates.

Although the spillover of violence into the U.S. has been on a limited but increasing scale to date, the State Department estimates that 106 U.S. residents were victims of cartel violence in 2010 (Omer, 2011). Many of these killings, including David Hartley's death on Falcon Lake (perhaps the most publicized murder of a U.S. citizen by cartel members) have occurred in Mexico. While the immediate effects of an expansion of violence into the U.S. would be concentrated in the Southwest, the eventual geographical impact would be more far reaching. Ironically, if the Mexican military's current push against the drug cartels enjoys significant success, it may serve as an impetus for the cartels to relocate some of their operations across the border into the U.S.

Hybrid Organizations

Both domestic and transnational terrorist groups are faced with the need for financing their operations, and they frequently turn to illegal operations, e.g., robberies, gun smuggling, and drug dealing, traditionally monopolized by organized crime to raise funds. In some cases, the balance between seeking funds through illicit enterprises as a means of financing political, including terrorist, activities and seeking funds as an end in itself blurs, with terrorist groups becoming more like traditional organized crime. This transformation in focus occurred with the Sicilian Mafia and seems to be occurring with the Revolutionary Armed Forces of Columbia, or FARC. Generally, terrorist organizations may be more likely to follow this path if they experience a long period of limited or no progress in achieving political goals. Developing ties between terrorist groups and traditional criminal organizations will focus on their mutual interests in acquiring funds through illegal activities, however. In some cases, including the connection between the Sicilian Mafia and Columbian drug cartels, more established groups will provide expertise in money laundering and other specialized functions that are required to sustain successful financial operations over time.

Although traditional criminal organizations often rely on the threat or use of force in pecuniary activities, there is a strong tendency for terrorist groups to engage in crimes that are more violent. While law enforcement efforts against terrorist groups will continue to focus on the prevention of mass casualty events, their involvement in financial crimes provides additional points of infiltration for the police and other government agencies. The development of more sophisticated intelligence and investigation techniques by law enforcement should prove beneficial in identifying members of these organizations, and may also provide additional avenues of apprehension or conviction for non-political crimes, such as extortion, money laundering, gun/drug trafficking, or even tax evasion. Curtailing money raising efforts obviously reduces these groups' capabilities to carry out political operations, including violent attacks, and following the money trail can lead to arrests and successful prosecutions of terrorists as it has for noted members of organized crime, e.g., Al Capone. Moreover, the tendency of some terrorist groups to move away from their original political agenda in favor of accumulating financial resources provides an opportunity for law enforcement to enhance political divisions within terrorist organizations. "True believers" may conclude that the current leaders have lost their way and abandoned the group's goals, and law enforcement can develop information campaigns aimed at exacerbating these tensions. There are numerous advantages to fostering these internal schisms. Among the obvious are distracting members from pursuing intended organizational goals and cultivating potential informants.

Although hybrid criminal organizations will continue to engage in financial offenses, law enforcement can expect an increased involvement in political crimes by these groups. By definition, both domestic and international terrorist groups will focus on affecting political changes, although any overt attempt to overthrow the U.S. government would be unlikely. Instead, terrorist activity will focus on efforts to reduce the legitimacy of the government's actions, both internal and abroad, among the general public. These can be expected to include portrayals of government response to terrorists and terrorism as fascist and destructive of the civil liberties prized by most U.S. citizens. Additionally, the creation of widespread public fear through attacks that produce mass casualties, e.g., 9/11, will remain part of terrorist groups' arsenals. Importantly, the threat of mass casualty events is not limited to transnational terrorist groups. The bombing of the FBI Building in Oklahoma City was carried out by a small number of U.S. citizens with a white supremacist political agenda. Furthermore, white racist groups can

be expected to exploit racial divisions in the near future with the upcoming campaign for re-election of Barack Obama, the nation's first African-American president. Furthermore, racial/ethnic tensions may also increase due to immigration issues. Finally, an additional element may be injected into these concerns should these fringe organizations incorporate a 2012 "end of the world" scenario, similar to doomsday groups espousing similar philosophies as the 20th century drew to a close, into their ideological frameworks.

A reciprocal influence between U.S. and transnational criminal organizations can be expected to occur through direct contact or media coverage of ongoing events. For example, kidnapping for ransom is a common tactic of fund raising for drug cartels and other criminal organizations in Latin America, and has been adopted by drug crews in some U.S. cities, including Baltimore. Unlike incidents south of the border, U.S. kidnappers are more likely to target rival drug dealers and others involved in crime instead of wealthy citizens or foreign nationals, and some incidents have led to retaliatory cycles of violence. Kidnappings may escalate in frequency in cities with particularly violent and/or unstable drug markets.

The vast majority of prior terrorist attacks have previously been committed or at least planned by established organizations. Developments in communication may change this aspect of political crime. Remember that Timothy McVeigh was inspired in part by the right-wing novel, *The Turner Diaries*. The internet with its increased opportunities for social networking may change the organizational foundation for terrorist acts, however. Currently, many political criminal organizations use websites as part of what is essentially a public relations campaign. The new technologies can lead to recruitment or at least peripheral, long distance involvement with terror groups. Many people may simply be impressionable and frustrated about their station in life, at society, or particular aspects of society (e.g., government, corporations). A small percentage may attempt or commit acts of terrorism in the name of a particular extremist group or cause, even though they have no formal or established ties to any members and may not receive any sort of logistical support from the organizations.

Future Trends

One of the most significant expected trends in crime will be the decreased importance of physical proximity for the development of criminal networks. To provide a historical frame of reference, prior to the widespread availability of automobiles, interpersonal networking for

criminal or other purposes was largely localized to neighborhoods or relatively small geographic areas. Social networking capabilities were restricted by physical space. The invention of the automobile and, to a lesser extent, the telephone expanded networking possibilities beyond the immediate neighborhood and also increased the potential for territorial conflict to extend beyond localized "turfs." A major problem for law enforcement agencies in the 1920s and 1930s was the new geographical mobility enjoyed by criminals with the development of the automobile and an expanding network of roads.

With current and projected developments in communication technologies, the barriers that physical space place on the formation of criminal organizations will further erode. In fact, they have already disappeared for a wide range of financial crimes, e.g. computer fraud. This is an important trend because financial gain has been the *raison d'etre* for organized crime and the cash flow from drugs often supports political organizations involved in terrorist activities. The HBO show *The Wire* was the first television series to explore the use of disposable cell phones by urban drug crews and law enforcement's technological response to them. In the future, new communication technologies will further expand the networking abilities of persons involved in nascent or continuing criminal enterprises. Criminals will not only be more mobile but will also have the ability to communicate with each other via a variety of mediums, such as text messages, e-mail, online social networking sites, and even within online gaming communities. Widespread availability of wireless internet networks and laptop computers further compounds this issue. This may lead to more amorphous, less pyramidal criminal organizations, a decline in the territorial component of traditional street gangs, and concurrent difficulties for traditional law enforcement intervention and investigation strategies.

While place will continue to have a role in criminal activity (murders and drug exchanges typically occur at identifiable locations), the physical dispersal of social networks of offenders may further broaden the scope of potential targets. This physical diffusion of interpersonal connections and the availability of new forms of communication, many of them unregulated or unmonitored, will lead to future difficulties in detecting, investigating, and preventing criminal activity amongst seemingly unaffiliated individuals. The communications will vary depending on the sophistication of the criminal organization. For example, there may be blatant communications or conversations in chat rooms, over text messages, email, etc., or they may be handled via "code-speak" and innuendo as many organized criminal networks have used in the

past to evade detection or deceive anyone who may be monitoring their conversations. Perhaps the most sophisticated method will be true encryption of text and electronic files.

The Increasing Role of Computers

The volume of computer crime has grown exponentially during the last two decades and will continue to do so. The opportunity for financial gain will be increasingly exploited by both traditional and hybrid organizations. On a mundane level, fraud and identity theft committed by individuals and organizations will become a greater problem for law enforcement. Jurisdictional issues and a lack of resources by most small- to medium-sized law enforcement agencies will continue to make investigation of computer crime and apprehension of offenders difficult in comparison to traditional crimes. Foreign intelligence services and terrorist organizations can be expected to mount hacking attacks to steal sensitive information and cyber assaults on computer networks to disrupt normal financial and governmental operations. A need for law enforcement agencies to enhance their level and sophistication of computer surveillance will be an especially daunting challenge in a period of decreasing revenues.

Besides the increase in criminal offenses carried out through the internet, an increasing percentage of the communications coordinating the activities of criminal enterprises and terrorist events will occur in cyberspace. Simply stated, in an increasingly computer-based information society, the worldwide web will be more routinely used for recruiting new members and planning operations by criminal organizations. These are not new developments, however. White racist organizations in the U.S. began using the internet to further their activities in the 1980's, and Al Queda has mounted an extensive media campaign for the past decade. On a positive note, this trend provides substantial opportunities for law enforcement surveillance of communications that can be used to track a group's members and operations, to inject its own messages into an organization's computer networks, and to follow the money trail. Realizing these opportunities will require the development of greater expertise in computer forensics by law enforcement agencies and the development of international treaties facilitating the prosecution of computer crimes that cross national boundaries.

The Increasing Importance of Border Control

It is uncertain if comprehensive changes in U.S. immigration policy will occur during the Obama administration. Although there seems to be an increased success in intercepting people entering the U.S. illegally and there is a very good chance that the economic recession of 2008

will dampen the volume of both legal and illegal immigration, completely securing U.S. borders to undocumented aliens or contraband is likely impossible. Although as a group, immigrants are less likely to be involved in crime than the native born (see Jaeckle, Huff-Corzine & Corzine, 2011 in this volume), closer monitoring of persons entering the U.S. is increasingly important. Criminal organizations in other nations, especially Latin America and the Caribbean, will take advantage of opportunities for financial gain in the U.S., a point emphasized by the problems with MS-13 members operating in several states. A separate type of problem exists when indigenous criminal organizations develop within immigrant communities within the U.S., e.g., the emergence of Somali street gangs in Minneapolis. The spread of MS-13 activities in the U.S. underscores the need for immigration reform to include a component strengthening the monitoring of criminal backgrounds for persons seeking to enter the U.S. The emergence of street gangs among young Somali immigrants calls for a different approach, such as the development of closer relationships between law enforcement and newer immigrant communities within their jurisdictions. This will not always be easy because some immigrant groups, especially those who enter as political refugees, are coming from nations where there is widespread mistrust and fear of the police.

Conclusion

Most policing will continue to focus on common crimes committed by a single person or a small group, but criminal organizations will remain a threat to public safety in the future, especially in large cities where organized crime has traditionally flourished and in areas near U.S. borders, particularly that shared with Mexico. Traditional adversaries, including La Costra Nostra families, street gangs, biker gangs, and white supremacist groups will not disappear from the scene, although their internal structures and activities will continue to evolve to take advantage of changing opportunities for financial gain. Continuing the sea of change brought by 9/11, law enforcement at all levels will also focus on the threat posed by hybrid organizations that combine political and economic crimes. The increase in communication capabilities and the increase in the permeability of national borders brought by the internet will facilitate the activities of transnational criminal organizations in the U.S.

Law enforcement agencies will enjoy greater success at countering changes in the activities of criminal organizations to the extent that they are able to enhance computer

surveillance capabilities and to establish ongoing contacts with newer immigrant groups in their communities that may give rise to nascent criminal organizations. The importance of border security in limiting transnational criminal organizations in the U.S. cannot be over stressed.

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Adversaries and Allies: What is in Your Agency Culture?

Marshall Jones[32] and Jim Reynolds[33]

The fuel for the engine that drives any organization is its culture. Law enforcement is no exception and the frequency of critical incidents tests the health of that "engine" frequently. The question any law enforcement executive must assess is whether or not their organization's culture is serving as an ally and facilitating agency peak performance or is so impeded by internal adversaries that it is a hindrance.

This article explores how an agency's culture can serve as ally or adversary to agency success, and various components that establish and maintain culture. The discussion also includes proactive measures from a futurist perspective that may be beneficial in increasing the probability that more members in an agency will help form an allied culture.

What is Culture?

There are a multitude of definitions that attempt to describe culture. A good definition for the scope of this discussion is offered by Connors and Smith (2000) and asserts that culture is "the aggregate of the beliefs, attitudes, values, assumptions, and ways of doing things that is shared by members of an organization and taught to new members."

Policy and procedure manuals deal with the technical aspects of the tasks necessary for the agency to perform its mission. The proper role of culture is to bind all the members together to meet that mission. Culture is an attribute of the agency that can be proactively cultivated into an ally to improve effectiveness and efficiency. An agency's true culture reflects the reality of aggregated beliefs, not necessarily the chief executive's aspirations. If the development of a positive culture is not a conscious priority of the agency's leadership a much different culture can arise that, once firmly entrenched, can disrupt the effective pursuit of the mission, and become extremely resistant to change.

An interesting thing about culture is that most members of an agency are oblivious to it once they are assimilated into an agency. Culture has both positive and negative traits and is well

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rooted in the attitudes and behaviors of the members. A new member, regardless of entering at a command or line level, quickly notices even subtle differences from their past experiences. Once there, they become part of the collective "culture" of the agency.

It can also be helpful in looking at the macro-level culture of an entire agency as well as micro-level culture within squads or units. Anyone working in and around policing recognizes the cultural differences between uniformed patrol and detectives, for example. They both share the global agency culture, but also work within sub-cultures of their own as well.

Culture is self-perpetuating, and seeks to preserve the status quo. It is not changed easily or quickly. A common yet often overlooked phenomena that are a clear example is what we call "BTITWWHADI." How many times has an agency member questioned a policy or practice within the agency that may not be logical or effective simply to get an odd look and reply, "because that is the way we have always done it." Members should have a process where they can help monitor and maintain the policy and practice of an agency.

There are three events strong enough to have a significant impact on a culture. The quickest change to an agency culture is a critical incident. Many sociologists will point to the disaster of the Space Shuttle Challenger and its immediate impact on the culture at NASA as a textbook example. A law enforcement example is the intentional line of duty death of an officer. Many agencies have evolved from revolvers to semi-automatic service weapons and found funding for ballistic vests as a result of the immediate importance of officer safety and survival. Negative change can occur as well, as the force may react to the loss with hypervigilance and less tolerance for citizen behavior.

Another common event that can alter an agency culture relative quickly is the entry of a new chief executive. A new Chief, Sheriff, or Director may have the ability to re-shape the culture initially with the insertion of new policies or practices or with dynamic leadership behaviors. At a micro level, say at a squad level, that agency sub-unit's culture can also be strengthened in a similar way with a new supervisor. This initial opportunity typically lasts a few weeks or months, and should not be squandered.

Watkins (2003) says that a new leader reaches a "breakeven point" after about six months, the time when that leader's immediate added value can offset the established values of the organization. He suggests an accelerated pace of assimilation and influence in the first three months due to the eventual diminishing effect of the new leader's actions. After that time the

agency and the new executive have assimilated onto the same culture without much additional impact.

The third and most common change engine in culture happens organically and naturally over time; often decades or generations. As new members arrive, older members leave, new technology comes online, and new ideas become part of any culture things change. External forces have effects as well. For example, the combination of a slow economy and rising fines due to the need for revenue coincides with a reduction in citations for moving violations at some agencies. Anecdotally, officers say they can see the impact high fines can have on a struggling family and issue fewer citations and more warnings. Such change is slow and often unrecognizable to the members. This is the area where proactive measures can make the difference in positive change or negative change.

Perceptual Challenges to an Allied Culture

"Good ole Boys" System

One person's "good ole boy" system is another person's pragmatic command staff. Can the "good ole boy" perception be as simple as point of view? Probably not. There are agencies, and some perceptions about law enforcement in general, where the cultural memory is not too far removed from a time of the "glass ceiling" and some real cases of unequal opportunity. Remnants of the old culture may remain. While today arguably the exception to the rule, basic psychological transference, or perceptual or actual unequal treatment can keep the "good ole boy" mantra alive.

Sheriff's Departments may be more susceptible than other agencies in this regard. A new Sheriff is certain to bring changes in command, even if the new Sheriff is from within the department. This is the natural order of things in this environment. In the best case scenario the new Sheriff has considered diversity of thought and a person's skills and abilities in selecting command staff, not simply patronage. In some cases, surrounding oneself with trusted individuals that share a common set of beliefs is comfortable and secure. In this case, the term "good ole boys" may be properly accurate. But how can a new sheriff or other law enforcement executive who has control over selecting a new command staff manage perceptions?

One answer may be not to worry about it. It could be argued that there are always malcontented members of an agency that will be unhappy regardless of what you do. The challenge here is not to give the malcontents ammunition by your actions and behaviors to become cancerous to the culture and spread discontent to other members.

Another solution may be a level of honest transparency. Simply stating that a person was appointed to a position due to their experience and the appointing officials trust could be a simple and honest way to tell the culture that you respect that they are stakeholders in the agency's future. Frank disclosure is far superior to hurried rationalizations about an appointee's superior education, experience or skills in an organization where many will share those attributes, at least in the mind of the beholder. This holds of course, that the appointee does actually have some skill set or background that could be viewed as an asset to the leadership team of the agency.

The best strategy to minimizing the negative impact of a "good ole boy" perception is to establish a pattern of practice that demonstrates good and fair leadership, decision making and accountability. Ask a cop what annoys them the most about their command staff you often hear of a lack of accountability, poor or tardy decision making, and inconsistency. It is important to remember that the multiple "little things" are what impact the cultural perception (correctly or not) about accountability, fairness, and equity. The culture of any command staff should include stressing the importance of the message sent by not only the decisions made by commanders, but their behavior as well.

The Infamous "They" & the Feeding Frenzy of Gossip

Walk past any squad room, briefing room, or table at the local breakfast spot where officers, deputies, detectives, or agents universally engage in talking shop and you will hear about what "they" did this time. "Did you see the latest memo about gratuities? What are they thinking?"

Is the infamous "they" synonymous with the "good ole boys" system? No. The "good ole boys" have faces and names attached but "they" is often the person or people who simply had the power to make a decision or implement something regardless of rank, position, or even if the action was warranted or justified. "They" did something that impacted other members of the agency usually without the commenting member or members being asked for input.

So what is the danger in attacking the often unspecified "they" to the culture? Gossip is the danger. While some sociologists and anthropologists contend that gossip can be as functional as social talk and networking, Clegg and van Iterson (2009) have contrary assertions on how gossip negatively impacts the regulation of power dynamics within an organization and its culture. They contend that, "gossip is the dirt that trickles in and out of these boundaries, illegitimate, formally disdained and often disruptive."

The distinction, according to Clegg and van Iterson (2009), is that gossip is done behind the back of those being discussed and it is not beneficial. Not to be confused with the story telling (culture builder) and rumor (information from which to verify), gossip is too often poison to an agency and its culture. This distinction and rejection of the functionalist view can be argued is magnified in law enforcement agencies where misconceptions, falsehoods, and lack of trust can have such critical and dire consequences as they spin without the controls of fact and full understanding.

Diminishing the infamous and oft evil "they" as well as disruptive gossip is best addressed by line supervisors who are in a position to hear and set straight both gossip and legitimate questions and concerns alike. This implies that line supervisors are provided timely updates on critical issues impacting the agency and that the culture expects and encourages supervisors to be proactive to keep accurate information flowing. It also requires there be a welcomed upward communication flow for questions and answers when the line level supervisor does not know the answer to an appropriate question or concern.

How You Ask Questions Matters

A universal mistake is asking questions without establishing the proper expectations of the inquiry. It is critical when soliciting input to qualify the question of "what do you think?" with a statement that you may or may not incorporate your suggestions. When not establishing this expectation with those asked, especially cops, you often get, "why did they ask me if they were going to do what they wanted anyway?"

Yet another pitfall in gathering information is the job satisfaction survey that often comes on the heels of an employee issue. These surveys are often developed by untrained personnel or, even worse, by those with a particular agenda. These instruments provide the malcontent members of an agency a vehicle to vent and can create more of a problem than a path to a

solution. Those interested in the results are also most often without any baseline or historical trends from which to compare.

A better system is one that is longitudinal in nature and part of the culture. This system would have a psychometrically valid instrument administered semi-annually or annually and can track trends across time. Regular solicitation of feedback and not as a result of any particular event in itself is significant enough to impact perceptions. Such a system also recognizes and considers that there are a certain number of members who will not agree or be satisfied but the trends and fluctuations are the more valid indicators of the actual condition. Such a process also provides the agency with data that may be useful for training or identifying issues where perception or miscommunication may become apparent and remedied before becoming major issues.

Understanding and Employing Proper Use of Power, Politics, and Networking

The challenge in any organization is to work hard and get promoted. In law enforcement that challenge exists from line level supervision to the top spot in the agency. No one can arrive there without using influence. Influence often takes the form of leadership but, as Lussier and Achua (2007) point out, it is also comprised of the organizational politics, networking, and negotiating required to gain the power needed for advancement. Power and politics are often given negative connotations while networking and negotiating are positive but in reality they can be either depending on how they are used, or more importantly, perceived. Watkins (2003) calls the perceptions the culture's *assumptions,* the beliefs we all take for granted in our organization. Overcoming negative assumptions is a critical task as leaders exercise influence. Influence is critical to getting anything accomplished.

Given the complexity of the entire premise of power, politics, networking and negotiating, how can any agency adequately address the issues without implying that the agency is a democracy? Leadership is ultimately accountable, and so it must have final say even as active participation and feedback are sought. The pragmatic solution is long term development program of supervisors and recognition that a healthy agency has both managers and leaders. Such a development program may include training sessions, mentoring, and/or educational requirements. It actually starts in recruiting, selecting, retaining and definitely in promoting members. The irony in policing is in most cases supervisor training occurs after a promotion with

few opportunities if any for developing the necessary influencing skills and understanding of power and politics until after promotion. It is another case of "BTITWWHADI" and defies logic.

The balance of conflict and cooperation between management and labor often comes to a head over promotional issues. Is the system "fair and balanced"? Does management have clear set standards for supervisory performance and a selection system that seeks the best qualified to meet those standards? Or is the "Good ole boy" system entrenched, with multiple hurdles and matrices in place, secretive and subject to further review before a final list is established?

Major Impact on Culture: The Infrequent and "Little" Things

"Little" things matter when it comes to how officers interact with their supervisors and how they perceive their organization supports them (Jones et al., 2002), but their impact on whether a culture is allied or adversarial to the organization's goals cannot be understated. Agency activities, such as promotional processes, may not get the attention in small and medium sized agencies that they warrant due to their infrequency. The balance of conflict and cooperation between management and labor often comes to a head over promotional issues. Is the system "fair and balanced"? Does management have clear set standards for supervisory performance and a selection system that seeks the best qualified to meet those standards? Or is the "Good ole boy" system entrenched, with multiple hurdles and matrices in place, secretive and subject to further review before a final list is established? There is a long laundry list of events and practices that can be addressed but a few are more glaring and offer room for action and improvement more than others.

Recruiting

How does the recruiting impact agency culture? The agency recruiting system establishes early expectations that, if broken, stand a good chance to negatively impact job satisfaction and retention. The selection of recruiters can often impact the selection of new officers. In one agency the recruiters were often former military, selected as much for "recruiting poster" looks as ability. The result was that, as could be expected, more former military personnel were hired than non-military.This is not necessarily a bad thing; after all, the military sends us people used to some structure and discipline. In the paramilitary pyramid of traditional policing this is

valuable, but can also be an obstacle when transitioning to a more organic, problem-solving model.

Most small and mid-sized agencies do not have a full time and trained recruiter. In some cases the city or county government human resources office handles police recruiting. These are practical realities for these agencies. It is important and steps can be taken to assist the agency member that may have recruiting as a collateral duty to be a good representative for your department and assist in selecting good candidates.

Recruiter training is imperative but hard to find. There is training offered and if it is available take advantage of it. If there is nothing available or local, do not rule out looking to larger agencies that have recruiters and ask if your recruit can shadow and speak with other recruiters. While many things will not be applicable, the core principles are the same. There are also articles and books on the topic that should include employment law considerations. In addition to insuring there is a current realistic job preview (RJP), the recruiter can also stress often overlooked benefits of law enforcement that usually include an advantageous retirement and vacation benefits that many in the private sector, that may be able to earn more in salary, do not enjoy.

"Fit" and a Realistic Job Preview

The "fit" of a potential new member to an agency is a two-way street. The agency needs to interview and interact with the candidate and the candidate should be directly encouraged to do ride-alongs and/or shadowing to see if the particular agency is a "fit" for them as well. This can be particularly advantageous for small agencies where hiring a new member is an infrequent event.

The "fit" can also be explored by employing a realistic job preview (RJP) specifically developed for your agency. A typical RJP, presentation or print, will include information about what a member can expect in a "day in the life" of a member and address the first few years of a new member's career at your agency. It must highlight the good attributes of the agency but it is also critical to include any real or perceived drawbacks such as permanent shifts, how long it usually takes to make detective or supervisor, and specialized units and movement into these units. The logic is simple; tell candidates the truth and if they are offered a position, and accept, they know that they may be on midnight shift for three years. This method, as opposed to the

recruiter telling a candidate the best case scenario that can rarely be generalized, significantly hedges against a legitimate impact on job satisfaction and morale on the new members perception if what they were told is not what actually happened. Candid disclosure is the linchpin to an allied culture from the beginning. Anything less is that "slippery slope" to unsatisfied goals and cynicism that build throughout a career and provide a medium of growth for adversarial culture.

Field Training (and Evaluation) Programs

Most modern police agencies utilize some type of field training and evaluation program (FTEP) for new officers. Common programs are the San Jose or Houston models which have established and court-tested systems. The key to an agency and to the culture is how it is employed. In evaluating a FTEP program, a few key questions are critical to quickly assessing its viability. The first is how many trainees have gone through in the past year (or depending on volume years) and how many have failed to progress. If everyone has passed then either the selection is so fantastic your agency is only getting the cream of the local crop of potential officer or there is a systematic issue that should be addressed.

A solid program typically results in some trainees failing to meet standards, but not so many that indicate an adversarial culture is in place that controls for informal norms. If the only candidates who fail pass muster in the hiring phase as viable but don't fit the paradigm of the FTO group rather than not performing to established standards then culture needs to be considered. Modern organizations fail to thrive when serving diverse populations yet preserve a selection and screening process that excludes on differences rather than demonstrated ability. These differences go beyond any historical ethnic or gender discrimination and key on thought process. Some non-conformity, challenges to assumptions, and differential approaches to problem solving can be very healthy in today's law enforcement agencies, but present a significant challenge to a more traditional status quo.

A second question is the average time in service for the field training officers (FTOs). The common adage in policing is it takes five years for someone to know how to police, yet another says burnout typically begins about seven years in. Provided you agree with this notion, then FTOs should have the requisite years of experience but be carefully screened for symptoms

of burnout. That population is often firmly entrenched in denial and resistance to change as coping mechanisms for job and career stress.

How can FTEP impact culture? “Social promotion” of senior officers can strengthen an adversarial culture, while if the FTEP is considered somewhat rigorous and staffed with properly experienced members who have earned the status with demonstrated ability, and the program is congruent with the agency mission and values, it becomes an allied asset. This has implications to new and existing members as well as the reasons experienced members may choose or not to choose to become FTOs.

Probationary Retention

It is fiscally challenging when a new member fails to meet standards in FTEP or during the probationary period. The impact of retaining substandard employees is as damaging to the culture as it is to the likelihood that your standards have eroded or are eroding. In a time of tight budgets and layoffs executives are faced with the challenge of staffing needs with the cost of recruiting and training. That immediacy and the larger politics surrounding it can overshadow the potential for negligent retention or the negative impact to the agency a substandard employee may bring over the career of 20 to 25 years.

How does retention impact an agency’s culture? The members of an agency take notice when any employee is not performing up to standards and retaining substandard members sends a message. When that employee is probationary it sends an even more chilling message to the culture as a whole. Given the culture is made up of all its members, substandard members, by definition, reduce the collective effectiveness of the whole and require the performers to carry an increased load. Retention decisions need to be made rationally and objectively, based on compliance with well-established standards of performance if an allied culture is to be preserved and grow.

Performance Management Systems

Performance appraisals in law enforcement is a topic within itself that warrants volumes in support for more research and behaviorally anchored scales related to job tasks. The unfortunate reality is that good systems are expensive and not even many large agencies have good ones. Many agencies of all sizes are forced by the larger government body to use general

employee performance appraisals that have no validity to the knowledge, skills, and abilities required for the routine tasks that members of law enforcement embark upon daily.

Griffith, et al. (2002) point out that Generation X employees actually seek feedback on their performance, which is somewhat of a paradigm shift from the boomer and post boomer expectation that if there is an issue someone will be told. This shift is even more significant in its impact given that most supervisors are from the older generation and may find it odd managing the new generational expectations. Generation Y members are arriving at adulthood with post boomer and generation X supervisors and need for a pragmatic and effective system appears even more unattainable.

Contemporary performance management is a "system" that includes routine goal setting and developmental feedback sessions, usually every three to six months, that lead up to an annual performance appraisal. This system proves the proper feedback and creates good expectations so in the event of a poor annual performance appraisal there is no surprise.

Steelman, et al (2003) discuss the wide variation among Florida law enforcement agencies in terms of both instrument and supervisor training. There is little debate on how much law enforcement supervisors dread and avoid performance appraisals but the impact on the agency is tremendous.

How does performance management impact culture? A poor system can erode morale within the agency. The earlier warnings about inconsistent standards, lack of accountability, and indecisiveness are magnified, and will feed the adversarial culture. This can be an even larger issue if performance appraisals are part of the selection process for lateral transfers to specialized units or in promotions. Most appraisals lack instructor training and behavioral anchored scales that bring objectivity and consistency to appraisals. A good system is attainable even if it requires hiring a consultant or working with a local university to make sure there is a valid job task analysis and subsequent performance management system. The advantages of a solid system to the agency are great.

Promotions and Lateral Transfers

The message sent to members by who gets promoted or assigned to a special unit, such as canine or detectives, is often overlooked by an agency command staff. In some cases it is years before an open spot is available and members often prepare for years. Educational requirements

and past practice, as well as written policy on these important agency events can lead members to go to classes, seek and accept positions that create life disruptions for their families, and can cost members in time and money. There are expectations developed by members on how the processes will happen and forethought must be given to these occurrences.

How does selection process impact culture? Agencies must use care and make substantive changes to the policy and practice with lengthy advance notice and recognize the realities of competition among the ranks for rare and few opportunities. The method of selection must not only be valid, it must include a method to challenge questions and represent the job for which the test is given. Perceptions of fairness are as impactful as the actual degree of fairness that occurs. Feedback, or the option to get it, to members regardless of their performance is critical. In an allied culture such constructive criticism and direction is not feared or resented, but embraced as positive advice for future competition.

Ceremony and Symbols

Law enforcement is a prime environment to explore the power of ceremony and symbols and the impact on culture. Watkins (2003) identifies symbols as a key component of culture, one that visually and emotionally distinguishes an organization from its contemporaries. Promotions and awards are, or should be, celebrated events. They assist in the assimilation of newer members and establish expectations for those aspiring to promotion or recognition. They must be sanctified by a standardized process that insures they are earned.

How can ceremony and symbol impact culture? Awards must pass scrutiny so that earning and displaying them is recognized by the culture as legitimate. A classic example of what not to do is the one of the officer who receives a meritorious service award from his supervisor because he was not late to roll call for three consecutive months. Not only is every other member actions who received or will receive that award diminished, it shows that no one was providing proper review of the awards. It also stresses the consequence of rewarding or punishing behavior appropriately. There is also growing concern that many members in the "all players get a trophy" generation have been reinforced with recognition for participating that agencies must safeguard award processes by even more oversight.

A Culture of Developing Members

One can find a host of leadership books on the market that tout developing your people. It is a solid concept. The challenge in policing is exactly how to do that within traditional bounds. Time and resources are limited.

Some law enforcement agencies are turning to career mentors for those expressing interest in promotion. Intentionally rotating positions in specialty units are another source of development by assuring members get varied experiences prior to competing for promotions. Performance management systems, when properly executed, assist greatly in establishing clear expectations and goals with members. Nearly every event, such as performance management, promotional process, later transfer processes, or mistakes on the job are opportunities for deliberate developmental opportunities if the culture is groomed to include it.

How does development impact culture? It is the life's blood to cultural development. Positive and consistent development based on established standards, the agency mission and values, applied consistently and objectively, will fuel the allied culture. Indifference will have the opposite effect.

Conclusion

The futurist perspective on why culture is important as an organizational ally or adversary is based on the assumption that the world we live is constantly increasing in complexity. The complex shifts in generational expectations, electronic communications such as Facebook, Twitter, and YouTube, the ease of accessing information, the increasingly vigilant and ever-present media and the rate in which the world requires policing requires police executives of the future to be more aware and prepared to leverage a healthy culture into an ally to accomplish the mission. The consequences of an unhealthy, let alone an adversarial, culture is increasing due to the same reasons.

Simply recognizing the potential a positive culture can have for an agency and respecting the damage a negative culture can create is a start to the discussion. The good news is that every member of the agency can contribute to making it more positive once they are aware and believe in the road to attain the goal.

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Neighborhood and Net-Centric Policing: Preparing and Training for Alliances

Michael E. Buerger[34]

One of the greatest accomplishments of the community policing movement has been the ability of the police to create partnerships to deal with specific problems. Creating a networked response to larger social problems is the next step in the evolution of police agencies, but it cannot be decreed. There are fundamental distinctions between responses to localized problems and integrated responses to endemic ones.

Netcentric orientations link capacities that are separately organized in bureaucratic fashion. They represent Weber's logical "division of labor" within organizations, just on a larger scale. What has been absent in the socio-political scale is not the efficiencies of the original divisions (policing; social services such as welfare, job readiness, and child protection; education; building and code inspection; community health, etc.), but the absence of a coordinating mechanism. Bureaucracy-specific orientations developed, and calcified, often embodying philosophies in direct conflict with each other despite serving a common clientele.

In bureaucracies, the top leadership coordinates the work of disparate divisions toward a common goal. The political structure theoretically provides comparable coordination in the public sector, but the multiple problems of politics – ideological divisions, corruption, short-term election frameworks, among others – have effectively thwarted attainment of that ideal.

Creation of networks -- informal relationships among organizations and individuals – has the potential to fill this void of coordination. It represents a step beyond the *ad hoc* partnerships that have marked community policing and problem-oriented policing endeavors, but it is of a markedly different character.

Isolated problems can be addressed with the temporary redeployment of resources (like crackdowns in police operations), and justified by the immediately visible results. Netcentricity requires being able and willing to bend organizational mandates to extraorganizational endeavors, in the hopes that the coordination or resources will better address organizational goals in the long run. It involves surrender of a certain amount of control, as well as the suspension of many assumption of a specific bureaucratic culture, in order to work well with others. It also

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creates additional stresses for, and by, organizational stakeholders, whose concerns must be assuaged or deflected in order to maintain their support and retain organizational resources.

We already know that netcentricity works for criminal organizations and terrorist groups. RICO prosecutions almost invariably illustrate the utility of netcentricity for those intent upon breaking the rules, in part because rules and procedures are antithetical to such enterprises. The real test is to create a netcentric capacity among those devoted to enforcing them. The first two tasks are to create a vision of the possibilities for line-level workers (those closest to the problems they will be called upon to solve), and to prompt bureaucratic leadership to start the process at their levels of the organization.

Context

Neighborhood policing is an enduring vestige of the nineteenth century form of policing, abandoned but revived in modified form as part of the community policing movement. Net-centric policing is a necessary, but not yet realized, function of policing for the twenty-first century. They are complementary processes if done correctly.

Neither is done correctly at the present time. Both are held hostage to persistent, reactionary expectations of both the police and community cultures. The multiple themes in this volume converge at the neighborhood level, but the solutions to the problems that arise from those convergences generally lie outside the neighborhood boundaries. Given the limits of bureaucratic responses, the development of netcentric responses is a preferred, logical organizational adaptation to rapid change in the immediate environments. But it is not inevitable: it will have to be developed.

Policing is still prone to describe itself as "law enforcement," staking its legitimacy on a single facet of its complement of operational tools. While the police will always serve as society's legitimate means of deploying coercive force (Bittner, 1970), redirecting policing into a netcentric mode requires a successful redefinition of the police mission, from crime control through suppression to one of crime prevention. Creating a netcentric capacity requires both individual and institutional abilities to operate in multiple environments, adapting to or accommodating different organizational philosophies and cultures.

