PREFACE

This booklet represents the second in a series of compilations of print and electronic articles that are relevant to the defeat of improvised explosive devices (IEDs) that insurgent and terrorist operatives use to kill and injure U.S. military forces and civilian populations. The readings are related to IED technology, social networks that may provide insight into how insurgent groups communicate and relate to their members, and other technical and cultural phenomena that will help the Joint Improvised Explosive Defeat Organization (JIEDDO) meet its mission.

The first section of the booklet contains abstracts of the articles included in the booklet in alphabetical order by author and title. The abstracts are hyperlinked to the article itself located later in the booklet. At the end of each article is a hot link to the original article on the Internet. Information of particular relevance is highlighted in yellow.
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ARTICLE ABSTRACTS


This is a round-about book review (Brynjar Lia’s *Architect of Global Jihad: The Life of Al Qaeda Strategist Abu Mus’ab al-Suri*) on Mustafa bin Abd al-Qadir Setmariam Nasar, better known by his nom de guerre, Abu Musab al-Suri. An al-Qaeda strategist, al-Suri argued prior to his arrest that jihadis should avoid creating hierarchical structures that are vulnerable to attack by U.S. or local security forces and move instead to a decentralised system of individuals or small local cells linked only by an overarching ideology.


RFID chips may be implanted under the skin of medical patients and potentially other personnel. These chips store key information able "to make significant advances in the effectiveness, efficiency, and safety of medical care by improving patient identification, promoting patient safety, and expediting access to patients' medical records." This article discusses the pros and cons of the technology.


André Martins of the University of São Paulo in Brazil has designed a computer model that simulates the way opinions spread through a society based on a mathematical model of the way atoms align their magnetic fields. At least one specialist in the psychology and anthropology of extremism speculates that the model seems to reflect some societies in the Middle East. Other researchers are not so sure.


A dirty bomb is designed to leave behind a great amount of radioactive debris. If terrorists were to attack with a dirty bomb, medical authorities would have to be prepared to treat children differently than adults because their developing bodies would absorb and respond to the radiation exposure in distinct ways, according to a new study from the University of Rochester Medical Center. [Researcher Note: Some of our youngest enlisted personnel are still developing physically; would they need to be treated differently in this scenario, and if so, how?]

Scientists in Great Britain have developed a new style of industrial lens for use in a low light environment. The structures on the surface of the new lens are less than 100 nanometers in height and thus reduce the reflectiveness of the lens, allowing it to capture more light.


This article describes the de-facto state within a state (an "Islamic Emirate") that has been established in the Swat Valley of Pakistan, just a few hours’ drive from Islamabad. It is led by a Taliban group under Mullah Maulana Fazlullah.


An interview with Thomas Haidon, a Muslim commentator on human rights, counter-terrorism, and Islamic affairs, the article centers on the effort of moderate Muslims to reform Islam and the problems they face.


This is an article from one of Egypt’s most widely-circulated daily on Sayed Emam (aka Dr. Fadl)—one of the men who authored the blueprint for armed struggle adopted by al-Qaeda and its affiliates and who recently renounced violence and called on his comrades to do the same to "put an end to the bloodbath around the world."


This article contains a recent interview in Australia with terrorism expert, Dr. Marc Sageman. He believes the current Islamic terrorist movement is a leaderless jihad, motivated by thrill and fame rather than ideology. He also asserts that previous terrorists were much better educated and tried to educate themselves in terms Islam. The new terrorists, on the other hand, are very young and do not know much about Islam – they want to be heroes and “be like Osama bin Laden.” [Researcher Note: Also included is the publisher’s flyer on Sageman’s new book – due in December – entitled Leaderless Jihad: Terror Networks in the Twenty-First Century]

Motion-capture technology makes use of reflective dots or small LEDs attached at key points on a person's torso, limbs, and head, which are tracked by an array of cameras. To be effective, however, they need controlled laboratory-like situations to function. Researchers have developed new motion-capture cameras that can work in real life situations. [Researcher Note: Could this technology be used in any type of counter-IED training?]


Journalist and author Robert Kaplan argues in this piece that keeping societies stable in many parts of the world will depend largely on tribes and the deals they are able to cut with one another. Quelling anarchy – and the violence it spawns – may best be done from the bottom up (clans and tribes), rather than building downward from an artificially imposed democracy.


The standard way to measure a radiation dose is to use a detector made from an inorganic semiconductor. A team of researchers has now developed a new type of radiation detector made from a new type of plastic that conducts electricity; as the radiation dose increases, greater current flows in the plastic detector, allowing an accurate measurement to be made.


Researchers have developed a pouch that can be put inside a large, open wound to halt life-threatening bleeding within minutes. Preliminary tests have also shown that the pouch promotes clotting. The U.S. Army developed an ultrasonic tourniquet to stem the flow of blood using focused ultrasound beams, but this method has thermal side effects that can cause damage to the surrounding tissue. This new device has no such side effects.


This article is a book review of Yaroslav Trofimov’s The Siege of Mecca: The Forgotten Uprising in Islam’s Holiest Shrine and the Birth of al Qaeda. The central event described in the book occurred on November 20, 1979 when several hundred Wahhabi revolutionaries began a thirteen-day siege of the Grand Mosque of Mecca (Masjid al-Haram.) In addition to this historical description of events, Trofimov – a Wall Street Journal correspondent – asserts that the uprising was a precursor of al-Qaeda.

Although war and technology have always been linked very closely and the quest for technological superiority is eternal, this superiority rarely lasts for long. The author posits that to win, it is more important “to understand the enemy; to understand the enemy means learning from him and, to some extent, becoming like him.”


European researchers have carried out wide-ranging testing of a new wearable technology with applications in a variety of fields, including the potential of protecting and even saving lives. Their vital innovation is that the technology facilitates a new form of human-computer interaction comprising small, easily accessible body-worn computers that are always on and always responsive. [Researcher Note: The Soldier Systems’ Center may already be aware of this information; if not, it could help their effort.]
Benefits And Risks Of Fitting Patients With Radiofrequency Identification Devices

ScienceDaily (Nov. 28, 2007) — In 2004, the United States Food and Drug Administration approved a radiofrequency identification (RFID) device that is implanted under the skin of the upper arm of patients and that stores the patient's medical identifier. What are the pros and cons of patients getting fitted with such an RFID chip?

When a scanner is passed over the RFID device, the identifier is displayed on the screen of an RFID reader. An authorized health professional can then use the identifier to access the patient's clinical information, which is stored in a separate, secure database.

