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VIRAL TARGETING OF THE IED SOCIAL NETWORK SYSTEM

By Scott Swanson

Extremist groups, insurgents, and resistance elements continue to use Improvised Explosive Devices (IED) to attack coalition forces to thwart "infidel Crusaders'" occupation activities and assault rival sectarian factions. The effective and low-cost IED weapon in Iraq hides as a tool created within an elusive social network system and its use will persist in opportunistic attacks if the status quo does not shift. This IED system[1] further devastates Iraq with evolving ambush accuracy and component sophistication, creates supply-chain income opportunities within the community, and beckons the youth who require a social-psychological outlet. Regrettably, IEDs will continue to be a weapon to channel the three "Rs" attributed to insurgencies: resentment, resistance, and revenge, unless social improvements can be rapidly implemented or the supporting networks can be debilitated.

Cutting off the regenerative hydra- heads of disparate insurgent networks is nearly impossible. Excessive direct action without timely intelligence runs the risk of civil infringements and insurgent propaganda opportunities. Capture and kill counter-IED solutions being used today have significant counter-effects of alienating and angering many Iraqis. The perceived social infractions create more discontent within the Iraqi communities and increases resistance participation.

Special Forces have typically been attuned to the delicate interaction and trust building required between vying sects, tribes, factions, and families.   Exchanges taking place between the SF teams and locals enhance intelligence collection and counterinsurgency (COIN) operational success in combat sign-tracking, targeting, combined/joint constabularies, and advisory activities. Such achievements replicated in multiples can destroy and disrupt insurgency groups with subsequent effects on the IED social network. The task of reducing negative "big military" battlefield effects and population flashpoints while minimizing contradictions to civil affairs and psychological themes adds to an already full plate. As SOF juggles shifting priorities with limited resources the insurgency grows and so does the IED threat.

Commanders and supporting intelligence resources involved in counter-IED activities require a deep understanding of the IED system's social components to improve targeting and reduce time constraints in social network analysis. Unfortunately, quality intelligence on the IED network is often not available to meet operator requirements. Gaps in this intelligence make it difficult to examine the IED system's vulnerability to attack, target criticality, downtime and destructive effects,

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[1] The IED "System" refers to the overall compilation and interaction taking place to create the IED. This entails a human system that finances, recruits, indoctrinates/trains, safeguards, emplaces, and detonates. It also includes the device system which procures/assembles, moves the device to the human or location, and eventually the OBJ/TGT.

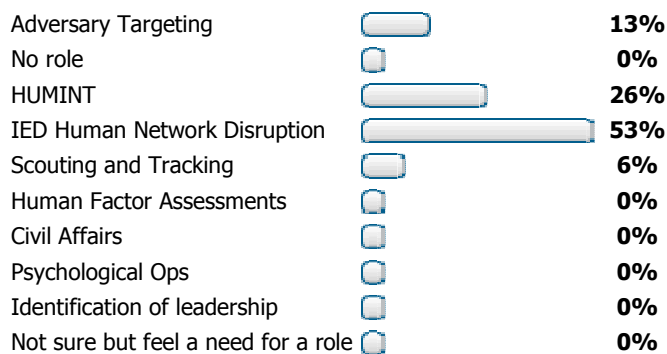**What is the most effective role for SF with regard to IEDs and the IED system?**

Adversary Targeting		13%
No role		0%
HUMINT		26%
IED Human Network Disruption		53%
Scouting and Tracking		6%
Human Factor Assessments		0%
Civil Affairs		0%
Psychological Ops		0%
Identification of leadership		0%
Not sure but feel a need for a role		0%

Table: Poll conducted within ARSOFU Irregular Warfare forum February, 2007

and operational requirements (CARVER[2]). The consequential result from light intelligence content is to engage more ad hoc targets. Statistics have shown, however, that neutralizing individuals with *rare skills* is 60% more effective than eliminating insurgents at random.[3] The trick then is to improve targeting around rare skills found deep within an impenetrable social network without adequate intelligence.

An augmentation to current counter–IED network activities is the application of Social Network Viral Targeting. Viral targeting is part of the "defeat mechanism" in the evolution of Operational Intelligence as it disrupts the human element around rare and valuable skills of insurgent groups with minimal civil impacts. The targeting method is potentially one of the most effective roles for SF action towards the IED system.

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[2] USAF uses a fairly good model that consists of 2 components: Criticality (Value, Depth, Recuperation & Capacity); Vulnerability (Cushion, Reserve, Dispersion, Mobility, Countermeasures & Physical Characteristics), Ref JP 2-01.1.
[3] Kai Stinchcombe, How Can Governments Disrupt Terrorist Social Networks? Draft 10/16/04
http://www.stanford.edu/~kstinch/academic/stinchcombe_terror networks.pdf

BACKGROUND

IEDs are often classified as Static IEDs, Vehicle Borne IEDs VBIEDs, Suicide Vehicle Borne IEDs (SVBIED), and Person Borne IEDs (PBIED). Simply "IED" will be used in this writing unless specifics are required for differentiation. The IED System is generally broken down by categories of: Information, Money, Personnel, Material, and Targets with a counter–engagement model split between *Attacking the IED Network* and *Defeating the IED Device*. The social network component most pertinent to special operations is focused on *Attacking the IED Network* through the various IED system stages, which is the foundation of this assessment.

The term "network" is used because of the unstructured relational activities correlating to an action's nature that have some common characteristics and can be analyzed collectively. The IED network is not necessarily a formal organization. It similarly refers to the complex bodies of lose overlapping social partnerships that one would tap in order to facilitate IED core and supporting tasks. This process allows

repeatable missions to be accomplished successfully through procurement channels.