Practice: Assumptions and Obstacles

Police remain behind the curve of both technological and cultural shifts. The former is anchored in budget considerations, but the latter is ingrained in the structure and ethos of The Job, defined by bureaucracy and by command-and-control cultural expectations. Lip service is given to the concept of empowering creative thinking (at least in some quarters), but civil liability and political accountability remain powerful obstacles to change.

Police are the guardians of the past. Whether out of personal proclivity or as a result of being immersed in the police subculture, their cognitive maps of American culture are flash-frozen in the frame of a mythical past. The laws they enforce were created by legislatures who clung to similarly mythic visions. At best, those laws reflect an enduring consensus regarding acceptable social behavior, but in some instances they defend a defunct set of social circumstances and expectations. At worst, they embody a knee-jerk reaction to a crisis *du jour* that has long since subsided. (The similarities between such laws and certain police department policies is here tactfully omitted.)

Police recruitment is still relatively passive (despite earnest efforts by some agencies), largely dependent upon self-selection based in media images or family influences. Screening of applicants remains a process of marginally effective opt-out mechanisms, and those who survive the hiring gauntlet are trained in a curriculum and format anchored in the reforms of the early 1970s, a process only slightly altered from its historical antecedents:

> Training, in essence, is the imparting of *specific and immediately usable skills* and provision of information useful for the development of knowledge for future long-term application. It is a *process* whereby officers *are given* the knowledge and skills necessary to accomplish police goals and objectives (Mathis & Jackson, 1991). Police officers cannot function at an acceptable level until they have successfully completed a training program that sufficiently provides them with this information.
>
> (Gaines, Kappeler, & Vaughn, 1994:88-89; emphasis added)

The most notable aspect of the training encapsulated in the quote is passivity. Recruits present themselves for police work *tabula rasa*, an empty vessel to be filled with wisdom and direction. Active learning is barely recognized, and assessment of learning is generally dependent upon

standardized objective tests (though there is some variation; see Schafer, Boyd, and Youngs, 2006:54).

Many current training elements, though minimally adequate to the immediate task environment, are relics of previous generations of educational philosophy and technology. Content is delivered in lecture in the same chairs-in-rows environment that has defined classrooms from the first grade through college. Large blocks of time are devoted to learning the relevant Criminal Code, procedural law, and other legal necessities. Important elements related to social change are relegated to four- and eight-hour blocks of modular presentation through didactic lecture lectures (the "sage on a stage" method). An isolated environment, dominated by police culture, can diminish the vital purpose of these modules – opening the recruits' eyes to dimensions and possibilities beyond arrest.

In-service training for police rarely approaches even the level of continuing education in other occupational spheres: anything outside the tactical realm is generally a pro forma response to legislative mandates and changes in the law (Buerger, 1998; Schafer, Boyd, and Youngs 2006).

The situation is not completely bleak. The diversity and the quality of police recruits have improved, abating the more toxic aspects of monolithic culture. Regardless of the level of their formal education, or the extensiveness of their training, good police officers have always learned from their experiences. Many have changed their attitudes and approaches as a result of experience and flashes of insight. Many more continue to seek additional skills to improve their own performance and career options. But we have rested for too long on the accomplishments of the exceptional few. The task before us is to move all serving police officers toward the level of the most accomplished.

The core problem before us is not how to replace the current state of police training and orientation – much of which remains necessary to The Job – but how to modernize it. The critical questions do not involve incorporating technological advances into the existing training framework: the police have already begun to adapt new technologies wherever the budget allows it. The training and socialization functions of the police academy need to be streamlined, incorporating principles of adult learning especially when delivering non-intuitive lessons. We must adapt training regimens so that they support a strategic and netcentric approach to problem-

solving and community building, rather than passing on the insular "one riot, one ranger" tactical approach to policing.

Turning the Battleship: New Possibilities

Step 1: Create Time Most police certification curricula are constrained by hours determined by legislative fiat. Logistical realities militate against adding hours: communities sending already-hired employees for training are hard-pressed to pay salaries without the benefit of the employees' actual service on the street.

In an era when even higher education is expanding through distance and asynchronous learning models, there is little need for the police academy to be a ship in a bottle. Some changes in the traditional model have already been made. The campus model of pre-service certification already competes with the boot camp stress academy. Pre-service training is available in many states for individuals who seek a police career, but have not yet been fully vetted for hiring by any agency: all that is required of pre-service personnel is a clean record, a clean bill of health, and the ability to pay their own way. Other hybrid models are well within the realm of possibility.

Shifting the basic knowledge of the criminal code to a web-based pre-Academy course is well within the abilities of current technology. For a relatively modest investment, a simple tutorial course could guide would-be recruits through the fundamental principles and relevant Supreme Court decisions (region-specific appellate court decisions are available online as well). Testing and validation can be coordinated through a local or regional college, but they can also be automated. In such a model, as a guard against cheating, the first few days of an academy's session would include a make-or-break exam that recruits must pass in order to proceed with the full academy regimen. (It is also conceivable that a comparable process could be incorporated into municipal hiring processes as a means of narrowing the pool of applicants.)

Academy-based instruction time could then be devoted to scenario-based applications of basic law, under direct tutelage of the instructors. Recruits would step directly into the preparation of cases for further investigation, preparation of warrants, presentation in court, or for other dispositions. From the instructional side, a premium could be placed on students' identification of weak points, contradictions in evidence from different sources, and other

anomalies that require active engagement with the material: in short, the academy would require prior understanding of the laws (both substantive and procedural), and teach their application rather than memorization.

Net-based assignments could occupy the evening hours, teaching students to use external resources effectively. The basic sciences behind evidence collection could be treated in this fashion, as could electronic investigation. Subsequent classroom work would focus on integration, application, and discussion of the results of Internet searches. Colleges and universities are already developing similar forms of this "blended learning" track; there is no fundamental reason why the police cannot.

The hands-on portions of the Academy – evidence collection, firearms training, defensive and pursuit driving, physical fitness and defensive tactics, surveillance technologies -- would remain the same. Though virtual equivalents could be constructed, they are vastly inferior to hands-on, in-the-presence learning. First-shooter games are not the equivalent of FATS training, and are far less comparable to range training and Hogan's Alley decision-making contexts.

Step 2: Bring in the Community. Police academies already employ scenario training, but the actors involved tend to be academy staff, persons already familiar to the recruits. Though some police personnel are natural actors, able to step into and out of roles with convincing ease, many are not. The air of unreality that attends going-through-the-motions role playing is much less effective than the tensions that unknown actors create. Most police work still involves the process described Reiss (1971), stepping onto a series of new stages, trying to determine what the various roles of the actors are, what the plot is, and then determining the appropriate course of action. If the recruits are being prepared for a job that requires them to do problem-focused work, they should be prepared with problem-focused learning.

Any number of non-police individuals may come in to staff scenarios: community repertory theaters have skilled actors, community members may be able to play particular roles convincingly from experience, and there are a wide range of civic organizations whose members may be attuned to particular needs. There are cost and preparation issues that would need to be resolved in advance, but these are part of building a network that links the police to additional resources.

Once training scenarios have been created and rehearsed with role-playing actors, two models of presentation are possible. The first is a standard lecture on the relevant material, followed by participation in the scenario. This allows recruits to apply the knowledge conveyed in the lecture.

The second model places recruits into the scenario first, carries the situation to a natural point of conclusion (one of several), then breaks for discussion with the community participants. Police academies already employ this after-action debriefing for tactical scenarios; expanding its utility into social problem situations and disorder scenarios is not a far step. When the issues embedded in the scenarios represent cultural differences, the post-scenario revelation of the cultural "land mines" that were part of the script may be more meaningful to recruits than the same material presented in lecture. A formal presentation of the material may also follow discussion, using the scenario and the followup primary-group discussion as poignant introductions to a wider range of issues. Whether lecture reinforces experiential learning, or the scenarios expand upon lectures, is a matter of pedagogical choice.

Step 3: Preparing for Netcentricity. In order to coordinate effectively with elements of other organizations, police officers need to understand how those organizations really work. Both the formal structure (with its rules and regulations) and the informal culture (with its own rule-bending mechanisms, and attitudes based upon experience with the clientele) must be understood. Before asking another agency for help, or responding to a request from that agency, it is vital to understand what it should do, what it does do, and what it is potentially capable of doing. It is not enough to read the mission statement (or the values statement, or the vision statement) or listen to the formal presentation by a CEO or section leader. Knowledge of the cultural lay of the land is vital to anticipating the positive and negative influences that may arise from a task-oriented alliance.

Knowledge of the external sovereigns who control or affect an organization's functions is vital as well. School boards are theoretically a natural ally for the police, but they have their own political dynamics, and may be even more rent by philosophical orientations and ideological divisions than the municipal governance system. Moreover, they are governed by a separate area of civil law, with privacy and accountability concerns far different from those with which the police are familiar.

Some of the overt differences can be conveyed in lecture format, but understanding the real dynamics – between staff and their clients, between line level workers and their supervisors – requires presence. Informal conversations often convey far more information about the real character of an agency, the real demands of its mission upon its employees, than any formal written or oral presentation.

Police agencies routinely place their new hires in various units of the organization – dispatch, investigations, crime analysis, etc. – for short periods of time to give them an exposure to the resources available to them, and the needs those units have for the officers' street performance. (The latter is often more subtle, and sometimes overlooked, but it is vital.) The same principle applies to the creation of a netcentric orientation: officers need a working understanding of the public and private organizations whose work overlaps their own.

"Internships" is a shorthand label for a variety of potential methods to expose officers to partnership cultures and structures. It can take place during or immediately after the police academy experience. It could be shoehorned into the interim period between hiring and entering the academy, when there is one (this would miss pre-service academy students, but if job-seekers are willing to pay their way through an academy, they probably will be willing to undertake unpaid internship experiences as well).

A specific block of time need not be reserved for internships, however. The experiences could be built into a Field Training Experience, or spaced throughout the FTO and probationary period. The benefit of later internships include an anchor in at least some field experience, perhaps a smaller possibility of being compartmentalized and discarded, and enhanced status for the officer within the receiving organization (and thus theoretically better reception and information).

The internship concept has inherent risks. It is intended to broaden recruits' perspectives by exposing them to the operations and world view of their nominal partners. If the host agency is not similarly prepared, however, recruits may have bad experiences ranging from a mere waste of time to an onslaught of outright hostility. Existing prejudices toward the agency's clients may be intensified rather than mitigated; worse, new misconceptions and antagonisms may arise where they did not exist before.

For these reasons, "throw 'em into the deep end of the pool" is a poor approach for creating mutual understanding. Internships will need at least some mutual guidance, feedback,

and appraisal. The existing FTO program structure presents a reasonable guideline, but new protocols will need to be developed (in mutual consultation with the receiving agencies) and refined with practice. Guided group interaction sessions may be helpful in pooling disparate experiences, and reorienting the recruits' initial reactions toward the policing duties they will be assuming.

Getting From Here To There

Netcentricity often develops at need in the lower echelons of organizations, an enduring legacy of problem-solving. Such informal relationships will continue to develop, but they are vulnerable to transfers, promotions, retirements, work overload, and supervisory intercession. The latter two are much less likely if the agency has transformed itself to a netcentric orientation, but moving from *ad hoc* to institutional commitment is not an *ad hoc* process. It must be directed, and that is a leadership issue.

Agency leaders face multiple challenges in preparing their agency for netcentric activities. These include, in no particular order:

-- laying the groundwork for netcentric cooperation with the political sovereigns;
-- establishing to their counterparts in other agencies the rationale for cooperation in the absence of a commonly-recognized crisis;
-- proposing a preliminary vision of the nature of netcentric cooperation, perhaps in a single, accessible aspect of their common clientele;
-- identifying natural leaders within their own organization who are not only receptive to the idea, but have the ability to "run with the ball" and proactively expand the concept in operational terms;
-- developing preliminary (and flexible) guidelines for acceptable levels of participation: time commitments, resource availability, legal constraints, and the like;
-- developing a set of useable feedback instruments to capture successful participation, identifying weaknesses and potentially disruptive relationships, and creating the next generation of viable assessment tools;

-- laying the groundwork for inter-agency cooperation on internships, beginning with police officers or recruits visiting social service agencies, but preparing as well for hosting employees from non-police organizations in mutually-reinforcing internships;

-- reaching out to community groups and organizations for input, participation, program assistance (such as the role-playing scenario above), and political support;

-- preparing command staff to deal with the brush fires and unanticipated snags that inevitably arise in new program rollouts;

-- preparing all levels of the agency and partner agencies to withstand the backlash against the first serious FUBAR situation.

Netcentricity requires an ongoing state of mutual feedback, support, and challenge. It is more than a temporary alliance to respond to a specific problem, but it is less than a merger of interests. It requires continuous, conscious massaging of the relationships as political support and budget resources wax and wane; as new social conditions arise, intensify, or are abated; as personnel change, bringing in new visions and prejudices; and as public expectations of agency and network performance change.

Leadership will be important in establishing and maintaining a netcentric orientation, and in insuring resources sufficient to sustain the effort. Netcentricity is not sustainable unless it is supported by a critical core of an organization's personnel, at all levels and in all units. The last half-century has seen tremendous reforms in selection and training, in the operationalizing of problem-oriented and community policing philosophies, and development of crime analysis and intelligence-led policing functions. Those reforms provide a solid base for the next step, moving beyond the boundaries of the police organization into a conscious and enduring partnership with sister agencies working toward the common goal of safe, vibrant communities.

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Networks and Other Urban Myths

Michael E. Buerger

Networks are a real force in the modern world, as the other works in this volume illustrate. The question we need to address is not "are networks real" or "are networks effective," but "under what conditions are networks desirable and effective?" As globalization and the expansion of cyberspace change our social and economic institutions, a similar question needs to be applied retroactively to the hierarchical institutions. Smith (2008) posed a fundamental question about organizational change in the coming years:

> How do we move traditional hierarchical law enforcement organizations into netcentric ones? … I understand how business can move in this direction, but I struggle to see how government organizations as a whole can do it without the approval of those we serve.

This chapter will not take up the issue of whether hierarchical institutions are dinosaurs, relics of the Industrial Age slowly lurching their way toward extinction. The presumption is that they are not. The large organizations arose to fill particular needs created by the urbanization of society, and those needs have not receded, howsoever much more complex they have become.

The focus of this essay is institutional adaptation, both in the abstract and for police agencies in particular. While the core demands that give rise to hierarchical structures remain, the rapidly-evolving complexity of the social fabric creates new needs for improved and coordinated responses. Developing ways to bring the strengths of hierarchically structured organizations to bear on a changing set of conditions and needs (ones that differ from the base conditions the institutions developed to meet) is the ongoing challenge for creating netcentricity.

Policing's environment changes rapidly in many superficial domains, but the fundamental demands upon police service remain stable across the multiple variations (good times, bad times), and are unlikely to change in the short term. Police respond to a constant load of demands (calls, incidents, case investigations) with sufficient "sameness" to maintain what we have been calling a static, antiquated, Industrial-Age dinosaur … the quasi-military hierarchy.

In that context, policing's version of adaptation actually conforms to an element found in the older, hierarchical model: boundary-spanning devices. There is no refutation of "netcentric" inherent in the confluence of the two, only a suggestion that the distinction is overstated. It is

more than "a distinction without a difference," but not necessarily robust or different enough to warrant a new label. Netcentric capacity is a logical extension of organizational strengths, but it will not emerge or reach its full potential without purposeful development.

The value of "netcentric" lies in the ability to respond quickly to shifting conditions, created by a lack of stability in the environment. The boundary-spanning "partnership" initiatives were an early attempt to incorporate and coordinate supplemental resources at need, either to quell an emerging problem or take a new approach to a persistent one. The experiences of and relationships formed during those haphazard joint ventures form a solid basis for creating a netcentric capacity, but alone were not sufficient to create a working network.

The differences between networks and classic Weberian hierarchical organizations has been the subject of considerable debate in recent years. While the advantages of networks have been promoted, less attention has been paid to the notion of "netcentric" organizations. This paper examines one approach to the question Smith presents, an approach that rest upon the following assumptions:

1 – In the phrase "netcentric organizations," the hoary old noun "organizations" is as important as the intriguing new adjective "netcentric";
2 – Criminal justice organizations generally, and police agencies in particular, lack the autonomy and thus the flexibility of private-sector organizations; as the Smith quote notes, they are nested within a larger organizational domain of multiple government controls;
3 - Innovation fatigue is a critical problem in effecting meaningful change in police organizations.

The fundamental presumptions of a "netcentric" model are two-fold. The first is that the new conditions create a demand for coordinated, overlapping resources from multiple agencies and institutions. The second is that those needs will change so rapidly – receding and reappearing, mutating, and giving way to new demands not yet anticipated – that no single response set will be needed long enough to require or allow institutionalization in the traditional sense. Rather, institutional resources will be combined, redefined, and recombined into different formats within multiple partnerships, in a kaleidoscopic set of responses to equally nimble changes in the environment.

The Groundwork

Police agencies have accumulated some limited experience already in basic "netcentric" principles. To meet the pan-jurisdictional demands of enterprise crimes and the drug trade, police agencies contribute limited resources to multijurisdictional task forces. Both crime prevention initiatives and community-building endeavors under the "community policing" label transcend the core functions of peacekeeping and crime control. So, too, do the multiple interactions with schools (D.A.R.E., driver's education presentations, and the like). Police officers often interact with their counterparts in other public agencies (housing, welfare, etc.) on an *ad hoc* basis when separate investigations converge on common targets and suspects. At the unit and even individual officer level, third-party policing efforts (Buerger and Mazerolle, 1998) constitute limited forays into the necentric realm, as do more coordinated efforts like the Oakland Beat Health SMART initiatives (Mazerolle, Roehl, and Kadleck, 1998.).

These are the boundary-spanning elements of their respective police agencies. They are part of the organizational structure, designed to protect or augment the core process (law enforcement or crime control). They operate within traditional command and control expectations, with formal interagency coordination at the top or middle management levels.

While some local responses may arise in a true network fashion, without a "core entity from which [authority is delegated]" (Smith, 2008), each of the individual actors is still responsible to a core entity. Their spontaneous actions are tangential to the main operations of their respective organizations, rarely receiving formal acknowledgment (unless a problem results), and often are conducted without organizational resources or integration into organizational evaluation or planning.

Therein lies the difficulty. Absent proper recognition of the power that these external linkages embody, they remain episodic, their impact diluted and potentially ephemeral. The resources needed to capitalize upon even small successes never materialize, as each wave of new crises diverts our collective attention and our limited social capital. The challenge of building a netcentric capacity lies in expanding the existing capacities of organizations in such a way that they work in concert with the capacities of other organizations toward a common set of purposes.

One final word of caution is needed. The phrase "expanding the capacities" is deceptive: it masks more fundamental changes in the organizational missions. For networks to be effective, the old stovepipes of "social service" and "law enforcement" and the like will have to be re-cast

into a broader sense of communal efficacy. That will require new vision (and new struggles) at the political as well as the organizational levels, and new concepts of and from leaders across the spectrum.

1. *The Organization Remains Important*

Organizations are created for a purpose, and that purpose remains integral to organizational structure even when altered or expanded. The first modern police force, the London Metropolitan Police, was created to detect, defuse, and deter the onset of urban riots. Though mimicking the structure of the London model, and incorporating the older functions of the watch and ward, early American police forces were as much about political patronage as about law enforcement as we understand the term today. The "professional" police and their later hyphenated incarnations ("community-oriented," "neighborhoods-driven, "intelligence-led," etc.) were a twentieth century revisioning of the nineteenth century mission and structure.

The adoption of a crime-control mission was part of a reform movement to eliminate overt politicized direction of police activities. While its success in that endeavor was slow and uneven, it nevertheless set the stage for important functions like selection based on qualifications (however minimal), training, rational organization, and ultimately (and belatedly) accountability. That the greatest gains have come over the course of the last four decades is less a reflection of the police themselves than of the social structures that supported the police (on both sides of the turbulent decade of the 1960s).

As we move into the twenty-first century, the purity of the crime control mission is much less certain than it once was. Our understanding of the complexity of the roots and situational causes of crime is considerably greater than when the professional movement began. We know that the client group of the police overlaps with the client groups of social services to a significant degree, yet we do little to bring separate missions to bear on the common problems.

New technological tools have emerged to benefit the law-abiding and the law-breaking alike, but we struggle to remain behind the curve. Our training and development regimens force the advances of technology into the existing channels of method: we have moved from Muggable Molly sitting on a park bench to LonelyGrrlz sitting in an Internet chat room, a dazzling change of venue but not of technique. Some of our restrictions are based in a legal structure beyond our control, but even when we seek influence in the decision-making processes

of legislatures, we turn a blind eye to the parochial elements trying to turn back the challenges of the globalizing economy.

The greatest internal obstacles to effective change lie in the area of organizational culture. Older conceptualizations of mission, responsibilities, managerial responsibility and the quaintly-termed "labor relations" present the stark line of demarcation between tradition and future need. The relatively rapid transformation of the American police in the wake of the Civil Rights Movement and the second feminist movement prove that even profound change is possible. Nevertheless, the lessons of community policing demonstrate how difficult change can be. It is a sobering realization that a logical evolutionary movement that originated within the profession continues to meet substantial resistance, while the most dramatic changes came about because of pressure from external entities.

2. *The Organization That the Organization Lies Within*

Some of our restrictions lie outside our organizations, and that may pose the greatest challenge to netcentric development. The police reflect and are subordinate to the political sphere, with its nostalgic preference for local control. The principle is still a sound one, given the variation in the makeup of America's communities, but a calcified shell of principle yields smaller and smaller returns. City governments have already realized the benefits of regionalization, breaking the lateral shackles of geography in important areas such as transit, water and sewer management, dispatching services, forensic analysis, and others. Bending and redefining vertical boundaries has not yet been explored, and it is that process that will be most necessary to the establishment of effective networks and netcentric relationships.

The ever-shifting makeup of political control creates dizzying shifts in policy demands, "flavor of the month" initiatives, and other instabilities that redirect or diminish organizational resources. Creating a stable organization with a long-term set of goals, yet simultaneously capable of being responsive to immediate concerns, remains the great purgatory of leadership. The current tension between local agencies and the Department of Homeland Security over enforcement tactics in the immigration issue is but the most recent battleground in this struggle of competing political demands. Local micro-struggles of professional goals against the demands of moral entrepreneurs, single-issue coalitions, and political legacies are also symptomatic of the same difficulty.

3. Innovation Fatigue

One of the persistent failures of American policing has been the inability to move beyond "implementing a new program" as a vehicle for needed changes. Often instituted in response to crisis, program-centered initiatives are described in conceptual language that bestows face validity to the concept, but which often has little factual grounding. Even more rare is any realistic link between the activities and the expected outcomes: far too many innovations are premised only upon engaging in an activity, with positive results expected to appear miraculously from the endeavor.

Two influences feed the phenomenon, Concept Promoters and a faddishness endemic to the police. The Concept Promoter -- whether a moral entrepreneur, a politician, or an academic with an idea to sell -- may approach the police directly, or may work through local political authorities to put their program in place. Entrepreneurs may also be retired police officers pushing a training program based on their personal experience, but those tend to be subscribed to individually by interested officers, rather than adopted wholesale by agencies.

Faddishness is the occupational equivalent of the external concept promoter. Once a flagship program has established itself, or received sufficient favorable publicity in practitioner magazines and elsewhere, it becomes a symbolic token of professionalism or progressive leadership and spreads in viral fashion. Klockars described an earlier manifestation of this *zeitgeist* as "the 9-millimeterization of the police": during the transition phase from the six-cartridge revolver to the seven-, nine-, and 16-rounds magazines of the semiautomatic pistol, to be a "real cop" – and, by extension, a member of a "real" police agency – one had to carry a 9-millimeter pistol, not the old wheel gun.

Special units of one sort or another are another manifestation of the phenomenon, as Krumholz (2000) found in Massachusetts: though the primary predictor of a department having a domestic violence unit was the existence of a unit in the next jurisdiction, rarely were the units constructed, staffed, or charged in any similar ways. Local preferences filled in the conceptual boundaries created by the name "domestic violence unit," with no apparent rationale for the wide operational variation.

The one common denominator that innovative programs share is their visible affirmation that the agency is "doing something" about the problem of the moment. Regardless of the source

of the innovation, participants are expected to respond to emotive, symbolic concepts that are not necessarily anchored in any particular empirical reality. Any gaps between surface resonance and the local, nitty-gritty task focus are soon apparent. A number of other flaws also become evident: a gap between the administration's rhetoric and its actual support for the program is often the most vivid. The conflicting institutional priorities of nominally cooperative agencies often weigh in as a close second.

Interest wanes when the expected conduct or outcomes are not realized in terms that have meaning to the participants (usually some manifestation of "real police work"). Even when a core group of acolytes understand and adopt the premise, their intuitive understanding rarely extends beyond the pioneer group. In some cases, as the acolytes move on in their personal career trajectory, their places are filled by "the sick, the lame, and the lazy" (Rumpza 1987). That phrase encapsulates police culture's disdain for individuals who are drawn to specialized positions by the lure of ancillary benefits (usually Monday-to-Friday day work or other perks), or banished there by administrators who consider them to be "problem children." Instead of a ground-breaking flagship unit, the initiative becomes an organizational Siberia.

Innovations die by a variety of mechanisms. Probably the most common is financial exhaustion, followed closely by *faux* institutionalization.

-- Financial Exhaustion: the end arrives with the expenditure of the last of whatever special grant money made the innovation possible;

-- Fossilization: the program is institutionalized into a special unit, staffed by acolytes (or worse, "problem children"), operating in a ritualized void, almost completely tangential to "real police work";

-- Faux institutionalization: departments declare the innovation to be a success, and announce that it will be diffused into regular operations (usually at the precinct level); day-to-day responsibility for the program is transferred to operational commanders; the special prototype unit's personnel are transferred to different operational commands, where they resume regular police duties with no discernible time or effort devoted to the program goals;

-- Fiscal exigency is a grim reaper of even successful innovation: when budget cuts and shortfalls threaten the core police function of call response, even

the productive special units and projects are dissolved so their personnel may be returned to patrol duties.

-- Outright failure is found more rarely, with the agency publicly renouncing the innovation's lack of impact. Failure is generally recognized more quietly, as a retrospective warning against later proposals: "We already tried that, and it didn't work," as though a single unexamined failure proved a fundamental law of the universe.

The cumulative effect of repeated program failure creates an institutional jaundice, a reluctance to buy in to new efforts. The burnout cases retreat into a defensive shell, exerting only the minimum effort needed to stay out of trouble. Those officers and employees who are still motivated tend to rally around the core principles of the institutional past, which for police is the "law enforcement" mission.

Moving police organizations in a direction that renders them more net-centric must overcome each of those considerable obstacles. The immediate target is the inertia that is endemic to allegiance to an organizational mission and culture anchored in the past. It is well bulwarked against change by the armor of innovation fatigue. It has a stalwart ally in the political nostalgia that subscribes to a vision of the police mission that is close enough to that of the police to forge common cause with them (even if, under ordinary circumstances, considerable disagreement exists between the two camps in day-to-day matters).

Expanding the Model

Creating organizational change, say nothing of broader occupational change, will require addressing all three areas simultaneously. The conceptual language we choose will be important: rather than speaking of strengths and weaknesses of the current organizational model, we need to define the debate in terms of strengths and emerging needs. Sufficient planning must precede even the introduction of the concept, to overcome innovation fatigue. Finally – to be true to the intellectual anchor of the network concept – we must be open to legitimate objections and suggestions that arise from the ranks as new directions impinge upon established, effective operational realities.

In their treatment of permanently failing organizations, Meyer and Zucker (1989) note that public-sector agencies share many of the attributes of low-performing organizations in the private sector. One of the most salient characteristics is the existence of multiple and often conflicting goals. In profit-seeking organizations, such conflicts arise over time, but Meyer and Zucker observe that

> public sector objectives are ill-defined and interests in and around public organizations divergent from the outset. Public organizations, therefore, carry from their beginning many of the liabilities that emerge only later, if at all, in private firms.
>
> (1989:136)

Given that "ill-defined objectives and divergent interests are built deliberately into many public programs," Meyer and Zucker conclude that "[t]he reality of public administration… has frequently fallen short of [the private-sector 'businesslike'] ideal, owing more to the nature of its tasks than to.. ineptitude or malfeasance" (1989:139-140).

Meyer and Zucker's analysis provides a theoretical and substantive basis for promoting 'netcentricity' among public organizations, including the police. A cogent rationale does not inevitably result in a cogent action plan, however, and there are multiple obstacles to be overcome. At the theoretical level, of course, "a cogent action plan" is close to being an oxymoron in any discussion of networks. On a more practical level, variations in local conditions and resources inevitably mean that "one size don't fit all," and action plans inevitably must be plural. But it is precisely the ability to manage multiple initiatives that makes networks the logical next step in the development of collective approaches to problems.

Initial Steps

The direction (and putative "control") of a hierarchy is relatively constant, perhaps even static, whereas network configuration presumes either (1) shared leadership or (2) leaderless, *ad hoc* responsive coordination. The latter is more suited to the al Qaeda model, where stochastic strikes degrade the social fabric like the old Chinese water torture worked on the soul. Though "leaderless resistance" is promoted by extreme right-wing groups in the United States, its primary function to date has been a defense against damaging civil lawsuits rather than a philosophy of direct action.

The implications of "shared leadership" for existing organizations are immense, because shared leadership is a fundamentally unexplored concept. The various management innovations of the last two decades – flattening the hierarchy, pushing decision-making farther down, employee empowerment, and the like – all presume a vertical alignment, and top-down guidance. They are designed to make hierarchies more efficient, but ultimately reside squarely within Weber's original construct of information traveling up, and decisions (now modified into "guidance" or "strategic direction") traveling down the hierarchy. Notable exceptions – specialty training and experience guiding Special Response Team actions more than rank, for instance – both reinforce the general rule and provide a foundation for promoting the shared leadership concept in other areas.

The challenge is all the more daunting for having to be started across multiple organizational contexts, more or less simultaneously. Both the structure and the cultures of the satellite or partnering organizations have to be prepped for participation in a viable network, and our earlier attempts to form "partnerships" should be reviewed as an objective lesson in how easy it really is. The most difficult task will be to shed the emotional attachments to the older symbolic missions – particularly "law enforcement" – in order to create a shared mission. "Law enforcement" has always been a tool, but it has been adopted as a *raison d'etre* by the police culture. A generation of reform efforts has managed to nudge it a bit, but it retains its dominant position in the police culture's social mythology. It is the primary lure for new recruits; it remains the central core of training; and as long as the fluctuations of the crime rate remains the sole measure of police effectiveness, it will remain an unnatural confluence of activity and outcome.

Traditionally, we have "sold" new programs and new concepts on the basis that they will enhance the law enforcement mission. Whether that same approach should be utilized or discarded for the purposes of this endeavor should be approached as an open question, as local conditions may well dictate many variations of the answer. We should not lose sight of the larger goal, but the changes must be constructed in smaller increments that are meaningful to line workers and supervisors. Change strikes not only at mission and myth, but at identity as well.

However, a simple semantic shift presents an opportunity. A small move away from "law enforcement" -- embedded in arrest and the pretense of punishment for misdeeds -- to "crime control" reaches more broadly into crime prevention measures, both tactical and social.

Modern police officers are now much more proficient at working with probation and parole officers, and in tapping into a variety of official and private agencies working to ameliorate social disadvantage.

While the police are visibly tradition-bound, other organizations are equally so, but at a less public level. All are encrusted with comparable numbers of do-nothings, time-servers, foul-ups, saboteurs, and "blue flamers": the equivalents of the vivid malcontents who populate some police organizations. Finding the forward-thinking individuals who will be amenable to the networking concept will be a challenge at all levels. "Amenable" is but the first quality needed. Ability to work in new ways while still fulfilling the standard organizational mandates is another; ability to be creative "under the radar" and accomplish results without drawing undue (and almost certainly negative) attention will be a third.

The latitude for discretion in line positions, and lower supervisory ones, is much greater in policing than it is almost anywhere else. That is why the organizational commitment from the police is a vital precondition for almost any networking: if the police define something as a problem, they have the political *gravitas* to make it a problem within other organizational contexts as well, even if only temporarily. That is the essence of networks, however: the ability to shift resources temporarily to quell a rising problem, and then shift back to *status quo ante*, or to take on new problems in a different theater.

Obstacles to Change:

Despite dabbling with sloganeering – "Police chief of the beat," "strategic corporal" etc. -- policing rarely recruits for potential leaders. The essence of the old command and control ethos still permeates many organizations, and "productivity" is measured in traditional ways: calls answered, arrests made, tickets given. Although there has been an attempt to "measure what matters" (Brady, National Institute of Justice, 1996), the reality is still that "what we have traditionally been able to measure, matters." Progressive departments are slowly working toward alternative (or perhaps better, supplemental) means of assessing employee performance in different areas, but it remains largely an undeveloped territory.

Policing rarely seeks, selects, trains or orients its new hires for its desired model: respect for citizens, ability to talk with people from all walks of life, technical competence, the fine line between "creativity" and "violating the rule of law," points of early intervention versus waiting

to count moral coup by finally arresting somebody, community building versus community culling. Recruitment efforts are made, of course, but generally the pool of applicants who present themselves expect the law enforcement thrill-seeking model of television and policing's own self-promotional efforts.

Policing is not the only occupation where too much energy is spent acting out roles that have no logical connection to the desired goal. But we sure have been better at it.

What could we do better? To a large degree, our so far limited ability to become netcentric is a function of sovereigns' about liability (and the sovereigns may be external to the agency, thwarting police administrators' attempts to expand their organization's effectiveness). Budgets and other political considerations external to the agencies, resident within the larger organization they are part of – state or municipal government – remain the largest constraint on meaningful netcentricity. And the instability of the political leadership – temporal and otherwise – is even greater than that of policing's brass hats.

The best that police administrators can do under most circumstances is prepare the organization for netcentricity. The concept of Fayol's Bridge – whereby subordinates in one section of an organization talk directly to their counterparts in another – has been making inroads among progressive agencies for years. While some form of it always existed, it was anathema under the old "command and control" mind-set of earlier eras, and operated only covertly. Modern police managers encourage the principle, recognizing that "control" can be as effective under loose reins as under tight ones, and often produces better results. Formal agency collaborations such as Oakland's Beat Health Program (Green, 1996; Mazerolle, Roehl, and Kadleck, 1998; Mazerolle, Kadleck, and Roehl, 1998) have been mounted from a top-down perspective, with adequate planning and clarity of responsibility: in essence they were task forces with clear mandates, defined resources, and planned courses of action. They followed familiar rules, and generally built upon an adequate planning process.

Netcentricity is most useful when applied to emerging problems, before they reach proportions that require task forces. In the process, the concept of netcentricity extends the concept of Fayol's Bridge *outside* the organizational boundaries, potentially bypassing two distinct layers of supervision. This raises questions (and anxiety) about proper guidance and authority, because netcentricity requires that administrators not only have confidence in their

own subordinates, but also in the abilities and judgment in other organizations as well. The first is difficult enough at times; the second, an invitation to disaster.

The shadow looming over netcentricity is the civil equivalent of a RICO prosecution: everyone connected to the endeavor (including and perhaps especially those who are *respondeat superior*) will be held accountable for "the deeds" of people they know nothing about, had no control, over who acted according to completely different rules, missions, and understandings of the problem. Though deeds in this case can be mistakes rather than crimes, there is a natural reluctance to give *carte blanche* permission to participate in the unreviewed schemes of others. This acts to counteract the advantages that come from a bottom-up approach that pools complementary understandings of the problems to be addressed.

For all the jitters about reaching out to unfamiliar partners, there have been instances of successful line-level collaboration. Most notable was Operation Nightlight, which grew into a formal program from an informal collaboration between parole officers and police in Boston, Massachusetts (for a short summary, see e.g. http://www.ojjdp.gov/pubs/gun_violence/profile33.html). Numerous unpublished local partnerships have arisen under the umbrella of community policing. While the most familiar successful programs have primarily been created within the criminal justice system, the same principle can apply outside the system to other city and social agencies.

The challenge for police agencies is to prepare all levels of the organization for working in a netcentric environment. That means not only reaching out to potential partners for police-defined projects, but also being open to responding to requests to participate in projects devised by other agencies. Police operate under severe legal restrictions that may not be recognized by all organizations wishing police participation, so it is imperative that line officers and other personnel recognize the constraints upon potential partners.