In the PLoS Medicine debate, Mark Levine, Chair of the Council of Ethical and Judicial Affairs at the American Medical Association (Chicago, IL, USA), argues that such devices have the potential "to make significant advances in the effectiveness, efficiency, and safety of medical care by improving patient identification, promoting patient safety, and expediting access to patients' medical records."

Yet, as with all new technologies, he says, "their adoption must be tempered by attention to potential unintended consequences." Ethical concerns regarding the use of RFID devices arise, he says, from issues pertaining to informed consent, the privacy and accessibility of stored information, and the purposes for which the transmitted data will be used.

Because of the risks of unintended consequences, the implantation of RFID devices "merits a healthy dose of skepticism," argue Ben Adida (Children's Hospital Informatics Program, Boston, MA, USA) and colleagues. If such devices become widely deployed, say Adida and colleagues, they may provide an incentive for both well and ill-intentioned parties to set up readers for these "license plates for people."

A store owner, for example, might set up a reader to track frequent customers, linking the unique identifier to the customer record upon first purchase. Law enforcement might leverage RFID as a means of ubiquitous surveillance. At the very least, say the authors, the informed consent process must "transparently convey the significant societal side effects of RFID devices."

John Halamka (Chief Information Officer of Harvard Medical School and of Beth Israel Deaconess Medical Center, Boston, MA, USA) adds his voice to the debate by sharing his personal experiences of having an RFID device fitted in December 2004. "After using the device for three years," he says, "I am not an evangelist for implanted RFID, but I believe it can be
valuable for some patients who understand the risks and benefits." RFID devices, he argues, "may be particularly helpful for a patient with Alzheimer disease who cannot give a history, a patient prone to syncope who may not be initially conscious during an emergency department visit, or a very active person who engages in extreme sports activities and could be noncommunicative due to injury."


Bidding violence farewell

Jihad leader Sayed Emam's revised ideology throws down the gauntlet to Al-Qaeda, offering an alternative jurisprudence to that justifying violence, writes Jailan Halawi

November 22, 2007 – The man who authored the blueprint for armed struggle adopted by Al-Qaeda and its affiliates this week renounced violence and called on his comrades to do the same so as to "put an end to the bloodbath around the world".

Sayed Emam, 57, aka Dr Fadl, was the ideologue, founder and first emir -- or commander -- of Egypt's Jihad group, many members of which joined Osama Bin Laden in Afghanistan in the war against the Soviet occupation and later formed the nucleus of Al-Qaeda. He is the author of *Al-Omda fi E'dad Al-Odda* (*Basic Principles in Making Preparations for Jihad*) which was quickly adopted as a guide by theological Al-Qaeda and other radical Islamic groups.

Emam, a surgeon, once worked closely with Ayman El-Zawahri before breaking ranks with Al-Qaeda. He travelled to Yemen where he was kidnapped following the 9/11 attacks and interrogated by the CIA before being extradited to Egypt where he has been serving a life sentence since 2004.

Emam's Jihad was among Egypt's most feared terrorist groups, responsible for attacks against state officials, vital utilities and tourist sites. Following the 17 November 1997 Luxor massacre that left 58 tourists and four Egyptians dead, and when the government at last appeared to have stemmed the rising tide of violence, Jihad members remained reluctant to follow in the footsteps of Gamaa Islamiya, which launched a unilateral ceasefire in the late 1990s. Even when Jihad's jailed leaders attempted their own revisions in 2004 they failed to secure the support of many members of the group. Now, though, the group's first leader has personally called for a halt to all killings in a 100-page document.

"Rationalising Jihad in Egypt and the world", exclusively serialised in the daily independent *Al-Masry Al-Yom*, with the first installment appearing on 18 November. The series has been accompanied by articles and interviews on the history of the movement along with biographies of its leaders.

While senior members of the group have attempted on several occasions to issue similar revisions to Emam's, Jihad's first leader alone wields the authority necessary to gain the support of the group's various factions, whether imprisoned or abroad.

Emam's opponents within Al-Qaeda have attempted to cast doubt on the sincerity of a publication composed behind bars, leading many of the group's domestic and expatriate members to defend their leader.

"A strong man like Dr Fadl could not be broken by imprisonment or torture and will only say and write what he believes is best for the Islamic nation. While people do say things to stop
being tortured, this is not the case here. His revisions are the outcome of long years of reflection and debate," argues Islamist lawyer Montasser El-Zayyat, who has been jailed many times for membership of the Jihad movement.

Emam, says El-Zayyat, always opposed launching armed operations in Egypt, a position that ultimately led to his split with El-Zawahri in 1992, when he left Afghanistan for Yemen. Experts on political Islam concur. Amr Elshouby, of Al-Ahram Centre for Political and Strategic Studies, insists "[Emam's revisions] reflect a sincere and logical shift". "This is a group whose violent strategy to overthrow the regime and establish an Islamic state was defeated. It became imperative that it revise its stance and develop alternative strategies." That an independent newspaper was selected to circulate the document lends yet more credibility to the sincerity of Emam's revisions, argues Elshouby, who says that the renunciation of violence should be viewed as a victory for the state.

But will Emam's revisions have any impact on his former followers in Al-Qaeda?
"I doubt it," says Elshouby, "at least not in Iraq. Nor is it likely to have much impact on the actions of the random violent cells that emerge here and there such as those responsible for the Sinai bombings."

A line must be drawn, believes Elshouby, between members or affiliates of Jihad whose aim is to establish an Islamic state and factions that carry out revenge attacks, whether against their own government or the US. "Attacks like those of 9/11 and embassy bombings are clearly acts of revenge rather than an attempt to establish an Islamic state."

Elshouby added that if Al-Qaeda leadership is to listen to such reviews, the US administration will have to also exert some efforts and show flexibility in containing the situation, a thing which does not seem likely to happen, "at least in the near future," he said.

El-Zayyat notes that it would be extremely difficult for El-Zawahri to renounce his current position.

The good news, according to Elshouby, is that revisions such as Emam's and those published by Gamaa Islamiya's leaders in the late 1990s constitute an alternative jurisprudence opposed to that of the late 1960s and 1970s according to which militant groups were established. Documents released by Emam and others and adopted by the cadres of various groups could, he says, act as a safety net preventing the formation of militant organisations.