IED SOCIAL NETWORK

The present IED social network tends to be comprised of very fluid, linear decentralized structures with a number of recurring roles. This structure is unlike other "traditional" insurgent groups that follow centralized hierarchical organization models. Most emerging networks are inter-laced outside of core cells. Core cells are generally comprised of between 5-10 members. Some have been found to be as small as 3-4, but they are much less effective. Affiliated around and within the IED is a system involving roles of financier,

bomb-construction engineers, device emplacement and concealment, and detonating triggerman/bomber. Those roles also have connecting nodes in supporting roles.

Modular duties within the core IED roles can be over-arching and can involve others acting along the IED supply chain system for:

- information (target scouting, intelligence, intercept, lookouts, and Io exploitation after the event);
- recruiting;
- hardware components and explosive compound acquisition;
- social-network facilitation for procurement, logistics, and freedom of movement;

Nature of Terrorist SOS,
Simple & Complex Relationships
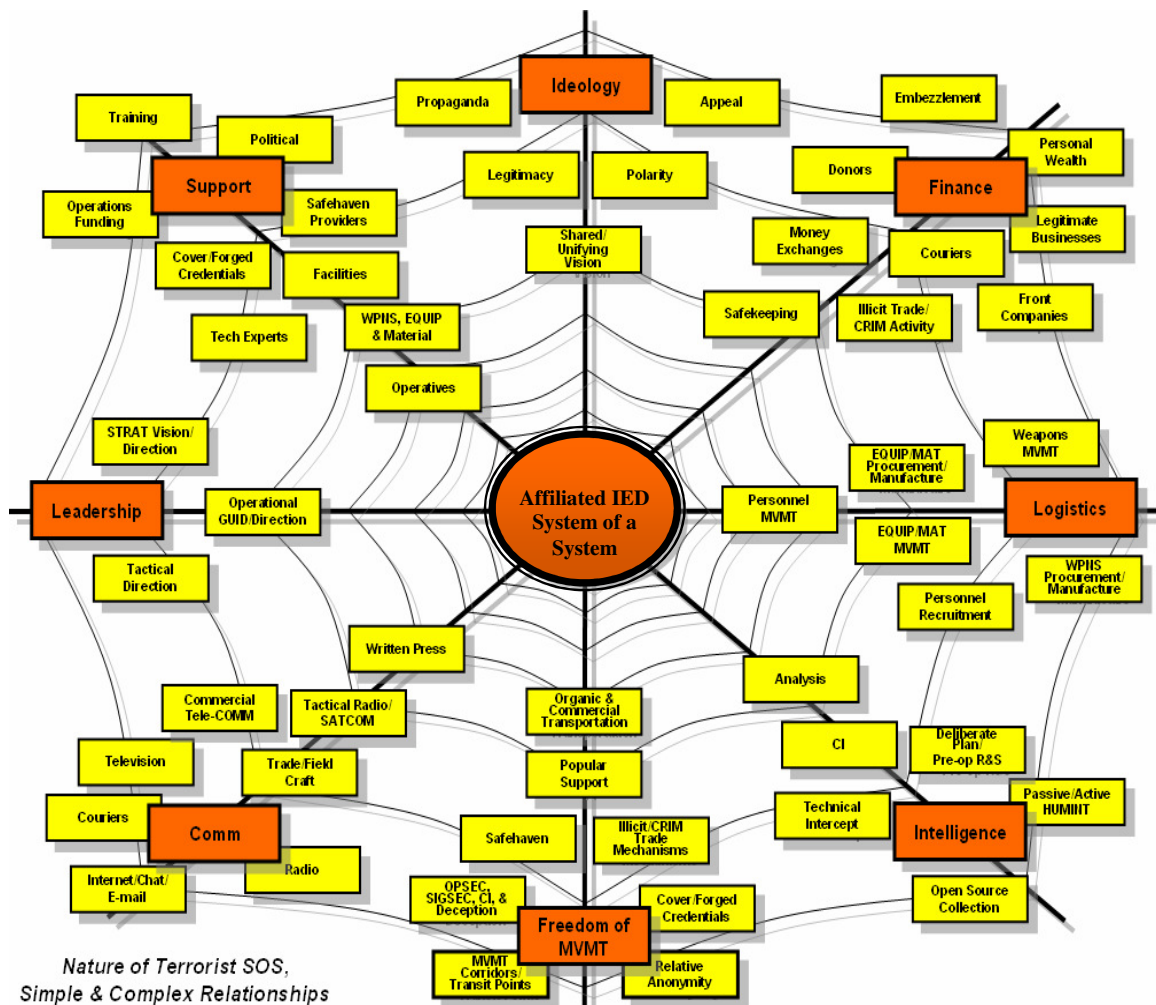
- bomb-making (explosives, initiators, complex assembly, and camouflage);
- emplacement

Vast numbers of today's hot-spots have adversarial groups operating in similar small autonomous adaptive cells that are independently orchestrated with no central authority and limited connection points. These covert networks don't behave like normal social networks. Underground members don't form many ties outside of their immediate cluster and often minimize the activation of existing ties inside the network. Strong connections between prior contacts, which were frequently formed years ago in school, neighborhoods, mosques, and training camps, keep the cells linked. Unlike normal social networks these bonds remain mostly dormant and therefore hidden to outsiders. This also allows cells to go detached ways and makes them nearly impossible to infiltrate with outsiders.[4] The cloaking also allows some cells to be created around deceitful criminal objectives where greedy and corrupt individuals may pretend to have religiously inspired drives in order to recruit others motivated by honor and quests to regain their dignity.

IRAQ'S IED NETWORK

The IED system in Iraq further complicates matters by expanding citizen involvement in both active and passive roles but is less insular than other terrorist cells. Military operations accordingly have to prepare themselves mentally and procedurally on the appropriateness of directly engaging the women and children participating in the IED

system. Also at hand are the innocent civilians being coerced into activities under the duress of insurgents, and the one-off IED events perpetrated by an offended Iraqi who needs to address a perceived honor infraction.