1. *Better recruitment and selection*. Though this is has been on the agenda since at least the 1967 President's Commission was convened, the progress in this area has been spotty. It is still easier to illustrate high-profile law enforcement (K-9 units, tactical entry teams, helicopters, and the like) in recruiting posters and brochures than it is to identify the more cerebral aspects of police work. Outreach programs tend to bring in those already interested in police work, without piquing the interest of those with more creative or entrepreneurial skill sets. Incorporating even

rudimentary scenario-based problem solving into the application process will set a tone of expectation that basic, field-training, and in-service training can build upon.

2. *Rethink and re-cast training and orientation*. The Royal Canadian Mounted Police CAPRA model, and the integrated academy-field experience process used in the UK, are possible starting points, but the entire POST academy approach needs to be re-thought. It is an early 1970s technology, grounded in didactic pedagogy and encrusted with special-interest modules (which vary across the country from highly effective to counterproductive to stultifyingly boring). Changing it will require legislative action, and thus a coordinated approa

The academy concept was a 1970s solution to a 1960s problem, and predates the Internet and the explosion of communications and learning technologies. At this stage, it should be possible to require a basic knowledge of the criminal code as an entrance requirement for the academy, with self-paced online tutorials. In line with the need for networking, the basic laws governing the social service agencies could be added to recruits' preparation time. Academy classroom time can shift to the application of the laws in scenario or other deployment modules. (One of the advantages of scenarios is that it allows for "creative failure" without any actual damage; trip-wire issues, gaps in the available learning materials or student failure to engage with those materials can be revealed and corrected.)

Table-top exercises based on successful partnerships expand the scope of scenarios, allowing students to take on unfamiliar roles (and through the, perhaps, learn more about what governs and affects potential partnering agencies), and to work in teams beyond what a simple scenario might permit. Both scenarios and table-top exercises can be adapted and extended into in-service training, although additional planning would be needed to do them constructively. Policing has always adhered to the bromide that the purpose of training is to "put an old head on young shoulders." Academia is shifting to inquiry-based learning approaches to compensate for a perceived (and in some cases documented) lack of skills needed for the older pedagogical models to succeed. Policing should be looking to better ways to instill knowledge, foster knowledge retention in the critical core areas, while expanding the recruits' perspectives on their role, abilities, and purpose.

3. *Restructure the career path*. For all that it is the "universal experience" and theoretically provides the broadest range of experience in the shortest period of time, patrol work is limited. Socialization to the old traditions is a major component of first-year learning, beyond the application of, and documentation that, each recruit has sufficient mastery of the skills learned in the academy. A number of additional goals will need to attend field training, in combination with academy preparation, in order to make the next generation of officers at least responsive to networking outside the organization (in departments with robust commitment to community policing, that seems to have happened already).

"More goals" almost inevitably translates into "more time," and in times of economic retrenchment, time is one of the most precious resources an agency has. New officers have to be cleared as competent in "the basics" so they can assume a share of calls on already-overburdened shifts. But call handling cannot be the only measure of effectiveness, which the police know intuitively, though they still find themselves bound to by political demands. Crafting an ethos that is net-centric must be started from the first day on the job: despite the overwhelming prevalence of alligators, the police job is still to drain the swamp. To do that, they need to be able to work effectively at all levels with others working in the same swamp.

Summary

The development of bureaucracies and other hierarchical organizations arose out of national economic and social conditions in the nineteenth century, and functioned well enough until the end of the twentieth century. Though it is increasingly evident that they are no longer the ideal structure for the global economy of the twenty-first, their inherent strengths are still needed for the evolutionary growth of responsive networks. For the foreseeable future, organizations will comprise the nodes of emerging networks. The challenge before us is to structure a shared mission for public safety and community development. It is only from such a shared vision that an orderly transformation of structure and resource allocation for network-based responses may proceed.

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Intelligence in Law Enforcement: From Need to Know to Need to Share[35]

Karen E. Gardner [36]

The challenge of incorporating intelligence from the wide array of local agency intelligence into a national network is one of converting from a "need to know" mind-set to one directed by "need to share." Such a paradigm shift requires the intelligence collection process to be redefined from the current system of passive compilation to active information seeking. This chapter, excerpted from a 2008 Futures Working Group white paper, highlights the complexity, limits, and potential for tapping into our nation's existing state and local law enforcement intelligence collection apparatus. That apparatus is decentralized, localized, and dramatically different than that used in the federal intelligence community. If a national-level threat intelligence collection capacity is to be created, it requires a seamless interface among state and local entities that does not presently exist.

The overhaul of the intelligence function also reaches into smaller cities, towns, and rural communities, attempting to incorporate local police agencies into a now informal, but increasingly formalized, national network to identify new threats. There are three primary components of such an outreach. The first is organized coordination between the federal intelligence community and local police and safety agencies, an effort that is well underway. The second is the development of functional intelligence capacities in smaller jurisdictions, a process already addressed by Carter (2004). The third element is the development of a versatile, multi-tiered system that can assess crime and terrorist threats in local, area, regional, national, and international settings, from reports generated in different formats and standards.

Proactive collection of intelligence information is a valuable resource for protecting the homeland against terrorists. That effort, however, is of radically different character than, and must be grafted onto or melded with, the existing and emerging criminal intelligence

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[35] from the original work:
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communities. The change at the local level constitutes nothing less than a shift away from passively recording accidental, random, and occasionally targeted bits of information into a proactive system that actively reads the environment for changes, anomalies, and new factors. This may be an understatement: outside of a small number of local agencies with active intelligence units, most police records are incident and investigation driven only. There is no agreed upon national set of collection requirements to guide collection and no mechanism exists to create those collection requirements for law enforcement.

The charge to "discover what we do not know" is structurally different from the classic model's task of collecting information and evidence. One phrase coined by an FBI executive calls this "the space between the cases." Clearly articulating threats requires a broader vision across time and space, looking for elements that may not proceed from known targets or enterprises, but will intersect with them in the future.

Introduction

> "*The reason the enlightened prince and the wise general conquer the enemy … and their achievements surpass those of ordinary men is foreknowledge. Foreknowledge….must be obtained from men who know the enemy situation."*
>
> *Sun Tzu*
> The Art of War
> 500 BC

The September 11, 2001, attacks against the American homeland revealed weaknesses in the existing structure of intelligence endeavors: stovepipes of agency-specific vertical communications, information hoarding, and political competition for scarce resources. The USA PATRIOT Act of 2001 and subsequent developments tasked the intelligence community with overcoming institutional barriers to information exchange among federal agencies and improving the quality of information development and networking. The 2008 Annual Threat Assessment of the Director of National Intelligence identified the need to "transition the IC [Intelligence Community] from a federation of independent intelligence organization to a more integrated enterprise" (McConnell, 2008:4). Part of the domestic needs include the increased potential for "home-grown" militants who adopt the ideology and tactics of the radical Islamist movement represented by al-Qaeda and other jihadist entities or who use violent tactics in the furtherance of single-issue causes (McConnell, 2008; Associated Press, 2008).

Perhaps more important, the radicalization process is creating new *ad hoc* groups outside the domain of current intelligence targets. New start-up groups lie within the new charge to "discover what we do not know" that is the driving mandate of the domestic intelligence endeavors. While the FBI has made remarkable strides in this direction, in its role as the nation's primary domestic intelligence-gathering agency, it is still constrained by resources. "Forward-thrown" intelligence can only be enhanced by incorporating the widespread capacities of local agencies and officers into an intelligence-gathering network.

The Director of National Intelligence's Vision 2015 sets forth a strategy to integrate foreign, military and domestic intelligence capabilities through policy, personnel and technology actions to provide decision advantage to policy makers, warfighters, homeland security officials and law enforcement personnel. The intelligence community – including law enforcement – is still largely structured, staffed and operated around a design optimized for a different era. Foremost among the challenge is the blurring of lines that once separated foreign and domestic intelligence.

One perennial advantage of the nature of patrol and investigative work is to notice things that are out of place and to be suspicious. At times, officers are moved to report suspicious events to someone within or outside of their organization who will recognize the significance of the information. A number of obstacles, however, exist that can thwart collection.

- *Inexperience*: The officer is unable to recognize a potentially important fact, event, or development.
- *Uncertainty*: The officer is uncertain about the significance of an anomaly or whether or not to report an observed anomaly.
- *Role definition*: The officer does not identify him or herself as collectors. Role identification contributes to a "not our job" attitude based on the perception that intelligence development lies outside the law enforcement mission parameters.
- *Active discouragement*: Superiors or local culture discourages reporting, including disbelief that "it could happen here," disdain for the intelligence enterprise generally (and extension of "not our job"), or antipathy toward the particular receiving agency or its representatives.

- *Lack of a meaningful identification with any larger homeland security efforts*: Line officers may simply be intellectually or emotionally isolated from the goals of homeland security.
- *Inconvenience*: Shift changes, the onset of vacations, having to deal with unpleasant intermediaries, and the desire to avoid paperwork prevent reporting.
- *Lack of or ignorance of a reporting medium or procedure.*
- *Lack of adequate and appropriate information storage and processing facilities* to handle and preserve inputs over time and severe shortfalls in retrieval and analysis capacities.
- *Laziness*.

Even in the best of circumstances, most police intelligence retention is that of human memory. Officers' activities and their records systems are incident driven and far more dependent upon citizen initiation than officer initiation of an inquiry. Important facts that should be part of the organizational memory are, thus, scattered in isolated formats; making connections between two salient facts is a matter of serendipity, and making connections across jurisdictional boundaries is even more rare because of the lack of opportunities for contact.

Some improvements are evident in locales with a strong community policing ethos, where officers maintain an ongoing domain knowledge that is not call-dependent. Those are relatively rare locations, and domain knowledge is still more likely to reside with the officer, rather than within any systematic set of records kept by the agency. As a general rule, the police have little or no capacity for acquiring and maintaining threat-based intelligence other than that which is incidental to criminal investigations.

The creation of collection, reporting, and storage mechanisms for a national intelligence network requires a multi-layered capacity. Herein lay the crux of the hybrid system matter: to create a system that would better "connect the dots," filling in gaps in the intelligence picture. A national system would require several elements that lie outside the mandate and restrictions that govern the existing criminal intelligence endeavor. In a perfect world, the data would be accessible to local, area, state, border-state, regional, and national authorities. The DNI Vision 2015 called this "seamless access" and a shift from the multiple hub and spoke model of information collection, analysis and dissemination based on specific disciplines, to a unified

architecture designed around a common cloud (i.e., distributed peer network) containing the information.

Intelligence as Practiced: Focused-Target Collection

This section is a synopsis of the predominant criminal intelligence framework used by local and state police agencies. The prevailing intelligence model for state and local law enforcement is that of criminal investigation intelligence. It is primarily a stand-alone model, though in practice there are important ongoing linkages with regional task forces. More important, it is created upon premises substantively different from the foundational assumptions that drive anti-terrorism intelligence.

The threat of international terrorism presents a new theater of operation. Terrorists have the potential of inflicting mass casualties through a range of assaults, possibly using weapons of mass destruction (WMDs), creating wide-scale disruption of the economy, and suborning the social order. Since 9/11, the FBI has moved beyond the original framework of criminal intelligence. The new mission for the FBI is "to know what is unknown," recognizing that the scope of its responsibilities now transcends the borders of the nation. The FBI is the only national agency charged with domestic intelligence collection and the primary interface between local agencies and the other members of the intelligence community, although the Department of Homeland Security (DHS) leads the coordination of infrastructure protection.

Other models are promulgated from other sources. Among the most important is RAND Corporation's examination of the current state of domestic intelligence (Riley, Treverton, Wilson and Davis, 2005) based on a survey of a stratified sample of 209 local law enforcement agencies [LEAs] and the 50 state-level agencies. The major findings of the RAND survey, excerpted here from the introduction, are as follows:

> Most local departments have little capacity to analyze the information they collect or receive... the sheer number of cooperating agencies sometimes inhibits progress responding to the terrorist threat... Federal authorities, the FBI in particular, will naturally lead in intelligence gathering that is not connected to criminal investigation (xiv).... It is imperative to find new ways to share information and to share it more widely.... The local role in the analytic labor would be to take the general guidance provided by federal authorities and relate it to local domain awareness (xv).... [There is] scant doctrine for shaping state and local LEA intelligence. More vigorous use of the Joint Terrorism Task Forces (JTTFs) as a locus for shaping LEA intelligence activities is one way of providing the fundamental principles. Another option is the development of a federal intelligence

> support program, similar in structure and role to the position of federal security directors at airports, institutions that are typically locally managed. (xvi-xvii)

Additionally, RAND reported that only one-third of the local LEAs had interaction with the FBI during the year following the 9/11 attacks, and most contacts were for information sharing or anti-terrorism training (page 15). Of the sources of information cited by those agencies as "very useful," professional associations and FBI Joint Terrorism Task Forces (JTTFs) led the list at 21 percent and 20 percent respectively. However, the majority of information received across all source categories including FBI reports, was identified as either "never used" or "not at all useful." The notable exception to that general rule was the FBI's unclassified reports; two-thirds of the respondents indicated those reports were "somewhat useful" (19).

Important as the RAND study is, it is framed in terms of the traditional top-down relationship of federal agencies to state and local authorities that assumes compliance and competence at all levels. Their conclusion is sound: "although law enforcement throughout the United States is fundamentally local in structure, there is no reason that law enforcement intelligence needs to be." The roadmap from current conditions to the desired state is far from clear, however.

The Existing Emphasis

The extant literature on criminal intelligence focuses primarily on intelligence units, a logical component of large municipal and state agencies that routinely deal with enterprise crime groups ranging from street gangs to international criminal organizations. The target cohort has now broadened to include new targets: international terrorist groups and their support networks and emerging single-issue groups.

Known targets of this type are a constant presence in large cities, requiring ongoing attention. The volume of information generated about them creates a need for dedicated data management and analysis of associations as RICO cases are developed. The nature and extent of harm that such organized groups inflict in metropolitan areas more than justifies the dedicated resources of an intelligence unit.

Extending the concept of intelligence to the numerous smaller agencies of the nation poses special problems. There are approximately 18,000 local police agencies, employing just

under 800,000 sworn officers (Osborne, 2006). The approximately 12,000 agencies comprised of fewer than 100 officers (Walker and Katz, 2008:64) typically lack the financial, logistical, and personnel resources to sustain a special intelligence unit. Carter (2004) and Peterson (2004) separately lay out guidelines for the creation of an intelligence capacity in smaller agencies, essentially a scaled-down version of the larger agency functions, but there are additional factors to consider.

The frequency with which small-town and rural officers will cross paths with members of groups that are targets is unknown, but the probability of such an encounter is likely zero for most officers. At least hypothetically, Smallville is a likely location of new initiatives for criminally circumventing law enforcement's existing intelligence network. Smallville represents one of the best places to hide for terrorists and other criminal entrepreneurs. For that reason, Smallville needs to be incorporated into the planning effort, but the planning effort, in turn, must understand and incorporate the special character of the nation's Smallvilles and their police.

Intelligence as Best Practiced: Innovations Afoot

Currently, each intelligence agency operates and maintains its own network and information infrastructure. The same can be said for law enforcement agencies. The trend at the federal level is toward a common information infrastructure, or a common "cloud" based on a single backbone network, with clusters of computers in scalable, distributed centers where data is stored, warehoused and managed. In a move toward dismantling today's information "silos" into what the DNI calls knowledge "archipelagos" of tomorrow, a project called "A Space," or "Analytic Space," created a pilot of a common collaborative workspace for all analysis in the intelligence community. It is accessible from common workstations and provides unprecedented access to interagency databases, a capacity to search classified and unclassified sources simultaneously, web-based messaging and collaboration tools. The Defense Intelligence Agency was the executive agent for building the first phase, and it went live in September, 2008 (Bain, 2008). According to Thomas Fingar, deputy director of national intelligence for analysis at the Office of the Director of National Intelligence (ODNI) "60 percent of all U.S. intelligence analysts have five years' or less experience on the job. They expect to collaborate no matter where they are and without concern for chain of command. There is a sense of urgency, a push from the bottom that didn't exist before" (Miller, 2007).

The greatest design challenge with A Space was to keep the costs down and spend money on servers, software licenses and design. The DNI policy was to have A Space rely, as must as possible, on commercial, off the shelf (COTS) software (Hoover, 2007).

The Department of Homeland Security (DHS), an agency established in the wake of the 9/11 attacks, currently serves as the lead agency in setting up and running fusion centers that allow state and municipalities to use information technology to share homeland security related information. Between 2004 and 2008, DHS spent $350 million on the fusion centers. In 2010, DHS started a pilot program called the Cybersecurity Partners Local Access Program (CPLAP) that allows state and local intelligence fusion centers to pass secret-level information on cyber threats to critical infrastructure to some cleared, industry officials (Bain, 2010). This is particularly important given a majority of the country's critical infrastructure is privately, not government-owned. Jenny Menna, who is director of the DHS program said "We've heard from a lot of our private-sector partners that travel budgets are being cut, so this will allow people who are outside the Beltway to go to their local fusion center and get that information, and it will also help build that relationship between the fusion centers and the critical infrastructure and key resource partners within their areas." (Bain, 2010). A total of five fusion centers have agreed to participate in the program and in all goes well, plans exist to expand beyond cyber to all critical infrastructure sectors.

The FBI has been training thousands of law enforcement officials across the nation to identify, disrupt and dismantle improvised explosive devices, including bombs made out of ordinary household products. If an officer finds a grainy white powder at a makeshift lab during the execution of a search warrant and assumes it's drugs, it could be a costly mistake (Bluestein, 2010.) This need was underscored in March, 2010, when federal authorities disrupted a suspected plot by a Christian militia group to kill police officers with homemade bombs. Add to that last year's failed attempt to make bombs out of beauty supplies in the case of Denver airport shuttle driver Najibullah Zazi and the Detroit-bound airliner attack in December in which a Nigerian student, Umar Abdulmutallab, failed to detonate 80 grams of PETN in the aircraft bathroom. This training is important not only for officer safety, but to be on the "look out" for certain chemicals and other signs of a makeshift explosive lab whenever they conduct a search warrant, search a crime scene or respond to a fire. An argument could be made that the FBI is

passing along a type of requirement based collection tasking to the state and local authorities though this type of training.

Intelligence as Desired: Wide-Net Seeking

The external threats of international terrorism provide impetus and opportunity to expand and improve the criminal intelligence function of the American police, whose responsibilities are much broader than just the threat of al-Qaeda and associated groups. Multi-jurisdictional task forces focus on drug and criminal enterprise organizations in regional and multi-state environments. For decades, the American police have conducted local intelligence operations against organized crime enterprises, drug gangs, and street gangs. Successful creation of this new intelligence system would benefit all of those endeavors. There is a social push (largely from outside the police establishment) to create what is termed intelligence-led policing (see, e.g., Atkin 2000).

Basic principles of intelligence collection apply alike to criminal intelligence and efforts to thwart international and domestic terrorism. A mounting body of evidence demonstrates that terrorist networks are resorting to a wide range of "ordinary" crimes, drug sales, cigarette tax avoidance, credit card theft and sale, etc. to finance their activities. Events, such as the August 2004 arrest in Chicago of Craig William Nettles for plotting to blow up a federal courthouse, lend credence to the idea that boundaries between American criminal elements and international terrorists are increasingly permeable. Though he was a lone actor rehearsing a grudge for a counterfeiting conviction, Nettles attempted to make contact with al-Qaeda or Hamas terrorists, presumably for assistance or advice. The "terrorists" he met with were instead federal undercover agents, but the symbolic weight of the crossover solicitation by a domestic anti-government fanatic to an international enemy group remains a significant warning sign of what could be. Joining the criminal and anti-terrorist intelligence efforts is a vital factor in keeping our homeland safe.

A new intelligence model will make a different set of demands of generalist officers than the traditional intelligence endeavors do of intelligence specialists. Both those demands and the dramatically increased quantum of information will create new, as-yet-untested dimensions in domestic intelligence analysis. We can reasonably anticipate that among those demands will be the following changes:

1) distance between source and analysis will be considerably greater geographically, temporally, and conceptually – and will involve multiple stakeholders;

2) resulting "noise" factor will place new strains on the collation and analysis functions of the intelligence community;

3) management of input, evaluation, and dissemination of information will be altered qualitatively and quantitatively by factors of magnitude;

4) sum of those changes will also require a directed effort to redefine the fundamental role of the local police officer; at the very least, uniforms must understand that the information may have a life, a utility, and a considerable value for policy development far beyond its immediate local interest.

A multitude of potential factors militate against the possibility that a national intelligence network can be created. The sporadic nature of contacts with viable targets is perhaps the greatest strain on the endeavor and is discussed in greater detail below. The variable (and shifting) levels of support within agencies and their jurisdiction's civil government units aggravate endemic structural weaknesses: lack of user-friendly reporting channels; the erratic or nonexistent nature of feedback; and a concomitant lack of understanding of how collection fits into the national "big picture" of homeland security, much of which may be classified. Nevertheless, three things demand that the work be undertaken: the dramatic international terrorist threat, the constant assault on the U.S. economy by increasingly complex international criminal enterprises; and the spread of domestic criminal enterprises into every corner.

The Intelligence Cycle

Intelligence professionals in law enforcement (who operate under different mandates and constraints from those in the international realm) speak of the intelligence enterprise as a closed feedback loop, one that usually focuses on a known target. In the section below, the cycle outlined by Peterson (2000) provides a basic framework for considering that process; references and vocabulary not ascribed in this work are drawn from that source.

The primary distinction between the classic criminal intelligence model and the emerging model is that the classic model does not articulate specific threats or manage collection. It is case-focused, with the targets already identified on the basis of defined predicate crimes and an external mandate for the maintenance and disposition of intelligence collected within a specific period of time.

The new model requires both threat articulation and data collection management. The charge to "discover what we do not know" is structurally different from the classic model's task of collecting information and evidence. A threat articulation mission requires a broader vision across time and space, looking for elements that may not proceed from known targets or enterprises, but will intersect with them in the future. Maintaining much larger amounts of information in useful form to be available for constant or periodic reassessment against emerging patterns is a herculean data management endeavor.

Palmieri summarizes nicely:

> In military and national security circles, the process by which intelligence has been produced was given a name: the Intelligence Cycle. This process is what turns information into intelligence, which is something one can use to make decisions and take action. The steps of the intelligence cycle include planning, collection, evaluation, collation and organization, analysis, production, dissemination and feedback, which should spur more collection, at which point the cycle begins again. Until recently, there were few departments in the United States at the local and state levels that were capable of producing intelligence; most often, the analytic component was missing. (Palmieri, 2005).

Traditionally, intelligence units and enterprise crime investigators are both the generators and receivers of intelligence. This process takes place within the parameters of one or more investigations with which the investigators are familiar and to which they are dedicated. The investigations tend to be their sole or primary responsibility, though they are often expected to be aware of broader trends that are relevant to the investigations. Most important, the core of their work involves a population of previously identified actors: their targets.

Legal Constraints

The single greatest external challenge to the wide-net collection effort is the patchwork system of statutes and case law governing the use of intelligence data. While 28 C.F.R. provides

a general guideline, there are 50 separate legal codes governing the conduct of state and local police officers and other peace officers. In addition, case law from the state courts and the federal district courts overlay another level of patchwork restrictions that will differ from state to state and region to region. These restrictions are not trumped by 28 C.F.R. or other federal rules. The silver platter doctrine of *Elkins v. U.S* will likely retain its force even when the direction of information and evidence transmittal is reversed.

The procedural rules that govern state and local police actions are predicated upon the presumption of innocence, and an expectation that The State will not move against its citizens without a level of just cause that is both articulable and open to examination. The lower threshold of "reasonable, articulable suspicion," which authorizes brief *detention* and inquiry, is also incorporated into 28 CFR 23:20. *Arrest* is justified by the higher standard of probable cause, a combination of facts and circumstances that would lead a reasonable person (under some circumstances, a "reasonable and experienced police officer") to believe that a crime was, is, or is about to be committed.

Many states are more tolerant of legitimate intelligence files, but there is no national standard at the present time. Federal rules always apply to federal cases, but state actors will be reluctant to participate if they are still subject to potential action under state codes and regulations.

Legal issues do and will continue to constitute a structural barrier to threat-based intelligence. While it is certainly possible to distinguish criminal intelligence efforts from national threat-based intelligence, until there is a clear ruling from the Supreme Court, courts have demonstrated a tendency to draw analogies to what is known and established on order to determine the rules for new elements. The point of reference is likely to be the criminal intelligence protocols in whatever jurisdiction challenges are raised.

Summary and Conclusion

Attempts at implementing an "intelligence-as-desired" system should not be approached as just a matter of expanding existing intelligence capacities. Neither should it be assumed that implementation can be accomplished by edict. The mission is so different from the current target-focused practice of intelligence that it will require the creation of a new type of quasi-

intelligence, an information-*seeking* process. That process is active hunting, aggressive collection of information against known and emerging threats.

Such a mechanism will have to be integrated with the existing and emerging criminal intelligence communities, an uphill task on both sides of the current dividing line. Not only will the information network have to operate across very different operational mandates, it will have to work up and down a complex network of jurisdictional differences and geographical distance. We need to encourage multiple opportunities for both structural and informal venues that encourage systematic exchange and maximize opportunities for serendipitous discovery and "eureka" moments.

The needs of the new system are at odds with the requirements of the existing intelligence establishment. It will necessitate a more complex structure of data cleaning, verification, storage, and analysis than now exists. It will also require a different legal mandate, since the current time and verification restrictions on intelligence data for active investigation will be essentially fatal to the wide-net, slow-time endeavor. While it might be best in an ideal world to separate national-import observations from local concerns, at least for archiving, the inherent bias is toward intelligence that is of local utility. Attempting to establish a dual reporting system will increase system costs prohibitively, and much of the potential benefit of the wide net lost. It is also likely that the attenuated buy-in that would result would undercut both efforts; it is probable that even a multiple-efficiency system will yield results so rarely that active participation will be very limited, but we should not write off the potential for such a system on the basis of that possibility alone.

Improving and enhancing the intelligence capacity, whether against terrorist groups or against enterprise crime, will be a difficult task. The distinction between the two threats seems to be receding rapidly as "network" replaces "organization" in the globalized economy, and both groups work sporadically with each other for mutual benefit.

While the creation of a national intelligence network may start with the intent of adapting existing entities and modifying functions, the greater probability is that ultimately it will require a fresh start. A national intelligence network under any name or guise raises red flags to those concerned about privacy, civil liberties, and checks and balances against errors. Enhancing, modifying, or building a wide-net intelligence-gathering faces an uphill climb against the public relations disasters of facial recognition software, Carnivore, Matrix, and the rash of wholesale

thefts of personal data from data processors. It will be better to conduct the attempt in an open forum than behind the scenes so that those concerns may be addressed.

There is a tendency to present any new operation as just an extension of current capacities, in order to protect it with the justification of accepted practices and existing laws. That may be counterproductive in this case. We are adding an entirely new, architecturally distinct, wing to the intelligence community by tapping into latent capacities of those closest to the collection: the 800,000 canaries in the mineshaft. The specter of Big Brother will not be banished with simple entreaties to "trust us," and the structural differences described above, particularly those of enabling legislation for the preservation of the data collected, are of sufficient magnitude to justify thinking of any wide-net capacity as a new entity.

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Instability: Regional Issues in a Global Context

Mary O'Dea[37]

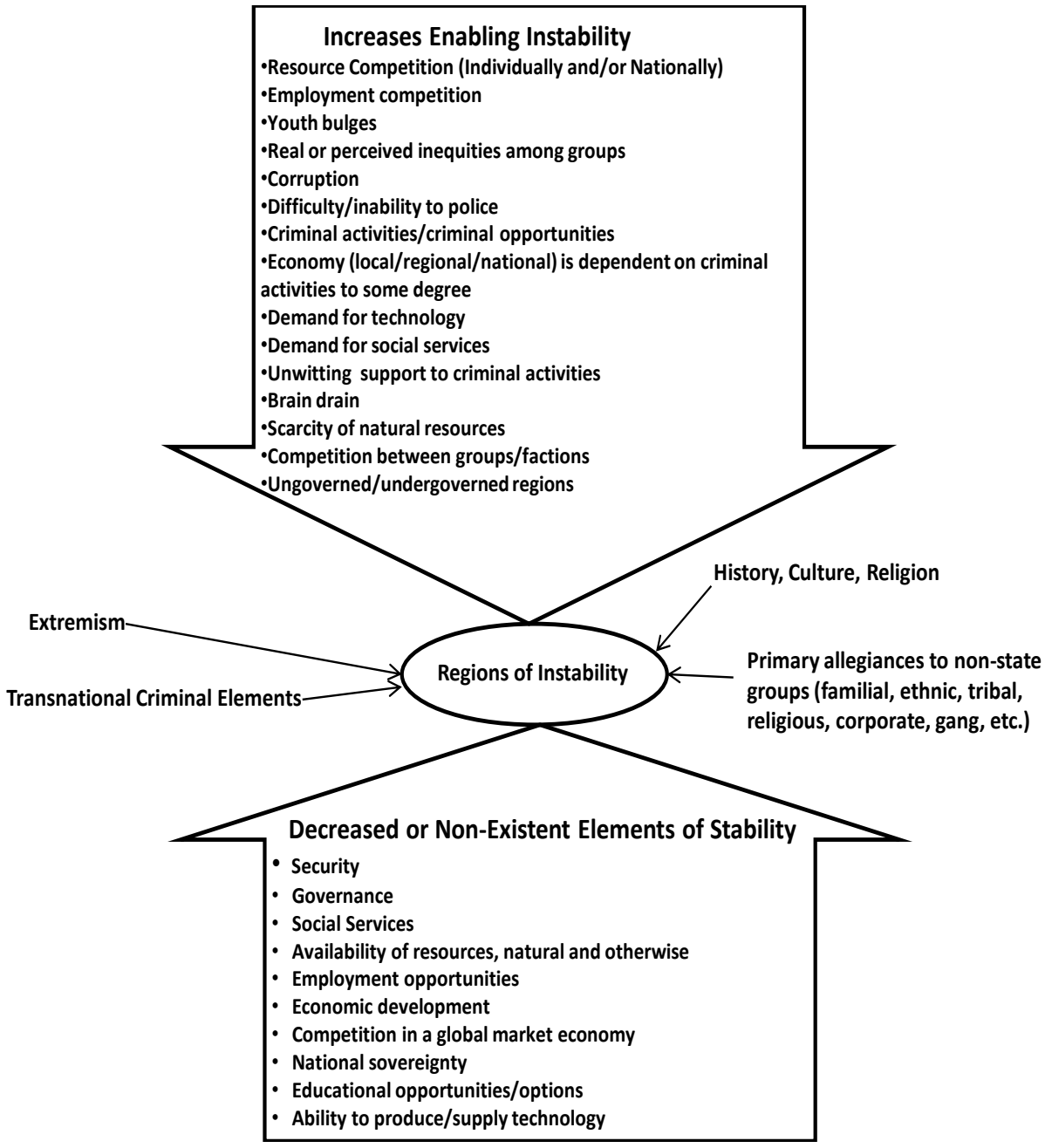

Figure 1. Examples of vulnerabilities which can enable instability in regions. Not all unstable regions experience all of these vulnerabilities.

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Why Should We Care?

"Why should we care about instability in other regions of the globe?"

Law enforcement is our first line of defense against and our first line of recognition of these illegal activities. The minute these transnational issues cross our borders, as most of them do, they become the responsibility of our law enforcement.

Illegal activities act on a global market economy. When activities become so large that they are transnational, they spill over into our nation, a nation with a dependently large economy and appetite, and one in which it may be easy to hide.

Living in the US, carrying on our daily lives, even watching the evening news, it's easy to become encapsulated in our own lives, our own nation, which ranks pretty high on the list of nations considered stable. It's easy to look inside the US at our counties and cities - at our own problems and successes - and forget that we are part (arguably an important part) of a globally interdependent system. It's easy to forget that we must look at the difficulties of regions outside our own political boundaries, not only because it may be a moral imperative, but also because the problems of those regions in the world suffering from instability eventually become problems within our own boundaries.

Regions affected to the point of instability become partially or wholly dependent on illegal activities on a global scale. The leadership of these countries may be wittingly in support of transnational activities that bring money into the country, or they may find themselves unable to affect change. We cannot assume that the leadership of other nations or groups is able or willing to stop the illicit activities from coming into or going out of their own borders, or from crossing into ours.

The systemic problems that unstable regions experience cannot be "fixed" simply. We cannot hope, for example, to stop all illicit shipping in one port and assume that the problem will go away. When one part of the system is thwarted, the entire system just re-adjusts to find another way of conducting business. When we think we have stopped the illegal shipping in one port, another port is used, an over-land or air method is used, or the way the illegal substance is shipped into the original port by another method. We never get to the root of stopping the problem by just "whacking the moles" as they appear. It takes effort against many parts of the system in order to change its negative direction. Can we stop or lessen the demand for the illegal

substance? Can we prevent the substance from leaving its origin? Can the region which economically depends on the illegal trade depend on something legal instead? Can we target those entities "farther up the food chain" who are responsible for more than one shipment into one port? etc., etc., etc. Disbanding or changing an illegal system on such a grand scale takes a devoted, long-term effort that requires those involved to understand why certain efforts are taken or not taken, to understand the system, and to understand that each part of the system is necessary. In order to combat illegal systems, we will need to work within a successful system of our own creation.

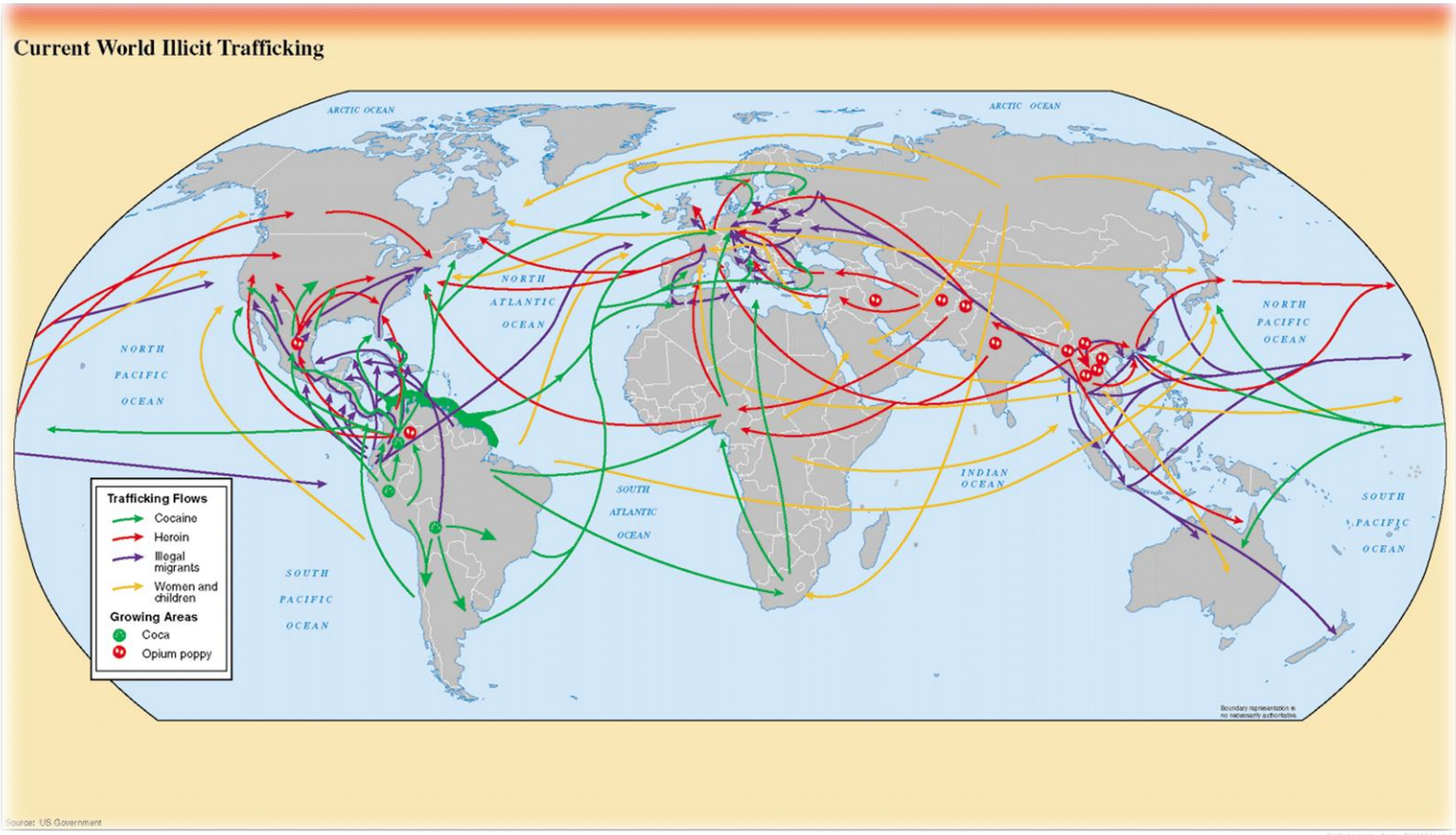
In the same way that a system of an unstable region will take much work and a variety of "attack" methods to make positive change, we cannot hope to make positive moves against the negative influences without involving a variety of people and methods. Law enforcement is at the heart of this system. Without a stable, focused, cooperative effort – some of which turns on law enforcement capabilities and cooperation - our system could be threatened with the same type of instability that threatens many around the world.