Meanwhile, notes El-Zayyat, hundreds of detained Jihad members are due to be released and there is a possibility that Emam's case -- he was sentenced to life when tried in absentia -- could be reviewed. El-Zayyat has appealed that opportunities be made available to allow the released to reintegrate into mainstream society by providing them with jobs so they can earn a living. Jihad leaders are reported to have raised some funds to help support long incarcerated cadres by selling the right to publish a number of documents to newspapers.

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Cheap sensors could capture your every move
Mason Inman, NewScientist.com news service, 26 November 2007

Video games like Dance Dance Revolution could soon require more than just fancy footwork. Small, cheap sensors for tracking the movement of a person's entire body could lead to "whole-body interfaces" for controlling computers or playing games, researchers say.

Conventionally, motion capture makes use of reflective dots or small LEDs attached at key points on a person's torso, limbs and head. Capturing the movements of these points using an array of cameras allows animators to create a computerized skeleton, which can then guide the movements of an animated character, for example.

However, "these systems need controlled situations to work" and typically cost tens of thousands of dollars, says Rolf Adelsberger of the Swiss Federal Institute of Technology (ETH) in Zurich. So Adelsberger and colleagues at ETH, along with researchers at Massachusetts Institute of Technology (MIT), and Mitsubishi Electric Research Laboratories, both in Cambridge, Massachusetts, US, set out to create a cheaper, more versatile motion capture system that works outside the lab or studio.

Their new motion capture sensors works even while a person is driving or skiing (see video, top right). It could make computer animation or movie effects more lifelike, the researchers say, and perhaps even help doctors analyse movements of patients going through physical therapy.

Bat-like ability

Several sensors measuring about 2.5 centimetres on each side are attached to a person's legs and arms. The sensors detect movement in two different ways: accelerometers and gyroscopes measure motion, but ultrasonic beeps are also emitted.

Tiny microphones mounted on the torso pick up these beeps, allowing a laptop computer, carried in a backpack, to calculate the distance to the sensor. The system is similar to, albeit much simpler than, bats' ultrasonic echolocation, and together with the motion sensors provides a more accurate overall picture of body movement. The small backpack also holds the batteries that power the system.

"The sensors are all off-the-shelf parts," Adelsberger says, making the system much cheaper than other motion-capture technology. It cost about $3,000 currently, but this could come down to a few hundred dollars, he says, if the sensors are mass-produced.

Active situations

In tests, the system compared well with a commercial motion capture system called Vicon. It got the angles of the body's joints almost exactly correct, but experienced some "drift", in which the
system erroneously thought that the body as a whole had shifted or rotated from its actual orientation.

For Vicon to work, it requires a controlled, indoor environment and a number of fixed cameras. The new system works in a variety of different situations, for example, when someone is skiing or biking.

The new system does not work when people make very sudden movements, however, because the relatively cheap sensors used are not yet accurate enough to compensate. But they are quickly improving, Adelsberger says.

"I think the biggest impact of this system is in easier data collection in everyday situations," says Christoph Bregler, an expert on motion capture at New York University, US. "This system could record many new activities for sports medicine, behavioral studies [and other fields] that were impossible before," he says.

http://technology.newscientist.com/article/dn12963
Children Would Need Different Medical Care In Wake Of Dirty Bomb

*ScienceDaily* (Oct. 31, 2007) — If terrorists were to attack with a dirty bomb, medical authorities should be prepared to treat children differently than adults because their developing bodies would absorb and respond to the radiation exposure in distinct ways, according to a new study from the University of Rochester Medical Center.

Investigators studied plasma cytokine changes and the expression of tissue biomarkers when adult and juvenile mice were exposed to a single low dose of external radiation between 0.5 and 10 gray, the unit of energy absorbed from ionizing radiation. The dose was designed to mimic the exposure from a dirty bomb. The tissue response of the younger mice indicated the radiation was more damaging, possibly causing long-term harm to the body's structure and function.

"It's difficult to think about developing strategies for a horrific, hypothetical event," said Jacqueline Williams, Ph.D., research associate professor of Radiation Oncology at the University of Rochester's James P. Wilmot Cancer Center. "But our work is teasing out some important nuances about how children and adults -- and perhaps even the elderly -- respond to exposure to radioactive particles. Our work could also apply to the clinical setting, as we learn how to better protect normal tissue from radiation exposure."

A dirty bomb is designed to leave behind a great amount of radioactive debris. Scientists believe that such a bomb would likely emit a combination of gamma, alpha and beta rays. That combination can destroy cells in the lungs and intestines, particularly when inhaled or ingested.

The next step is to study precisely how internal radioactive contamination might affect animals and humans. Exposure to inhaled radioactive particles is very different from exposure to external radiation exposure. When a person receives external radiation to treat cancer, for example, he or she does not become radioactive. The exposure stops once the therapeutic radiation beam is turned off.

But continuous exposure, internally, to radioactive particles is a potential health risk. In the event of an attack with a radioactive or dirty bomb, radioactive dust and particles would likely stay in the air and linger on the ground, and breathing in or eating the radioactive dust could lead to long-term contamination. After the 1986 Chernobyl nuclear power plant explosion, for example, children drank milk from cows that had ingested radioactive particles by grazing in contaminated fields. The radioactive material eventually caused cancer in many of those children, Williams said.
Although scientists have not studied much about the consequences of inhaled radioactive exposure since the Cold War ended, the government ramped up funding for this type of research after the Sept. 11, 2001 attacks. The University of Rochester was among several centers nationwide selected to improve the country's response to a radiological event.

Scientists are not sure why juvenile mice responded differently than adult mice to radiation exposure, and they are continuing that investigation.

Rochester researchers are also looking at ways to measure the original dose of radiation a person received, after the fact. Currently, doctors look for symptoms such as skin redness and vomiting in patients with suspected radiation poisoning. But those symptoms are vague and can be elicited by stress, William said. The Rochester study has focused on developing evidence such as biomarkers that could be used in a mass casualty event to assign treatment.

Other studies in Rochester include the development and testing of new agents to treat the toxic effects of radiation and to identify a means of predicting the long-term health risks posed by low levels of radioactive particles.

Researchers will present the findings October 30, 2007, at the American Society for Therapeutic Radiology and Oncology annual meeting in Los Angeles. The Rochester study is among a number to result from a $21 million grant awarded in 2005 by the National Institutes of Health/National Institute of Allergy and Infectious Disease.

Principal investigator and co-author of the ASTRO study is Jacob N. Finkelstein, Ph.D., professor of Pediatrics, Environmental Medicine and Radiation Oncology at the University of Rochester.