The number of highly skilled bomb makers making the most complex IEDs (large, difficult to locate, high-tech detonation) are relatively small due to the military (-like) training or engineering skills required. Many of these small and highly skilled IED teams can operate as a freelance unit hired out to other insurgent groups. Some of these IED teams have posted their contract for hire services through the internet with video footage of past acts serving as promotion and bona fides. Tracking these IED makers and discovering their caches and workshops is a high priority of coalition planning.

Clandestine groups complicate identification by remaining very fluid in their village movements and local interaction with an emphasis on operational and common goal cohesion. Numerous cells and factions share information, techniques, materials, personnel, etc. as appropriate with no formal or ongoing relationship necessary.   Offshoots of these groups or aspiring individuals fall into about 100+ mid-tier expertise IED cells and insurgent networks. Of the almost 3,000 IED events reported each month, most unfold around a basic formula for assembly and emplacement within such mid-tier groups.

Skill sets can come very close to the highly-skilled IED makers since this mid-tier element is adept at exploiting internet PC based training. Other groups are taking advantage of procuring ready-to-assemble kits from suppliers or sponsors. The evolution of adeptness in developing advanced IED

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[4] Valdis E. Krebs, Uncloaking Terrorist Networks. Source Online:
http://www.firstmonday.dk/issues/issue7_4/krebs/#author#author

capabilities outpaces all historic resistance activities to date (Ulster, South Lebanon, Chechnya, Gaza, etc.).

Many of these groups commingle in factions of 5-10 to share both intelligence and tactics. Leadership is comprised of many former Iraqi military colonels, lieutenant colonels, and majors. The former military cadre provides additional technical skills, small unit tactics, social networks, and access to money/resources. While most cells work in their own regions, at times cells under some higher command or affiliation can be dispatched by cell commanders or lieutenants to other locations to blur intelligence identification attempts. Other times cells may be dispatched to augment another cell for a larger coordinated attack.

At the bottom level is an increasingly threatening IED-capable group comprised of low-skill bomb makers and untrained willing participants in the form of gang structures or grieving locals. The Iraqi youth at the ages between 12-16 years are escalating in active insurgency participation and peripheral criminal activity. Some data suggest this latest generation of revolutionary actors is more violent than its predecessor. Incoherent gangs with members older than 18 years of age (avg. 18-25) have progressively transformed into Shia and Sunni militia armies as sectarian violence and revenge killings escalate. Older-teens' previous roles in disjointed gangs have now been filled with younger children who are victims of growing trends of displacement and migration of Iraqis. Three wars and twelve years of economic sanctions have also created traumatic experiences and subsequently

emotional problems exacerbating the volatility within this growing pool of insurgents.[5]

Police and military networks, house searches and raids, arrests of innocent people and of suspects, shutting off streets, forced hajib removal, touching of women, sectarian warring, and other persistent social issues makes Iraqi life virtually unbearable. Children see homes demolished, beatings and humiliation of their fathers, killings, and other traumatic events. The resulting consequences are high levels of anxiety, depression, paranoiac symptoms, and hyper arousal. Outlets are violent and criminal activity.[6] Many young boys congregate with friends outside of their overcrowded dwellings and are progressively more vulnerable to the appeals of militias or insurgent group recruitment. These kids release their frustrations, humiliation, and resentment through increased tribal, Islamic, and Arab identity outlets pushed by the local factions, militia, and units, while directing the actions against US forces and religious or sect rivalries. Great internal self-worth and an instilled sense of appreciation or belonging is created for the

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[5] Reference based on a proposal submitted by Dr. Ali Hameed Rasheed, to the Ministry of Health in Baghdad to create a psycho-social mental health referral system for children in Iraq. Documentation coincides with many other sources on the topic of PTSD in the Middle East.

[6] Youth Issues and Traumatic Behavior has been referenced in numerous articles, some of which were written by Jonathan Powers, a former U.S. Army captain who served in Iraq in 2003, who now works with kids there. Other references were made in Newsweek, The Next Jihadists, January 22, 2007. These observations follow many similar studies on Palestinian children written by Samir Qouta, Raija-Leena Punamaki, Eyad El-Sarraj, and Derek Summerfield. In 2006, a study by Iraqi psychiatrists, sponsored by the World Health Organization, found 30% of children surveyed to be suffering from post traumatic stress disorder. Of those also surveyed, almost 50% had been exposed to a major traumatic event. In another study by the Association of Psychologists of Iraq, 92% of kids surveyed showed signs of learning impediments. It is estimated that only 30% of the 3.5 million Iraqi elementary-age kids are attending school now, down from 75% last year.

youth by being taken in and offered the opportunity to dig an IED hole or keep watch from atop a village dwelling.

Lack of violence accountability and impunity increases children's participation and creates a surplus of those willing to participate in insurgency activities. The core members at this age are very irritable, distrustful of others, and have a willingness to die due to extreme feelings of situational hopelessness. The result is more competition to engage in insurgent activities and shifts the IED system's financial backdrop due to a surplus of volunteers in the supply chain.

FINANCIAL RESOURCES

The IED financial support landscape has changed quite dramatically over the past few years. Whereas the IED system staging had started with a financier initiating activity at arms length, now groups are becoming more self-funding. Others are becoming more profit centric over being ideologically driven but they still can leverage those who do have strong ideological interests from politics to religion (not that the two are very separate in the Middle East). This means that any number of combinations from Bekka Valley, ex-Mukhabarat (M-21 directorate and Spec Ops M-14) Hamas, Hezbollah, Islamic Jihad, etc. can lend a degree of expertise in the IED. More sophisticated Persian anti-tank mines triggered using photoflash and infrared initiating systems as well as explosively formed penetrators (EFP) appeared in the Iraqi theatre in 2005 and have been used with increasing effectiveness.[7]

Groups, especially those linked to the former regime elements, have enough sources of money to sustain violence for a great period of time. Some have fled to neighboring countries to build greater financial bases in support of insurgency. National charities, private donors, mosques, 'Zakat' alms, and governmental organizations around the region are also contributors to insurgent groups. Much of this money does not actually go into the low-cost IED as much as it contributes to the strengthening and power of influence from a group with the means to travel, bribe (officials, clans, families), and personally reap the acquired assets.