Figure 1 represents just a brief glance at indicators that define instability in a region. For a more comprehensive list of indicators, review the Fund for Peace Failed State Index at http://www.fundforpeace.org/web/. Based on social, economic, and political indicators, the group publishes a reasonably inclusive list of those areas most at risk. This list makes it easy for anyone examining it to see areas at risk.

We must keep in mind, however, that while the list is fairly inclusive, it is based on the idea of failed and failing nations versus those nations considered more stable. This examination, though helpful, is somewhat problematic in that it is based on the Westphalian concepts of nation states. This idea of government as the lead entity – and political entities as a whole – being primary is a concept that has never been accepted in some parts of the world, and has, in fact, been forced upon parts of the world to accommodate western notions of political interactions. For example, Afghanistan is only a nation-state because as many as 140 tribal chiefs agreed to work together in order to better their standing in a western-dominated world. The country of Afghanistan, in some senses, only exists on paper as an artificial construct and those people residing within it do not find their first allegiances falling with the Afghani government, but more likely to their individual tribal allegiances and a host of other priorities (such as family, history, culture, and religion) before that of a western-style political government. Afghanistan is

not alone; there are many, many regions around the globe that fall under similar circumstances. All across Africa, it is most common that loyalties fall first to family and then tribe long before they do to a constructed government.

The need to survive and prosper is important to all of us and not only is it important in those regions that do not easily align themselves under a political construct, but these needs must be met in regions where there is little or no governance or a lack of stable or good governance. People will align themselves with those entities that can best meet their needs. Sometimes these entities are legal and sometimes they are not. There is not a black and white measure of good governance and poor – it is a sliding scale – but the populace in any region must believe that its needs are being met. If they are not, eventually, the people will try to get them met. Such situations are not new. History is rife with examples of tribes, gangs, mobs, and leaders who were brutal, bloody, or fair, but managed to meet many of the people's needs at least for a time outside of recognized government entities.



What we must understand in today's world, is that the days of Chicago's mobsters being contained in Chicago have long gone. The trials and tribulations – economic, social, and political problems - in Africa, the Middle East, the Far East, and Europe (as well as the rest of the world), are no longer contained to one region, if in fact they ever really were. Today, technology and all of the trappings of globalization move or enable global effects on a truly global scale (both positive and negative). We may be able to watch the evening news and convince ourselves that we are not affected by war between tribes in Africa or the economic plight of farmers in Central and South America, but we are only hiding from the fact that we are already greatly affected by ripple of global problems.

People who need to survive economically, will do so legally or illegally when it comes down to need. If a government is not and/or cannot supply basic security, social services, economic survival, people, of course, will find a way to do just that – as they always have. Some groups have little affiliation or dependency or trust regarding a political government, and they will find a way to make ends meet and meet their needs – legal or not.

Instability in regions around the world creates vulnerabilities to criminal actions and avenues from both within the community and influences from without. Transnational actors have and are establishing and re-establishing routes through unstable regions. These regions, vulnerable to criminals, extremists, and in need of income, may depend upon this income to a greater or lesser degree and wittingly or unwittingly. Great flows of money, drugs, arms, people, and movement of weapons of mass destruction, exist around the globe today.

Effecting change is not easy. How many of us recognize that when a heroin dealer sells, he is likely funding Al-Qaeda? How many of us consider that the Russian prostitute arrested last night was sold by her family to international criminal rings? Do we think about the cocaine shipped from Argentina to Europe funding the arms MS-13 brings across our own southwestern border? These are truly global issues that will take a concerted effort by law enforcement and whole of government to contend with.

For its part, law enforcement must be informed and be given the opportunities and capabilities to work together and with whatever entity necessary to combat such crime. Increased intelligence collection/reporting capabilities (and the desire to do so), cyber capabilities, and coordination efforts among a variety of entities seem like the obvious places to begin enabling

law enforcement to work in a community that is quickly becoming a global community, both legally and criminally speaking.

Future Scenarios

Steady as she goes: continue as always, no change. In such a scenario, the US continues to experience increasing effects of criminal illicit activities surrounding drugs, human trafficking, terrorist movements, and possible use of weapons of mass destruction (biological, chemical, nuclear, etc.), increasing activities such as corruption, unwitting support to traffickers, and economic dependence on traffic-related monies. Law enforcement experiences increasing difficulties combating movements of people and illegal substances as well as crimes surrounding the movements. Corridors of movement within the US and Canada and along their shores continue to increase and become increasingly difficult to stop. Public funding to police departments weakens, street crime increases, and areas of under policed and under governed areas increasingly develop within the nation. Law enforcement, though at first depended upon to help protect and stop the increasing criminal movement, eventually lose more status within communities because they do not have the tools to stop the rising flood; their jobs become even more difficult. The negativity within this scenario continues on a spiral that eventually leaves local and state law enforcement agencies a thing of the past. Law enforcement will be purchased by those who are able. Those who are not able, will have no options but to protect themselves.

We are all a part of a bigger system. Local and state law enforcement work as part of a larger system of security entities within the US. Capabilities in areas such as communications and intelligence are increased. Parts of non-federal law enforcement entities work with federal agencies in order to combat those transnational elements that are threatening the US. This frees the other parts of local and state law enforcement free to build community policing ties, and reinforce their good standing in communities, an upward spiral that leads to support for all law enforcement. With a combined, whole of government effort, the increasing flow of illicit movements within and around the US is stifled. On a global scale, the flows are lessened in other regions.

Interoperability and Information Sharing

Sean P. Varano[38] and Thomas J. Dover[39]

Communication and information sharing are two of the most pressing issues facing the public safety community today. In previous chapters of this volume, authors have made note of the changing public safety landscape as it relates to the need for enhanced information and intelligence sharing among a broad cross-section of organizations. Public safety organizations, particularly law enforcement agencies, have been quick to adopt emerging technologies that have allowed for greater communication and information sharing capacities. While substantial improvements have been made over the decades that enhanced communication and information sharing, many challenges remain in the move to seamlessly integrated communication capacities. The key challenge in the upcoming decades relates to the *technical* and *cultural* changes necessary to achieve integrated communication systems. There is no shortage of resources given to increasing the communications capacity of the public safety community, yet serious challenges remain in the degree of interoperability within and across public safety domains. Interoperability has in many ways become *the* defining issue in the arenas of communications and information sharing. This chapter will provide an overview of critical historical events that placed questions of interoperability and information sharing on the national agenda. The chapter will also provide an overview of national models for information sharing.

Background

The September 11th, 2001 terrorism attacks as well Hurricanes Katrina and Rita in 2005 put the challenges associated with the interoperability of communication systems across the public safety landscape in the public spotlight. On the morning of September 11th, 2001 law enforcement, fire, medical, military and private security personnel from the New York City region, as well as, countless numbers of private citizens responded to the unfolding tragedy in the World Trade Center towers in lower Manhattan. The sheer volume of personnel responding

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to the WTC theatre to provide assistance to those in need serves as one of the defining moments in American history. What quickly became apparent on that fateful morning was that the public safety apparatus in and around New York City was woefully underprepared for the tragedy that was unfolding right before their eyes.

The after-action reports that resulted from this tragedy revealed what was otherwise widely known among many sectors of the public safety community, namely, that serious problems existed within the local and regional communication systems that resulted in a systemic communications failure around the WTC theatre. The radio system used by the Fire Department of New York (FDNY), for example, was inadequate in terms of technical capacity to reach all of the locations throughout the WTC theatre (911 Report, 322). Their radio system was not capable of reaching the upper floors of several of the WTC towers due to the sheer size of the buildings and the density of the concrete and other building materials. The myriad of public and private agencies responding to the attacks also used a variety of different communications technologies that were not easily adaptable (McKinsey Report, 2008). In the end, a critical part of the overall WTC tragedy was that the response could have been more effective had proper training and equipment standards been established.

On that same fateful day, those responding to the crash site at the Pentagon experienced much of the same shock and horror as their counterparts in New York. Damage and chaos created a similar sense of panic and need for an immediate regional response across multiple emergency response systems. The response in Washington, DC metropolitan area, however, unfolded differently than those in New York. The DC metro area had a long history of planned exercises in response to anticipated natural and manmade disasters. As part of these exercises, a wide range of federal, state, and local first responders had extensive and well established protocols for responding to such events. Of notable importance, these agencies had protocols in place for dealing with the well-known problems associated with interoperability (Arlington County, 2002). While the Pentagon was plagued by challenges in responding to the unprecedented attack, there were far fewer problems associated with the overall communications capacity and interoperability across agencies. Compared to their counterparts in New York, there was an overall sense that the communication among the responders, particularly in terms of the interoperability and coverage of their systems, to this event was largely effective.

The systemic problems caused by a lack of interoperability within and across public safety sectors emerged as a critical area needing attention by federal, state, and local policymakers in the aftermath of the 9/11 attacks. In an effort to prevent similar problems in the future, the Department of Homeland Security (DHS) had implemented national efforts to enhance interoperability limitations by 2004. The broader policymaking community became acutely aware of what had been known for decades among many first responders; interoperability problems were not unique to New York but instead plagued most regions of the country. As Bitto (2007, p. 460) observed, "[n]ot only is the interoperability problem not novel, but it [ ] seems that each time a major emergency exposes the lack of interoperability, a new blue ribbon commission is convened to study the issue." Several notable interoperability achievements were announced by DHS by September 2004 that were argued to substantially enhance emergency responses by first responders. The following are some of the most notable accomplishments outlined in this report along with brief descriptions (Department of Homeland Security, 2004):

- **Created central office within Homeland Security for interoperability**: The Department of Homeland Security's Office of Interoperability and Compatibility was created as part of the Science and Technology directorate. This office was charged with coordinating federal government activities relating to research and development as well as technical assistance and training as it relates to interoperability.
- **Developed statement of Technical Requirements**: DHS established the first national Statement of Requirements (SoR) for Wireless Public Safety Communications and Interoperability[i]. The intent of the standards is to aid the country's estimated 50,000 public safety agencies in defining future interoperability requirements for both voice and data communications.
- **Assisted states in acquiring the necessary funding to improve interoperability**: The federal government provided over $280 million in federal funding from 2001-2004 to specifically address the challenges of interoperability across the broad range of public safety agencies.
- **Established Federal Interagency Coordinating Committee**: This council was designed to coordinate all federal efforts geared toward addressing issues of interoperability. More

specifically, the intent was to coordinate efforts directed at grants, technical assistance programs for state and local activities, and federal efforts at regulating airwaves.

These are a few of the federal, state, and local efforts specifically designed to address the problems associated with interoperability. There was a sense by some by early 2005 that the nation had made substantial progress in its efforts to create a more integrated communications system that facilitated interoperability (Department of Homeland Security, 2005). By early 2005, there was a general sense that substantial progress had been made.

While communities across the nation made some notable improvements in the area of interoperability and enhanced communication, Hurricanes Katrina and Rita in August 2005 clearly demonstrated substantial improvements were still necessary. The sheer magnitude of the physical destruction in addition to the large geography posed significant challenges. An after action report revealed that

> Hurricane Katrina destroyed an unprecedented portion of the core communication infrastructure throughout the Gulf Coast region. [T]he storm debilitated 911 emergency call centers, disrupting local emergency services… More than 50,000 utility poles were toppled in Mississippi alone….The complete devastation of the communication infrastructure left emergency responders and citizens without a reliable network across which they could coordinate. (The White House, 2006, 55).

The after action went on to later identify basic standards for operability and interoperability as one of the core recommendations coming out of Katrina (Ibid, 97). Hurricanes Katrina and Rita, however, demonstrated full well that nationally, the United States had still fallen very short of reaching the necessary communications capacity to effectively respond to large scale disasters. As Tom Kean, co-chair of the 9/11 Commission Report noted, "On Sept. 11, people died because police officers couldn't talk to firemen…Katrina was a re-enactment of the same problem. It is really hard to believe this has not been fixed" (Careless, 2006).

The question remains as to why interoperability, a highly technical issue that seemingly could be fixed through the application of proven technologies, remains such a critical challenge. Some have argued that the problem of interoperability is less a *technical* but more *cultural* in nature. As McKay (2010) points out, "[Members of agency A] doesn't talk to agency B because

they two aren't really familiar with each other – or maybe they just don't want to talk. Even when there's a new, multimillion-dollar system, agency personnel revert to previous behavior." New technology, even when implemented well, sometimes amounts to little more than a "$100 million doorstop" (Ibid.). As those across the vast public safety community try to break down the cultural barriers that often thwart effective communication and interoperable systems, many technical challenges remain. The following section outlines key initiatives that have been implemented to enhance information sharing and communication among a diverse set of stakeholders. Particular emphases are given to national programs that are intended to foster collaborative working relationships between public safety entities that not only create frameworks for information sharing and access, but also break down the cultural barriers that impede coordination.

Current Practices Fostering Interoperability

There have been a number of measures employed by local, state, and federal agencies to promote inter-agency communication and flow of information. These efforts include increasing the ability of police, fire, and rescue communication systems to span the gap between jurisdictions, merging resources to provide regional based specializations, and integrating of information collection and dissemination practices. The common goal of all of these efforts has been to provide correct and accurate data to those persons who can contextualize the information and operationalize investigative leads, actionable intelligence, or functional recommendations. Moreover, they are intended to build effective working relationships among agencies that may have limited histories sharing information or developing local, state, or regional data sharing strategies. The goal of these programs is to break down the traditional "silo" approaches whereby individual agencies or public safety sectors (e.g., police, fire, private security) operate either independently, or worse yet, with a sense of antagonism. The following section then outlines some of the efforts by local, state, and federal agencies to integrate their information gathering and dissemination capabilities. Several of these strategies were incorporated in a post 9/11 environment where the flow of information has trumped jurisdictional disputes and necessitated inter-jurisdictional cooperation.

Critical Incident Reviews

There are at least two distinct types of critical incident reviews (CIR). The first is the process whereby agencies responding to a particular incident or set of incidents implement a post-hoc review process with the intent of evaluating the overall quality of the response. The primary purpose of the review process is to identify breakdowns in the response and develop protocols for eliminating problems in the future. The second type of CIR relates to information sharing related to a particular case or investigation. This second CIR model has been developed under the auspices of the federally funded *Project Safe Neighborhoods* in places like Rochester, NY (*see* Klofas, Hipple, McDevitt, Bynum, McGarrell, and Decker, 2006).

The first CIR model is part of evaluating agency preparedness, evaluating the ongoing operational aspects of response and containment, and evaluating post event activities. Arguably, CIRs should be standard operating procedure in any critical incident response. This is especially true due to the potential for civil liability issues, and potential for wide spread, knee-jerk policy responses. CIRs provide agencies with an opportunity to effectively evaluate and critique the incident response. It also assures the public that the agencies involved are doing everything they can to understand the dynamics of the incident, how it led to successes and failures, and how to enhance responses in the future. They represent an important feedback loop that is essential to continued response improvement.

CIRs assess the contribution of each component involved in responding to the incident in terms of that component's role and effectiveness. These components will of course differ depending on the incident, but may generally include initial emergency response, command and control, information collection, information dissemination, collateral containment, media services, and post event follow-up. The purpose of a critical incident review is to understand what did and did not work, and provide reasonable and measured recommendations for further training, resources, and policy. Aspects of data sharing and communication barriers, including problems associated with interoperability, often lie at the core of these efforts. CIRs provide a real life contextual understanding of the significance of the challenges individuals and agencies directly involved in incidents experienced. These events provide a capacity to move the discussion out of the hypothetical into the practical, from the probable into the actual.

In providing an effective evaluation, it is imperative that the politics of the situation be kept at a minimum. Finger-pointing and inter-jurisdictional bickering serves no purpose. Thus,

an important consideration of any CIR is identifying the review team. This manuscript will not make any recommendations as to how to assemble a review team other than to suggest that the team should be as objective as possible, incorporate both self-assessment, and third party assessment, and operate autonomously without political pressure from any of the involved agencies. Most importantly, the team should be comprised of individuals with leadership responsibilities who are capable of creating an environment of leadership and positive self-reflection.

The second CIR model involves ongoing information sharing among a broad group of stakeholders related to a particular event or a series of events. There is a long and well-established parochial tradition in the public safety community whereby organizations and individuals within organizations are generally not inclined to share information or draw in a cross-section of stakeholders to assist in individual investigations that might fall outside of their individual jurisdiction (Dawes, Birkland, Tayi, & Schneider, 2004). In fact, it is not uncommon to find that there is little information sharing between individual units within larger police departments that investigate shared problems. For example, an outside observer might be amazed to learn in larger, more complex police departments, it is rare for a homicide detective to collaborate with a narcotics detective when working homicide cases involving drug dealers. Moreover, it is equally as likely that agencies operating in close proximity share very little intelligence as it relates to particular investigations even when they share a common "client" base.

Incident specific CIRs are being used increasingly more by police departments around the nation as coordinated strategies for solving specific cases. They represent one of the more innovative strategies for sharing information on specific crimes, usually homicide or similarly serious crimes, in local criminal justice communities. The purpose of the reviews is to assist localities solve individual crimes and enhance local or regional responses to crime in general (Klofas et. al, 2006). While this type of CIR is not new per se, a more formalized and deliberative strategy for information sharing has emerged in communities across the nation participating in the federally funded Project Safe Neighborhoods initiative (*see* www.psn.gov).

In the most straightforward example, CIRs involve on-going meetings with a group of key stakeholders organized around information sharing. The identified stakeholders often come from a wide range of organizations, but in the typical example, the inclusion of particular

representatives is tied directly to their capacity to provide direct assistance in the investigation. Participants often involve representatives from federal law enforcement agencies, state agencies (e.g., state police, Department of Corrections, and Parole), and other county or local agencies (e.g., Probation and other local police departments). Those organizing CIRs are also encouraged to consider selecting participants from different specializations within individual agencies. Individuals, for example, may be selected from different investigative units (e.g., Vice, homicide, and narcotics), from different levels of an organization (e.g., patrol), and those with highly specialized expertise (e.g., ballistic experts).

While this description of stakeholders represents a model fostering communication and information sharing within an organization or small network of agencies, the basic model is one of scale and scope. Thus, it can be extended to a variety of problems and situations. The review process itself takes on many different forms. In the end, the primary purpose is for the stakeholders to bring as much tangible intelligence to the table about individuals involved in events, specifics of locations, and to generally draw a connection between what appears to be disparate facts.

> "It is in that combination of professionals with different training and experience that the potential of incident review is found. [ ] The goal of the incident review is for a group of experts to combine two different sets of knowledge and skills…so that the result is an understanding of the crime problem that supports the development of a strategic plan to help prevent those types of crimes" (Klofas et al., 2006, 4).

The most effective solutions to interoperability and information sharing have, and will continue to, come from well informed and crafted CIRs of both types outlined above.

Memorandums of Understanding

A Memorandum of Understanding (MOU) is a formalized inter-jurisdictional agreement to share resources. Generally, speaking if multiple agencies identify the need to pool funds for regional equipment needs, for example air support, an MOU is drawn up identifying the personnel and budgetary obligations of the contributing agencies. MOUs have also been used quit effectively in inter-agency agreements to share data. They can be one of the most straight

forward and simplistic strategies for starting a formal partnership between two or more agencies. Most importantly, MOUs establish the protocols for the relationship and establishes a clear understanding of the mutual expectations.

MOU's can be an effective starting point for developing shared information and communication systems. At the state or regional level, MOUs may serve as a starting point for drawing consensus around a strategic vision for communication systems that help guide the technology investment decisions among stakeholder agencies moving forward. Developing MOUs in the absence of tactical emergencies and/or impending funding creates a better opportunity create agreements that are both mutually beneficial but also more likely to achieve their intended goals. This type of pre-crisis and pre-funding planning is generally more deliberative and creates a better framework if and when resource investments are made. Access to resources sometimes emerges quickly, possibly caused by a failed system or new grant opportunity. These situations often require quick action to develop requirements documents, identify vendors, and select technology. Those responsible for performing these functions may lack specific expertise in these areas. Absent a plan that articulates shared values and established standards, it is likely that new systems will fail to meet the desired level of interoperability.

Joint Terrorism Task Forces

The first Joint Terrorism Task Force (JTTF) was established in New York City in 1980. Currently there are 100 cities nationwide that maintain a JTTF. Sixty-five of these JTTFs were established as a direct response to the national terrorism threat following 9/11. A JTTF is a small cell "… of highly trained, locally based, passionately committed investigators, analysts, linguists, SWAT experts, and other specialists from dozens of U.S. law enforcement and intelligence agencies."[ii] The JTTFs were created to address short comings in information flow between local state and federal agencies, and to give regional support to domestic intelligence gathering requirements.

One of the advantages of the JTTF approach is the use of local, and state law enforcement entities to provide regional snapshots of domestic terrorist activity that can be further synchronized at a national level. JTTFs utilize local, state, and federal law enforcement personnel that, in all likelihood, already have a working relationship based on other regional crime issues. In addition, JTTFs provide a structure that can be effectively applied to collect

intelligence and combat other forms of complex criminal activity (often identified as peripheral to terrorist activity) to include organized crime, narcotics, and murder. The JTTF model creates an infrastructure for coordinated, collective action and information sharing.

JTTFs represent an excellent opportunity to develop shared agreements about information sharing protocols, demonstrate the need and value of information sharing that helps break down institutional barriers against information sharing, and pilot what works within the context of the current system. JTTF are generally more proactive and less reactive, and thus, are better positioned to pilot technologies and to build the business case that justifies their need. The individual cases or threats addressed by the JTTF then create the real-life opportunities to model shared information and communication systems. Just as importantly, there is often the possibility that resources might be available to pilot emerging technologies on a smaller scale.

Fusion Centers

As a means to synthesize and analyze data coming from JTTFs and other regional sources, several states have established fusion centers. These fusion centers act as command and control centers to handle and disseminate information and intelligence on a state or multi-state level. Fusion Centers are staffed by agency representatives from a variety of regional law enforcement and emergency service agencies.

The FBI participates in the information-sharing environment (IEO) fostered by state fusion centers by assigning Field Intelligence Group (FIG) analysts and agents to leading regional fusion centers as provided by the Intelligence Reform and Terrorism Prevention Act of 2004. To assess the need for FBI involvement in a state fusion center,

> The field office SAC assesses the maturity of the fusion center by asking the following questions:
>
> 1. Does it have a facility and connectivity to local systems?
> 2. Will multiple agencies commit full-time personnel?
> 3. Is the fusion center attempting to meet the Global Justice Guidelines?
> 4. Does the fusion center cover a significant region or metropolitan area?

> If the fusion center meets the aforementioned criteria, then the FBI participation is mandatory. If the fusion centers are not mature enough to warrant full-time FBI personnel assignment, the SAC is directed to establish an effective and robust connectivity allowing for effective two-way exchange of intelligence.[iii]

The primary role of FBI personnel in a JTTF and/or fusion center environment is to:

> 1. Establish a gateway/connectivity between the FBI and the federal, state, local, and tribal partners across all investigative programs.
>
> 2. Provide an effective two-way flow of information through the intelligence cycle (e.g., requirements, taskings, intelligence, and feedback) between the fusion center and the FBI.
>
> 3. Participate as an investigative/analytic partner in uncovering, understanding, reporting, and responding to threats.
>
> 4. Ensure the timely two-way flow of terrorism-related threat information between the fusion center and the local JTTF and FIG.
>
> All terrorism information and intelligence generated from the fusion center/FIG relationship will continue to be directed to the JTTFs. The JTTFs remain the recognized and designated environment for which federal to local operational partnerships take place to detect, investigate, and disrupt terrorist threats or pursue perpetrators.[iv]

In many ways, Fusion Centers represent the perfect laboratories to model and pilot data and radio communication technologies. Fusion Centers are specifically mandated to draw data from disparate data sources and to rationalize their meaning. To accomplish this, there is a need for enhanced technologies to facilitate this, but also for building the individual and organizational relationships that make it happen. These relationships often do not develop naturally. Moreover, it is not uncommon for antagonism to exist that discourages such

coordination. Historical turf battles or personality disputes within and between agencies are powerful impediments against information sharing and shared technology visions.

Information Sharing in Action: FBI's ViCAP Program

In the early 1980's the FBI realized that "linkage blindness"[v] was an underlying impediment to the successful resolution of serial murder cases in general. It was further determined that a means to collect, collate, and disseminate case data on homicides and rapes that appeared to be serial in nature would potentially increase case solvability by linking agencies and providing cross-jurisdictional leads. Thus, the FBI's Violent Criminal Apprehension Program (ViCAP) was created as a central repository for murder, rape, missing person, and unidentified human remains cases from across the United States.

In its earliest form, ViCAP existed as a standalone system operating out of the basement of the FBI Academy in Quantico, Virginia. Cases were submitted in a hard copy format to data entry clerks who would hand enter cases, and if appropriate, search the database for similar types of cases based on *modus operandi*. Soon it became apparent that local agencies could expedite the entry of cases into ViCAP by entering their own cases into a local agency stand-alone copy of ViCAP and then sending them, first by floppy disk and then, as technology allowed, via email, to the ViCAP Unit. These cases were then uploaded into the national database. At the time, the national database existed on servers within the ViCAP Unit and the national database was searchable only by ViCAP analysts.

Web-based technology has made sharing the ViCAP national database with local, state and federal agencies technologically feasible. Therefore, ViCAP changed from an internal FBI database to a truly interoperable database that can be shared with all submitting agencies. By early fall, 2008, the ViCAP system became a web-based database operating through the Law Enforcement Online (LEO) website.

The ViCAP national database is an example of how the collection, storage, and dissemination of data can be facilitated in an online environment. This move toward information sharing will result in a reduction of data entry by ViCAP analysts, and an increase in case submissions and inter-jurisdictional case-awareness by local, state, and federal agencies. Furthermore, this interoperability allows investigators and analysts from local, state, and federal

agencies to perform their own analysis using national data, and thereby identify other agencies that may be stakeholders in a particular series.

Like other models presented above, ViCAP represents an opportunity to develop the business case and technological capacity to share information among agencies. In many ways, ViCAP represents an integrated intelligence system that draws data elements from a variety of sources, identifies common characteristics, and creates linkages between events that otherwise appear distinct. The general inability of the public and private sectors to do this lies at the heart of the 9/11 Commission Report that detailed how those tragic events occurred even after multiple indicators were observed across the broad array of intelligence and law enforcement agencies. It was evident that agencies had long histories of organizational competition, and that few effective practices were in place. ViCAP and similar programs continue to represent promising strategies for modeling new approaches.

Other Data Sharing Strategies

An integral part of any interoperability paradigm is the idea that data must be shared with those who can contextualize it, analyze it, and then create investigative leads, actionable intelligence, and operational recommendations from it. Regardless of the data to be collected, the data requirements for intelligence gathering must be understood and established across those agencies participating in the effort. Similar formats, collection strategies and requirements for reliability, validity, timeliness, and accuracy should all be well established to facilitate ease of integration and analysis.

Often one of the greatest impediments to interoperability of data is the variation in underlying database structures utilized by different record management systems from different agencies. This issue alone is often one of the key justifications for a complete lack of information sharing. While it is not reasonable to expect all agencies to change their internal records system and data management to the same regional or national interoperability scheme, it is important to recognize that compatibility is important. Many agencies have invested hundreds of thousands, if not millions of dollars in a functional records management system that meets their needs. However, the ability to export this data or portions of this data, into a standard format that can be shared with other agencies is important to the concept of interoperability. Furthermore, this data extraction should be automated and pulled directly from the agencies

native records management system, so as not to necessitate duplication of entry (which can easily result in errors and wasted man hours). A history of investment in one type of technology or a given "system" may discourage movement to a different system even if the alternative is superior. Key policymakers might perceive that movement to new technologies after historical investment in others is a sign of failed leadership or squandered resources.

Future Practices in Interoperability

Interoperability and information sharing will continue to be key features of enhanced homeland security efforts in the coming decades. Communities will continue to be pushed to enhance interoperability and move toward seamless communication and information sharing. The federal government has helped to propel the interoperability concern to the forefront of public safety planning. The Department of Homeland Security, for example, has funded Interoperability Coordinator positions for many states across the nation in an effort to establish a single point of contact for voice-and-data based interoperability concerns. While many states are still in the infancy stage in terms of their progress toward large-scale interoperability, the groundwork continues to be laid.

One of the more interesting examples of cutting edge efforts directed at seamless information sharing and community is the Law Enforcement Online (www.leo.gov) system funded by the Federal Bureau of Investigations. As a digital networking site, LEO is an elastic system that permits approved users to create and manage secured digital discussion boards and intelligence sharing sites. Among other functionality, LEO also functions as a portal of sorts whereby authorized users can access to access a variety of national data sources such as a JTTF site, Function Center data, or other national databases. Authorized users, for example, may not only be granted access to the ViCAP system but can allow users investigating cases thought to be linked to form integrated discussion groups. There are numerous examples of threads dedicated to ongoing major case investigations where personnel who are currently working on the case can post information, maps, diagrams, photos or anything else that needs to be shared with the community of stake-holders in the investigation. This represents a true paradigm shift in how multi-jurisdictional investigations are managed. Moreover, it represents a first of its kind virtual public safety community.

It will be imperative for public and private sector public safety entities to continue progress that has begun in recent years. Experience suggests, however, that the most substantial hurdles that will have to be overcome are less about technical capacities than about the cultural impediments that can threaten even the most well-funded effort.

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[i] *See* http://www.safecomprogram.gov/NR/rdonlyres/127FFF18-100D-4405-AA40-076B79F17B1B/0/interopbooklet.pdf.

[ii] http://www.fbi.gov/page2/dec04/jttf120114.htm

[iii] Michael C. Mines, Deputy Assistant Director, Directorate of Intelligence, Federal Bureau of Investigation, *Statement Before the House Committee on Homeland Security, Subcommittee on Intelligence, Information Sharing, and Terrorism Risk Assessment*, September 27, 2007. http://www.fbi.gov/congress/congress07/mines092707.htm

[iv] … http://www.fbi.gov/congress/congress07/mines092707.htm

[v] A term used to describe the tendency for agencies to be unaware of similar murders occurring in other jurisdictions.

Communities as Allies

Joseph Schafer[40], Sean Varano, & Nicholas Libby

A popular axiom attributed to British policing is the police are the public and the public are the police. Inherent in this term is a blurring of the distinction between the police and the public they serve; the police are cast as being little different from the citizenry and citizens are cast into a role of responsibility for the safety and well-being of the community. In effect, communities are framed as allies in the fight to ensure safe and secure neighborhoods. Across space and time this idea has held uneven sway within American policing ideologies. This essay considers the relationship between the police and the policed, as well as how that relationship might be influenced be technological and social evolutions. The essay begins with an overview of the very notion of "community" and their relationship with crime and disorder. This is followed by a brief review of the historical trajectory of police-community interactions within American policing. We then consider how emerging and future technologies might modify what "community" means. The essay concludes with a consideration of police and community interactions and partnerships in the digital age.

Thinking about Community

The term "community" is imbued with both a common understanding and an element of abstract vagueness. Though most readers certainly have a general understanding of what the term means, the exact definition and parameters of community are subject to some debate (see Kappeler & Gaines, 2005, pp. 74-79). The term generally implies a common set of values, beliefs, traditions, and cultures that are shared by a group of people. These concepts of community have largely been spatially based; traditional communities have primarily been place- or geography-based. Depending on idiosyncrasies across different locales, communities may be identified as geographic areas as small as one or two blocks or as large as a neighborhood or cluster of neighborhoods. This traditional identification of a community has long been recognized by law enforcement and other political agencies focused on improving and maintaining public safety. Physical locations have been traditionally divided using a variety of

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methods and boundaries to define the zones of responsibility for layers of service providers (i.e., school districts, election precincts, and first-responding fire services).

Aside from geographic or spatial components, communities can further be defined by shared values systems and the mutual obligations they engender. When these systems are established, individuals within the community develop a sense of their mutual identity and shared interests. The degree of shared interests and identities helps to understand the degree of embeddedness of individuals associated with given communities. The more deeply embedded and committed the individual, the more they would be expected to share values, beliefs, and bonds with others (see also Bursik & Grasmick, 1993; Sampson, 1999). Consequently, embedded individuals are expected to be more active participants in their community; they are further expected to make more efforts to contribute to the well-being of their community, presumably to more successful ends. These individuals may participate in a number of ways, such as through church activities and stewardship, local school functions, neighborhood associations, or simply informal interpersonal relationships between the people within the community. It is widely accepted that a greater sense of community leads to more effective regulation of local conditions due to an increased propensity of residents to take action to collectively enforce normative expectations (see Bursik & Grasmick, 1993). Although any given community as a whole can hold any number of values, communal safety is often a leading priority. For example, proponents of community policing argue this approach to policing fosters strong ties among residents of an area, making them more effective in reducing crime and improving quality of life (Kappeler & Gaines, 2005).

A strong sense of community, that is a collection of individuals with a shared identity and sense of collective concern and action, can be one of the most salient factors affecting the overall "health" of a community (Chavis & Wandersman, 1990). If a community can develop these shared value systems and mutual obligations, social bonds between residents often increase and informal social control is heightened. Leung (2005), for example, argues that focused "community building" strategies in low-income housing can increase the sense of collective ownership and responsibility, thereby decreasing levels of disorder. In this case, high levels of collective efficacy, defined by Sampson and Raudenbush (1999) as the cohesion amongst individuals within the community along with shared expectations associated with keeping public space within the community safe, are often found. Measures of collective efficacy, a sense of

one's community and involvement in local institutions, such as churches, have all been associated with lower rates of crime and violence (Cancino, Varano, & Schafer, 2007; Cantillon, Davidson, & Schweitzer, 2003; Johnson, Jang, Li, & Larson, 2000; Sampson & Raudenbush, 1999). Communities with high levels of collective efficacy demonstrate high degrees of self-regulation in terms of controlling the behavior of their residents through informal social control. Additionally, these established and organized communities may also have the ability to gain assistance from outside, formal sources of social control (e.g., law enforcement) in order to increase internal regulation or keep unwanted elements, such as drug dealers and gang members, out of their community (Warner, 2007).

Social science research offers reasonable support linking the strength of communities with local social conditions. Community cohesion and stability are found to correlate with local levels of crime and disorder. Whether such cohesion and stability can be influenced and enhanced is not currently understood. In addition, though advocates of community policing argue that police and community efforts can enhance community and lead to more effective and self-regulating neighborhoods, the exact functioning of these processes remains unclear. Given that communities have a capacity to influence crime it makes sense to seek ways to enhance the integrity of communities and to ensure some level of citizen involvement in policing. These ideas, however, have only recently entered into the discourse surrounding American policing.

The History of Police-Community Partnerships

Scholars regularly refer to different "eras" of policing in an effort to trace law enforcement organizations from their earliest days as chaotic and informal organizations to the highly rationalized bureaucracies that exist today. These scholars tend to refer to the "Political Era" of policing as covering the years 1840-1930, the "Professional" or "Reform Era" of policing as covering the years 1930-1970, and the "Community Policing Era" as covering the years 1970 to the present day. This framework is particularly valuable because it helps to explain not only the formal structure of police organizations, but also to identify shifts in emergent organizational structures and strategies. The shifting nature of police-community partnerships over time is but one important dimension to these changes.

The earliest days of modern policing were founded on a strong tradition of partnerships, formal or informal, between police and the communities they served. With the advent of formal

law enforcement organizations in the mid-nineteenth century, police officers were historically selected from and ultimately assigned to the very neighborhoods in which they lived. Police officers were in many ways, part and parcel of their home communities. Their professional careers became somewhat of an extension of their personal lives. Police officers usually began their careers with well-developed personal networks that were only further enhanced during early days on the job. With little-to-no direct supervision, backup, or capacity to be in regular contact with "headquarters," the abilities of officers to develop formal and informal relationships was critical to the job. These relationships were best characterized as officer-level craft that was generally the product of individual officers forming relationships or partnerships with individual citizens or groups of citizens. There is little evidence of systematic organizational efforts to develop large-scale community partnerships. Regardless, similar to today, well-developed relationships with neighborhood constituencies were essential to gaining intelligence, solving crimes, and ensuring physical safety for officers (Uchida, 2010).