Adapted from materials provided by University of Rochester Medical Center.

Engineers give industry a moth's eye view

November 26, 2007

When moths fly at night, their eyes need to capture all the light available. To do this, certain species have evolved nanoscopic structures on the surface of their eyes which allow almost no light to reflect off the surface and hence to escape.

Now scientists at MicroBridge, a project at Cardiff University’s Manufacturing Engineering Centre (MEC), have adopted the model to create an industrial lens for use in a low light environment.

The structures on the surface of the new lens are less than 100 nanometres in height. They need to be smaller than the wavelength of light to avoid disrupting the light as it enters the lens.

The tiny features of the lens mould were created using the MEC’s Focused Ion Beam. The beam uses highly charged atomic particles to machine materials in microscopic detail.

Dr Robert Hoyle of the MEC said: “This was a particularly complicated challenge. Not only did the lenses have to be of very precise curvature but the nanoscopic structures on the lens surfaces had to be smaller than the wavelength of light so as to smooth out the sharp refractive index change as the light strikes the surface of the lens. This smoothing of the refractive index reduces the reflectiveness of the lens thus allowing it to capture more light. The end result has a number of highly practical uses for industry.”

The research team is now looking at using the lens in optoelectronics and photovoltaic applications in semiconductors, including solar cells, where loss of light is a major problem. The lens also has potential uses in fibre optics, sensors and medical diagnostic devices.

Source: Cardiff University

Extremist views explained by aligning atoms

Michael Brooks, NewScientist.com news service, 24 November 2007

In certain societies, people's views naturally migrate over time towards extreme ends of a political spectrum, where they will become entrenched. This, at least, is what a mathematical analysis of human behaviour by André Martins of the University of São Paulo in Brazil has shown.

Martins's computer model is designed to simulate the way opinions can spread through a society. It is based on a mathematical model of the way atoms align their magnetic fields. The underlying idea is that individuals' opinions can be influenced by the views of their neighbours, just as the orientation of an atom's magnetic field tends to line up with that of its neighbours.

While such an approach undoubtedly simplifies human behaviour, it has already shown some success by predicting people's voting patterns in the build-up to an election (New Scientist, 24 August 2002, p 42). In that study, people's views were modelled as two simple states of mind. Now Martins has extended this to allow each human "agent" to hold a range of opinions across a defined spectrum.

Martins assigned to each agent a view close to the middle of the spectrum, and then left them to interact with their neighbours. As the simulation progressed, each individual's conviction shifted, based on what they learned about their neighbours.

The game always ended up with most of the agents' views entrenched at one or other end of the given spectrum (www.arxiv.org/abs/0711.1199). Martins says he was surprised by this, as he had expected the agents' opinions to drift back and forth indefinitely.

Martins accepts his model is "clearly a simplification of the real world". In most real societies, he points out, those with extreme political opinions are in the minority. "Under some circumstances, though, it might be inevitable," he says. "An interesting next step is to try to understand when it will happen and why."

Scott Atran at Michigan State University, who specialises in the psychology and anthropology of extremism, speculates that the model does seem to reflect some societies in the Middle East. "In Palestine and Lebanon extreme attitudes towards Jews have permeated all of society," he says.

Dietrich Stauffer of the University of Stuttgart in Germany, who ran the election simulations, thinks Martins's approach based on a range of opinions should be used with other models aiming to analyse the shift of societal views. "If they all give the same kind of result - that extremism emerges automatically - then this is something to take seriously."

Not all researchers are convinced. Sociologist Duncan Watts at Columbia University in New York dismisses this approach to modelling social networks as "extremely unrealistic". 
PAKISTAN'S SWAT VALLEY

In the Realm of Mullah Fazlullah

By Matthias Gebauer in the Swat Valley, Pakistan, November 22, 2007

Once Pakistan's favorite tourist destination, Swat Valley is now ruled by a brutal Taliban group. The infamous commander Mullah Fazlullah has installed a Sharia emirate here, and President Musharraf has stood by and allowed it to happen.

The huge billboard on the pass high in the mountains may be yellow and faded but it's still legible. "Welcome to Swat Valley," is written in huge letters with a picture of a jeep surrounded by tourists underneath.

They are all smiling, enjoying the view from the mountains that range 2,000 meters high into the clear blue skies. The advertisement harks back to a time when the Swat Valley was considered the Switzerland of Pakistan. Islamabad's middle classes would tramp up the mountains in the summer and in winter they would whiz down the country's only ski slopes. "A paradise on earth," was Swat's motto.

That was before the Swat Valley came to epitomize the current crisis in Pakistan, before President Pervez Musharraf used the region as an excuse for his state of emergency. The military ruler claimed to want to come down hard on the religious extremists by imposing emergency rule. And he repeats this claim at every opportunity. But it has since become clear that the general was most concerned with holding on to power.

The dangerous journey to Swat reveals a lot about how weak Musharraf and his army is in the conflict with the extremists inside the country -- and that they have been allowed to thrive for far too long. There are soldiers stationed just behind the advertising billboard. They are nervous, wear bullet-proof vests and helmets and have their weapons at the ready. "You must be mad to
A Jihad against Musharraf

With its anarchy and lawlessness, the Swat Valley has come to symbolize Pakistan in the year 2007. This time it's not about the tribal areas, such as Waziristan along the Afghan border, where radical Islamists have been successfully undermining the power of the state. The Swat Valley is just a few hours' drive from Islamabad. And Mullah Fazlullah's jihad is directed at Musharraf's regime. He and his fighters want to see a strict Islamist state, that is not oriented towards the US but to Sharia law. It is an enemy in the heart of the country -- one that Musharraf seems increasingly incapable of dealing with.

Only the remnants of Musharraf's authority are visible beyond the checkpoint. Army posts with their clay huts and corrugated iron have been deserted. The police stations are either empty or masked militants with Kalashnikovs lounge on the steps. The driver doesn't want to stop anywhere. He is only willing to embark on the journey after lengthy discussions and taking the precaution of dressing in shalwar kameez clothing, the traditional garb that resembles a night shirt. Like everyone here, he is afraid. The journey is perilous -- even journalists have been known to be beheaded on Fazlullah's orders, on suspicion that they were spies.

The history of the takeover of the Swat Valley began long before Musharraf started to raise the alarm a few months ago. It has been more than two years since 28-year-old Koran student Fazlullah built a madrassa in Iman Deri, a small pretty town near the Swat River. People in Mingora know the young man who now has a long black gray beard that reaches his belly and who drags his right leg because of a past polio infection.