Towards the beginning of the Iraq conflict a participant planting an IED could yield the equivalent rate of $1,000. Another $1,000 could be earned for killing an American.[8] Martyr benefits were provided to the surviving family such that some rewards and sense of appeal drove foreigners to fight in Iraq.

Within a matter of a few years trends saw a decline to $300 for emplacement with a $700 bonus for a successful targeting. Today families' incomes are being sustained from rates of $20-50 to set bombs, around $35 for bomb couriers, and former suicide bonuses to martyrs' families have also dropped significantly. Artillery rounds (a 152mm. round can sell for $75-250 and an old Soviet surface-to-air missile can sell for $1,000) and other explosive compounds have risen in prices now that demand has increased with added

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[7] Fourteen U.S. soldiers were killed recently in their armored vehicle by new shaped-charge Improvised Explosive Devices appearing in the insurgent theatre of operations. John Ward Anderson, "Bigger, Stronger Homemade Bombs Now to Blame for Half of U.S. Deaths." The Washington Post 26 October

2005. http://www.washingtonpost.com/wp-dyn/content/article/2005/10/25/AR2005102501987.html
[8] Newsweek, p. 32. January 22, 2007; similar references made in Global Guerillas "The IED Marketplace in Iraq" and same article written by Greg Grant, Defense News, August 3, 2005; Bomb Squad discussions; Defense Technology International, Behind the Bomb Makers, January/February 2006; www.iraqslogger.com; and other black market reports/sources.

participants including those ideologically driven and those who must earn wages to support a family (many head of household bread winners have been killed). Others are still willing to act as insurgency supporter or insurgent with no pay, either out of fear or sense of duty.

Black market visas for families to leave Iraq have increased from $1,500 to reports of over $15,000, which means meager salaries will require supplemental incomes. Other costs that have surged are arms such as AK-47s selling for around $100 to over $300 now. Glock 19 9mm pistols have also risen in prices. Those with social ties to weapons or direct access to arms find the business of insurgency the only viable economy. Some blame is in part on the U.S. with regard to an introduction of U.S. dollars into the Iraqi marketplace without a pre-determined exchange rate. Results are increased black market opportunities and inflation. This also complicates estimates on IED price supply and demand considerations. One thing is clear, however: there is an overabundance of explosive remnants of war (ERW), in the form of abandoned, scattered, or stolen ammunition stocks that can provide materiel for IEDs for the indefinite future in Iraq at current rates of usage. Military grade explosives are also readily available in neighboring countries. The ingredients for home-made explosives (HME) are also abundant in Iraq.

These figures have a great impact on operational targeting and security planning. Insurgent fundraising will increase around the less commoditized items in the IED system such as higher caliber talent, more complex triggering and detonation mechanisms (to counter procedures and IED-jammer devices), VBIEDs, etc.

The fundraising around this area will be tied to increased kidnapping, extortion, black market activities, white collar resources (who are largely driven to fund based on ideology), neighboring state actors through surrogates such as former/current government and military officials (often driven by ideology and money), fundamental Islamic groups, tribe and clan chiefs (often driven by power plays, honor, and self-interest), and gang activity (in some Iraqi neighborhoods money is cleaned through selling cars and some teens in neighborhoods may have three to five cars).

Insurgent money-schemes will evolve in short time from predatory operations to parasitical ones that yield a steadier, more dependable from of income[9] and combine more territory taxation as a military movement. This segment will operate according to clan and tribe and drive more of the black market activities as a formal economy[10], and begin to influence the "white collar", military/law enforcement, political administration more and more (estimates cite official corruption costs Iraq $5-7 billion per year). This will further stress the Iraqi infrastructure.

Money that had gone to recruitment resources will dwindle in some areas of low-complexity IED participation, but this is where extremist recruitment will capitalize on the ideologically motivated volunteers. Lines of the innocent become further blurred for operators

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[9] This follows typical escalation of black market operations of guerrilla organizations. Observations from Iraq mirror many of the published works of R.T. Naylor's research of insurgent economies.

[10] Experts estimate that 150,000-500,000 barrels of oil may be stolen per day due to the black market. Sources published and Iraq Study Group Report illustrate the Iraqi political leaders tendencies to pursue their personal, sectarian, or party interests, and that corruption is more responsible than insurgents for sector breakdowns. Many U.S. trained Iraqi Freedom Forces used their station to extort their fellow Iraqi citizens for money.

as insurgent activity is increased by decreasing ages and gender engagement expands to more females in support activity. Females primarily volunteer based on for vengeance, especially if their children have been killed. Increased friendly-fire casualties inflicted on citizens are the more significant insurgency growth levers. Device sophistication is increasing based on lessons learned and experience, but also based on the fact that erudition must evolve to yield higher dollars for those driven by financial motives.

When the supply of IED "gangs" is increasing martyr pay goes down for suicide activities, and increased sectarian conflicts cause an increase in amateur status cells with increasing mistakes and faulty detonation results. A number of side-effects also come with reduced quality cells since disharmony among Arabs creates more disorganization and disputes for greater fundamentalist movements. This will cause such movements to become a bit more vocal and visible to attract followers, greater internal/external support, and re-instill a wider Islamic movement.