While the advantages of highly developed networks of personal relationships can seem obvious, the negative consequences also emerged as officers arguably became too deeply and personally embedded with the very community they were responsible for policing. Corruption, for example, materialized as a central concern as officers at all levels were argued to be too closely connected to local political machines and criminal enterprises. The police, it was observed, became the "muscle" of politicians seeking to gain and maintain political support (Uchida, 2010). In the end, many police organizations developed an organizational ethos of corruption that became the primary target for police reformers during the early twentieth century.

Reformers pushed for more "professional" police forces characterized by highly qualified candidates, formalized training standards, integration of technology, and the decoupling of police from local political influences. As a way of reducing corruption and political influences, this new generation of police executives implemented intentional strategies to depersonalize policing. Many departments implemented strategies such as altering the locations of patrol assignments and assigning officers to beats where they had little familiarity with residents and networks. These strategies were intended to eliminate the potential corruptive influences of close personal relationships between police and the community. Moreover, the introduction of motorized patrol also created greater physical, and thus interpersonal, distance between officers and their communities.

The reform efforts of the early twentieth century were seen by and large as effective in instituting the basic agenda of the reform movement. Civil service exams were implemented to institute a level of objectivity in candidate selection, formal training curricula were adopted across the nation, patrol strategies were developed to regularly move officers around a community, and police departments exploited the capacities of technology. These strategies were effective in reducing the appearance of large-scale corruption within policing. The intentional movement away from close police-citizen relationships, while potentially effective in reducing levels of corruption had the negative consequence of reducing the legitimacy of the police among many segments of the community and vice versa. The legitimacy of the police was raised most vocally during the 1960s as some citizens conceived of their local police as nothing more than external, occupying forces less intent on providing services to the community and more intent on exercising their authority. It was during this period that the basic tenets of community policing were seeded.

Community policing is best described as an organizational philosophy couched in the principles of crime prevention through problem-solving and community partnerships. After recognizing the limitations to the professional model of policing, many police executives deliberately rejected the idea that they alone were responsible for reducing crime and that the most effective strategies for enhancing public safety require formalized relationships outside law enforcement organizations. Community policing is based on the concept of making the necessary organizational changes that facilitate innovative responses to crime. The role of police, for example, has evolved to reflect moving beyond merely *reacting* to crime after is has occurred to proactive strategies geared toward the prevention of crime. Within the community policing model, the concept of "partnerships" has emerged as one of the primary organizing themes. "Partnership" connotes a deliberative engagement of external (and internal) constituencies in meaningful ways organized around the principles of preventing and solving crime. This represents a profound departure from the "professional era" where police placed themselves in the role of "all-knowing-expert" exclusively charged with the crime control function.

The advent of community policing and similar organizational mandates has created an environment where police organizations actively engage and partner with a variety of public and private citizens and organizations as central aspects of their overall organizational efforts. The

concept of partnerships has evolved over the history of policing; though originally of little concern, in the last forty years community partnership, trust, cooperation, and confidence have become central elements (at least rhetorically) in American policing. Though some might argue the philosophy of community policing is waning (or was never fully realized), policing concerns over community and partnership seem quite likely to endure for the foreseeable future. Setting aside the inconclusive evidence regarding the capacity of the police to enhance community and thus, indirectly, influence crime, agencies must fulfill a political mandate and social expectations that they will network and partner with the community or communities they serve.

Are Conceptions of Community Changing?

As stated earlier in this essay, throughout human history "community" has been a concept tied almost exclusively to place and time. That is, an individual's feeling of belonging to a collective or group was tied to physically interacting with other likeminded individuals; neighbors conversed over the back fence, religious adherents worshipped together, or sports fans watched events with one another. Though 20th century technological expansions such as the telephone, radio, and television may have subtly modified some dimensions of community, the spatial and temporal components remained quite strong. An open question being considered by futurists and social scientists, among others, is whether the social networking capabilities facilitated by the internet and modern computer applications might have more radical influences on the spatial and temporal nature of "community." Further, if changes in the conception and function of community do emerge, what implications might those evolutions have upon the nature of communities as allies for the police?

Social networking sites combine the speed of contemporary communication networks with the "high tech, high touch" feel of software and computer applications. In reality this discussion can be traced back to the 1970s and the establishment of ARPANET, the precursor of the internet. ARPANET was established to create asynchronous linkages of like-minded, but geographical diffuse scholars. The modern internet (sometimes referred to as "web 2.0") brings that objective to life for the average consumer. It is a transition that has been radically fast, yet which many have not noticed.

First e-mail allowed users to quickly send messages. Later the internet allowed producers and consumers of information to find each other (aided with the emergence of more sophisticated

search applications from Alta Vista and Yahoo! to Google). Now, social networking sites (MySpace and Facebook being but two of the more common contemporary examples) allow users to locate long-lost friends and to make new acquaintances with common interests. Online virtual worlds create alternative platforms in which users can express themselves (Second Life) and/or engage in recreation (World of Warcraft or Medal of Honor). Enhanced digital phones and wireless computer networks allow consumers to track new posts to their favorite blogs and "tweets". Consumers equipped with the proper technology can take their "community" with them anywhere they might wish to go, at any time they wish.

Though many individuals may still prefer to derive their sense of community, identify, and belonging from those with whom they temporally and spatially interact, that is no longer required. If a person's social interaction and sense of community is grounded in virtual worlds and social networks of friends around the world, do they maintain the same sense of loyalty, allegiance, and concerns for the physical community in which they live, work, and traverse on a daily basis? Are relations with neighbors important when one has hundreds of online friends? Is it important to attend religious ceremonies or sporting events when one can engage in those same practices in virtual environments? In an era when "telecommuting" and working from one's residence is increasingly pervasive, is one's sense of identify and basis of socialization as strong when co-workers are never together in place and time? Such questions are difficult to address and their answers are likely embedded in the preferences, habits, and economic situation of the individual. Nonetheless, these questions lead to further considerations of importance and relevance to the future of policing.

Community policing is predicated on temporal and spatial interaction of citizens who share a common community identity. What happens to the ability of the police to leverage local citizens when ties to a geographic community are weakened? Though most citizens will still maintain some semblance of commitment to the physical environment in which they live and work, what will police agencies have to do in order to compete for the limited attention and energy citizens might expend? These are fundamental questions that need to be of greater prominence in modern discourse about police efforts to engage and strengthen communities, regardless of the form and function of the latter. To be sure, the answers may not be easily identified; the processes agencies employ will likely have to go beyond the current "best practices" touted in popular and professional media. Agencies will need to do more than

establish Twitter feeds and create a presence in Second Life, but the actions necessary to ensure viability in the digital age are not yet readily apparent.

In a similar vein are questions about the nature of policing in online environments. It is still unclear how normative rules of social interaction will ultimately be determined and enforced within social networks; it is likely that variation will emerge, just as we see variation in expected behavior and the repercussions associated with non-conformity in physical communities. We already see examples of universal rules for expected behavior, as well as community-specific lexicon, standards, and modes of punishment. Some sanctions issued for violations of social norms are highly formalized and visible (SecondLife publicizes sanctions issued to users who violate certain terms of service, harkening back to the days of "police blotters" published in local papers), while other sanctions are handled through ad hoc vigilante action. How will the responsibility of "policing" online communities and user conduct ultimately be allocated? What tasks and expectations will be placed upon users, service providers, conventional police organizations, and quasi-police entities that might still emerge?[41]

Community Engagement and Partnerships in the Digital Age

The preceding discussion is intended to provide a history of policy/community partnerships as well as illicit questions about the ways in which police departments can engage and partner with their community in light of advancing digital communication technologies. The authors would contend a clear implication for policing is to capitalize on the use of technology to reach the public. While emerging communication technologies and their associated social trends have transformed community and interaction, they also create opportunities for agencies to capitalize on these applications. Even better, many of these opportunities require little more than modest investments of personnel and time, producing negligible costs for agencies.

For the most part, agencies are mired the tendency to only adopt technologies after consumers have begun to move on to the "next big thing" or agencies have used technologies for narrow purposes. Though many state and local agencies now operate websites, most are static creations reflecting Web 1.0 orientations (i.e., limited use of multimedia and real-time access to information). When agencies operate on MySpace or Facebook, it often seems a tool used to vet

[41] Examples of the latter have existed since the early days of the internet in the form of groups created to track and, in some cases, respond to distasteful, disorderly, discourteous, and unlawful actions.

the background of prospective employees, rather than also being a method to access consumers via the technologies they most-often utilize. Though a smattering of agencies use blogs, Twitter, text-message communication (operating in both directions), and social networking applications to communicate with the public, the authors would speculate these practices are the exception and not the rule.

This is not to say improvements have not been achieved. One of the side-effects of the tragic shooting events at Virginia Tech and Northern Illinois University has been an up-swing in text-based mass notification systems. Though the dialog generally only works in one direction (from the police to the public), such systems create a capacity for campus agencies to communicate emergency weather, accident, and crime information to students, faculty, staff, and local residents. Whether consumers will continue to voluntarily enroll in such systems has yet to be seen. It is also unknown whether agencies will use this communication shift to generate momentum toward other types of non-audio two-way communication (i.e., the capacity for users to send a text message to communications personnel alerting them of emergencies or other police concerns).

In the physical world, the relationships between communities and local rates of crime and disorder have been repeatedly validated by the research community. Whether those relationships perpetuate within digital communities is an unresolved question. Police agencies and leaders need to be aware of how emergent technologies create new opportunities for the police and the public to interact, exchange information, and facilitate greater levels of trust and collaboration. At the same time, we need awareness that such technologies generate a number of questions regarding whether the community-crime nexus will persist and, if so, how police organizations ought to position themselves to be more responsive and effective in maximizing communities as allies.

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Policing Partnerships[42]

Greg S. Weaver[43] and Toby Finnie[44]

Introduction

For many years, law enforcement-public partnerships and collaboration with other agencies/organizations has been touted as desirable, and there are countless examples of such efforts between elements of the criminal justice system as well as with other organizations (Lovrich, 1999). However, this essay is not intended to chronicle the numerous types of partnerships that have been attempted in the past, or those that exist today. Particular emphasis will be given to partnerships with citizens (volunteers) and, to a lesser extent, collaborations between law enforcement and other agencies and groups. To that end, the focus on agency collaboration will highlight the potential of fusion centers as a mechanism for organizing and maintaining ongoing cooperation among groups that have in some cases experienced strained relations. The discussion that follows seeks to build upon what is known about existing partnerships in order to capitalize on the benefits of them and to avoid an over-emphasis on ineffective or duplicative efforts.

For example, neighborhood watch programs, one of the most common examples of police-public partnerships, are generally viewed as being ineffective (Greenberg, 2005; Sherman, 1997). However, this finding is not meant to suggest that neighborhood watch programs are without merit. A closer examination can reveal specific shortcomings that, if adequately addressed, may improve their utility. For instance, Greenberg (2005) suggests that a common problem of neighborhood watch programs is they tend to be short-lived. This issue could be due to a number of factors, such as unrealistic expectations on the part of residents (which may temper initial enthusiasm for the program) or because a department may not be committed to the effort or have the resources to devote to it. In a later section, possible ways to utilize neighborhood watch as one component of an integrated system of partnerships will be discussed.

[42] The authors would like to thank FWG member Al Youngs for his helpful suggestions.
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Law Enforcement – Volunteer Partnerships[45]

Walker and Katz (2008) note that historically, police forces in the United States have frequently utilized the services of volunteers and reserve forces. Furthermore, Greenberg (2005) notes how volunteers can assist law enforcement in a number of tasks. Typically, non-sworn volunteers assist law enforcement via neighborhood watch programs, in consulting and advisory roles, and in crime prevention efforts within the community. Departments also utilize sworn, reserve officers in a variety of tasks (Berg and Doerner, 1988). The concept of citizens assisting law enforcement to improve safety is central to Community Oriented Policing (Thacher, 2001), and volunteers are an under-utilized asset. Similarly, Frederickson and Levine (2004) suggest that implementing a reserve officer program is another way to bridge the gap between law enforcement and the community.

Sundeen and Siegel (1986) note that volunteers are cost efficient, improve citizen participation, and provide a potential source for job applicants. Particularly in regard to the former, services provided by volunteers allow officers to devote more time to crime prevention and reduction. It is important to acknowledge a number of considerations in relation to use of volunteers. First, dependability is an issue. It is noted elsewhere that waning enthusiasm is a common issue for neighborhood watch programs, due in part to lack of commitment to participants. Similarly, even if given non-essential duties, supervision is required. Finally, regular personnel may feel threatened by the use of volunteers (Greenberg, 2005; Sundeen and Siegel, 1986). Clearly, the benefits versus costs of volunteers and reserves in particular must be weighed carefully, as the public will hold them no less accountable than regular personnel. However a coordinated effort involving volunteers, CPA, and reserves holds promise. For example, Cohn (1996) suggests that reserve officers are well-suited as instructors in citizen academies, which lessens the demands on regular officers and reinforces the emphasis on community.

Citizen Police Academies (CPA)

Schafer and Bonello (2001) note that citizen police academy (CPA) programs tend to recruit and attract persons who are supportive of law enforcement and who are already more

[45] The Volunteers in Police Service (VIPS) website http://www.policevolunteers.org/ provides an extensive overview of programs in the United States.

likely to be involved in volunteer activities. For example, in their review of the Lansing, Michigan, CPA, participants were initially selected from neighborhood watch programs. However, they also point out how citizen police academies often do not include members of groups with whom law enforcement has traditionally had strained relations – such as minority groups. At the same time, increasing participation among other key groups can have benefits as well. For example, recruiting representatives from media outlets could serve to increase knowledge about the functioning of police departments. Schafer and Bonello (2001) note that law enforcement – media relations are perceived, particularly by the former, as strained. One specific objective of the Lansing academy is to increase public awareness and knowledge in relation to media accounts of crime and the criminal justice system.[46]

Similarly, participation by representatives of other local government bodies (e.g., city council members or other executive/administrative persons), agencies, and departments can also further this objective. Teachers and school administrators are but two examples. A broader objective of citizen police academies should be to encourage civic participation in general, not just in the context of the law enforcement function. For example, having teachers complete an academy may have positive effects on programs such as D.A.R.E., G.R.E.A.T., or other efforts in which the school plays an important role (see Greenberg, 2005). Chamard (2006) also provides an account of how one agency implemented a Business Police Academy, which provides a more specific focus than a traditional CPA, in areas such as loss prevention and violence in the business/workplace. Vidaver-Cohen (1998) contends that the business community underestimates the impact of crime on productivity, so this endeavor serves not only to educate business leaders and their employees, but also provides an avenue for them to increase civic engagement by collaborating with law enforcement. The Business Police Academy provides an interesting example of what could be referred to as a "targeted" academy. Depending on the needs of a department, educators, business leaders, etc. could be given priority.

A key rationale for CPA lies in communication. Raffel (2005) notes that on one hand, media depictions of crime tend to excessively emphasize violence and dangerous aspects of policing, which may serve to increase fear of crime and conversely decrease confidence in law

[46] For example, at least one of the authors of this essay views the following, hypothetical depiction as an illustrative example: "Today, a local resident was sentenced to fifteen years in *jail* for the crime of..."

enforcement. The authors further suggest that through CPA, citizens can better understand how communication is used to legitimize and justify actions, reduce the need to use force, and to show how communication is an integral aspect of crime prevention and investigation. Doing so serves to increase understanding between the public and law enforcement. Thacher (2001) suggests that dialogue is at the crux of police partnerships with the community.

The use of citizen – law enforcement collaborative efforts such as neighborhood watch programs, citizen police academies, and volunteers (in some capacities) is generally consistent with many principles of Community Oriented Policing (COP), in that each one is in part intended to create and encourage citizen involvement in efforts to reduce disorder in neighborhoods, in crime prevention (Walker and Katz, 2008) and, in some cases, law enforcement activities. However, the authors also note that COP remains more of an ideal and resistance to it remains. It is extremely important that future efforts seek to develop long term relationships between the public and various agencies responsible for public safety.

For example, it was noted earlier that one criticism of neighborhood watch programs is they tend to be short-lived (Greenberg, 2005). If these efforts, as a component of a coordinated effort to encourage citizen participation, provide a "connect" with the system, then another benefit is realized. Similarly, the content of citizen police academy curricula could be expanded to emphasize the roles of law enforcement, first responder, and other agencies in the coordinated effort in the "global war on terror" and in response to natural disasters. It has been repeated often that law enforcement and other first responders are the front line against terrorism. At the same time, agencies are encountering difficulty in visualizing its role in what may also be viewed as a national security concern.

Furthermore, law enforcement agencies could provide a conduit to organize volunteer efforts in the aftermath of natural disasters. Spradling (2007) correctly notes that in times of crisis, such as following a natural disaster or other large scale event (e.g., the Oklahoma City bombing) there is an abundant supply of persons wanting to volunteer. In some locations, police departments may coordinate with volunteers and other first responders to ensure that critical tasks are met. For example, trained volunteers can assist with service-related functions. One example in particular illustrates this potential: In Houston following Hurricane Katrina, VIPS-trained and other trained volunteers coordinated in excess of 8,000 persons within a 24-hour period and over 66,000 in the 22 days following the storm. Alexander (2005) suggests that the

Joint Terrorism Task Force (JTTF) concept is one mechanism to accomplish this task, but as will be discussed later, fusion centers may be another viable option.

Police Collaboration with Other Groups

Police-Academic Partnerships

Braga and colleagues (2006) correctly state that both law enforcement and academia do not fully recognize the potential benefits of collaborative efforts. Due in part to mistrust on both sides and the stereotypical notion that academics are comfortable in the "ivory tower," a sizeable contingent within the law enforcement community prefers they stay there.[47] Granted, in some disciplines there is a bias toward pure (as opposed to applied) research and because of the perception that academia is overly critical of police and the criminal justice system in general, academic research tends to be dismissed as irrelevant. That is not to say this relationship is antagonistic, however. Throughout the United States, there exists what Travis and Hughes (2001) refer to as informal "exchange" relationships, in that students may complete internships with departments, that officers frequently enroll in university courses and earn degrees, and that individuals and programs in academia also work together in community service and research projects.

Braga et al. (2006) note that academic research can assist law enforcement efforts in a number of ways, such as in problem analysis (e.g., Project Safe Neighborhoods), in conducting feasibility studies, evaluation of specific programs/policies, and in compiling data for a variety of purposes. Furthermore, police-academic partnerships can enhance the research capacity of a particular department (Travis and Hughes, 2001). It is unknown how many police-academic partnerships exist, be it along informal lines or through more systematic efforts formalized by memoranda of understanding (MOU) and other long term agreements. Travis and Hughes (2001) also point out there is no obligation (and in some cases motivation) for a partnership to continue if a formalized structure is not in place. There are few documented examples of such partnerships. However, see Travis and Hughes (2001) for one account of the development of a

[47]For example, one needs to look no further than the academic versus practitioner debate over the effectiveness of D.A.R.E.

partnership between the Forest Park (Ohio) Police Department and the University of Cincinnati Center for Criminal Justice Research and the issues and problems encountered in this process.

Fusion Centers

Imagine a Venn diagram that represents the overlap (jurisdiction, mission, etc.) between the following departments, agencies, and services: law enforcement, the military, national security agencies, public health departments, disaster/emergency interests (e.g., FEMA), and the private sector (business). Given the complicated and continually-changing nature of these relationships, a more accurate representation may instead require a kaleidoscope. For example, an article by Butler and colleagues (2002) cites the anthrax event in the wake of 9/11 to show how various agencies were required to coordinate efforts. In this instance, coordination was required between the Federal Bureau of Investigation and the Centers for Disease Control and other local, state, and federal agencies. In doing so, the authors note that in such instances there may not be existing protocols for dealing with issues such as confidentiality of information or with chain of custody (e.g., issues not regularly encountered by public health agencies).

Particularly in the post-9/11 era, there is a critical need for law enforcement collaboration with a variety of entities. In fact, not only is collaboration encouraged, it is mandated. For example, federal agencies re-organized under the auspices of the Office of the Director of National Intelligence (ODNI) – which includes the intelligence function of various federal law enforcement agencies, emergency, critical infrastructure, and the military – are faced with the extremely difficult task of opening and maintaining lines of communications while simultaneously remaining in compliance with myriad laws and regulations, including 28 CFR Part 23. A recent article by Middlemiss and Gupta (2007) cites expansion of the Joint Terrorism Task Force (JTTF) as an example of success in this area.

In addition to those mentioned above, there are numerous examples of collaborative efforts between law enforcement and other entities. Law enforcement partnership with business is an important example and deserves mention. It has been estimated that up to 85 percent of the nation's critical infrastructure is protected by private security, but very few law enforcement agencies have established partnerships with them (Chamard, 2006; Law Enforcement – Private Security Consortium, 2008). However, see Moteff (2008) for a review of federal efforts to address issues related to critical infrastructure. Common partnerships include: Business

Improvement Districts or other initiatives that focus on a particular geographic area; specific issue collaborations, such as the National Cyber-forensics Training Alliance (NCFTA), a nonprofit organization which brings together law enforcement and business interests to address issues related to cybercrime; and Infragard, a joint effort between the private sector, academia, and the government in relation to cybercrime and infrastructure.

An important question arises in how can these efforts be coordinated, if only in a partial sense? A potential framework may be found in one of the most ambitious collaborative efforts to date: fusion centers. While the impetus for fusion centers and their early development focused primarily on terrorism, their role is expanding. Building on successful collaborations such as JTTF and High Intensity Drug Trafficking Area alliances (HIDTA), fusion centers are evolving to emphasize intelligence gathering and information sharing between agencies; conducting joint investigations; provide assistance to local agencies; and include the public sector, public health, emergency management and critical infrastructure interests. As opposed to agencies working together on a case-by-case basis, fusion centers offer much potential for establishing long term, collaborative relationships (Rollins, 2008).

Rollins also notes that one of the greatest impediments to information sharing lies in resistance by individuals and departments. Waugh (2003) acknowledges that organizational and cultural differences make establishing partnerships more difficult. Government agencies and the military have a traditional, hierarchical structure with explicit and detailed guidelines and operating procedures, as well as a unique jargon (i.e. use of acronyms) – more so than do the private sector and non-governmental operations, which tend to be de-centralized in structure.

Identifying how to accommodate these differences as part of developing partnerships is no easy task, but communication is an important first step. Because fusion centers are typically organized and coordinated at the state level – with input and participation by local and federal agencies as well as from business/industry, etc. – it may be possible to avoid some of the well known but often exaggerated pitfalls of joint operations and task forces led by federal agencies. Because fusion centers are moving away from a sole emphasis on terrorism-related issues, there is much potential for this organizational structure to provide an excellent means for various entities to share information, to develop intelligence, and to collaborate as needed in situations requiring joint crime-, terrorist-, disaster-, and public health concerns.

Conclusion

The previous discussion was not intended to provide a comprehensive overview of the various types of police partnerships, but to hopefully show how agencies can build upon existing efforts. Generally speaking, the police culture includes a tendency to view outsiders with caution, particularly individuals and groups believed to be critical of them, and distrust between governmental agencies is almost legendary. Establishing partnerships is one way to break down these barriers. Sherman (1997) suggests that one of the major benefits of Community Oriented Policing (COP) is the potential for departments to enhance legitimacy within the communities they serve. It has also been noted that COP remains more of an abstract or ideal. Similarly, this essay highlights key law enforcement partnerships with other organizations, which concludes by briefly discussing a promising means through which collaboration (at the organizational/agency level) can be facilitated, the fusion center. By increasing the number of individuals and groups within the community who are participating in this process – particularly if done in a comprehensive and targeted manner – the extremely difficult job of law enforcement may become easier.

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Getting from Here to There:
Creating a Futures Orientation Using CIAPRA

Michael E. Buerger

The inherent instability of the Chief's position means that a futures orientation cannot be vested in a single individual. Though individual leadership is important, the entire agency must be inoculated with a futures orientation. If the experience of community policing is any guide, the most successful inculcation must be a covert one.

To build a futures orientation throughout the department requires transformation without the department noticing that it is being retooled. Attempts to establish community policing were accompanied by massive publicity (or propaganda) that spoke to public concerns without addressing those of the officers. The result was raised expectations in one constituency and resistance in the other. To avoid a repeat of the phenomenon, the first steps toward creating a futures orientation need to be practical, not exhortational.

"Practical" in this case means recognizing both the possibilities and the limits of what can be done with police resources. "Practical" also requires development of more than just a conceptual vocabulary that describes the outcomes: it must also define intermediate actions steps -- both processes and outcomes -- in language that is meaningful to the officers who will be charged with making them happen.

Broadly speaking, the desired outcome is not all that different from the changes sought by the community policing movement. The goal is to change the police mindset from that of a fraternity of Jedi Knights operating outside the community, to one of a network of community-building agents who are integrated into the larger community as well as the criminal justice system.

To do so requires developing a means to break the police out of the confinement of the immediate, and instill a capacity for both recognizing and consciously seeking the small trends of change that are occurring in their areas. Good cops have always done this as part of the creation of cognitive maps they call "street sense"; some have specialized in narrow interests – burglars, robbers, perverts, con men – while others have broader vision. But these cognitive maps have traditionally been located in the individual; police agencies rarely develop the means

to tap into the collective understanding of patrol officers and detectives. The result, as Lawrence Sherman noted, is the fragmentation of institutional memory.

The police organizational response has invested the analytical power in special units, crime analysis or crime mapping. Though they need not be, those functions tend to be centralized: often, command level offices are the primary recipients of their work. Individual officers or units can request specific analyses to supplement local investigations or problem-solving efforts, and in some departments officers are encouraged to engage in their own crime mapping and crime analysis to augment their cognitive maps of their beats. The push toward evidence-based policing is pushing the process toward more rational organization and sharing of information, but it remains a push-out more than a push-in process.

The difficulty in centralized functions of this nature is that they can process only that data which is routinely archived by the agency: traditional crime reports, field interrogation cards, and perhaps 9-1-1 call data. Most other information remains ephemeral, resident in the memories of individual officers and small units, but not accessible beyond the precinct boundaries. It is vulnerable to absence (sick days, vacations, court and training assignments, etc.), and extinguished by transfer or retirement except in the rarest of circumstances. Yet it is this information – not "data," but information – that holds the greatest promise for developing anticipatory policing, that which positions itself to shape the immediate future rather than to react to it.

Innovation fatigue is a real obstacle to creating change in police departments. Rather than introduce a new term, such as "anticipatory policing," it would be better to work within the existing police vocabulary. Problem-oriented policing or problem-solving is the most intuitive to officers at the line level, and provides a logical framework for blending a futures approach with a familiar and reasonable accepted conceptual framework. Several distinct tasks can provide a new base from which fresh approaches may be developed.

1. *Retire SARA*

SARA was a necessary first step in developing a new police vision, but it dates to the Newport News project in 1985-1986. Spelman and Eck (1986) gave the policing world a basic model that could be used at the line level: Scanning, Analysis, Response, and Assessment. More than a quarter-century later, SARA continues to be the industry standard for training in problem-solving, but it has become calcified, never moving beyond the first model. A

longstanding criticism of the SARA model is that it tends to stint analysis in favor of problems that can be "solved" by arresting someone. Analysis runs a wide gamut of approaches, from the careful consideration suggested by Spelman and Eck to a bull-headed "we already know what the problem is" attitude that is the antithesis of problem-solving.

The Royal Canadian Mounted Police have used an alternative model successfully in their recruit training. CAPRA, which is here modified slightly into CIAPRA, represents a second-generation model for problem-solving. It lends itself well to a futures orientation on a small scale, a foundation upon which to build subsequent layers as an officer's career progresses.

The elements of CAPRA are Clients, Analysis, Partners, Response, and Assessment, the latter two identical to the American SARA model. A sixth element, Information, should be inserted to transform the process from simple problem analysis to baseline intelligence-gathering. Requiring officers to identify Clients of a particular action is intended to move them beyond the simple tactical perspective; similarly, Partners broaden the perspective of responsibility and capacity. It moves the "solution" out of the exclusive domain of the police, and complicates the process of crafting a solution in the process. Adding "Information" to this mix is intended to nudge the process even further, as there are databases and repositories of knowledge outside the small core of those actors most affected by the problem. The rapid proliferation of personal communications technologies, and the advent of cloud computing, have created a new condition in the environment that makes information regularly available with minimal personal effort.

At worst, requiring these new elements in place of the more subjective "Scanning" process is simply leading a horse to water: there is no guarantee that a resistant officer will do any more than "mail it in" with a superficial effort. That is a problem of supervision. In the best-case scenario, pushing officers outside the familiar channels of law-enforcement thinking will lead to a new awareness of the depths of the community resources and the multiple intervention tactics that might be brought to bear upon a problem.

Omitting for a moment the Response and Assessment components that it shares with SARA, the critical elements of the CIAPRA model can be expanded even further:

C: CLIENTS

1. Society as a whole – (a given; like "everything we do is for the community," this answer alone is a cop-out, bland and so attenuated as to be useless; it should be discouraged by supervisory review)
2. Stakeholders with a positive influence
3. Stakeholders with a negative influence
4. Disenfranchised stakeholders (including targets of police action)

I: INFORMATION Needed

1. Where do we obtain it?
2. How do we develop it if it is not readily accessible?

A: ANALYSIS (Initial)

1. Driving forces behind the problem
2. Guardianship issues (see C2, C3, P)
3. Possible points of intervention
4. Impact of A3: Changes in recent times? Trajectory of the changes?
5. Unintended consequences of A3
6. Means of mitigating A5
7. Realistic expected outcomes in light of A3, A5, and A6.

P: PARTNERS (Potential)

1. Resources they can bring to the effort
2. Limitations that constrain their willingness or ability to contribute
3. Motivations and inhibitors

2. *Implementation*

In order to avoid the trap of a one-time exercise, CIAPRA assessments must be built in to the regular calendar. The basic template is that of the Beat Book, but the experience of the CPOP initiative in New York City (McElroy, Cosgrove, and Sadd, 1993) suggests that monthly updates are not an ideal mechanism. Officers considered it time-consuming, redundant, and

irrelevant. While hand-held technology now mitigates that onus somewhat, it is still an additional "paperwork" effort.

The fundamental premise remains valid, but the implementation should stress the officers' role as the center of an information-gathering network. While quarterly assays are useful, officers should be encouraged to attend to the process in real time, adding observations about changes as they are made. The first round should not be defined as an exercise in "what businesses are in your beat?" as the NYPD Beat Book appears to have been. It should be a process for identifying the "main players" in the officers' beats, and should include legitimate citizens and knowledgeable informants on the fringe of the criminal underground.

Shift supervisors should emphasize and facilitate ongoing interaction among officers working the same beat area in different time-frames: the main players will likely have some variation by time of day, and the officers' own observations will certainly be diverse. The process of comparing information will build a more comprehensive understanding of the beat for all officers, regardless of whether they work rotating assignments or steady shifts.

Agencies will need to develop a metric for assessing officers' work, distinguishing when they are:

-- doing a good job;

-- monkey-wrenching the process by creative fiction;

-- dogging it with a "this too shall pass" attitude;

-- attempting to meet the new demands, but lacking efficient results through a lack of skills or an intuitive understanding of the concepts.

Supervisors will know their own people well enough to make these distinctions, assuming the supervisors themselves are on board with the program. In the initial stages, that cannot be assumed: shift supervisors will need to be courted and developed by upper-level command staff just as line officers will, at least in some cases.

Active or passive resistance should be relatively easy to detect, as the quality of information developed will be inferior to that developed by enthusiastic and good-faith participants. The task of distinguishing between resistance and unskilled but good-faith attempts at compliance will be more difficult.

The first few attempts at training cannot be expected to produce uniformly successful results; each round of CIAPRA assessments should be considered as an iterative learning

process, further refining the process. CIAPRA can be built into recruit training or agency orientation, but retraining or reorienting serving officers may be difficult. It will be necessary to develop a new training regimen to assist those who seem to be trying to do a good job, the good soldiers who "just don't get it."

Merely setting up the scheme will not be sufficient; agencies must build in a structure that makes visible use of the officers' efforts: and intelligence bank. There are several components.

3. *Supervisory Metrics*

How supervisors elect to manage the new CIAPRA requirements will likely vary by personality. Some may mandate individual assessments and nothing more. Some may elect to make CIAPRA a group exercise; still others may coordinate their squad's efforts with those of the other squads who cover the same area on different shifts or days.

4. *Developing Applications*

The greater challenge will be to use the information thus developed productively at the beat and precinct level. CIAPRA as a training guide or a problem-solving template is task-focused and finite: there is an end to the exercise. As an intelligence-gathering tool or a futures perspective, it is open-ended, subject to constant revision. That goes against the grain of the operational expectations of incident-based policing.

The first round will establish a baseline, but if there is no follow-up, it will simply be a flash in the pan with no utility. The organizational challenge will be to maintain consistency, to insure that the process is repeated on a quarterly basis, and that all officers participate. It will also be an agency responsibility to put the information developed to some visible use.

5. *Archiving and Use*

Quarterly CIAPRA assessments at the beat level will not be uniform, nor will they lend themselves to traditional computer databases. Much of the beat-level interpretations will be intuitive, non-linear, and narrative. Making links between reports and across time will be a human endeavor, not a computerized one. There has been a rapid increase in software packages that purport to be able to map disparate data into coherent frameworks, and it would be prudent

to field-test such products. It is an expensive proposition for any but the largest departments on an individual basis, but national and regional crime analysts' associations might be able to do beta-testing and report strengths and specific advantages, in order to narrow the scope of consideration and target specific programs to particular departmental approaches.

Each collection of CIAPRA reports will vary according to the observations made by the officer and the individual's writing style. The raw material can of course be preserved as a text file or a bound volume, but it will be useful for agencies to invest in text analysis programs for distilling what will inevitably become huge libraries over time.

In the worst-case scenario, that in which no useful archiving and retrieval process is developed, there will still be a residual, if unstructured, archive in the human memory of the officers. The greater the amount of purposive interaction and information-sharing, the greater the probability that the information will be retrieved when the need arises.

Conclusion

CIAPRA is not the only model for developing a futures orientation throughout all levels of a police agency. It does have the advantage of tapping into elements of the police culture that are already in place. To be successful, it still needs to be properly managed, not only at the onset, but consistently into the future.

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Technology Update 2011: Progenitors of the Symbiotic Age

John Jackson[48]

Of all the dimensions in which change occurs, none are as glaringly visible as technology. For the past dozen or so decades, technology has been a primary driver of change in society. We can mark time according to these changes: the Age of Sail, the Railroad Era, the Industrial Age, the Automobile Age, the Atomic Age, the Space Age, the Information Age, and so on. Each innovation births multiple offspring, develops, matures and eventually fades away. Each subsequent innovation builds upon the preceding innovations that spawned it. Out of this recurrent cycle, accelerating change emerges. When we examine the body of technological change occurring in the world, we see a front of innovation that expands in depth and scope and occurs at an increasingly rapid pace.

The Futures Working Group has written often on the emerging face of technology. Technological change is a micro-level phenomena; it occurs in small increments across millions of projects, through multiple scales of components and subcomponents. A comprehensive attempt at technological change would be grand in scale; full of terms like *biotech*, *nanotech, genomics, proteomics, robotics, artificial intelligence, microfluidics* and *biometrics;* and, in the time it would take to research, compile, write and read such an affair, the details would be likely obsolete. Like eating an elephant, technological change is best taken one chunk at a time, with an eye to broad patterns and drilling-down as the need arises. In this vein, this article focuses on the developmental arcs of selected technologies with a view to how they would converge into useful applications in the future. Taken together, the selection can be distilled to a single dimension: our technology is changing the way we interact with it, and in the process, changing our very selves.