"He is a simple man," says his former teacher. "But that is exactly how he is able to win over the people here." The villagers say that the construction work on the madrassa went amazingly quickly. Hundreds of volunteers helped and money was no problem. Masked armed guards began to patrol the red mud-brick building and checked visitors. Every week more and more men arrived with weapons. The creation of the Fazlullah militia had begun.
There are more heroic stories in the Swat Valley about the young Fazlullah than a 90-year-old man could be expected to have experienced. There are no photos of him, but fearful locals still tell tales of his brutal, inhuman face or the way he gallops by on a black horse. In Afghanistan, they whisper, he fought against the Russians. And then he sat with the leader of the Sharia movement in prison. The fact that this is all highly unlikely is immaterial. Fazlullah has succeeded in doing what every Taliban leader aspires to -- he has become a myth, and one that spreads fear.

Fazlullah, who named himself Mullah, copied the tactics of the Koran schools in Afghanistan. During the hour of prayer he punctually broadcast his Islamic interpretation of the Koran, thus reaching even the women behind the high walls, and gave himself the nickname FM Mullah. The authorities in the valley sat on their hands and looked on as the young Fazlullah used his preaching to openly threaten those who did not adhere to Sharia law, and by the beginning of 2007 he had begun to call the Swat Valley an "Islamic Emirate." "No one accepted responsibility," says one teacher in Mingora. "Nobody wanted trouble."

At night, Fazlullah's men distributed newsletters and threatened all the CD shops and barbers with death if they didn't close down. Several bombs exploded in bazaars, and girls' schools -- to whose uniforms Fazlullah took exception -- received hate mail. In radio broadcasts, he ordered mothers not to let their daughters out of the house.

The strategy of terror worked. Today the bazaar's streets are dead. CDs are only being sold on the black market. Schools have been on holiday for weeks. Mullah Fazlullah's emirate has become reality.

http://www.spiegel.de/international/world/0,1518,518962,00.html
Quelling anarchy in Iraq, Pakistan, and elsewhere, will require building on tribal loyalties—not imposing democracy from the top down

BY ROBERT D. KAPLAN

It's the Tribes, Stupid!

For more than 230 years, Americans have assumed that because we have had a happy experience with democracy, so will the rest of the world. But the American military has had a radically contrary experience in Iraq. And Iraq may be but prologue for what our troops may encounter in the tribal areas of Pakistan.

Iraq has had three elections that have led to chaos. Bringing society out of that chaos has meant a recourse not to laws or a constitution, but to blood ties. The Anbar Awakening has been a rebuff not only to the extremism of al-Qaeda, but to democracy itself.

Restoring peace in Anbar has been accomplished by a lot of money changing hands, to the benefit of unelected but well-respected tribal sheikhs, paid off with cash and projects by our soldiers and marines. Progress in Iraq means erecting not a parliamentary system, but a balance of fear among tribes and sectarian groups.

Because Iraq was among the most backward parts of the Ottoman Empire, tribalism has always been strong there. The power of the tribes intensified during the Iran-Iraq war of the 1980s, when the state was weakened in part by economic pressures. Because the tribes in Anbar, along the desert smuggling route to Syria, were too strong to subdue, Saddam Hussein had no choice but to co-opt them and make them part of his power structure – exactly as our military has lately been doing.

It is such traditional loyalties existing below the level of the state that historically both Marxist and liberal intellectuals, in their efforts to remake societies after Soviet and Western democratic models, tragically underestimated. A realist like St. Augustine, in his City of God, understood that tribes, based on the narrow bonds of kinship and ethnicity rather than on any universalist longing, may not constitute the highest good; but by contributing to social cohesion, tribes nevertheless constitute a good in and of themselves. Quelling anarchy means starting with clans and tribes, and building upwards from those granular elements.
The tribal nature of Pakistan is even more pronounced than in Iraq. Pakistan, divided among geographically based ethnic groups, is a nuclear Yugoslavia-in-the-making. Our troops are already in Afghanistan. So it is highly conceivable that we will have boots on the ground in Pakistan’s border area with Afghanistan. This is the true frontline in the war on terrorism, where presumably the leadership of al-Qaeda is ensconced. Our troops will find there a deathly volcanic landscape of crags and winding canyons and alkaline deserts 1,000 miles long and 100 miles wide. In this high desert, the tribes rule: Dravidian Raisanis, Turko-Iranian Baluchis, and Indo-Aryan Pushtuns. Neither the British nor any succeeding Pakistani government has managed to subdue them.

The tribes of Baluchistan and the Northwest Frontier Province don’t require Western institutions because they already have institutions of their own. What we call warlords are often, in reality, tribal elders who settle divorce cases, property disputes, and other civil conflicts for which we resort to the courts or government. If the American military deploys to these badlands in numbers large or small, it will follow the Anbar example of working with the tribes, greasing their palms for information on al-Qaeda, while accepting their social and political way of life.

There is nothing wrong or cynical about this. Where democratic governance does not exist, we must work with the material at hand. We have inherited our Anglo-Saxon traditions of liberty and democracy just as other peoples, with different historical experiences and geographical circumstances, have inherited theirs. And these other peoples yearn for justice and dignity, which does not always overlap with Western democracy. Throughout the Arab world, old monarchial and authoritarian orders are now weakening. Keeping societies stable will depend largely on tribes, and the deals they are able to cut with one another. In the Middle East, an age of pathetic, fledgling democracies is also an age of tribes.

When George W. Bush first ran for president in 2000, he spoke about the need for “humility” in foreign affairs. Now that our troops are practicing what he preached, after years of failure we’re finally seeing some tenuous results. In striving for a new, post-modern order in the Middle East, we have awakened a medieval one, from which we must now build something permanent.

Physicists use plastics to detect radiation

In applications ranging from hospital X-ray machines to instruments for astronomy, the standard way to measure the dose of radiation is to use a detector made from an inorganic semiconductor, such as silicon. It is not easy, however, to use this type of detector over large areas, and inorganic detectors are not flexible.

November 21, 2007 – A team of researchers from the Department of Physics at the University of Surrey, led by Dr. Paul Sellin, has developed a new type of radiation detector made from a new type of plastic that conducts electricity. As the radiation dose increases, a greater current flows in the plastic detector, allowing an accurate measurement to be made. The research effort has received a boost recently in the form of a one-year research grant from the Science and Technology Facilities Council. The grant is being shared with Centronic Ltd., a Croydon-based company that manufactures and develops radiation detectors.