The effectiveness of most IEDs will be reduced further but security resources will be tested due to greater instances distracting the focus from more complex cells.[11] On the other hand, when an IED is successful it will likely be of higher sophistication and casualty-causing capabilities for maximum political impact. Special Operations can get caught in the middle of these shifts. Targeting plans should not veer to the ad hoc chases driven by increased low-complexity IEDs that are situational honor-based and opportunity events. Selected targets remain higher value than most prospect
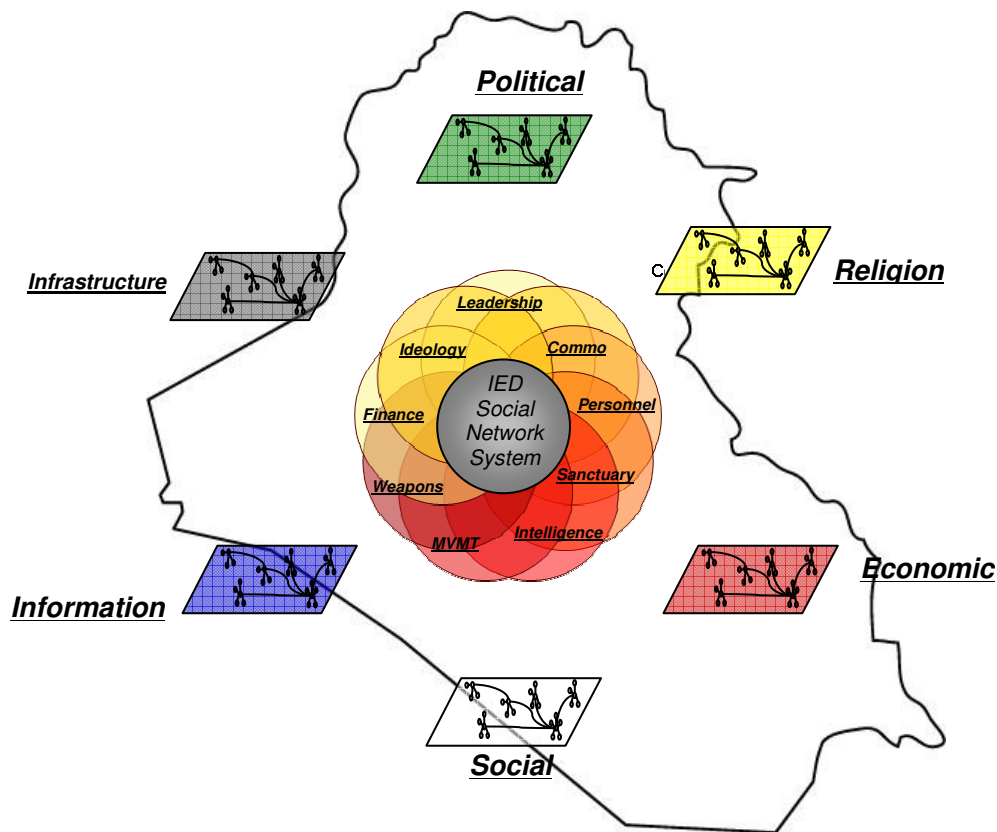
targets. The smaller tasks are great real case training opportunities for Iraqi investigators and special police to demonstrate learned TTP.

PHYSICAL RESOURCES

The amount of weapons and ammunition available in Iraq is astonishing. Most households have a weapon, many with AK-47 automatic weapons. Arms dealers find great profit in selling military small arms and mortars within villages, and weapons bazaars can open in a roadside stand within minutes. Such weapons are also found in caches throughout the areas in orchards, canals, and gravesites. Where weapons are not at the ready, manufacturing and reverse-engineering is also a commonplace.

Most insurgents have learned that all they need to create a bomb is a fuel and oxidizer that can be combined chemically and detonated with a conflagration of between 9,000 and 27,500 feet per second. Many are professionals or semi- professional scientists, engineers, architects, and civil engineers. Other expertise has come from sources such as the Republican Guard, Special Guard, Hezbollah, Iranian Intelligence, and the internet. Unexploded or stockpiled ordnance (60mm or 81mm mortar rounds and 155mm shell), black powder, smokeless powder, ammonium nitrate (and ammonium nitrate chemical mixtures such as aluminum powder, fuel oil, sugars, etc.), dynamite, C4, Semtex, PETN, and nitroglycerin tend to be fairly obtainable and common. However, each explosive compound will be procured from a different supply chain, have greater cost disparity, and require an engineer or bomb-maker at differing skill levels. Most of these can be mapped together in a social network analysis knowledge exploitation (SNAKE) model for the area or less detailed

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[11]The basic response by adversaries has been to increase the number of IEDs at the risk of quality and complexity. This creates a quality all of its own.

Terrorist System of Systems since rapid construction typically warrants a maker to utilize similar methods.

Device detonation equipment will also have a logical coupling and affiliated expertise. Cells shift their use of triggers. This is in part to availability but also by preferences and new innovations. Some cells will be forced to use any available black market remote controlled sending and receiving units while others will use command hard wire devices. MO should not be confused with shifts in the black market supplies. Only good HUMINT, SIGINT, or MASINT can detect some of the indicators around such shifts. Victim operated against people and pressure or timed detonated against static targets will also have slightly differing cells and network links based on ideology and motivation. Other cells that desire the employment of more unconventional weapons, such as 82-mm chemical (TD-42 liquid) mortars, require different supply channels and expertise to execute their missions. Toxic Industrial Chemicals are available in large quantities throughout Iraq and pose to be another easily obtainable weapon.

HUMAN RESOURCES

Insurgency participation in Iraq has three strong foundations: religious ideology (and convictions), money, and social factors (nationalism, pan-Arabism, honor, debt, threats). Iraq also appears to have a number of different types of insurgencies: a resistance movement, revolutionary strategy, civil

sectarian strife, and a conflict between external state actors. The motivations behind each struggle differ in purpose, scope, and objective from one faction to another.