Throughout history, great transformations have come about through the emergence of clusters of related technologies. Today, a large and substantial cluster of technologies are converging with the promise of a profoundly transformative impact around 2020. In the 20th Century, technologies – radio, television, and the Internet – have changed the way people sense the world around them. Radio permitted us to experience far away events like the explosion of

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the Hindenburg. Added to radio, cinema lent further richness to the propaganda of World War II. By Vietnam, the horrors of war were transmitted to television sets, helping to shape American perceptions of the war. Today, communications technologies are everywhere, quite literally in the hands of ordinary people. Where broadcasters and journalists brokered our technology-mediated views of the world, the contemporary agent of communication is as likely if not more likely to be a neighbor, co-worker, or the salesperson at the local electronics store. *Youtube, Flickr, Blogger, Wikipedia, Twitter* and a host of other web-based technologies have put publishing at *your* fingertips. Inexpensive cameras, many on wireless phones, enable the bottom-up documentation of events. Google has zealously pursued its mission to make the entire world's information available over the web. As one looks across the landscape of technological change, a cluster of technological trends stand out. Miniaturization, the transition from wired to wireless, the emergence of the "cloud," voice recognition and semantic search are combining to create the next era of technology, what John Smart calls the Symbiotic Age.

Miniaturization

Miniaturization is a long-term trend that places more power in less space. In his 2006 *The Singularity Is Near*, Ray Kurzweil documented the rate of miniaturization; with each cycle, performance across a host of dimensions – price, cost, power, etc - doubles. More significantly, accelerating change means the length of each successive cycle is shorter than the preceding one: the doubling occurs with increasing frequency. At the beginning of the 20th Century, the price-performance of computational devices doubled every three years. By mid-century, the doubling period had fallen to 2 years. By 2000, price performance doubled every year (Kurzweil, 2005, p. 41). In the 20th Century, computing power moved from buildings to rooms to large machines to desktops to laptops and now to small portable devices. Progressive miniaturization is nearing the point where powerful multifunction computers are in small, pocket portable devices. Today, most wireless phones include cameras, calculators, calendars, organizers, Internet connectivity, games and messaging. The fastest growing segments are smartphones like iPhones or a host based on the Android, Blackberry and PalmOS systems; these cutting-edge phones permit the downloading of customized software applications developed by third-party programmers. Miniaturization enables microchips to be deployed on ever smaller platforms. In recent years, RFIDs have been deployed, allowing just about anything to be tagged and tracked. In the future,

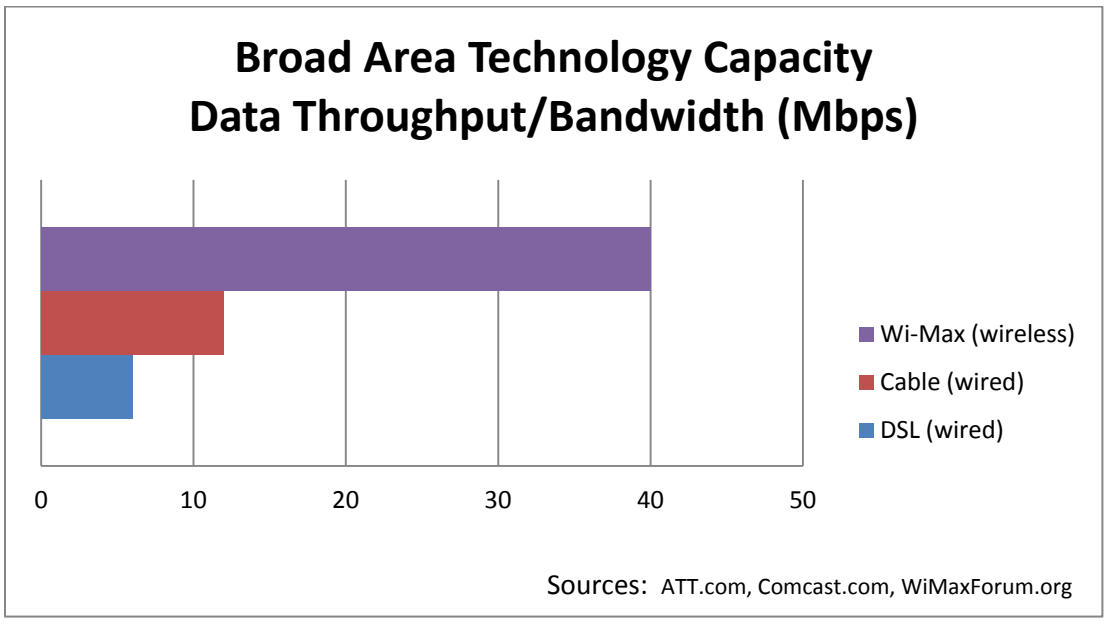
very small sensors will be robustly distributed through the environment, monitoring and reporting information for an array of purposes limited only by human ingenuity.

From Wired to Wireless

A second long-term trend lies in the movement from wired to wireless communications. Communication is a fundamental component of the Information Age. Modern communications involve the transmission of information through devices – transmitters and receivers – on an electromagnetic carrier wave, using either wires or wireless (radio) means. In most cases, wired solutions precede wireless applications. Approximately 200 years ago, the first wired telegraphs were developed in labs. The first commercial telegraphs emerged in the 1830s. Telephones emerged in the late 19th Century, joining the basic telegraph with a device to translate sound to electrical signal and back again. In the 1890s, Marconi introduced the capacity to transmit signals wirelessly. In the 1920s, wireless signals would be used to transmit video images (television). In the 20th Century, radio would be used for aircraft navigation. In the 1970s, radios would be used to send information to and from orbital satellites. In the 1980s, telephones would become wireless. By the 1990s, computer networks were proliferating broadly. Up-scale homes constructed in the 1990s often featured wired ports for computer networking. In the 2000s, computer networks went wireless.

The choice to use a wired or wireless solution depends on the application and the capabilities of the technology. Some applications are predisposed toward one solution over another. Highly localized applications such as circuitry on electrical components are unlikely to be replaced by wireless solutions. Likewise, wires are wholly unfit for communications with mobile assets (satellites, ships, aircraft, police cars, etc). Wireless technologies offer a significant advantage over wired technologies: a reduction in infrastructure costs. Wires impose physical and resource constraints on a communications system. Wires are made of things – aluminum, copper, or more recently, fiberglass – which must be manufactured at some material cost; wireless technologies require much less infrastructure: wireless nodes may be connected to wires (fiber-optics) or other wireless devices. Wires must also be installed in the operating environment in a manner that protects them from damage; wireless can communicate to any device within its transmission radius. State of the art wire generally possesses greater bandwidth, security and protection from interference than the state of the art wireless technology.

Fiber-optic wires still exceed the best throughput of today's wireless technologies. Wireless signals must also be encrypted to restrict access to information. Further, radio spectra can become saturated with transmissions, resulting in interference. Nevertheless, advances in manipulating carrier waves have enabled engineers to pack ever more data on radio carrier waves, creating more channels within a given limited spectrum and making wireless more competitive in bandwidth. Older infrastructure is largely wired based on these historical advantages of wires. For much of the infrastructure, transitioning to wireless will be less expensive than replacing the existing copper wire with fiber-optic cable to meet demands for increased bandwidth. By far the highest throughput technology, fiber-optics presently offer capacities of 40 Gbps, with 100 Gbps solutions in current development and 1 Tbps (terabit-per-second) solutions forecast for 2015. The following chart demonstrates the bandwidth capacities of various current technologies:



Some technologies are local (site specific) while others are designed for broad scale networks. Currently, broadband service is delivered in three flavors: 1) DSL by the telephone companies, 2) by cable modem through cable service providers, and 3) wireless over 3G or 4G networks, principally through wireless telephone carriers. Wireless carriers are beginning the transition to WiMax technology. Clearly, WiMax offers superior capacity over cable and DSL broadband. It is possible that wired providers will upgrade existing wires to fiber optics, but the

costs of such an upgrade will likely be higher than the WiMax alternative, suggesting wireless will prevail.

The Cloud

Cloud computing is achieving breakthrough today. The traditional computer places processing, memory, software and data storage in the same box. Networks have also been in use, with servers, applications and storage arrays available on local area networks (LANs) or wide-area-networks (WANs). The conventional computing networks are well mapped entities with connections between components clear. But today, the traditional model is giving way to a dynamic, hyper-networked reality in which explicit pathways are impossible to map. In robustly networked structures, multiple paths emerge between points on the network and the very concept of "path" becomes irrelevant when the number of paths becomes large. The term "cloud" has emerged to describe the hyper-connected Internet.

It is worthwhile to consider the scale of the Internet, the physical collection of servers (hosts) and phone lines that form the hardware infrastructure on which software protocols like the World Wide Web and the Mobile Web reside. Using data from the Internet Systems Consortium (Vidal, 2008), the scale is clear. In 1981, 213 hosts made up the Internet. Since then, the Internet experienced exponential growth. The Internet reached 1000 hosts in 1984; 10,000 in 1987; 100,000 in 1989; 1 million in 1992; 10 million in 1995; and 100 million in 2000. By July 2008, there were nearly 571 million hosts.[49] As of January 2011, there are more than 818 million unique hosts. The growth rates in the data show startling growth. The rate of recent growth seems to have slowed somewhat – based on earlier growth rates, we might have expected 1 billion hosts by now – suggesting the system may have become saturated. Regardless, the web of hosts is sufficiently large to constitute a very dense cloud. The number of potential pathways through nearly 818 million hosts is astronomical.

Now that the cloud is better understood, what does it mean? Increasingly, computing activity is moving into the cloud. In the traditional model, all computation (including data storage) are located on the local computer, requiring sufficient processing power, memory, software and storage to perform the necessary task. In the cloud model, computation can be located on highly optimized servers and storage arrays, performing the heavy lifting at the server

[49] Actual reported number from ISC: 570,937,778.

level and reducing computational and material requirements of the user device. Further, the cloud model allows access to work across a variety of platforms: desktop, laptop, mobile phone, etc. One can outsource intensive processing to cloud-based providers. Google and Amazon (Amazon Web Services) offer Platform-as-a-Service (PaaS) (Hinchcliffe, 2008). One can replace software with web-based applications; Software-as-a-Service (SaaS) is a rapidly growing industry. Many providers of web-based office applications have emerged; Google Documents (docs.google.com) is the largest. Microsoft began offering web-based Office versions in 2009 (Fried, 2008). A host of companies provide encrypted data services. The move to the cloud provides opportunities for the future.

The Intuitive Interface: Voice Recognition and Semantic Search

Another trend makes computers more fluent in human language, particularly English. We see this trend in two ways: direct voice input and natural language or semantic content. Built upon maturing voice-recognition technologies, direct voice input permits computerized devices to receive spoken word inputs from their users. Human interface is a critical component of technology. Keyboards and mice have been the principle input devices humans have used to interact with their computers. These devices impose substantial space requirements on computers, a feature acceptable with desktop computers but increasingly burdensome with smaller, mobile devices. In recent years, two wildly successful products have emerged: the *Wii* and the *iPhone*. Both products rest upon innovations in input interaction. The *Wii* game system utilizes motion-sensing remotes while the *iPhone* features a touch-screen with a virtual keyboard activated when needed. During the 2010 holiday season, Microsoft released the *Kinect* controller for its XBox 360. The *Kinect* uses a camera to map objects in its field of view, identify people and track their movements to enable users to provide input through motion. Direct voice input and optic motion mapping enables device designers to eschew space consuming keyboards, reinforcing miniaturization.

The second component of the trend focuses on the content of communication between humans and computerized devices in order to enable human beings to extract information from computers with less formal training. One form of this is the Semantic Web, the so-called 3.0 version of the World Wide Web. The Semantic Web seeks to standardize information storage and create much easier recovery of data on the web, including data in graphical or pictographic

form. It also seeks to relate data to real world objects, enabling users to move from one database to any number of other databases seamlessly because the databases are about the same thing (World Wide Web Consortium). A new computer language, OWL (Web Ontology Language), has emerged to provide the linkages to real world people and things and enable machines to process information based on the meaning of the information. Yet, OWL requires specialized programming proficiency. To enable human beings to work with data with less formal training, several projects are building easier to use, graphical tools to produce the necessary code. One example is **AceWiki**, which uses the University of Zurich's Attempo Controlled English (ACE) tool (University of Zurich).

In addition to the formal aspects of Semantic Web development, Linguistic User Interface (LUI) is increasingly being used in computer applications. LUI goes by many other names: Conversational Interface (CI), Spoken Dialogue Systems (SDS), Universal Linguistic Interface (ULI), Voice User Interface (VUI) and Natural User Interface (NUI), to name a few (Smart, 2008). LUI uses natural language and is the basis of the various flavors of control languages such as ACE that are part of the development of the Semantic Web. Further, Natural Language Search (NLS) is a LUI presently being developed by the major search engines. In June 2008, Microsoft bought natural language search innovator *Powerset* for more than $100 million (Marshall, 2008). Yahoo boasts of NLS in its search engine (Ed, 2008). Google is developing its own forms Natural Language Processing (NLP). According to John Smart, the average length of a search term on search engines is increasing exponentially. In 1998, Alta Vista had an average term length of 1.3 words. Google's average term length was 2.5 words in 2005 and 4 in 2008. Smart forecasts an increase to 5.2 words by 2012 and 10.4 words by 2019 (Smart, 2008). Such search term lengths are substantial and approximate spoken sentences. Consequently, human beings will be able to conduct searches using natural language queries.

Voice-recognition is reaching maturity, having been deployed broadly for years. One can hardly call any substantial company without having to speak to a computer. The popular desktop software Dragon *Naturally Speaking* is presently in version 10. Microsoft included voice recognition in its *Vista* operating system. In November, 2008, Google unveiled an iPhone application that integrates voice recognition with its search function; users speak using natural language, which is translated into search terms (Markoff, 2008). Yahoo! and Microsoft have less

powerful applications and Adobe has integrated a voice-recognition technology, Autonomy, in its *Creative Suite* product (Markoff, 2008).

Implications

Individually, the trends described in this article are interesting; taken together, they begin to paint an explicit picture of the future. Miniaturization means our devices will continue to pack increasing power in smaller forms. We will have powerful computers in ultra-portable mobile devices. Inexpensive sensors will be densely deployed through our environments, providing us with astonishing amounts of never-before-seen data. The emergence of ubiquitous wireless environments enables these mobile devices and sensors to remain continuously connected. The cloud creates a permanent web presence; my data is safely stored and instantaneously available wherever I have access to the web. And, since I will live in a pervasive, wireless environment, I will always have access. The cloud also permits work to be done anywhere using a combination of cloud-sourced processing, software and data storage interfaced through my mobile device. The Semantic Web will ensure I have unprecedented access to information, linking the electronic with the physical world and integrating data in all its forms. Further, the evolved forms of natural language interface coupled with voice recognition will enable me to speak to the web, interacting with the technology infrastructure in a much more human fashion. Together, these technologies create a permanence and persistence in the human relationship with technology. We begin to form a symbiotic system where we continuously live with our technology, integrating it more profoundly as part of our normal lives. We accrue a permanent electronic presence on the web, allowing us to exist simultaneously in the physical and virtual.

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Adversary Weaponry to 2025

Robert J. Bunker[50]

This chapter will provide an overview of adversary weaponry that will be utilized by criminals and opposing forces (OPFORs) which U.S. law enforcement personnel may encounter domestically. The projected time frame will cover the futures period from 2009 through 2025. Criminal weaponry use will be analyzed using a criminal threat continuum that starts with minimal threats and increases in severity. OPFOR weaponry use will be analyzed using a similar continuum. It should be noted that OPFOR threats, like criminal threats, are illicit in nature and derived from individuals and groups that can be designated as engaging in criminal behavior or are criminal organizations. The fundamental difference between these threat continuums (See Fig. 1) are that they are based on the severity of threat derived from intent. Criminals will not typically seek to engage U.S. law enforcement directly or take actions that can be viewed as engaging in private warfare. OPFOR groups intentionally engage in private warfare and actively seek to engage U.S. law enforcement personnel in direct firefights or indirectly by means of ambushes and the use of improvised explosive devices (IEDs) designed to maim and kill them. Prior to this treatment of adversary weaponry use, however, a short overview of weaponry targeting and effects will be provided along with an overview of the weaponry pool available to law enforcement adversaries. This overview of the weaponry pool will incorporate projections concerning the impact advances in the sciences will have on weaponry evolution and its operational use.

Weaponry Targeting and Effects

Depending on the type of weaponry, different target sets can be influenced. This provides different targeting opportunities to law enforcement adversaries. Point targets are represented by individuals, vehicles, and small sections of buildings (doors and windows) and are generally engaged by small arms and infantry support weapons. In civil settings, this may also include fists and feet, weapons of opportunity, weaker lasers, and less lethal weapons. Area targets encompass larger zones which consist of groupings of point targets. These are typically targeted by blast and fragmentation weaponry such as IEDs and military explosive devices (grenades,

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mortars, artillery). Chemical agents, both hazardous industrial materials and military grade, and mid-size radiological weapons can also be utilized to target larger area targets.

Systemic targeting is derived from weaponry that influences the greater system such as a larger city or computer network. Biological agents, computer viruses, electromagnetic pulse (EMP) weaponry, radiological, and nuclear devices fall within this category. Targeting schemes based on anti-personnel, anti-materiel, anti-infrastructure, anti-mobility, and area denial criteria also exist. These distinctions are basically irrelevant to criminals and their weaponry utilization but can be extremely important to OPFORs when they plan their operations against U.S. society and law enforcement response assets.

Weaponry effects are either destructive or disruptive in nature. Industrial age arms such as small arms, IEDs and military explosive devices, rocket propelled grenades (RPGs), and man portable air defense systems (MANPADS), and most WMD are destructive in nature. They complement an approach to warfare and policing that is "thing" targeting based and focused on destruction, killing, and physical seizure of ground and individuals. Exotic and more advanced forms of post-modern weaponry are disruptive in nature because this is the preferred fighting style of network organizational forms. These target the bonds and relationships that hold things, such as societies and computer networks, together. Many times these are systemic in their targeting abilities such as EMP and computer viruses. Of note is that while OPFOR weaponry use may be destructive at the tactical level, such as the use of a suicide bomber in a shopping mall, it ultimately is intended as a disruptive attack. Terrorism is thus a disruptive form of conflict and U.S. law enforcement response will be up against OPFORs with this as their mission end state.

Weaponry Pool

The weaponry pool available to law enforcement adversaries out to 2025 will not be substantially different than that in existence today. While some marginal weaponry advances may be derived from the new sciences, no qualitative firebreaks are envisioned to be crossed within the next decade and a half to two decades. Developments in biotechnology, at best, may influence the efficiency and effect of some biological agents. These are indiscriminate weapons, however, with systemic targeting effects that are just as likely to harm those utilizing them.

While speculation exists that specific ethnic groupings could be targeted due to biotechnical advances, no current scientific proof exists to support such concerns.

Nanotechnology advances, which university researchers have claimed already allow for the ability to neutralize some chemical-biological agents, may lead to the emergence of tandem weapons based on conventional (explosive) warheads and follow-on agent neutralizers that could be used against hardened foreign WMD facilities. Such tandem weapons, even if built, would fulfill a nation-state counterforce, rather than, OPFOR offensive targeting role. No other nanotechnology advances for weaponry purposes have been noted at this time, however, continued concerns exist over the eventual creation of self-replicating nanotechnologies and the harm that they could do to the environment if they ever escaped from the lab.

While strides are being made in augmented and virtual realities, these technologies do not as of yet influence weaponry functioning. Still, in the case of virtual reality, the growing importance of online simulations and massive multiplayer games, such as avatar based Second Life, have resulted in the development of new conflict environments which have seen direct action and terrorist acts take place within them. As a result, these provide new venues for hacker and information warfare tools to be utilized.

The new sciences that support continued advanced in robotics may have the most influence on weaponry utilization in the coming years. Robotic advances are already allowing for remotely piloted vehicles (RPVs), both unarmed and armed, to be utilized on a greatly increased scale by nation-states and even by non-state groups such as Hezbollah. Remote weapons platforms, such as tele-operated sniper rifles hooked to computer systems via wireless devices, allow for attacks to be made in which the perpetrators operate the weapons from anywhere in the world and, as a result, remain immune from attack. Other potential advances may result in the fielding of autonomous armed robots that will crawl, walk, and drive through conflict zones.

Even with some of these new advances and capabilities the weaponry pool that will exist through 2025 will remain quite familiar to contemporary readers. This weaponry is as follows:

> Fists and Feet: The hands and feet of humans represent the default weapons of unarmed individuals. The effectiveness of these weapons are dependent on an individual's physical health, size, and training but are far inferior to small arms and other more advanced weaponry.

Clubs and Thrown Objects: Tree limbs, boards, rocks, and bricks can all function as improvised weapons. They provide the ability to engage in stand-off attacks and augment unarmed combat capabilities. These objects also serve as a force multiplier for spontaneous attacks on individuals and in riot situations.

Less Lethal: Pepper spray and Tasers are the most common forms of this weaponry class. Blunt force trauma projectiles, such as baton and foam rounds, represent other applications. Improvised substances, such as non-stick cooking spray, can also be used in stairways and train landings in a less lethal role to create hazardous situations. The danger of this class of weapons is that they may partially debilitate police officers leaving them vulnerable to further assaults and injury.

Knives: Edged and sharp pointed objects further improve the lethality of individuals. Knives, and improvised devices such as shanks, are quite commonly used because of their small size and ability to be hidden on the human body. While machetes and swords represent more dangerous weapons, their size makes them far harder to hide and thus far less likely to be encountered.

Small Arms: Firearms run the gamut from semi-automatic to automatic-weapons with varying caliber and intended use ranging from home protection and hunting though dedicated military use. Typically, these can be characterized as lower tier (non-military) and upper tier (military) small arms.

IEDs and Military Explosive Devices: Improvised explosive devices are inferior to military explosives devices (e.g. mines, grenades) in reliability, safety of transport, and killing/wounding potentials, however, they are more than adequate in their functioning to kill individuals and groups of people. Mass killing and infrastructure targeting systems are derived from the use of vehicular borne improvised explosive devices (VBIEDs) which increases explosive payload yield and allows for bomb mobility and direct insertion into or near the designated target. Along with traditional IEDs, the use of suicide bombers has grown dramatically over the last 25 years. Future suicide bomber

employment patterns include projections of body cavity bomb use against high value targets and chemical, biological, radiological, and nuclear (CBRN) variants. Military explosives represent another concern and may be utilized in gray-systems, which are those utilizing some commercial components, and in dedicated military munitions such as anti-personnel mines and fragmentation grenades.

RPGs: Rocket propelled grenades (RPGs) are a sub-class of military explosive devices, however, their effectiveness and proliferation of use warrants their own weaponry category. These stand-off weapons are simple to use, provide devastating effect, and can be used against personnel, material, and infrastructure targets based upon warhead type.

MANPADS: Man portable air defense systems are used to target helicopters and fixed wing aircraft. They are a military weapon that is composed of a rocket body and small high explosive warhead guided by heat, infrared, or other sensing capability. These devices have since fallen into the hands of numerous non-state groups and actors.

Lasers: Current laser devices and weapons, a class of directed energy weapons (DEW), rely upon counter-optical (vision disruption) capabilities because of their inherent low energy levels. Of all the weaponry classes, handheld lasers are one of the most likely to see further gains in their effectiveness for illicit attacks. This will mean greater counter-optical effectiveness and stand-off ranges and the potential by 2025 of also inflicting some damage through thermal burns on human skin and against materiel targets. At that point, a true class of "laserarms" would have emerged.

RFW: Radio frequency weapons and high powered microwaves (HPM) represent somewhat exotic forms of directed energy or less lethal weapons. They are also expected to benefit from technology advances over the coming years. These weapons create electromagnetic pulses (spikes) which can burn out computer and electronic equipment. HPM devices can raise human brain temperatures creating seizures and millimeter-wave devices, such as the Active Denial System (ADS), can be used for crowd control purposes by creating a burning sensation just under a targeted individual's skin.

Hacker and IW Tools: Computer and network hacking attacks represent another weaponry category. These tools and devices of information warfare (IW) can be used to steal data, take control of computers and networks, and, if tied to SCADA programs, can in extreme circumstances result in the takeover of components of the physical infrastructure such as metro trains. Virtual reality and the use of personal avatars have resulted in new conflict arenas within which this weaponry has found new applications.

CBRN: Chemical, biological, radiological, and nuclear weaponry are viewed as mass killing technologies. In the case of radiological devices, however, they serve more in a mass disruption and area denial mode since death is not normally measured in the near term but in the course of years or decades. Some biotech and nanotech influences may be seen during the upcoming time frame but they will likely be marginal at best.

Criminal Threat Continuum

Robberies, burglaries, drug deals, and other illicit economic activities are a major focus of criminals. Criminals engaging in such activities are viewed as being relatively unsophisticated and unorganized and will typically try to avoid direct confrontation with police officers. If cornered, however, such criminals may attempt to punch it out or even shoot it out with the police. Many times those engaging in criminal behavior may be intoxicated or high on illegal substances. Mental illness and extreme emotional duress can also be attributed to some criminal activities such as robbery, rape, and murder. Additionally, the illegal actions of protestors and partygoers during riot situations fall into this continuum. While anarchist protestors have proven to be at times a very organized group, their level of violence threshold is still relatively low and for this reason they do not yet warrant full OPFOR threat status. Trends suggest, however, that some anarchists are now operating in the gray area between the criminal and OPFOR continuums making police response problematic.

Changes to the weaponry pool out to 2025 will have minimal influence on criminals. While small performance gains may be expected in less sophisticated weapons this will not substantially influence their functioning and operations. Criminal weaponry use is projected as follows:

Individual: Expected weaponry use is fists and feet as the first resort for unarmed individuals and as the last resort for disarmed individuals. Weapons of opportunity such as chairs, rocks, and the like must also be considered. Armed individuals will typically carry knives and lower tier (non-military) small arms. Possible weaponry includes less lethals, clubs, and weak laser devices such as red and green pointers.

2 and 3s: The probability of encountering knives and non-military small arms goes up with this grouping. If small arms are not being carried, they may be in the trunk of car, under a seat, in a building, or in some other nearby place. Body armor use is highly improbable but has been encountered in rare instances. Fists and feet, clubs, and weapons of opportunity are still a concern.

Small Groups: This group, typically street and drug gang based, goes up dramatically in weaponry use. Less sophisticated street gangs used to rely upon knives, weapons of opportunity, and cheap and unreliable hand guns. This has changed with their current reliance upon commercial small arms such as semi-automatic pistols, rifles, and shotguns. Drug-selling gangs and drug gangs are an even greater concern because of their need to protect their markets and sizeable takes in illicit revenue. These groups will not only utilize lower tier small arms but also acquire fully automatic military assault rifles and wear body armor. The use of IEDs and sawed-off shotguns as booby traps and pit bulls to protect drug houses is not uncommon. Still, these groups operate under a criminal mentality, lack training and discipline, and will neither seek to directly engage in force-on-force confrontations nor are capable of waging guerrilla campaigns with the police.

Large Groups: This grouping will be encountered in riot control and urban disturbance situations. At the low end, it can be considered a mob of protesters, crime scene spectators, or partygoers who have gotten out of hand. They have the potential to engage in or are engaging in rampaging and looting. Sports riot such as those taking place at soccer stadiums would be found at the medium level. At the high end, full scale community rioting, including mass looting, arson, and selective murder, maybe taking place as was witnessed during the Watts Riot in 1965 and the Los Angeles Riot in 1992.

This large grouping is partially composed of individuals, 2 and 3s, and potentially small groups, with lots of small arms, that add levels of added complexity and threats.

OPFOR Threat Continuum

OPFOR threats are identified by their intent to function as para-military and military-like groups and directly utilize privatized violence against the people, institutions, and structures of American society. In essence, they are waging private warfare upon the state. These threats may have an illicit economic orientation or an illicit political orientation and will utilize terrorism, insurgency, and guerrilla warfare tactics to further their ends. As a result, they are derived from more sophisticated and trained individuals, groups, and organizations. While many law enforcement groups may still currently label these threats as just additional forms of criminal activity, they must instead be given a special opposing force designation and their own threat continuum because of the danger that they ultimately represent at their higher levels of organization to the United States. These non-state soldier threats will actively engage in operations against police officers in order to kill or capture (to ransom or torture) them. This may be done by directly engaging police officers in stand up fire fights, using superior stand-off weaponry, or by employing military-like ambush and evasion tactics.

Changes to the weaponry pool out to 2025 will have a slightly more pronounced influence on OPFOR threats over that of criminal threats. Because of the greater sophistication of this threat class, new capabilities and synergies may be exploited, including the use of tele-operated weapons and the exploitation of virtual worlds, for their operations. OPFOR weaponry use is projected as follows:

Individual: An active shooter, lone sniper, bomb planter, or suicide bomber represent the most basic OPFOR threats. Serial bomber examples would include Ted Kaczynski and Eric Rudolf. Weaponry used is small arms, typically but not always military, and IEDs. Body armor is increasingly being worn by shooters and suicide bombers. In the case of the suicide bomber, a larger team exists to support the bombing attack but many times police officers will only encounter the strike element of the group. Individual hackers and programmers engaging in cyberspace operations or utilizing a tele-operated weapon such as a sniper rifle now represent another type of basic OPFOR threat.

2 and 3s: This threat level is composed of 2 to 3 members operating as a small tactical team. This can include a two-man active shooter or assault element supported by a sniper, a sniper and a spotter, or a MANPADs or RPG operator and a security force. A counter-optical laser weapon utilized against commercial aircraft could also be utilized in this way. A two-man VBIED team with a driver and security member would also fall into this category. The best past domestic examples of this OPFOR threat can be found with the North Hollywood shootout in 1997, Columbine Massacre in 1999, and the Beltway Sniper attacks in 2002. While no instances of a cyberspace capability have been recorded for 2 and 3 attacks, the interplay between dual dimensional— physical world and virtual world— operations can no longer be discounted.

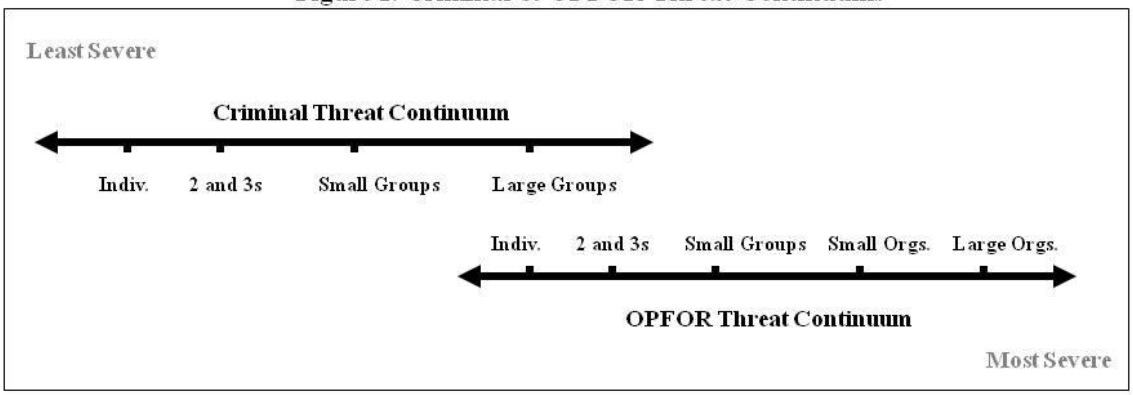
Small Groups: Operational cells of large terrorist organizations, such as Al Qaeda and Hezbollah, and drug cartel mercenaries (Zetas and Kaibiles) are composed of multiple-tactical and support element teams. These include reconnaissance, propaganda, security, quartermaster and transport, and financial functions. Combined arms groups would include suicide bombers, assault infantrymen, snipers, and RPG teams but are way beyond the envisioned Al Qaeda threat presently facing this nation. From South of the border the recent cartel hit in June 2008 in Phoenix Arizona where the perpetrators were dressed as SWAT officers, wore body armor, and carried AR-15s is a prime example of this threat. Recent firefights between cartel operatives and US law enforcement over drug loads dropped at the Mexican-American border are another example of this threat. A cross border laser strike against a US Border Patrol helicopter for area denial purposes, presumably from a Zeta force protecting a drug transshipment house, also took place a few years back.

Small Organizations: Weaker and less developed terrorist groups such as some of the white supremacist groups, Earth Liberation Front (ELF), and Animal Liberation Front (ALF) are the next level of threat concerns. This also includes affinity radical Jihadist terrorist organizations which are emerging in parts of Western Europe and in North America. Weaponry use will center primarily on small arms and IEDs. The remote possibility exists that Jihadist terrorists may also get Al Qaeda central support which

could include military explosives, RPGs, or MANPADs. The Madrid bombing in 2004 and the London bombing in 2005 by Al Qaeda affinity members are examples of this level of threat.

Large Organizations: Bigger terrorist and guerilla entities such as Al Qaeda, Hamas, FARC, and Hezbollah, criminal para-states found in Central and South America and Africa, and drug cartels such as the Gulf cartel, Sinaloa cartel, and Tijuana cartel represent the largest form of OPFOR organizations. These entities may rival the power of some states and utilize almost all forms of weaponry that exist except currently for some CBRN components (nuclear devices, highly contagious pathogens, et al.) and state of the art forms of exotic weaponry such as dedicated military blinding laser systems and military electromagnetic generating munitions. The threats that these groups pose totally outclass police response capabilities and are a homeland security (federal law enforcement) and homeland defense (military services) concern that must be addressed at the national level.

Figure 1. Criminal & OPFOR Threat Continuums



It should be noted that police response may find itself challenged in complex emergencies in which attributes drawn from both the criminal threat continuum and the OPFOR threat continuum are involved. As an example, during the Democratic National Convention (DNC) in 2001, primary concern centered on mass protests and purposeful disruption, spearheaded by Anarchist elements, and focused on large group threat dynamics and their containment by means of crowd and riot control techniques. At the same time, planning and deployments were made to respond to terrorist CBRN potentials by focusing on small organization OPFOR threat dynamics. While no terrorist threat existed, this scenario provides a glimpse into the intersection of the threat continuums that police may be facing in situations where both criminal activity and OPFOR activity is taking place simultaneously. Each requires a very different response orientation and mindset from policing forces.

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VooDoo Science and Nonlethal Weapons[51]

Charles "Sid" Heal[52], Viktor Bovbjerg[53] and John Kenny[54]

The proliferation and employment of nonlethal weapons in military and domestic law enforcement applications has skyrocketed in recent years. Weapons as simple as cayenne pepper sprays to as exotic as electro-muscular disruption devices have rapidly become mainstays in military and law enforcement arsenals throughout the world. As these devices have proven their worth, even more exotic devices are emerging. One, the U.S. military's Active Denial System, which has been adapted to law enforcement applications as the Assault Intervention Device, uses a high-frequency radio wave that stimulate nerve endings to induce pain without causing tissue damage at ranges that exceed those of conventional hand-held lethal weapons. Other devices use highly focused acoustic waves that are debilitating but without long-term harm, or chemicals that simply smell so bad that no one wants to be around them. Indeed, more progress has been made in employing force without resorting to lethal options in the last two decades than in all previous history.

One might expect critics of injuries and deaths resulting from military and police confrontations to be among the first to laud the efforts to develop and employ safe and effective nonlethal options. Such has not been the case, however. Nearly from their inception, the use of modern nonlethal weapons has been fraught with controversy. The more pretentious allegations began arising in the early 1990s when the American Civil Liberties Union claimed that scores of people were dying as a result of the use of pepper spray and that pepper spray was a form of punishment and torture[55] comparable to "cattle prods" and used to impose a "painful chemical street justice." A series of lawsuits attempting to ban or limit the use of pepper spray followed. News reports repeated sensational claims that it appeared that "one person dies for every 600

[51] This article was originally published in the proceedings of the 4th European Symposium on Non-Lethal Weapons, May 21-23, 2007, Ettlingen, Germany. An earlier version was also published in *Tactical Response*, Jan-Feb 2009, pp. 24-28. The current version is substantially the same with its predecessors but with updated data.

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[55] Press Release, "ACLU Urges CA Appeals Court to Declare Use of Pepper Spray Dangerous and Cruel" (8/12/1999) available from the ACLU website http://www.aclu.org/police/abuse/14551prs19990812.html, accessed May 1, 2011.

times pepper spray is used."[56] Studies that repudiated such claims from the National Institute of Justice and the International Association of Chiefs of Police were slow in coming but provided strong evidence that the claims were greatly exaggerated, if true at all. Follow-on studies further supported the use of pepper spray as an effective and relatively safe method of controlling violent persons, especially when other alternatives were inappropriate or unavailable. As the evidence continued to accumulate, the controversy, and related news value, diminished.