The Surrey team has published their preliminary findings in the prestigious international journal, Applied Physics Letters. Dr. Sellin and his collaborators in the Physics Department, Dr. Alan Dalton and Dr. Joe Keddie, have also filed a patent on organic radiation detectors with support from the University.

Dr. Sellin commented: "This successful research has grown from a collaborative effort drawing on our expertise in radiation detection and the experience within the Soft Condensed Matter Physics Group in making polymer films and understanding their properties."

Dr. Keddie added, "Within the Physics Department, the Radiation Laboratories and the Soft Matter Laboratories have benefited from recent investment from government SRIF funding. This investment is clearly leading to exciting scientific results combined with a patent and further funding."

Source: University of Surrey

On November 20, 1979, at the first dawn of the 15th Muslim century, several hundred armed rebels laid siege to the holiest place in Islam, the Masjid al-Haram or Grand Mosque of Mecca. The Wahhabi revolutionaries, led by Juhayman al-Uteybi, a former Saudi national guardsman, chained shut each of the mosque's 51 gates before announcing their apocalyptic message to the nearly 100,000 pilgrims trapped inside.

Proclaiming that the corruption, decadence and vice exhibited by the illegitimate Saudi kingdom - its rulers, pawns of the infidels - was a clear sign that the end of days was near, they declared that among their number was the messiah-like redeemer of Islam - the mahdi, or guided one, who will bring justice to Earth.

For the next 13 days, the zealous, ascetic rebels - whose primarily Arab and Saudi Beduin ranks also included two African-American converts - waged fierce battle against inept, rivalrous Saudi forces within the mosque's vast compound. Their largely forgotten revolt, pointedly absent from Saudi history books, is the subject of Wall Street Journal correspondent Yaroslav Trofimov's nonfiction thriller, *The Siege of Mecca: The Forgotten Uprising in Islam's Holiest Shrine and the Birth of al Qaeda*. As his subtitle asserts, Trofimov has larger ambitions than to illuminate an important, neglected event.

Even as he claims that Juhayman's uprising was merely "a precursor of al Qaeda" - multinational, Wahhabi, vehemently anti-Shiite, savvy in staging spectacular media events, harboring ambitions of unifying the Islamic world - he also hints that the siege was a necessary condition of al-Qaida's birth. "With the benefit of hindsight, it is painfully clear: The countdown to September 11, to the terrorist bombings in London and Madrid, and to the grisly Islamist violence ravaging Afghanistan and Iraq all began on that warm November morning."
That Juhayman and Osama bin Laden's groups sprang from similar causes is beyond question. Both men were raised in a rapidly modernizing Saudi state whose leaders had abandoned in all but name the uncompromising Wahhabi ideology on which their forbears rode to power. Both figures attracted pupils of exiled Egyptian and Syrian clerics who taught that it is a religious duty to oppose rulers who do not uphold the tenets of Islam. And both decried the hypocrisy of a kingdom whose senior religious authority forbade the display of graven images, while royal portraits adorned official buildings and Saudi Riyals.

But does all this add up to a convincing case that Juhayman's group was a cause of al-Qaida's birth? Trofimov thinks so. Yet aside from noting the many al-Qaida leaders who have been influenced by Juhayman's writings (originally published, incidentally, by an Iraqi Ba'athist-affiliated publisher), the bulk of his argument consists of weaving together a series of varied and intricately connected repercussions of the Mecca uprising.

The siege began just weeks after the storming of the US embassy in Teheran. It also coincided with a series of frightening protests among Saudi Arabia's 350,000-strong Shi'ite minority, many of them waving posters of Iran's supreme leader, Ayatollah Khomeini. Amid widespread suspicion of Iranian involvement in the Mecca uprising, Khomeini deftly turned the accusations on their head, stating in a radio broadcast that "it is not far-fetched to assume" that the events in Mecca had "been perpetrated by the criminal American imperialism."

In the days that followed, credulous Muslims set fire to American embassies from Libya to Bangladesh, prompting so much panic within the Carter administration that secretary of state Cyrus Vance withdrew American personnel from across the Middle East.

Trofimov also contends that America's precipitous decline in influence, coupled with its unmistakable display of cowardice, emboldened future jihadists as well as the Soviet Union. Just one week after the Mecca crisis and the ensuing withdrawal of American personnel, with their self-confidence at new heights the Soviets decided to invade Afghanistan. That invasion, in turn, encouraged the Carter administration to make two decisions of great consequence to al-Qaida's growth: first, to increase the American military presence in the Middle East, thus, in Trofimov's view, propelling additional recruits to al-Qaida's ranks, and second, to decide, together with Saudi Arabia, to harness this newly discovered Islamist upsurge and use it against the Soviet Union in Afghanistan.

Just how these events would have played out in the absence of a siege of Mecca is the unanswerable question that hovers over much of Trofimov's thesis. The central causal link he identifies between Juhayman and bin Laden is the Soviet invasion of Afghanistan, but that event, as Trofimov notes, had at least as much to do with Soviet indignation at an unrelated deployment of a US aircraft carrier in the Persian Gulf.

Still, the siege of Mecca was a fascinating, portentous event, and Trofimov succeeds in his primary task of engagingly telling the tale while revealing the fragility of a kingdom containing many subjects who are more sympathetic to militant Wahhabis than to the House of Saud.
Stopping Battlefield Bleeding

A polymer-filled pouch that expands when exposed to blood can quickly halt bleeding.

By Brittany Sauser, Tuesday, November 27, 2007

Researchers at Aurora Flight Sciences have developed a pouch that can be put inside a large, open wound to halt life-threatening bleeding within minutes. The pouch, called a swelling hemostat, resembles a beanbag and is made of a polymer-fiber mesh encased in spandex fabric. The polymer absorbs the blood, and as it does, it expands, putting sufficient pressure on the walls of the wound to stem the flow of blood. Preliminary tests have also shown that the pouch promotes clotting: only the water from the blood is absorbed, hence the natural clotting factors that exist in blood become concentrated.