The Iraq Study Group Report cites, "Most attacks on Americans still come from the Sunni Arab insurgency. The insurgency comprises former elements of the Saddam Hussein regime, disaffected Sunni Arab Iraqis, and common criminals. Shiite militias engaging in sectarian violence pose a substantial threat to immediate and long-term stability. These militias are diverse. Some are affiliated with the government, some are highly localized, and some are wholly outside the law. They are fragmenting, with an increasing breakdown in command structure."

Short term differences in ideology can be overcome by some cell nodes with a united/common goal and opportunity for many to profit. Such was a case outside of Iraq in the 1980s as US black gangsters built ties in prison with US-Mexican gang members with close connection to Colombian drug dealers. Each group would not willingly collaborate but individuals could act as interface points to other groups without a visible alliance. This created a dual drug conduit supply chain that also included previous black gang relationships with the Mafia. Tweaks here and there based on gang locations, willing participants, and law enforcement dictated what would be sold as cocaine and/or crack. Before economies of scale were created to involve more people in this drug selling process and open the supply chain through social networking, it was nearly impossible to earn a living in a street gang.[12]

The roles of bomb emplacer, triggerman, scouts, and bomb engineers typically fall into the category of financial interests albeit rationalized in ideology to drive the US out or to attack a rival faction. In the cases of VBIEDs most attacks are against rival sect civilian targets and not the US.

Triggermen have been found to have some criminal backgrounds and military training, which is also true of the emplacer. Digging, scouting, targeting can be done individually or in teams with an experienced individual and a couple youth or unseasoned activist. Many Iraqi's who wish to be involved only moderately can act within a cell's surveillance team as a spotter or security element communicating through hand signals or cell phones and taking the cover of a market browser, taxi driver, worker, or child at play.

Those who subscribe from an ideological perspective and have been recruited for suicide missions are typically hand picked with some attribution to the mosque. In younger circles, often the subject of dying for Allah is mentioned with a group and reactions are monitored. Those who are most interested in discussing matters further are singled out. In most of cases of attracting street resources, it is a male ranging in age from 12-18 but certainly the target range can stretch through 30 years of age and higher.[13] The small batches of foreigners coming to Iraq are from Saudi Arabia, Egypt, North Africa, Jordan,

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[12]Steven Levitt and Stephen Dubner, Freakonomics: A Rogue Economist Explores the Hidden Side of Everything, Harper Collins, 2005, pgs. 109-112.

[13] The trend for younger participants is not exclusive to Iraq. Most data on those in the ranges of 12-18 comes from research on Palestine. Applicability is based on mirroring of circumstances and post traumatic stress disorder coupled with unemployment, daily violence occurrences, and the overall bleakness of life. Christian Science Monitor published an article to this point on 5 March, 2004 "As life looks bleaker, suicide bombers get younger." Also published was a statement in Al Wasat 29 March 2004 that 25% of Palestinian boys ages 12-17 wanted to become suicide bombers.

Yemen, and Syria. Upon arrival they head to mosques as an external resource where they can be linked to local resistance cells. Local mosques and sheiks in a village area can support between 10-20 insurgents- foreign or local.

Iraqi men who have lost their immediate family members, young impressionable distressed Iraqis, and foreigners are easy prey for self-destructive IED attacks. These individuals can be described as "Fence-sitters"; they are easily influenced to join if properly motivated and are used as fodder by fedayeen. Initially they come already sympathetic to insurgent cause, which makes them susceptible for recruitment into most any organization.[14] While they may have disparate and divergent ideologies; however, they do have common short term goals with those of the insurgent groups.

The call to jihad (usually referring to military exertion against non-Muslim combatants) can initially be presented in the broader usage and interpretation of striving to live a moral and virtuous life. Those more committed to the spreading and defending Islam, and to fighting injustice and oppression are recruited to make an impression "against the rejecters of truth after it has become evident to them." Qur'an verses drive the messages in calls to arms against seemingly overwhelming odds and that turning the back to a battlefield in fear or apathy can bring about the wrath of God:

> "Prophet! Rouse the believers to wage war. If there are twenty amongst you, patient and persevering, they will subdue two hundred: if a hundred, they will subdue a thousand of the disbelievers: for these are a people without understanding...—Qur'an, 8:65

> And fight in the way of Allah with those who fight against you...drive them out [of the place] from which they drove you out and [remember] persecution is worse than carnage...if they attack you, put them to the sword. —Qur'an, 2:190-194

> "O you who believe! When you meet those who disbelieve marching for war, then turn not your backs to them. And whoever shall turn his back to them on that day-- unless he turn aside for the sake of fighting or withdraws to a company-- then he, indeed, becomes deserving of Allah's wrath, and his abode is hell; and an evil destination shall it be. —Qur'an, 8:15-16

> 'Our Lord! Rescue us from this town whose people are oppressors, and raise for us from You one who will protect, and raise for us from You one who will help. —Qur'an, 4:75-76

SOCIAL NETWORK VIRUS DESIGN

In a report "How Big is the Iraqi Insurgency?" by John Robb of Global Guerrillas, estimates of the insurgency were calculated to be comprised of about 150,000 active participants with a worst case estimate around 300,000. Breaking down the individual cells with such a large sample and potentially non-calculated passive participants is nearly impossible with already constrained resources, yet by considering the afore mentioned roles, individuals or groups with the following characteristics can actually be identified:[15]

1. An individual or group where removal would alter the network significantly; e.g., by making it less able to adapt, by

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[14] Recruiters and indoctrination agents capitalize on existing psycho-social factors to develop a 'doctrine of necessity'. The factors are: Diagnostic Argument (what's wrong w/status quo, list grievances) and the Prognostic Argument (the solution is only possible thru violence).

[15] Destabilizing Networks, Kathleen M. Carley, Ju-Sung Lee, David Krackhardt, Carnegie Mellon University, November 2001.
http://www.ksg.harvard.edu/complexity/papers/connections4.pdf

reducing performance, or by inhibiting the flow of information.