While much of the controversy on the use of pepper spray has died down in the United States it has been supplanted with the advent and popularity of the TASER® electronic control device. The TASER (an acronym for Thomas A. Swift Electronic Rifle) uses a small amount of electrical current to involuntarily constrict the skeletal muscles. While it has been around since the 1970s, newer versions became available to law enforcement in the late 1990s. The newer TASERs have been employed and carefully evaluated by law enforcement agencies and strongly encouraging results have been reported, often rating effectiveness well into the 90th percentile; nearly unheard of for *any* force option—including lethal force. Within months of the first TASER uses, controversy erupted when Amnesty International reported that people were dying after being "tasered." Since then the controversy has only heightened with Amnesty International now reporting that as many as 351 people have died as a result of "taser-related"[57] death—incidents in which TASERs may have been one of many uses of force, and not necessarily causally related to the death.[58] Paralleling the experience with pepper spray, Amnesty International's report, "United States of America: Excessive and lethal force?" Amnesty International's concerns about deaths and ill-treatment involving police use of tasers" quickly became the focus of considerable media attention.

Sadly, the law enforcement community continues to follow the same failed pathway through the quagmire of public opinion as we did with the pepper spray controversy. Bona fide scientific reports have been slow in coming and some have been challenged because TASER International, the company that developed and sells TASERs, paid for their own research.

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[56] Pepper Spray Update, ACLU of Southern California June 1995, available from the ACLU website at: http://www.aclu-sc.org/attach/p/Pepper_Spray_New_Questions.pdf, accessed May 1, 2011.

[57] "Taser-related" has been ill-defined, if any formal definition is used at all. Accordingly, the term is placed in quotation marks to alert the reader of the nonstandard term.

[58] This figure represents the "worst case" figures available at the time of this writing taken from the website of Amnesty International, USA. "Taser Abuse in the United States," http://www.amnestyusa.org/us-human-rights/taser-abuse/page.do?id=1021202, accessed May 1, 2011.

So what is the true story? Why are caring and well-meaning organizations, like the American Civil Liberties Union and Amnesty International, convinced that TASERs and other nonlethal options are so dangerous? Why do news media outlets, who pride themselves on their objectivity, report findings that are inaccurate or biased and are later refuted? More importantly, how does a community make informed decisions about the weapons and force used on their behalf by their representatives when they receive conflicting information? If science is to have any value it must be believable, but when the same events are interpreted in opposite ways, what is to be believed? Like the proverbial lost hiker with two compasses, each pointing a different direction, our communities are confused when civil libertarians are saying one thing and law enforcement agencies are saying another. Nowhere is the problem more acute than in the development and employment of nonlethal options.

Herein lays the crux of this article. Simply put, much of the "science" cited by detractors of nonlethal options is either fundamentally flawed, misunderstood, mischaracterizes the evidence or ignores influences beyond the control of the user. It is an exceedingly rare occurrence when any of this so-called "science" is subject to peer review by objective researchers, cited in reports by other researchers or scientists, used in supporting references, or corroborated with other research by bona fide scientific or academic institutions. While it may take on any number of forms, it can be described as "voodoo science."[59] Voodoo science may be best understood as a "catch all" term for any junk science that misleads or mischaracterizes the evidence. It matters not whether it was intentional or not, only that on the surface it is predisposed to make people believe something without scientific validity. While voodoo science can take on any number of forms, four types are used so often in describing nonlethal weapons that they merit mention.

One of the most common types of voodoo science in the media results from "pseudo-symmetry." This occurs when even well-meaning news media outlets attempt to obtain a balanced perspective by seeking out and quoting opposing views. While this seems both logical and reasonable it becomes misleading when an opposing view is actually held by a very small minority. Because the two opposing views are presented with equal emphasis it appears to a lay person that subject matter experts are equally divided on the issue when in actuality the vast

[59] The term, as well as, the inspiration for this article, is taken from the excellent book, *Voodoo Science: The Road from Foolishness to Fraud*, by Robert Park, Oxford University Press, New York, NY, 2000.

majority may hold a differing opinion. As can be imagined, pseudo-symmetry presents unparalleled opportunities for small minorities with radical viewpoints. In the controversy surrounding nonlethal options, one example of pseudo-symmetry occurred in 2002 after the Dubrovka Theater Siege in Moscow, Russia. The use of soporific chemicals as a nonlethal option had never before been attempted, and even though hundreds of hostages were saved, 129 lost their lives as a result of the inadequate aftercare. In the media frenzy that followed, a previously unknown group called the "Sunshine Project" rocketed to national prominence when they were called upon to provide comment by the news media. Prior to this event the group had only existed for about 36 months and at its height had less than 1,300 people on their largest Internet distribution list. It is now defunct.

Ignoring perspective is another characteristic of voodoo science. This occurs when an emotion arousing factor is sensationalized without a contextual comparison. One of the best examples of ignoring perspective is the current controversy in the United States concerning the use of TASERs. Civil libertarian groups, especially Amnesty International, contend that as many as 351 victims have died as a result of "taser-related deaths." Although virtually all of the independent post-mortem investigations do not specify TASER exposure as a cause of death, or even a contributing cause of death, for the sake of argument let's assume *all* are causally related to TASER exposure. The more astute observer's curiosity is quickly piqued when the first obvious question is how many people have been subjected to TASER shocks but have *not* died? That figure is estimated at 1.27 million![60] The risk of dying after a TASER exposure is then 351 deaths divided by the 1.27 million estimated field uses of TASERs to subdue subjects. Even if every post-TASER death was a direct result of exposure, the likelihood of dying following being shocked with a TASER would be approximately three-hundredths of one percent. Certainly any unnecessary death is a tragedy but by ignoring the total number of uses it appears as if the event is far more common than it is. In contrast, compare the likelihood of surviving a lethal force encounter with American law enforcement. As a rule of thumb, American law enforcement officers hit only about half of the people they shoot at, and of those that are hit, only about half actually die. This means that a suspect's likelihood of dying while police are trying to save their life is at most 1 in 3,500, while the likelihood of dying when police use lethal force is 1 in 4.

[60] The latest figures available from TASER, International, (April 2011) estimate that the total number of exposures is approximately 1.27 million field applications with another 1.22 million applications during training, for a total of 2.49 million TASER exposures.

Perhaps even more revealing is that there are actually two groups from which to draw comparisons. The first comprises those of suspects being confronted by police. The second is comprised of police officers themselves! Police officers routinely subject themselves to experiencing the application of TASERs during training. Indeed, estimates place the number at about 1.22 million applications on police officers who have voluntarily been "tased." What is nearly never reported, however, is that *all* the deaths recorded have been suspects and *none* have been police officers![61] Clearly then, there are factors and influences that exist in the group comprised of suspects that makes them more susceptible for adverse consequences.

Because of our faith in science, any evidence that appears to be scientific is automatically awarded more credibility than other types. Accordingly, a third manifestation of voodoo science in swaying opinion is by gathering anecdotal accounts and presenting them as evidence. For example, listing newspaper articles, citing civil court cases or quoting litigants and plaintiff's attorneys have proven very successful in capturing the attention of an audience. Nevertheless, given that newspaper accounts are nearly always second-hand anecdotes from a reporter quoting a witness and relying on statements provided by people who have an obvious interest in an outcome would be viewed as suspect individually, but when taken together they appear to corroborate each other. This type of voodoo science may best be described as "pseudo science," since its practitioners may believe it to be science but to objective researchers it is flawed on its face. Of the various forms of voodoo science, this type is second only to pseudo-symmetry in prevalence, especially when supporting opinions for reports and press releases.

The fourth of the most common types of voodoo science is fallacy. A fallacy occurs when an argument or statement is supported by an invalid inference. In the case of nonlethal weapons it is most commonly manifested by either ignoring the influence of other factors or making assumptions that exceed the evidence. No better example exists than in the claims that 351 "taser-related" deaths have occurred. Without ignoring the possibility that TASERs *might* have a role in the deaths, it is disingenuous not to consider that many of the people who have died after being shocked with a TASER had serious, often preexisting life-threatening medical issues, many times because they "self-medicated" themselves with cocaine, PCP, methamphetamine or other drugs. Furthermore, many were engaged in life-threatening

[61] Using the same figure of 351 deaths following TASER exposures, divided by the total number of exposures from both suspects in the field and police officers in training, the chances of dying following a TASER shock drop to 1 in 7,000!

behaviors that required some type of intervention to protect human life—including their own—and without an ability to employ an effective less-lethal option they might very well have been killed outright. In these circumstances, even the noble attempts to save their lives are made to appear contemptible.

Both civil libertarians and law enforcement organizations seek safer and more effective methods of reducing death and injuries during violent confrontations, but are so at odds in how best to achieve these reductions that more effort is spent in arguing than in collaborating. It is particularly troublesome, however, when even the supporting information is so tainted as to render it meaningless. Certainly, voodoo science is not limited to the controversy surrounding nonlethal options. In recent years, the public has been terrified of cancer from cell phones and captivated with the possibilities of unlimited, pollution-free energy from cold fusion, neither of which has withstood the scrutiny of scientific inquiry.

Nonlethal weapons can provide moral alternatives in inherently amoral circumstances but completely safe and effective technologies remain elusive. In the search for these options only objective approaches to examining them can balance the risks and benefits of their use. Protecting the peace while preserving life is a gallant calling, but it is far more difficult to achieve without objective science and fair reporting.

Digital Vigilantes: Potential Allies or Adversaries?

Earl Moulton[62]

There is a long history of comparisons between the Internet and the American Wild West. Usually, such commentary focuses on the unregulated nature of the Internet and the consequential amount of criminal behaviour. Less commonly, the commentator rightly notes that the vigilante actions which were taken in the Wild West also have their corollary in cyberspace. How are these digital vigilante actions going to affect policing in the future? Will they be allies or adversaries?

It seems appropriate to start this discussion on the basis of a definition of vigilante obtained from Wikipedia.

> *A vigilante is a person who ignores due process of law and enacts their own form of justice in response to a perception of insufficient response by the authorities.*[1]

While we might quibble with aspects of this definition it does, however, capture the essence of vigilantism -- the taking of action not formally sanctioned by society by people who aren't specially designated to do so. How does this play out in cyberspace? Examining this definition provides us with the context in which we will discover the answer.

Insufficient Response

The Internet was specifically designed to ensure survivability and redundancy. The result is that the Internet considers responses by authorities to be a threat and simply routes around them – as it was intended to do. This design is well known to all users. Moreover, there is an ethos of anonymity on the Internet that is demonstrated by the reality that it is relatively easy to hide your tracks and identity on the Internet. These two primary features of the Internet combine to provide most users with the accurate perception that there is an insufficient response by authorities.

An illustration of the incapacity of authorities to deal effectively with undesirable behaviour on the Internet is the phenomenon of spam. Despite technological attempts to contain it, despite legislative attempts to contain it, despite social networking attempts to contain it,

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despite software attempts to contain it, spam still cost US industry approximately $21.58 billion in 2004 [2]. The same range of controls have been attempted in respect of pedophilia and child abuse imagery – again, with largely ineffective results on the overall problem although with some success in particular cases.

Conversely, it is difficult to come up with examples of authoritative action about an Internet issue which was successful. It can certainly be said that particular security vulnerabilities are constantly being successfully patched and subsequent exploits avoided. However, since the 'authorities' responsible for creating the patches are also responsible for the creation of the vulnerability in the first place, it is very difficult to view these as success stories.

Authorities

The problem of insufficient response on the Internet is exacerbated by the very concept of authority. A useful definition for our purposes is:

persons having the legal power to make and enforce the law; government [3]

While there are rulemaking mechanisms in respect of the Internet, there is no central authority with the capability of making enforceable laws. The reverse is similarly true. There are no existing analog world authorities whose law making capacity extends to all the reaches of the Internet. Consequently, the bad guys simply migrate to those Internet lacunae. Where do we see this? One example is the lack of success of the US government in stopping its citizens from gambling online. Even secondary efforts to control the payment mechanisms which underlie those activities have proven to be ineffective.

If our usual forms of authority are not effective, are there uniquely digital equivalents to whom we can look for adequate responses? It does need to be observed that there are effective control authorities in respect of the functions of the Internet. That is, we have mechanisms which ensure that the Internet works effectively and its architecture can be maintained. What we do not have is the ability to control the uses to which those functions are put. The analogy is that traffic laws are effective, largely, in ensuring that vehicles can get from point A to point B with everyone driving on the proper side of the road. Those same traffic laws are wholly ineffective to ensure that the same vehicles are not transporting drugs or being driven by a drunk driver.

Due Process

There is a valid argument that any Internet action that occurs in more than one sovereign jurisdiction is not subject of competent authorities and cannot, therefore, be subject of due process. By this view, we can say that, semantically speaking, there can be no vigilante activity on the Internet. More practically, the public do, and arguably should, look to the usual authorities when bad things happen on, in relation to, or because of the Internet. Just as practically, due process is rooted in an English common law tradition that traces its roots back to dunking witches. That due process fails in multi-jurisdictional contexts is apparent to anyone who has grown old awaiting the evidence from an Mutual Legal Assistance Treaty (MLAT) process. This reality has even received judicial approval in the US with the FBI's hack back into Russian servers without any form of search authorization [4]. It would seem reasonable to assume that a quite different view would be taken by Russian judicial authorities. What this last case points up is a significant difference between digital and Wild West vigilantism. In the Wild West the vigilante who hung the horse thief without benefit of a trial was possibly, and occasionally actually, subject to due process himself. The digital vigilante is not caught in this conundrum and even, to extend the irony, benefits from the very ineffectiveness of the authorities that triggered his actions.

Typology of Digital Vigilantism

As the duly constituted and usual authority that the public turns to for resolving issues of bad behaviour, the police need to understand the various types of vigilante action that can occur on the Internet and the various types of vigilante. The typology offered below is a tentative classification based on behaviours that have already been observed “in the wild”.

Lone Wolf

In the digital universe, just as in the analog one, there are individuals whose system of beliefs and values require them to take personal action when they observe activities which offend those values. In another context entirely, these individuals are rightly considered Good Samaritans. Both contexts are based on a version of altruism – the second is distinguished by the more general approval of society. One of the distinguishing features of digital technology is that it

empowers individuals to take actions and to have impacts far beyond their capacity in the analog world. An example of such a Lone Wolf, one can consider the actions of the Canadian teenager that resulted in the conviction of a California Judge[5]. Motivated by a personal belief in the wrongness of collecting and sharing child abuse imagery, this individual acted in the full knowledge that what he was doing was illegal. In order to obtain approximately 70 convictions, his activities had to be tacitly condoned by authorities. Once his activities became public knowledge, those same authorities required that he cease and desist at the risk of being imprisoned himself.

The Lone Wolf can certainly be viewed as an ally of traditional law enforcement and was the individual in the above case. However, the illegal nature of lone Wolves' activities can taint evidence and result in lost prosecutions if the actions of the vigilante can be said to be at the direction of those same authorities. Turning a self-motivated ally into a directed agent often results in judicial approbation.

Acting on very similar motivations, other Lone Wolves are actively photographing and videotaping police officers and posting the results to the Internet. Their stated purpose is to ensure that the police are policed. Such efforts are characteristically viewed as adversarial by the police and point up the obvious conclusion that Lone Wolves can be either an ally or an adversary.

Organizations

In the same way that white supremacists and extreme animal rights activists have used the Internet to discover others with similar interests, some vigilantes discover others with compatible beliefs and form organizations to advance those interests. Scambusters [6] and the Anti-Child Pornography Organization [7] are just two examples. For the most part, these types of vigilante action operate in parallel to, and occasionally in alliance with, recognized law enforcement. Typically, when they view the level of evidence available as being sufficient to pursue a prosecution, these organizations will turn over the matter to the authorities. In cases where such an evidential basis may not be available, other efforts may be undertaken, ostensibly legal, to thwart the bad guys.

Similarly, there are organizations whose primary activities are focused on ensuring the continued efficient functioning of the Internet. The HoneyNet Project [8] and spam blacklisting

organizations [9] fall into this category. These organizations will also turn over relevant information to authorities when they view that turnover as being not in accordance with their own aims.

There is a concern within such organizations that continuing failure of constituted authorities to deal adequately with illegal behaviour that they uncover may cause them to undertake or instigate illegal means of interdiction. Until such actions are manifested, however, these types of organization are typically allies of traditional law enforcement.

Another type of organization engaged in vigilante behaviour is Anonymous [10]. Their ongoing campaign in regards to the Church of Scientology is not tied to traditional law enforcement. They are relying on a variety of activities to bring attention to what they believe to be illegitimate activities of the Church of Scientology. Included in those activities was a successful 'googlebomb' [11]. More recently, Anonymous has become involved with Wikileaks and computer security experts. The former of these has prompted considerable attention from authorities in both the US and the UK.

Commercial Interests

A number of digital vigilante activities are undertaken by persons or organizations who claim to be motivated by altruistic interests. They are distinguishable from the above noted organizations in that there are very apparent commercial interests which the cynical observer might contend are the operative motivators. Notoriously, the Dateline television programs created with Perverted Justice [12] fall into this category. Certainly the Dateline producers took the position that they were allies of traditional law enforcement [13]. Texas prosecution authorities took an opposite view [14]. Clearly, police officers approached to cooperate in these projects need to carefully weigh the motives and possible outcomes prior to making their own determination of ally or adversary.

A more recent illustration of this kind of commercial vigilantism is the work of Brian Krebs of the Washington Post. His investigation into the spam industry resulted in the shutting down of an ISP named in McColo in California [15].

Another manifestation of commercial vigilantism has arisen in respect of copyright enforcement. The corporations acting on behalf of the Recording Industry Association of America (RIAA) and the Motion Picture Association of America (MPAA), especially

MediaDefender [16], are conducting investigations in support of cases against copyright offenders. Their actions are certainly predicated on a dissatisfaction with the actions or inactions of traditional law enforcement and would seem to be a form of vigilantism. That they do so for corporate gain is equally certain. This particular form of vigilantism was unique in the political power of these industries to have legislation passed which effectively turned themselves into "authorities".

Official Vigilantes

As noted above, the FBI itself has engaged in hacking back into servers in Russia which activity can be characterized as official vigilantism. Those actions were given *post hoc* approval by a judge but this does not mean that they always will. While law enforcement in the US is unlikely to see the FBI in such a case as being an adversary, a very different view will exist for foreign law enforcement undertaking the same activities on US soil.

In May and June of 2007, Estonia was the target of a cyberwar. More recently, Georgia has been the target of the same kinds of attacks. In both cases, suspicion has fallen on the possible involvement of nation states in perpetrating these attacks. Built into the architecture of the Internet, however, is a level of plausible deniability which makes absolute statements and accountability unlikely. To the extent that such activity turns out to be actually undertaken by patriotic amateurs, this is a case where they are simultaneously ally and adversary depending on which side of the attack you are on.

System Maintenance

Internet Service Providers, and other telecommunications providers, need to engage in system maintenance and system surveillance activities that are necessary for the health of their systems. Such activity is entirely legal. In some situations, those activities result in the provider having information of illegal activity which they may, or may not, share with law enforcement. Where they do share such information, they are clearly allies of the police. These same system maintenance activities, however, also pose grave and largely unmanageable difficulties for law enforcement when using these services in covert ways. To the extent that a service employee notes electronic surveillance or internet usage activity which is indicative of law enforcement involvement and uses that information to warn or otherwise thwart enforcement, then providers

turn into adversaries. Given that service providers are largely faceless corporations operating through individual employees, the determination of friend or foe becomes highly situational.

Inadvertent Vigilante

Similar to ISPs, individuals will occasionally stumble upon information which is valuable to law enforcement or indicative of illegal activity. The most common of these types of situation is the discovery of child abuse imagery on a computer by a family member. In these cases, the term vigilantism doesn't really apply unless the inadvertent discoverer of the information goes further and physically provides access to the computer for law enforcement or otherwise circumvents procedural safeguards. Clearly, these individuals should properly be seen as allies of law enforcement.

Another inadvertent ally of the police can typically be found away from the Internet. All of those digital surveillance cameras that are deployed by individuals and industry occasionally pick up evidence of illegal activity. As long as this evidence is made available to police, the owners of these technologies are allies.

Non Enforcement/Order Maintenance Assistance

Vigilantes can also be allies for police in the large range of activities that police deal with that are not law breaking but are more accurately characterized as order maintenance activities. Commonly it falls to the local police jurisdiction to coordinate or conduct search operations for missing persons. Very recently, digital volunteers assisted in the search for the missing plane of Stephen Fossett. That such volunteers are clearly allies of the police is unquestionable. The enormous value of that type of assistance needs to be acknowledged even though it falls outside the immediate realm of vigilantism that we are currently considering [17].

Police are also called upon to intervene for the purposes of preventing death and injury. In this field, too, a similar type of assistance can originate from the Internet. ISP employees monitoring chat rooms have noted suicidal ideation, tracked back the source of those discussions and warned the local police. The timely intervention of police that was enabled resulted in lives being saved.

Typology of Vigilante Actions

While vigilantes occasionally turn over the fruits of their activities to traditional law enforcement, it is much more usual that they pursue their own forms of digital justice. What follows is a brief typology of vigilante actions.

Flaming

Flaming on the Internet, like many other online actions, started in the Usenet hierarchies. It is now recognized as the hostile and insulting interaction between Internet users. [18] To put the most positive spin on this behaviour, it is used as a form of Internet social control. Flaming is a means for users to rather colourfully establish the norms of a particular cyberspace community.

Public Shaming

Once a vigilante has established to her own satisfaction that a particular individual is responsible for a particular dysfunctional behaviour, public shaming may to undertaken. That shaming is designed to serve two purposes. Firstly, the public shaming identifies the particular individual as a miscreant. Depending on how dim a view is held of the behaviour, this can be devestating. Secondly, the public shaming tends to put an end to the behaviour by making the Internet public widely aware of both the actor and the action. A recent example of this kind of vigilante action was the shaming of Matt and Jake Dylewski. While their actions probably amounted to criminal fraud, the shaming was a much more effective tool in ending their scam. Their pictures, addresses and *modus operandi* were all published - along with pictures of their vehicles, their girlfriends and all of the Internet domains with which they were associated [19]. As noted above, the famous Dateline cases are examples of this form of digital activity. The Dateline case must be distinguished on the basis that the public shaming, or outing, of the suspect pedophiles was done for a commercial purpose.

Reverse Social Engineering

There are groups on the Internet who use a form of social engineering in order to achieve a sense of justice. A good example of this kind of activity is that undertaken at the www.scambuster419.co.uk website. These vigilantes specialize in responding to the infinite

varieties of Nigerian 419 scams by engaging the fraudsters in endless and fruitless exchange of emails. All of these, of course, eat into the time available to the fraudsters to be successful. In some cases, touted as the most 'successful' of the genre, some scammers have actually been conned into paying for phony deliveries.

Hacking Back

What is meant by hacking back is the compromising of a targeted computer system. The FBI liberation of data from a Russian ISP is a well-known example of this kind of vigilante action. Similarly, infecting a pedophile's computer with a Trojan was an effective hack back on the California judge as discussed above.

Another form of hacking back by vigilantes occurs when they are able to organize sufficient computer resources to undertake a distributed denial of services attack on the 'offending' computer system. The latter system is then effectively disabled and their offensive actions are halted.

The difficulty with this kind of vigilante action are twofold. Firstly, the action is illegal – no matter the purity of the motive. Secondly, there needs to be a degree of certainty about the culpability of the hack back target that is rarely achieved.

Infrastructure change

A very much more socially responsible action enabled by the information gathered by vigilantes is seen in the changes to how the Internet and computer systems operate. In many cases, the resulting changes are effective in reducing the ongoing risk. Examples of these kinds of changes are found in the automatic update functions in operating systems and software.

Future Considerations

Two major changes are unfolding on the Internet that may impact the amount of vigilante activity occurring in the digital world.

As many will be aware, there is a migration of both applications and data into the 'cloud'. What this means is that users will be accessing web based software rather than having it reside locally on whatever device that they are using to access the web. Additionally, their data – or the products of using the web based application – will also be stored someplace in the Internet.

What does this mean for vigilantism? The most apparent possibility is that system maintenance activities by both the application and the data storage providers will result in more reports to police of illegal activity. There is also a distinct possibility, bordering on certainty, that some type of Lone Wolf will access remote data while undertaking their vigilante activities. It can also be predicted that there are going to be increased difficulties for police in their efforts to locate real individuals to associate with anonymous, remote and probably encrypted data kept in the cloud. To the extent that these web based services are physically located in countries with differing legal retention requirements, the providers may become active adversaries of law enforcement.

The second emerging digital technology that will impact the number of allies and adversaries is 3G, 4G and next generation mobile telephones. Included in this category are all those devices that can connect to both the cellular networks and the Internet. Without exception, these capabilities are accompanied by digital cameras. This convergence technology carries particular risks for law enforcement. When everyone is connected to the Internet all the time, the opportunities to be a victim or a perpetrator of cybercrime become limitless. To the degree that traditional law enforcement already does not have the tools, the time, the people or the laws in place to deal with cybercrime, the resulting increase will provide ever larger incentives for vigilantes to take matters into their own hands.

What Does All This Mean to Police

When we consider the Wikipedia definition of vigilante that we began with:

A vigilante is a person who ignores due process of law and enacts their own form of justice in response to a perception of insufficient response by the authorities

and our ensuing discussion, it becomes apparent that digital vigilantism is here to stay. The twin causes for vigilante action show no signs of being remedied. The few policing resources currently committed to cybercrime are overwhelmed and swiftly losing even more ground to the exponential growth of Internet crime. Unfortunately the same dismal outlook exists for any truly effective, global legislative response. Current legislative processes are simply incapable of contending with technology that operates under Moore's Law.

What all this means to policing is that law enforcement needs to learn to leverage the actions of vigilantes that are operating within the law. Only by co-opting the skills, knowledge

and abilities of a committed public will policing be able to keep even the semblance of a lid on Internet-based criminal behaviour. Just as assuredly, policing will find its own scarce resources drawn away to investigate those vigilantes that choose to operate outside of the law or as a law unto themselves. In both cases, police managers will find themselves less in control of their investigative resources.

The answer in the future is apt to very similar to that of the past. Two hundred years ago, Sir Robert Peel enunciated the principle that "the police are the public and the public are the police." It remains the same in the digital information age.

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Emerging Digital Technologies and the Implications of Online Social Networking for Law Enforcement

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Introduction

Digital technology is advancing at an incredible rate. As digital technology becomes more advanced, it is also becoming more available to the public. As more people use digital technology in its various forms, the technology itself has become an integral part of social interactions. These interactions may be as simple as communicating via cell phone or email, or as sophisticated as a full immersion into a virtual environment. Whatever type of digital medium is being used, it is important for Law Enforcement to be aware of major developments in these digital technologies and the opportunities they afford criminals in the planning and perpetration of illegal activities.

Users of digital technology have left and will continue to leave digital "footprints" throughout the Internet. Therefore, it is also important for Law Enforcement to be aware of how emerging digital technologies can be exploited to enhance the understanding of social networks, provide investigative leads in both online and offline criminal activity, and the training and legal implications to be faced in the future.

Already, Law Enforcement takes some advantage of digital "footprints." For example, many investigations have been enhanced by searching various social networking sites such as Myspace.com and FaceBook.com for offender and victim profiles. Online transactions such as banking, shopping, and even online invitations ("evites") have and will continue to provide invaluable real-world information to investigators. However, it is anticipated that there will come a time (in the not-to-distant future) when an individual's digital footprint can provide investigators with a highly detailed timeline of events and activities both on- and offline. Unfortunately, none of this information will be useful if Law Enforcement is unable to find and exploit it. This means that Law Enforcement needs to have a basic understanding of how various digital technologies work and how they relate to both on- and offline activity.

The following essay is not meant to be an in depth discussion on any one of these topics. Instead, it is the authors' intention to provide a primer on some of the more relevant digital

technologies that are focused on web-based and online activity and are likely to be encountered by Law Enforcement in the future. This essay will also briefly touch on the concept of social networking and how it plays into current and future digital technologies used by people in general. The authors will also discuss how, based on some underlying issues, these digitally based social networks can be used and exploited by criminals. Ultimately, this essay will identify how Law Enforcement may be affected by emerging technologies in the types of crimes and victimizations that will be encountered, new criminal methodologies, and the means by which Law Enforcement can begin to capitalize on emerging digital technologies to enhance and solve crimes.

Present and Future Technologies

The telegraph and telephone are 19th century[63] models of technologies that revolutionized communication. These two technologies paved the way for 20th century social networking technologies such as digital communications, the Internet and World Wide Web.

In its early development, the World Wide Web (Web 1.0) consisted primarily of static pages containing owner-generated content combined with simple graphical elements. Transmission of site visitor-generated content, such as an online order form, could be transmitted via email. Content display was constrained by use of dial-up connections in terms of speed, access time and cost. User-generated information focused on metaphors of place: cities, neighborhoods, and homepages.

By early 2001, the business community, realizing the vast marketing potential, began developing a strong Web presence with richer site content to encourage visitor traffic, information sharing and user collaboration. Increased public access to broadband and wireless services combined with greater storage capacities of computers and other digital devices facilitated rapid evolution of consumer-generated media, web-based communities, and hosted services such as social-networking and video sharing sites, podcasts, [64] wikis,[65] and blogs [66].

[63] The telegraph was invented in 1837 and the telephone was invented in 1876. Both were fully in use at the turn of the century.

[64] Podcasts are series of audio or video digital-media files distributed over the Internet that users can download for playback on portable media players and personal computers. Podcasts are distinguished from other digital-media formats in that they can be subscribed to and downloaded automatically when new content is made available.

[65] A Wiki is a collection of Web pages designed so that users can collaboratively contribute to and modify site content.

Terry Flew (2008) described the transition from Web1.0 to the next level (Web 2.0) as a "move from personal websites to blogs and blog site aggregation, from publishing to participation, from web content as the outcome of large up-front investment to an ongoing and interactive process, and from content management systems to links based on tagging (folksonomy[67])."

Web 2.0 has evolved into sites that are more socialized, interactive and media-intensive. Applications now run within web sites, creating new avenues of information distribution. "Mashups," or applications that can be incorporated into web pages (for example, a mapping service that provides users with driving directions) and "web feeds" (news and content distribution services) have added functionality and encouraged interactive participation by site visitors. In addition, web-based "cloud computing" applications make ubiquitous usage possible not only from computers but also from other web-connecting digital devices such as cellular phones. According to a recent Pew Internet report, "69% percent of online Americans use webmail services, store data online, or use software programs such as word processing applications whose functionality is located on the web" (Horrigan, 2008).

Currently, businesses deploy Web 2.0 software applications ("adware" and "spyware") to monitor and track a consumer's online behaviors to personalize marketing strategies. By making recommendations and comments about the business and its products, customers now actively assist other customers to make purchasing decisions ("social commerce"). This "social" shopping enables users to communicate and aggregate information about products, prices, and deals and to create personalized shopping lists to share with friends. As concluded in *Networked Families,* a Pew Internet study, "…many households are hubs of personal communication networks, as people log on individually to email, IM[68], post on social networking sites and chat. They are both together with their families and connecting outward to friends and relatives elsewhere" (Kennedy, Smith, Wells & Wellman, 2008, p 30).

Web 2.0 has changed the way the world works and plays. Now forward-looking individuals are enthusiastically planning the next generation of internet applications. For example, World Wide Web inventor Tim Berners-Lee coined the term "semantic web" (Web 3.0) to describe the next evolution of web development (Shannon, 2006). He envisions advanced

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[66] A derivation of "Web log," a blog is a web site that contains owner-generated and in some cases, viewer-generated content that includes opinions and commentary, event descriptions, and links to other websites, graphics or video.
[67] Folksonomy is term that describes user-created keywords or "tags" that annotate and categorize content.
[68] IM is the acronym for "Instant Messaging"

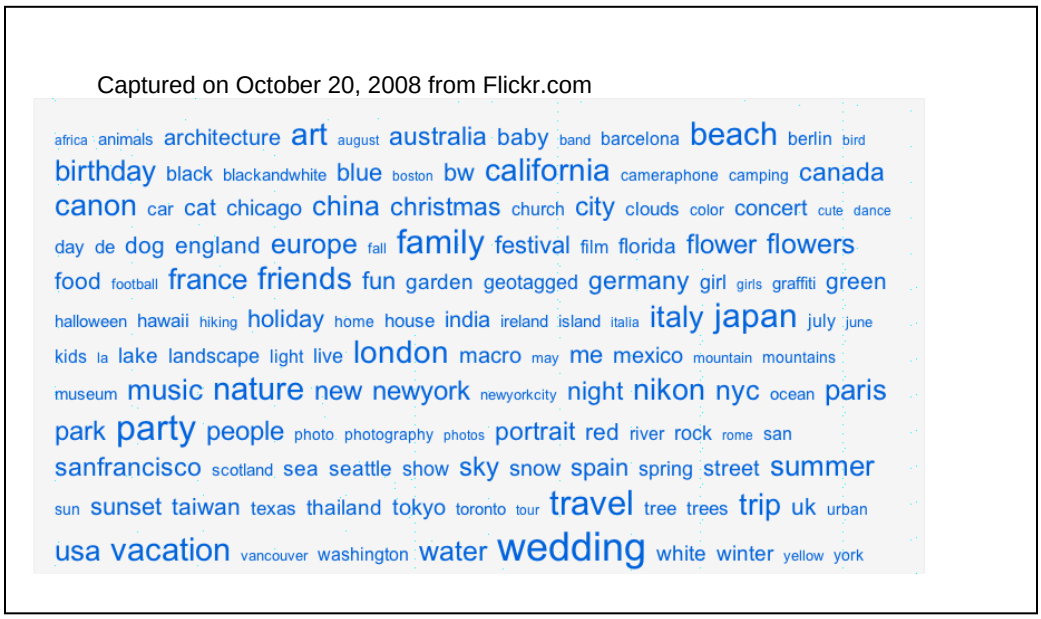
search engine capabilities where intelligent agents[69] conduct contextual searches that return information more closely tailored to individual users. The semantic web will revolutionize the way content is distributed to users through use of special encoding embedded into web pages. A World Wide Web Consortium (W3C) Working Group tutorial explains how users might benefit from contextually interactive Web 3.0 applications:

> What if the browser received information on the meaning of a web page's visual elements? A dinner party announced on a blog could be easily copied to the user's calendar, an author's complete contact information to the user's address book. Users could automatically recall previously browsed articles according to categorization labels (often called tags). A photo copied and pasted from a web site to a school report would carry with it a link back to the photographer, giving her proper credit. When web data meant for humans is augmented with hints meant for computer programs, these programs become significantly more helpful, because they begin to understand the data's structure. (Adida & Birbeck, 2008)

Current contextual development is focused on projects involving life sciences, medicine, and industrial research, but Ivan Herman (2007) identified categories of context-understanding applications that could be developed for use in commercial environments:

- Knowledge management
- Business intelligence
- Linking virtual communities
- Management of multimedia data (e.g., video and image depositories)
- Content adaptation and labeling (e.g., for mobile usage)

[69] Intelligent agents are programs that automatically gather information, perform services or other activities without direct user intervention.



A progenitor of a semantic and socially integrated web application is Flickr.com. This site enables users to upload photographic and video images to web browsers via free proprietary software from mobile phones, via email, and through third party desktop applications. Once uploaded, images can be edited, tagged with searchable reference labels and organized into categories. Users can globally or privately invite others to view the images and write comments. Images can be linked to geographic mapping displays that indicate where a photo was taken. Users can create prints, calling cards, photo-books, slideshow-DVDs, postage stamps and other products with their images. Site visitors can search for specific image content and Creative Commons[70] licensing enables even amateur photographers to purvey their images to interested buyers. The following image illustrates a hierarchy of user-assigned tags associated with their uploaded image files. The larger the type, the greater are the numbers of individual references.

[70] Copyrighting of intellectual property and works of art is also undergoing innovative changes with the advent of Web 2.0. Creative Commons (http://creativecommons.org/) licensing encourages sharing of copyrighted works by granting some or all usage rights. The intent of Creative Commons licensing is to impede monopolies by commercial developers and media producers by promoting the sharing of open source software applications, artwork and other intellectual properties. (Creative Commons, 2008)

At the time of this writing, Flickr.com site information reveals that 5,248 images were uploaded in the last minute; 160,129 images were tagged with the word "morning" and 2.8 million images were linked to a map ("geotagged") in the past month.

Social Networking

A social network is defined as "a social structure made of nodes (which are generally individuals or organizations) that are tied by one or more specific types of interdependency, such as values, visions, ideas, financial exchange, friendship, kinship, dislike, conflict or trade."[71] Therefore, "social networking" generally refers to the interaction of an individual with other persons or communities. Social networking within the context of a "digital setting" consolidates the social interaction to that of a computer or digital-based medium. This could include a fully immersive environment (often referred to as "virtual reality"), but it could also mean the incorporation of less than fully-immersive technologies such as Web 1.0 and 2.0.