Conventional methods for controlling external bleeding include applying direct pressure. This can be done by a medic or another individual compressing the wound, stuffing it with haemostatic gauzes, or applying a tourniquet. "Each one presents a unique problem, and I am not sure any of them are very effective," says George Velmahos, a professor of surgery at Harvard Medical School and chief of the division of trauma, emergency surgery, and surgical critical care at Massachusetts General Hospital (MGH). A tourniquet, for example, stops the blood circulation below the point on which it is applied, which leaves the rest of the extremity susceptible to becoming "dead muscle," says Velmahos. Recently, the U.S. Army developed an ultrasonic tourniquet to stem the flow of blood using focused beams of ultrasound. (See "An
Ultrasonic Tourniquet to Stop Battlefield Bleeding.") But this method, along with others, has thermal side effects that cause damage to the surrounding tissue.

It is also very difficult to compress deep wounds, especially when bullets are flying, says Velmahos. "We need smart devices and smart materials that can stop bleeding without cutting circulation off, and without the need of a paramedic or another body being physically present. To that extent, the swelling hemostat is very useful."

The pouch initially measures about three square inches and only weighs a couple of ounces, making it easy to stuff into a first-aid kit, a backpack, or even a soldier's pocket. It is made of a polyacrylic-acid-based superabsorbent polymer powder, a standard material known to greatly swell when exposed to water; hence it can absorb the aqueous components of blood and expand. However, when the pouch is used in a wound, the expansion of the polymer particles is easily blocked by the particulates in the blood, which significantly reduces the effectiveness of the polymer in the device.

To combat this, Aurora researchers mixed the polymer with a polypropylene fiber. The fiber keeps the polymer particles evenly spaced so that they can soak up the blood quickly while expanding uniformly. The outside material is a micro-mesh spandex fabric that stretches to accommodate gel expansion. The pouch, in turn, puts pressure on the walls of the wound and stems the flow of blood through a mechanical fluid-blocking effect.

"The device has a total absorption of approximately 30 times its initial weight within two minutes," says Liping Sun, a senior scientist at Aurora. Depending on the size of the wound, multiple pouches can be used. Each one can swell to about the size of a couple of grapefruits, says de Luis. But ideally, a pouch would not expand all the way--only enough to stop the flow of blood. The pouch also works like a diaper: it locks in the fluid so that the blood can't be squeezed out. Tests on pigs at MGH yielded promising results: all of the test subjects treated with the pouch survived their injuries, versus only 40 percent for the controls, which were tested with a standard army-issued gauze roll.

The swelling hemostat pouch could provide a good way to stop bleeding for a few hours, so that a soldier or a patient can be transported to a medical center, says Ali Khademhosseini, an assistant professor in the Harvard-MIT division of health sciences and technology, and a winner of the TR35. "Unlike similar devices, it works to minimize the amount of liquid that would come out of the wound," says Khademhosseini.

Two other types of devices already used by the U.S. military are made by HemCon and Z-Medica. HemCon, based in Portland, OR, makes bandages from chitosan, a naturally occurring, biocompatible polysaccharide derived from shrimp shells. When applied to a wound, the positively charged chitosan attracts negatively charged blood cells, which seals the wound and allows the body to form a clot that stops hemorrhaging.

Z-Medica, based in Wallingford, CT, makes a pourable product called QuickClot that uses zeolite-based agents to soak up the blood and adhere to the tissue at and around the wound site.
But for traumatic injuries, one needs to have a fast system that can prevent bleeding in large wounds, says Khademhosseini. HemCon bandages, for example, only cover a four-by-four-inch area.

"The main benefit to our device is that it is purely a mechanical application, so we don't have any complications with chemical reactions or exothermic reactions," says de Luis.

Researchers at MIT, led by Rutledge Ellis-Behnke, are also working on an innovative solution: a biodegradable liquid that can quickly stop bleeding. (See "Nanosolution Halts Bleeding" and "TR10: Nanohealing.") It could also be used to promote healing particularly for wounds inside the body. The biodegradable liquid is still three to five years from being approved for use in humans, however, and MIT researchers say that it will first be used in surgical procedures. Its impact on large wounds and in other areas is unknown.

According to de Luis and Velmahos, the swelling hemostat can be developed for less than $10 per pouch, and it could be on the battlefield within a year. "These kinds of things are very useful not just for the battlefield, but for biomedical treatment anywhere," says Khademhosseini. "They use standard polymers that are cheap and commercially available."

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Jihadism

Abu Mus’ab al-Suri – al-Qaeda Strategist: The brains behind the bombs


*Architect of Global Jihad: The Life of Al Qaeda Strategist Abu Mus’ab al-Suri*

By Brynjar Lia

Columbia University Press; 256 pages; $28.95. Hurst; £27.50

IF THE internet is *jihad*’s open university, used for spreading ideological and military knowledge, then one of its most formidable professors is Mustafa bin Abd al-Qadir Setmariam Nasar, better known by his *nom de guerre*, Abu Musab al-Suri. The Syrian-born militant was arrested in Pakistan in October 2005 and is now believed to be detained by the United States in an unknown location. Yet his lectures remain available as audio files in cyberspace.

The blond professor. *Source: EPA*

Ginger-haired and married to a Spaniard, Mr al-Suri went by several aliases, including El Español and El Rubio (the blond one). He was little known outside Islamist circles until the Madrid train bombings in March 2004 when Spanish investigators named him as a possible ideological influence, if not the actual mastermind. Eight months later America placed a $5m bounty on his head and Mr al-Suri sensed the net closing around him. So he took precautions: hacking into commercial websites in America, he placed on the internet many of the books, lectures and letters that he had been circulating privately.

“I wish by God that America will regret bitterly that she provoked me and others to combat her with pen and sword,” he declared. His pen turned out to have been prolific, including brutally frank assessments of the violent uprisings in Syria in the 1980s and Algeria in the 1990s, and a host of training manuals. His life’s work is a 1,600-page opus, “The Global Islamic Resistance Call”, which started to take form in the early 1990s. In it,
Mr al-Suri argues that *jihadis* should avoid creating hierarchical structures, which are vulnerable to attack by local or American security forces, and move instead to a decentralised system of individuals or small local cells linked only by ideology.

To judge from the succession of actual and foiled plots in Europe, international jihadism has indeed evolved this way. It is unclear, however, whether this was done deliberately under the influence of Mr al-Suri’s exhortations, or out of necessity after al-Qaeda’s expulsion from Afghanistan and the arrest or death of several leading figures. At the very least, Mr al-Suri demonstrates considerable prescience.