2. An individual or group that is unlikely to act even if given alternative information.

3. An individual or group that if given new information can propagate it rapidly.

4. An individual or group that has relatively more power and can be a possible source of trouble, potential dissidents, or potential innovators.

5. An individual or group where movement to a competing group or organization would ensure that the competing unit would learn all the core or critical information in the original group or organization (inevitable disclosure).

All of these information factors are obtainable by SF elements that interact with family head sheiks (bloodline and emplaced), citizens, market vendors, imam religious leaders, political leaders, militia, Iraqi military, and local law enforcement. The IED factor is simply a tool used by the groups or a common thread to other groups. Access to specific skills within the IED system creates value within the network and when access to that skill is disrupted, they must identify a new restorative tie or learn the skill. Exposure is and the risk of detection is created by reaching outward into the network.[16]

To disrupt the patterns the next step is to collect intel around: [17]

1. The basic components that account for the networks structure; e.g., the number and types of sub-groups, or the number of triads, stars, and the extent of reciprocity.

2. The central tendency within a set of networks, and the networks that are anomalous when contrasted with the other networks in the set.

3. Critical differences between two or more sets of networks.

4. Which components in the network are structured significantly differently from the rest of the overall network?

5. How do cells contribute or control behavior, emotion, or attitudes of individual members?

6. What makes some groups hostile to one another and others neutral or civil?

7. Whether the existing network is coherent; i.e., what is the likelihood that there are key missing nodes or relations.

At a minimum create a matrix around Actors, Knowledge, and Tasks. All segments will cross-relate as Actors are contrived of the individuals who are a part of the varying social networks. The Actors are affiliated with specific Knowledge and information available on the networks and elements of the Tasks. Knowledge and Actors also fit into Tasks based on assignment, needs, and task-precedence. Since it is virtually impossible to penetrate these segments, specific social viruses can be sewn in the form of sabotage, distrust, persuasion, impersonation, ingratiation, and conformity. Operations may be conducted in the form of Civil Affairs, PSYOPS, black or overt SOF, and IO. Cornerstone is SOF HUMINT and moderate asset running. The virus works against group affiliations and is constructed with actors' social culture in mind.[18]

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[16] Kai Stinchcombe, Ibid.
[17] Destabilizing Networks, Ibid.

[18] RAND has also done work in this area through Future Insurgency Threats. A comparable theory is called 'Network-Oriented Subversion'. RAND also calls for another complementary component called 'Network-Oriented UW'.

Targeting the subjects' issues around inferiority, identity, role confusions, etc. should be pressed to mark the mean age range of insurgency participation for maximum virus uptake. Most of the virus frontline recipients will create a defensive behavior since the individuals will perceive or anticipate a threat. Energy and resources will be spent by the recipient in defensive posturing to mitigate attack, reposture one's self, escape punishment, and win dominance.[19] During this period defensive recipients will also distort the messages they are receiving and warp communications. Such distortions will create social disturbance between groups and impact talent procurement, status, power, and trustworthiness. In this situation the distortions will also play to symptoms of Post Traumatic Stress Disorder and should include social cultural factors to enhance uptake results.

Most virus details will require action on a psychological and physical level but are inappropriate to share in this medium. The concept is simply based on illicit organization entrance, fraud, deceptive network intrusion, mistruths, and scheme disruption forced on the weakest link of a cell and social network. The system is similar in theory to an AnnaKournikova.jpg.vbs email propagation computer worm although it runs through humans and coincides with activities similar to that of the British Joint Support Group (JSG) or Force Research Unit (FRU). The misinformation or covertly orchestrated event is pushed by the cell members to other cell members, cells,

family, and social contacts along the IED supply chain. The push of perceptions and rumor is what carries the "virus" in a lytic cycle created by a contrived solution that directly correlates to the target and damages or ostracizes the group from within. While it damages individuals' credibility and trust, it also decelerates the flow of knowledge and information, creates some bottlenecks, and reduces innovation.

The family structure in a situation like Iraq makes the viral spread and absorption activity work so well. When one asks how many relatives an Iraqi has in a hundred mile radius, the answer is likely to be multiple hundreds of individuals considered to be family. Within the reach of these families are also blood feuds that are very much alive in Iraq where old scores are settled by informing on adversaries. Confused group identity through an unstable system shift naturally increases friction flash-points.

Qabilah = large tribe (500,000)
Ashirah = major tribe
Fakhdh = clan
Fundah = a branch of a clan
Khams = five-generation group
Hammulah = several households
Bayt = household

Also at hand are significantly differing ideologies that are currently cohesive based on a centralized threat of the US occupation. Each of the many groups in Iraq remain in distrust of the other and most have plans of attacking

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[19] Matthew S. Shane, Jordan B. Peterson (2004) Defensive Copers Show a Deficit in Passive Avoidance Learning on Newman's go/No-Go Task: Implications for Self-Deception and Socialization, Journal of Personality 72 (5), 939-966. Additional research in this area is found in: Ego Defense Mechanisms: The Unconscious Art of Verbal Defense; works on brainwashing; and problems with psychoanalytic techniques.

even more opposing factions when the US is no longer a significant presence. One ex-military insurgent was reported as stating, "One day when there are no more Americans, I will kill the mujahedin." Of the main armed groups, al Qaeda's Organization in Mesopotamia is most closely associated with Islamic extremism. The Islamic Army in Iraq is more opposing with a nationalist outlook.20 Both sides can be exploited based on power interests and all sides, while decentralized, rely almost exclusively on technology to fuel their network behavior. Other Sunni and Shia groups can be affected in a similar manner. The social virus spread through pervasive technology can be leveraged to refuel old blood feuds calling upon old codes of honor that still prevail. Protection and collaboration will recede to the family, clan, and tribe. Strategic and operation level employments of Civil Affairs and PSYOPS forces are well placed to disseminate the viruses in another avenue of social approach.