Social networking sites consist of online communities where interaction is facilitated by instant messaging, sharing of photographic images, video, music and other files. Myspace.com, Friendster.com and Facebook.com are examples of social networks in which millions of users congregate online. Business professionals use networks such as Linkedin.com and Konnects.com.

People tend to participate in a social network (both offline and online) for different reasons, for example: social interaction in and of itself, fantasy- or role-playing, economic opportunity, information exchange, operational practice, and in some cases, predatory or stalking activities. These reasons are not mutually exclusive and multiple reasons may play a role in participants' motivations. Furthermore, two individuals in the same social network may be participating for entirely different reasons.

Social networking has also expanded in massive multiplayer online role-playing game (MMORPG) sites such as Worldofwarcraft.com (10 million players) and Secondlife.com (15 million players). In the Second Life virtual world game, players can opt to trade in "Linden Dollars" — a virtual currency that has real market value and can be exchanged for US Dollars or

[71] http://en.wikipedia.org/wiki/Social_network#Network_analytic_software

be traded on Lindex, the Second Life stock market. Players also sell virtual "real estate," and create and sell virtual goods and services.

Both networking and gaming communities emphasize common social attributes such as a way to identify individuals (photographs, contact and biographical information), geographic location, other friends and associates, group affiliations, communication (text messaging and online chat) and content sharing (i.e., music, photographs, video clips, and other digital files). The genre is enormously appealing to teenagers and young adults, who will likely continue to populate social and business networking sites throughout their entire lives, leaving digital footprints of personal information across the Internet.

In any type of relationship, there are at least two participants or "actors" who can project how they and their intentions are to be presented. Human beings are trained to interpret and respond to both verbal and non-verbal cues and how they operate in our own understanding of reality. Unfortunately, social networking in a digital setting incorporates the virtual medium as a filter that can enhance, obscure or misrepresent the true intentions of social networking participants. Thus, social networking in a virtual setting, while often compared to real-world interaction, can be complicated by two issues that are intrinsic to the medium: ambiguous identity and manipulated reality.

Ambiguous Identity

Participants in a social network adopt personaes to project to other participants. However, the primary interaction between participants in an online social network is visual and/or audio as filtered by a computer. In such a situation, the nuances that might normally throw up red flags about other people's intentions can be easily minimized and obscured. Thus, in an online social network, it is much easier for users to misrepresent their identity and by extension, their true intentions.

In a web based social network, participants may have varying degrees of both emotional and economic investment in an online personae. For example, in a virtual environment, one participant may have simply selected an avatar because it was the first in a list to choose from,

while another user may put much more thought and symbolism into a personal representation.[72] This concept also applies to less immersive social networks like chat-groups and email-based discussion forums ("ListServs"). Generally speaking, in a web-based social network, a participant creates and acts through any number of online personaes. Each of these online personas incorporates, at some level, an alternate identity that the user can wear and interact through.

Manipulated Reality

Manipulation of reality allows participants to easily explore fantasy and to experience people and places they would never be able to explore in an offline context due to physical, financial and legal limitations. While this type of manipulated reality is a form of escapism, it does have potential to effect real-life circumstances depending on the emotional investment of the participants.

In some cases, the line between reality and fantasy has been blurred, especially for those who invest a significant amount of their time interacting online with other social network users. For instance, in one case out of the United Kingdom a disabled couple first met in an online chat room where their communications led to an online romance. Eventually, the two were married first in a virtual tropical setting, and then in person at a local registry office.

> The svelte images of their avatars stand in contrast to their real wedding photo, which shows a plump couple – him balding with glasses and a red boutonniere, her in a flower patterned shirt instead of a dress.
>
> Their marriage started to fall apart after Taylor [the bride] allegedly caught her husband's avatar having cyber sex with a virtual prostitute last year. She said she had fallen asleep and when she woke up spotted the pair cavorting on the computer screen. (Satter, 2008)

As online reality is enhanced, the human senses will become less and less trustworthy as the ability to snatch reality and digitally mimic it within a virtual setting is augmented with

[72] According to Talamo & Ligorio (2000) the selection of avatars among students can be characterized into six distinct categories: experimental shifts from one avatar to another, the need to be recognized in the virtual setting, adopting certain avatars for certain situations, avatars that accurately represented the user's physical appearance, social choices based on the opinions of others, and no relevance at all.

advances in graphics, incorporation of the sense of touch taste and smell, and the inevitable bridge over the "uncanny valley."[73]

In line with the corporate vision of online social networking as a lucrative economic frontier, some companies are hastening the integration of near-photo-realistic graphics within online social networking communities by providing high-end three-dimensional modeling applications to users free of charge. The marketing theory driving this trend is that the creation of engaging content will make the online community "…a more interesting place, more people will come, and there will be more advertising revenue and transaction revenue" (3D World, 2008).

In a less immersive environment, manipulation of reality has and will continue to become an issue in both the dissemination of information and the multitude of sources that will vie for consideration of online users. Information that is incorrect, libelous, or posted with malevolent intentions can be quickly circulated on the internet. As this disinformation dilutes accurate information, factual information will become difficult to cull from subjective and unverifiable half-truths.

Social Implications of Ambiguous Identity and Manipulated Reality

Ambiguous identity and manipulated reality can have very interesting effects on an individual's online activity and can both contribute to a user's feelings of anonymity, invisibility, and dissociative imagination (the notion that "it's just a game"). This "disinhibition effect" identified by Suler (2004) incorporates the social-psychological effects of anonymity to explain how online computer use can lead to behavior uninhibited by offline social norms.

> It's well known that people say and do things in cyberspace that they would not say or do in the face-to-face world. They loosen up, feel more uninhibited, express themselves more openly. Researchers call this the "disinhibition effect." It's a double-edged sword. Sometimes people share very personal things about themselves. They reveal secret emotions, fears, wishes. Or they show unusual acts of kindness and generosity. We may call this *benign disinhibition*.

[73] This theory, developed by Masahiro Mori in 1970, hypothesizes that as robots begin to mimic the appearance of human beings in likeness and movement, there is a point at which the robot will cease to be judged as a robot intended to look human, but rather as an unsettling human who is not quite real. When social acceptance and comfort with a robot is graphed against the robot's level of realism, this "uncanny" appearance provides a valley of unsettling reactions. This principle has also been applied to computer graphics and computer animation. It is postulated that at some point, this "uncanny" valley will be bridged and robots and computer generated representations of human beings will be accepted as correct and comfortable representations of real people.

On the other hand, the disinhibition effect may not be so benign. Out spills rude language and harsh criticisms, anger, hatred, even threats. Or people explore the dark underworld of the internet, places of pornography and violence, places they would never visit in the real world. We might call this *toxic disinhibition*" (Suler, 2008, p 1).

The implications of toxic disinhibition are apparent in South Korea where "Almost every household in the country is equipped with broadband Internet service, and ideas and information flow freely in a flourishing online culture. But the unrestrained ethos of the Internet creates a dangerous mix when combined with Koreans' traditional Confucian emphasis on 'saving face'" (Lee, 2008). This unforeseen incompatibility of traditional cultural philosophy and social networking through digital technology has resulted in a series of high profile suicides among popular South Korean entertainers who were harangued and harassed online by displeased, and in some cases ill-informed, fans. Unfortunately, in the digital age "Cyber attacks can spread at light speed, bringing down an entire career in days" (Lee, 2008).

In a country that prides itself on free expression such as South Korea, there are obvious political implications for imposing government regulations that require real name and true identifiers on social networking sites. Furthermore, the practicality of enforcing such a mandate is problematic. However, "…polls suggest that most South Koreans want tougher laws to stop cyberviolence[74] and online libel. In a recent survey by one Seoul broadcasting station, 63 percent of respondents agreed that more Web sites should require real names. In the same survey, 55 percent supported legislation specifically designed to combat online libel" (Lee, 2008).

Another example of the disinhibition effect can be found in a recent case in the United States. This case involved the use of MySpace to misrepresent identity and manipulate reality by a 49 year old adult female who participated in a conspiracy with her daughter to harass a fellow classmate. The victim, a 13 year old girl, was led to believe that she was communicating with a boy who was interested in her. Unfortunately, the conspirators had created a fake MySpace profile with the intentions of eventually humiliating the victim. This case gained national attention when the victim committed suicide after being told by the fake "boy" that the world would be better off without her. Ultimately the 49 year old woman was charged with conspiracy

[74] The South Korean term for online attacks such as hate e-mail and libelous web posts translates as "cyberviolence."

and accessing a computer without authorization. It was asserted by the prosecution that the woman had violated the terms-of-service agreement of the MySpace site by using the site to lie, to pretend she was someone she was not, and to harass the 13 year old girl.

Criminal Use of Digitally Based Social Networking and Technologies

The underlying issues of ambiguous identity and manipulated reality inherent in a digital social network make those networks particularly susceptible to being exploited by criminals in a number of ways. First, it may help to visualize a digital social network operating much like a "watering hole." It is not hard to imagine participants of a virtual environment like Second Life, or a web-based environment like Facebook or MySpace, meeting online and "drinking the waters" of social interaction. At the same time, just below the surface is a disguised predator waiting to pounce. However, in this case, the predator is not a crocodile, but could be, for example, a fraudster waiting to engage a participant in a pyramid scheme, or an adult sex offender soliciting potential underage victims. Online social networks exist as fertile hunting grounds for the criminal element because they are places where potential victims gather (often according to demographic similarities or common interests), they tend to allow users to create ambiguous identities that can provide camouflage, and through a manipulated sense of reality they can provide criminal predators with ample opportunity to confuse and mislead potential victims.

Generally, the level of a social network within a criminal setting can be broken into three broad levels of classification with an emphasis on size and focus. These classifications are team networks, organized networks, and general networks. *Team networks* and *organized networks* consist primarily of groups defined by size[75] and unified for a common activity or series of activities. A *general network* is much more amorphous entity. General networks tend to be clusters of social interactions that do not have a unified goal of a singular activity. Within the criminal world, general networks are essentially "general populations of criminals within defined boundaries or areas, and can include organised and team networks. These areas can be geographic – areas within communities where many offenders can be found, towns or cities, and

[75] Team groups are typically smaller than organized groups. Team networks can exist within organized networks to carry out tasks and form specialized subgroups. Both team and organized networks tend to have a defined structure.

so on" (Canter & Alison, 2000). This concept encompasses congregations of offenders who interact, but not necessarily to commit a specific offense.

Certainly, telephones of the past may have provided terrorists with a means to coordinate efforts. However, today's social networking technology allows extremist philosophy and propaganda to be espoused in full color with graphics and video in a receptive (or at least ambivalent) environment (general network), to form strategic, goal oriented, subgroups with hierarchy and specialization, (organized network), and smaller tactical subgroups that act as autonomous cells (team network). These forms of online social networks allow criminals to establish operational division of labor (like logistics, command and control, and recruitment) that is much more difficult for Law Enforcement to track and disrupt because the "who," "when," and "where" of the operation are obscured by the digital medium. Essentially, social networking can provide a framework for the recruitment, financing, and operational training of any type of criminal enterprise. Furthermore, the criminal enterprise can exist as its own social network or it can be fully integrated with a legitimate and non-criminal generalized network. Thus, online social networking gives criminals the ability to hide their activities in plain sight.

Within a terrorism context, each of these levels of network can allow the extremist philosophy to exist and operate in the social network setting independent of any one entity. The digital setting is flexible and adaptable, it is not location oriented and can be accessed from mobile positions, and can be easily dismantled and reassembled. Ultimately, this use of digital social networks by criminals is much like the hydra of Greek legend; it is very difficult to mortally wound the organization because when you cut off one head, two more sprout up.

It is safe to assert that as digital technology integrates itself further with society, offline criminal activity will more frequently involve a digital component. This is not to say that online victim selection or offender conspiracy will become an integral part of all future offline crime. However, as digital technologies become more entwined with day-to-day activity, the use of digital-based social networking and the Internet as a whole will continue to become more and more commonplace. For instance, a murder case may involve online Google research performed by the offender on anything from getaway locations to forensic techniques. Internet activity may be used to set or, in some cases, break alibis. Furthermore, banking transactions, online purchases, and communications, sites visited, as well as IP addresses and wireless access points are all valuable digital sources of information for very real offline crimes.

One case in particular, recalled by one of the authors of this essay, involved the murder of a female victim in her own apartment. On the surface, there was no computer nexus involved in the murder. The offender and victim met at a party and they were engaged in drug and sexual activity when the offender beat the victim to death and then sexually assaulted her with an inanimate object. During a search of the offender's residence, his computer was seized and his email activity was searched to determine if he and the victim had any prior communications, which they did not. Further examination of the computer was not a priority due to other physical evidence that was used to successfully secure a conviction. Following the offender's conviction, the computer was examined to determine if the offender was involved in other offenses. During this examination, it was determined that following the murder, and prior to the murder coming to the attention of law enforcement or the press, the offender had been searching the internet on the victim's name and any recent murders reported in the locality. He even visited the local law enforcement agency's webpage and showed a great deal of interest in recent cases and unsolved murders. Ultimately, it appeared that the offender had been very concerned that the murder had been discovered and he wanted to monitor any activity on the case. Certainly, had no other information been available to convict the offender, the circumstantial information collected from the offender's computer would have been compelling evidence that he knew about the murder before the police.

Law Enforcement Implications

According to Canter and Allison (2000), "the concept of network levels has a number of implications for intelligence analysis. Depending on the network size, different aspects of the structure will be emphasized. For any criminal network larger than teams, it is often logically impossible to arrest and successfully prosecute all individuals involved in the network. The police must attempt to disrupt the networks by concentrating on certain individuals within it." Incorporating Social Network Analysis (SNA) within investigations touching on digital social networks will help Law Enforcement begin to understand the central and peripheral aspects of the social structure, legitimate and criminal roles within the network, methods and types of communications among members, which members are integral to the network and the effect of their removal from the overall network, and who is most likely to provide investigators with viable and actionable information (Canter & Alison, 2008). The initial assessment of the network

and its subsequent classification as either team, organized or general will further enhance Law Enforcement's ability to enact appropriate measures to shut it down, infiltrate it, or identify appropriate sources of information.

The future of law enforcement incorporates some of the same digital social networking techniques employed by criminals. Online social networking sites such as the High Tech Crime Consortium (HTCC) or Law Enforcement Online (LEO) enable law enforcement personnel to communicate with each other in a variety of ways. Emails, ListServs, chat groups are only some of the online social networking options available. Both HTCC and LEO also offer online data resources, research capabilities, virtual training, and the capabilities of creating specially secured sub-groups for ongoing cases and projects or virtual command centers for emerging incidents and events.

It is also becoming apparent that with the increased amount of data flowing over the Internet and the anticipated exponential increases in the amount of data to be flowing in the years to come, law enforcement must begin to explore and implement automated data collection. Already some agencies in the United Kingdom are looking at applications of Artificial Intelligence (AI) in the analysis of web counter-surveillance, the investigation of Internet fraud and masked online identities, and data mining. The UK government-funded Cyber Security Knowledge Transfer Network (KTN) has also begun to explore "…how artificial neural networks can intelligently pull together evidence from different online sources and databases, and how swarm intelligence – inspired by the behaviour of flocks of birds – could probe information shared by groups on social networks" (ZDNet, 2008).

Conclusions

The terrorist assaults in Mumbai, India, in 2008 powerfully exemplify the ubiquitous influence of social networking technologies. Damien McElroy (2008) reported that "Indian officials suspect the Islamic terrorists in Mumbai may have British links after examining BlackBerry phones they used to monitor news reports." McElroy continued, "Key figures in the terrorist gang were equipped with the devices that meant they were able to monitor British news, even when the authorities turned off power" (McElroy 2008).

Wikipedia.com entries regarding the Mumbai assaults also underscore the emerging prominence of social networking technologies and their potential for endangering law enforcement operations:

> The Mumbai attacks highlighted the increasing importance of social media and citizen journalism in the way events are reported. Many people covered the unfolding event on websites like Twitter and Flickr, which are largely clustered under search tags such as "mumbai" and "attack" (to which Twitter adds hashtags[76]). The day after the attacks, the Indian government asked Mumbai citizens to cease updating Twitter with live coverage of police activity. The New York Times and BBC offered live textual coverage online, as did many Indian bloggers. A map of the attacks was set up using Google Maps Wikipedia was also noted for its more detailed reports and more rapid updates compared with many traditional media outlets. (Wikipedia, 2008)

During emerging crises, astute police commanders in large departments should consider assigning officers to monitor social networking sites to take tactical and operational advantage of information provided by citizen journalists' use of social networking technologies and to protect officers in the field. Commanders in smaller agencies should consider identifying and vetting community assets to monitor social networks. Steps should also be taken to ensure that investigators develop digital forensic analysis capabilities so that digital evidence can be retrieved, preserved, and analyzed.

[76] A "hashtag" is any word in Twitter that is immediately preceded by a "#" symbol. A hashtag enables other Twitter users to find a user's "tweet" message and to associate it with other tweets that contain the same hashtag.

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Powering the Future: the Energy Problem and Prospective Solutions

John Jackson

Energy. It warms us, cools us, cooks our food and gets us from place to place. It is the lifeblood of the economy. It quite literally enables us to get work done. It is an intrinsic part of the universe, the E in $E=mc^2$. The stars, fusion factories that turn hydrogen and helium into heavier elements, pump energy into space. Our sun's energy drives many of the Earth's processes. It fuels the winds and the ocean currents. Through photosynthesis, it gives life to plants, which in turn give life to animals. Time and pressure transform the remains of plants and animals into fossil fuels. The heavy metals born in long gone stars and attracted by the sun's gravitational pull become the fuel for nuclear fission. Energy's abundance makes nations rich. Its absence makes them poor, and at times, desperate. The necessity of it drives nations to war. Energy grants nations a powerful tool of statecraft, but it also breeds envy. The pursuit of energy has oft spawned invaders. We need look no further than World War II for an easy example: the oil fields of Southeast Asia and the fields along the Caspian Sea drew, alternatively, Japan into a war with the United States and Germany into opening a second front by attacking Russia. Normal conflicts that occur in the course of human events are conflagrated by the presence of oil, which raises the stakes – and the weaponry – of conflict. The overreaching stranglehold of OPEC in the 1970s energized investment in new sources and new methods of extraction, resulting in new source nations and undermining OPEC's dominance. Today, Venezuela pokes a superpower with a stick bought with petro-dollars and a resurgent Russia leverages fossil fuels to assert its power upon its weaker neighbors and a needy Europe.

Energy is so fundamental to life that we can measure the power of civilizations by it. In 1964, Russian astronomer Nicholai Kardashev proposed a scale of civilizations based on the amount of usable energy available to the civilization; Kardashev's exponential scale described three types (Wikipedia). Type I civilizations wield the power of a planet.[77] Type II civilizations harness the power of a star.[78] Type III civilizations master the power of a galaxy.[79] Some

[77] ~10^{16} W (watts); Earth is estimated at 1.74×10^{17} W (174 petawatts).
[78] ~4×10^{26} W; Earth's star, Sol, is estimated at 3.86×10^{26} W (386 yottawatts, or 386 billion petawatts).

theorists have proposed a Type IV civilization with command of the energy of the universe, or at least a supercluster of galaxies.[80]

In 1973, American Carl Sagan improved the scale to measure human civilization, which has yet to achieve Type 1 (Wikipedia).[81] Based on Sagan's formula, the 1973 Kardashev scale value was 0.69 (8.2 terawatts). As of 2010, human civilization is estimated to have nearly doubled its energy to 0.72 (16 terawatts). By 2030, humanity is expected to achieve 0.73 (22 terawatts) on the Kardashev scale (Wikipedia). Requiring an annual capacity of 1,000 terawatts, Type I civilization remains a distant achievement for humanity. The website FutureTimeline.net estimates human achievement of Type 1 status around 2250 (FutureTimeline.net).

The Recent Past and the Near Future

While there are many sources of energy, fossil fuels – coal, petroleum and natural gas – remain the dominant form. In 1956, M. King Hubbert introduced the notion of peak oil (Deffeyes, 2003, p. 1). Peak oil theory predicts the peak of oil production and the subsequent depletion of oil reserves, as new reserves become increasingly rare and remaining reserves become increasingly difficult to exploit. Hubbert focused on US production and accurately predicted its peak in the 1970s. Beginning in 1995, analysts began to apply Hubbert's theories to global oil production, with predictions of peak oil arriving between 2004 and 2008 (Deffeyes, 2003, p. 1). New discoveries and new extraction technologies have foiled previous predictions of peak oil, but many believe these are temporary delays and the fundamental premise of peak oil theory is accurate and imminent. Economic growth, particularly in China, Brazil, Russia and India, are rapidly expanding global energy demand, putting increased pressure on global energy supplies. Demand for the fuel of first resort, oil, has risen rapidly in recent years, growing at an average annual rate of 1.2% (ExxonMobil). As petroleum demand has risen, coal and natural gas exploration have also increased, resources the United States has in abundance.

Developing "green energy" has been a centerpiece of the Obama administration's energy policy. Nevertheless, alternatives to fossil fuels have failed to gain solid footing. Alternatives include renewables like solar, wind, biofuel and nuclear.

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[79] ~$4x10^{37}$ W: 40 trillion yottawatts .
[80] Universe: ~10^{45} W; supercluster: ~10^{42} W.
[81] Sagan's formula: Kardashev scale value (K) = $(\log_{10} W - 6)/10$, where W is the energy available to civilization.

Solar and Wind

There are two main forms of solar-electric power. In the most common form, panels of photovoltaic material convert photons from sunlight into electrical current. Solar panels remain expensive to manufacture, are heavy, and are subject to damage from adverse weather. Further, solar panels lose efficiency when photons strike the panel from oblique angles. In order to maintain consistent power, very expensive battery arrays must be installed; these arrays are limited in their duration and the current they can provide. They are unable to sustain heavy use from refrigerators or power tools. Until battery efficiencies improve, solar panels will remain an expensive alternative. Currently, residential solar systems make sense for remote locations where building connections to distant conventional sources are too expensive. However, many advances in photo-voltaic solar materials have been made. The most promising are in thin-film applications which permit the application of photo-voltaic veneers to structural materials. However, thin film cells are currently inefficient forms, converting only about 8% of the solar radiation that strike them (US Energy Information Administration, 2011).

The second form of solar energy generation involves fields of mirrors (solar thermal collectors), which reflect and concentrate solar radiation to heat water into steam, which powers a turbine generator. Today, solar-thermal generation is the primary method of commercial solar-electric power generation. Solar-thermal collectors manufacturing peaked in 2006 and fell by one third in 2009 (US Energy Information Administration).

Largely in response to substantial government subsidies, wind energy capacity is the fastest expanding source of energy in the US. Between 1998 and 2009, US wind generation increased from 3,052,000 megawatt-hours to 73,886,000 megawatt-hours per year (US Energy Information Administration, 2011). While its growth curve is accelerating, future planned capacity is indicates decline. Of planned electricity generation capacity to be added between 2010 and 2014, wind accounts for 16% - and only 6.2% of the capacity after 2012; however, wind-power generators can be constructed more rapidly and require less advanced planning (US Energy Information Administration, 2011).

Solar and wind present some challenges to achieving market efficiency. First, solar and wind resources (sunlight and wind) are not evenly distributed geographically. Because of the infrequency of cloud cover, the greatest amounts of solar energy are in the Southwest, in west Texas, New Mexico, Arizona and southern California. Likewise, the Great Plains regions along

the eastern edge of the Rockies have ample supplies of sustained winds. However, the geographic concentration of sunlight and wind requires long-distance transmission of generated electricity from the optimal locations; some of the energy is lost during transmission and corridors can be expensive to build. Further, water is a common component of electricity generation, particularly when steam generators are used as in concentrated, solar-thermal production. Because optimal solar production occurs in arid climates where water availability is problematic, solar-thermal technologies will probably have limited lifespans.

Solar and wind – indeed, all "electric" technologies – have been limited by the need to store energy. While technology has generally progressed exponentially, battery technologies have struggled to keep up. In development of electrical systems, engineers must contend with the size and weight demanded by batteries. Batteries remain the principle obstacle to the development of electrical vehicles of practical range. However, a new technology – the semi-solid flow cell – developed at MIT can provide 10 times the energy density of contemporary batteries in a form that can be scaled to industrial applications at low cost (Chandler, 2011). The improvement of battery technology will improve the viability of solar and wind options.

Biofuel

Not all new fuel experimentation is based on wind or solar energy. In the 2000s, substantial attention was directed to developing biomass fuels. In truth, biomass fuels are not substantially different from coal, petroleum and natural gas; after all, the fossil fuels are biomasses that have been sequestered underground for thousands of years. Biofuels are developed from surface sources of organic material. Consequently, biofuels burn similar to fossil fuels. Their principle environmental advantage is that surface level biomass releases CO_2 that had previously been absorbed from the atmosphere while conventional fuels release CO_2 that had been previously sequestered.

From biomass, two fuels are produced: ethanol and biodiesel. Ethanol is an alcohol produced from the fermentation of sugars in plant material. Using corn, the United States is the world's largest producer of ethanol. Utilizing cane sugar, Brazil is the second largest producer of ethanol (Wikipedia). In many nations, including the United States, gasoline regulations require ethanol be added to refined gasoline. The recent history of ethanol production has been controversial as the use of food sources for fuel production has increased food prices. Further,

corn is an especially poor choice of material for ethanol production for two reasons. First, ethanol extraction from corn is inefficient, requiring an intermediary step to extract corn sugar. Consequently, some analysts have calculated that the production of corn ethanol requires more input energy than it yields (Patzek, 2004). Second, corn products are inputs in many other food and industrial products. As corn prices rise, the prices of products that use corn inputs will rise. Subsequently, demand for corn substitutes will also rise, resulting in further price inflation. Corn ethanol production in the United States grew rapidly in 2005. By 2007, corn prices had doubled, resulting in widespread increases in beef, milk, corn syrup, cereals, and vegetable oil (Rosenwald, 2007).

Whereas ethanol derives primarily from plant sources, biodiesel can be produced from a broad range of organic material. A major advantage of biodiesel, many of the inputs are waste products in other businesses (e.g., waste grease from restaurants). Oils derived from plants, algae and animal fats can be refined into fuel similar to conventional diesel (Scott, 2010). Further, biodiesel production does not require components used for food (Scott, 2010).

In the United States, nuclear energy has had an uncertain future. Capacity has essentially remained flat for a decade. In much of the world, particularly France and Japan, nuclear power is the primary source of electricity generation. On March 11, 2011, a high-magnitude (9.0) earthquake struck off the coast of Japan near the Fukushima nuclear plant northeast of Tokyo. The earthquake generated a tsunami that struck the Fukushima plant with a 14m wave, which exceeded the capacity of the protective walls around the facility. The wave damaged the plants plumbing works and impaired the ability of controllers to keep the reactors cool. The damage resulted in meltdowns of multiple reactors and release of radiation into the environment. The Fukushima crisis is one of the worst nuclear disasters, second only to the Chernobyl event (Wikepedia). While there is no solid public opinion evidence yet, it is likely that nuclear power development will be curtailed for decades as a result of the Fukushima event. In June 2011, Germany approved a plan to completely exit from nuclear power by 2022 (Neely, 2011).

The Mid-Future

The most visible private plan for alternative energy is the Pickens Plan (www.pickensplan.org). Despite its high profile campaign and pledges from both presidential contenders in 2008, the Pickens Plan has failed to gain momentum; former oil executive T.

Boone Pickens maintains his advocacy for the plan, which calls for increased reliance on wind energy for electricity generation and the use of compressed-natural gas (CNG) for motor vehicles (PickensPlan.com).

Biofuel development offers some medium time horizon productivity. While current ethanol production relies on the sugars people might otherwise use for food, future production will increasingly rely on the parts of plants we cannot eat: those high in cellulose. Cellulose is found in the woodier parts of plants like stalks and trunks. Because it does not use food sources, cellulosic materials are better sources for ethanol than corn or sugar. If researchers are successful in developing viable processes for producing cellulosic ethanol at industrial scales, ethanol will be a more important fuel source in the future. With regards to biodiesel, algae offer the most promise as a fuel material. Algae require three nutrients: water, sunlight and carbon-dioxide. Algae can double its mass several times in a day and more than 50% of its mass is lipids that can be refined into fuel (US Department of Energy). They can also be grown in convenient vats on existing industrial facilities to make use of emitted CO_2. By capturing emitted CO2, algae vats can convert a pollutant waste product to a fuel source. At current technologies, algal fuels can be produced for about $8 per gallon; technological advances are needed to bring algal fuel production to a competitive level (US Department of Energy).

If nuclear energy can weather the political storm engendered by the Fukushima crisis, a new form of nuclear energy may become commonplace. Scientists at Los Alamos National Laboratory developed very small nuclear fission power plants engineered without mechanical parts. Small and Modular Reactors (SMRs) a small and relatively inexpensive fission-based power plants that can be deployed in a diffuse manner to produce highly localized power. Hyperion Power Generation produces an SMR called the Hyperion Power Module (HPM). The reactor for the HPM is fueled at the factory with uranium nitride, a non-weapons grade fuel, and sealed. Upon installation, it is buried in the ground. When the fuel is exhausted, Hyperion recovers the reactor and returns it to the factory to refurbish and refuel. Each reactor is enclosed in a cylinder 1.5 meters (diameter) by 2.5 meters (height), produces 25 Megawatts in output and can power 20,000 homes for 8-10 years (Hyperion Power Generation). The Obama administration has requested $500 million for SMR research in FY2012 (Wald, 2011).

Less a source of new energy than a means to better manage existing supplies, the Smart Grid being deployed will produce energy savings. Under the plan, residences and businesses are

being outfitted by enhanced meters that provide more information to the consumer and to the network. By integrating increased computational capacity at various critical points in the electricity distribution system, proponents hope to reduce demand while improving the efficiency of distribution.

The Long Future

Over longer time horizons, new power sources are needed for human progress to continue. Incremental increases will not keep pace with growing demand. Instead, a revolutionary new energy source is needed to meet future needs, and certainly, to progress to a Kardachev Type I status. Advances in solar energy are likely to help meet future energy needs. Additionally, the future economy will depend more heavily on hydrogen. Finally, the best candidate for revolutionary status is nuclear fusion.

There are three promising advances in solar energy on the longer horizon. Today, flexible film solar cells are being produced, but they are at a primitive stage of development. Theoretical applications suggest flexible films can eventually be used to transform vast surfaces into electrical generation power plants. If these visions are realized, future construction will incorporate flexible solar films as façade materials on a broad range of products. Imagine skyscrapers in which the exterior surfaces are used to power the buildings and provide excess energy to the grid. Likewise, imagine riding in a car that draws power from the thin films covering the surface of the vehicle.

Forecasters have long forecast the emergence of the "hydrogen economy." In the hydrogen economy, energy comes primarily in electrical rather than chemical forms. Rather than combust hydrocarbons – a process itself that utilizes the chemical properties of hydrogen, new energy sources will use hydrogen as a source of electrons. In this economy, hydrogen batteries and fuel cells dominate. Currently, the absence of a fuel distribution infrastructure presents a significant challenge to using hydrogen to fuel transportation. One potential solution relies heavily on solar technology. Hydrogen stations are being deployed by SunHydro across the United States, beginning on the East Coast (Mick, 2010). Some of these stations use solar-electric energy to power hydrolysis, the process by which water is split into hydrogen and oxygen gases. The hydrogen is captured and compressed for fuel dispensing.

Third, new biosolar technologies are being developed that build on the photosynthesis process which plants gather energy from the environment. In plants, photosynthesis provides a means for plants to convert solar energy to chemical energy with nearly 100% efficiency. In 2005, three scientists isolated the protein, now called the Fenna-Matthews-Olsen light-harvesting protein or FMO, that enables the chlorophyll in plants to transfer light energy (PhysOrg.com, 2007). Because current solar technologies have efficiencies with theoretical maximums of 29%, biosolar presents a dramatic and potentially revolutionary improvement in solar technology (Wikipedia). Early applications will use vats of photosynthetic organisms to convert light. As advances are made in operationalizing the FMO protein, one can imagine its incorporation in a host of useful products such as paints, glasses, roofing materials, and casings for electronics.

Always around the corner, the long-pursued technology of fusion remains a potential revolutionary source of energy over the long horizon. Scientists have long dreamed of fusion, and for nearly as long, have been frustrated by slow progress. Today, there seem to be some promising advances that may produce commercially viable fusion reactors by 2030.

Fusion is a process that produces energy by fusing two or more atoms of light elements into a single, heavier element. In the process, mass is converted to energy according to Einstein's famous relationship, $E=mc^2$. A fundamental source of energy, the fusion process drives the energy output of stars like our sun. Currently, existing fusion reactors are exclusively used in research and none have achieved the breakeven point, where output equals input. The Joint European Torus (JET) holds the current record with an output equal to 70% of input energy (ITER). An international consortium is developing the *ITER*, a deuterium-tritium (DT) reactor facility being built in southern France to test a concept for breeding tritium[82] (ITER). The ITER is expected to far surpass breakeven, achieving an output to input ratio of 10 (500 MW output from 50 MW input) (ITER). In the future, a reactor capable of producing 1 gigawatt (GW) per year would use only 250 Kg of fuel, as compared to 2.7M tons for a similar capacity coal plant (ITER). Future reactors may provide the means to develop human outposts on other planets.

In order to achieve fusion, fuel matter must be superheated to extreme temperatures. However, the resulting plasma flow would greatly damage any container with which it came into contact. Therefore, fusion reactors use magnetic fields to control the plasma flow. The great

[82] Tritium is very rare – global inventory is estimated at 20Kg

expense in building fusion reactors are the materials used to control the flow and withstand incidental collisions with escaping plasma and radiation. Most fusion reactions use isotopes of hydrogen like deuterium or tritium. However, hydrogen fusion produces 80% of its energy as neutron radiation, which are difficult to control and devastates the interior reactor walls; consequently, the walls need to be reconstructed every five years, an expensive process that makes fusion commercially unviable at present (Channel, 2007). Most visibly promoted by former astronaut and geologist Harrison "Jack" Schmitt and his colleague, Dr. Gerald Kulcinski[83], lithium fusion produces energy in more usable and less destructive forms. In lithium fusion, the lithium-6 isotope would be used as fuel. Unfortunately, lithium-6 is extremely rare on Earth and its primary source is harvesting from decommissioned nuclear weapons (Channel, 2007). However, lithium-6 is abundant in lunar rock; consequently, development of lithium fusion will be linked to future space exploration.

The United States is experimenting with an alternative form of fusion generation called inertial confinement fusion. Located at the Lawrence Livermore National Laboratory, the National Ignition Facility (NIF) uses 192 ultraviolet laser beams focused on a millimeter sized fuel pellet of DT gas to ignite a fusion reaction (Lawrence Livermore National Laboratories). The NIF was constructed in 2009 and began research operations in 2010. In the future, Laser Inertial Fusion Energy (LIFE) reactors would utilize inertial containment technologies to produce commercial energy. According to the LIFE timeline proposed by researchers at Lawrence Livermore National Laboratories, net-energy (output more than input) ignition will be demonstrated at NIF by the end of 2012; further, a prototype LIFE reactor will demonstrate operation by mid-2020s and be available for commercial roll-out by late-2020s (Lawrence Livermore National Laboratories).

Conclusion

Energy is fundamental to our existence. It drives our economy and our lifestyle. Energy is closely linked to prosperity and health. In the modern economy, goods are transported across long distances and information technologies draw on electrical grids to speed communication. Energy is so fundamental to a nation's security that nations will go to war to protect or acquire

[83] Fusion Technology Institute, University of Wisconsin-Madison

critical sources. At the same time, concern over environmental damage is driving humanity to seek out cleaner and more efficient sources.

There is certain poetry in our energy history. At its most basic, all energy on Earth is derived directly or indirectly from the sun. In primitive societies, wood may be the primary source of fuel. But, the tree that provided that wood grew by converting solar light to energy through photosynthesis. The fossil fuels humanity uses today were once plants, algae and other photosynthetic organisms. The food we eat grew either by consuming sunlight or by consuming the plants that consumed sunlight. The future will be dominated by new forms of solar energy. In the future, new technologies will enable us to collect solar energy with greater efficiency, in various forms, and ultimately, to replicate the processes that fuel the sun itself.