Similar techniques are used within the US prison system when convict gangs display increased coordination and collaboration. Guards can orchestrate rifts to create wedges in the unity by segmenting out activities of collaboration such as protection, smuggling, gambling, drugs, and shake-downs. Any spontaneous or engineered event can be used as a precipitating force. By instilling distrust and fingering one another word spreads and each group goes back to more insular activities until time has passed to attempt another consolidated effort. Even then, due to the frail levels of trust, each transaction, deal, or favor, is only as good as the perceived short-term benefits. Word travels fast to cease operations

and unity. Understand that in this example the environmental factors can be manipulated at a large scale while Iraq is limited to specific places of influence for finite periods of time. Therefore messaging for viral attacks has to be compelling enough for the network to push communications fast and with decisive measures.

Most insurgent groups in Iraq follow other national Islamic Extremist Elements patterns of internet use as a primary means of communication. Experts are found with a number of other horizontal skills such as mass e-mailing, chat rooms, video, computer security, etc. Many groups publish daily bulletins, either on their web sites or through mass emailing. Citizens are also affixed to mass communication and rumor spread by pervasive mobile telephone use. Any big news event travels quickly by word of mouth through Baghdad, aided by the enormous proliferation of cell phones with text messaging, making it easy to start misperceptions within the insurgent community. This is the weakness of a social network that holds cells together vertically. In a hierarchical structure, leadership would be more effective in quashing rumor or speculations and rooting out the root of virus in an efficient manner that would keep the organization from seizing. In a network, nodes are abruptly cut off taking weeks if not months to reestablish communication and transaction flows. Those with formal networks established with over 50 members are most vulnerable to disruption.

A great opportunity to negotiate with area and village leaders, sheikhs and amirs occurs during these gaps and confusion. The key is to hold them accountable through honor, shifting identity awareness, plus a stake in the outcome so they are motivated to exercise influence over

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20 International Crisis Group, "In Their Own Words: Reading the Iraqi Insurgency," Middle East Report,
50 (Brussels: International Crisis Group, 2006), 1-3.

locals to volunteer for local law enforcement or military roles. Locals at the lower class level who are usually distrustful of their own upper class local leaders will see value in such proposals that protect their families. Military and police recruitment enables militia members to protect their families and offers income, but now in the capacity of law enforcement former insurgents can hunt down "traitors" or "criminals" that were formerly part of a connected social network.

Iraqis may be more willing to risk disclosing locations of known insurgents if they believe in missions that are cloaked as Iraqi security improvements and not US operations. Those remaining in the cells and networks will know that their methods and whereabouts are common knowledge. They have little choice but to either also join law enforcement or move to a different area, only to be flushed out by those locals. Successes have been viewed in this vein with the Iraqi Counter Terrorism Force, (ICTF) where this new group provides the sense of honor and belonging, "My family is the ICTF," one ICTF captain has said. "Let me tell you something. If you ask one of these men what his religion is, he will tell you – 'I am not Sunni, I am not Shia (Shiite), I am not Kurd. I am ICTF.'"

CONCLUSION

Iraqi faction unity has changed greatly in the last few years converging resources towards a common goal – Death to US troops. A recurring theme that has also endured but simultaneously escalated during this time is the hatred fostered between sectarian factions. The loss of power and enhanced paranoia of the Sunni and the increase of power and frustration by the Shia unites some activities against both the coalition and one another. In

this capacity the IED has been a successful facilitator through vertical social networks and loosely linked insurgent cells to keep the country in chaos. Sunnis and Shi'ites struggle to achieve or regain supremacy for political domination. Power quests and violence continue based on perceived social, political and economic inequality, imposed by repression and prejudice. This hatred is not mainly about religion. Iraq's civil conflict reverberates to other parts of the Middle East, fueling existing tensions between Sunnis and Shi'ites and rekindling long-dormant ones. In time, the conflict will transcend Iraq's boundaries and so too will the IED networks.

Raids and leader assassinations will not stop the network from existing and growing so another solution is required to destroy the cells and system from within. Special Forces have the unilateral operations experience that can leverage regional expertise and language capabilities which will reduce population alienation and limit resistance groups' propaganda ammunition; they are able to target the insurgent infrastructure and ideally enhance local security. [21]   This lends credence for improving Low Level Source Operations (LLSO) for the GWOT with the recruitment of native language speaking 1st and 2nd generation individuals from specific country and tribal areas. Advanced Special Operations Techniques (ASOT)–Level III training must also produce greater abilities and tradecraft for such difficult to obtain HUMINT from local assets.

Creating virus-like disruptors that can damage hard to reach social networks from within is among the few ways to cripple or minimize this insurgent activity and minimize

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[21] Colonel Ken Tovo, From the Ashes of the Phoenix: Lessons for contemporary counterinsurgency operations, Special Warfare, January-February 2007, Volume 20 Issue 1, p.12.

IED system activities (credibility, recruitment, motivation, procurement, sanctuary, and funds) if we can not penetrate the cells.[22] More importantly, it quickly shifts the three "Rs" away from the coalition until we hone our counterinsurgency operations.

03/29/07 - Iraqi army soldiers with 2nd Battalion, 2nd Brigade, 5th Iraqi Army Division stand next to the mortar tube and rounds at Combat Outpost X-Ray, Iraq, March 29, 2007, after finding a destroying a four-man-insurgent mortar team. (U.S. Air Force photo by Staff Sgt. Stacy L. Pearsall) (Released)

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[22] Given the nature of some complex IED networks or the overly simplistic supplies where weapons are just given away with no repeat affiliations, the viral attack system does not necessarily work in every situation. IED-social network countermeasures must still calculate the action-reaction counteraction dynamics; cumulative, cascading, and collateral effects; comprehensive possible sequels or outcomes and then prepare robust plans to address those most likely to occur in order to avoid unintended effects.