This biography by Brynjar Lia, a Norwegian expert on the subject, is a welcome addition to a crowded field of books on Islamist extremism. Mr al-Suri comes across as a lone wolf, neither a hard-bitten fighter like Abu Musab al-Zarqawi, the late leader of al-Qaeda in Iraq, nor a religious ideologue, like the jailed Palestinian-Jordanian cleric, Abu Muhammad al-Maqdisi. He casts himself as a military strategist who, unlike other jihadists, embraces secular knowledge and draws on the experience of other guerrilla movements.

His life is emblematic of a breed of itinerant jihadist. He started out fighting the “near enemy”; in his case Syria’s Baathist regime (he got support from Egypt and then Iraq). After that proved a failure, he joined the fight to liberate Afghanistan from Soviet occupation. He then drifted in the dispersed international *jihadi* milieu until he arrived in “Londonistan”.

Gradually, he turned his attention to confronting the “far enemy”, the United States. He helped to propagate al-Qaeda’s message through a “media bureau” in London, arranging interviews for Western journalists with Osama bin Laden. He returned to Afghanistan in 1997 to work as a media adviser to the Taliban regime, which he regarded as “the best example of an Islamic state on earth today”.

The most important contribution of Mr Lia’s book is the insight he offers into the personal and ideological rivalries in the *jihadi* world (though these may make hard going for a non-expert). It is plain that Mr al-Suri was not enamoured by his fellow militants. He disliked the “erratic actions” being taken by al-Qaeda, which he feared would undermine the Taliban experiment (he was right). He once accused Mr bin Laden of acting like a “pharaoh” and he had little regard for Saudi jihadists in general. Many, in his view, treated the *jihadi* training camps as an adventure playground or as a means of cleansing themselves after having “spent time with a whore in Bangkok”.

The Qur'anist Movement


Frontpage Interview’s guest today is Thomas Haidon, a Muslim commentator on human rights, counter-terrorism and Islamic affairs. He is active in the Qur'anist movement and works with a number of Islamic reform organisations as an advisor. He has provided guidance to several governments on counter-terrorism issues and his works have been published in legal periodicals, and other media. Mr. Haidon has also provided advice to and worked for United Nations agencies in Sudan and Indonesia.

FP: Thomas Haidon, welcome to Frontpage Interview.

Haidon: Thank you, it's a pleasure to speak with you.

FP: So what's going on with the effort of moderate Muslims to reform Islam? It doesn't seem to be getting very far. How come? There appears to be a failure of moderate Muslims to make any real ground in developing a counter-jihad strategy. Why is this?

Haidon: The current Islamic reform movement, if it can be called a movement, is incoherent. Collectively the efforts of moderate Muslims to reform Islam have been highly disorganized, and generally ineffective. In general, Moderate Muslims reformers have been unable to move beyond the rhetoric towards developing real, theological solutions and alternatives to Islamism. As a foundational starting point, there is no precise definition of moderate Islam or moderate Muslims, only characteristics and assumptions.

In 2002 and 2003, a number of mid-size moderate Muslim organisations were established which sought to advocate for a moderate vision of Islam. Unfortunately, these groups have all but faded from existence, and generally exist in name only. There are a number of reasons for this. The primary reason is that these groups failed to develop effective strategic approaches and theological platform to combat Islamist ideology. An organisation that merely points out
problems or symptoms of a problem without proffering effective counter-solutions will not have a sustainable future. These groups have done little to convince traditional Muslims that the path to reform is necessary. The case for reform has simply not been made well enough. Modernising and reforming Islam is arguably one of the most complex and pressing policy questions confronting civilization. The task is formidable: to develop a strategic reformist framework that provides a theological response to Islamist ideology. Solutions and answers have to be robust and comprehensive. I have seen a number of Islamist scholars and non-Muslim commentators who have completely discredited Islamic reformist platforms. Merely saying Islam needs reform won't make it so.

Other reformers have made a number of tactical errors that have hindered their progress. A strategic approach to Islamic reform necessitates "playing the game" to a degree. By becoming a perceived "darling" of the so-called "right", Muslim reformers will never gain acceptance in the wider Muslim world. Admittedly, it is a difficult balance to achieve. Effective reformers must try and strike a balance, and not appear to be so aligned with Western interests that they disenfranchise traditional Muslims. There has to be an element of gradualism. Some well intentioned reformers have ignored this. While this notion may seem a bit unpalatable to your readers it is necessary for a sustainable reform.

Islam must first and foremost be seen to reform for the benefit of Muslims. Other reformers have called for actual parts of the Qur'an to be removed and simply forgotten. In realistic terms, this approach to reform is ill conceived and will never be accepted by the wider Muslim body. Islamic reform does not require the abandonment of all traditionalism or conservative principles. An Islamic reformation movement cannot ignore the traditionalism and conservative principles. Unfortunately, some well intentioned moderate Muslims have simply not grasped this key concept.

There have also been a number of other constraints to the so-called reform movement. It is largely personality and individual driven. There is a lack of consensus in terms of identifying the problems facing Islam. Reformers are often reluctant to work together because of different approaches. This is one of the primary reasons the much touted Progressive Muslim Union is now defunct.

In other words, there is great division in the reform movement that is not easily reconcilable. A further constraint is resource mobilization and organizational capacity. While mainstream Muslim organisations generally have no problem soliciting funds from their constituents and foreign governments, moderate Muslim organisations are, in general, grossly under-resourced and rely on the hard voluntary work of its members. It is virtually impossible to establish an effective reform organisation without adequate resources or capacity.

Non-Muslims can also be an impediment to moderate Muslims who want to achieve Islamic reform. The so-called "left" has, in many ways become a partner to the ideology of Islamism in their unyielding opposition to the war on terror. The "right" has also created barriers. Commentators on the "right" have a tendency to scoff at Muslim reformers and dismiss them. Painting all Muslims with the same brush is an over inclusive and short-sighted approach. Non-
Muslims who are interested in defeating Islam, cannot win an ideological battle without moderate Muslims.

On top of this, true moderate Muslims are confronted with the threat of social exclusion and physical violence. Reform is often viewed as bidd’a (innovation), and those who espouse reform are often considered murtad (apostates). Leading the charge against moderate Muslims is Sheikh Yusuf Al-Qaradawi, who condemns moderate Muslims as "intellectual apostates". According to Al-Qaradawi, intellectual apostasy is a:

[k]ind of apostasy among people who do not declare their explicit disbelief and openly wage war against everything that is religious. Those apostates are far smarter than that. They wrap their apostasy in various coverings, sneaking in a very cunning manner into the mind, the same way that malignant tumors sneak into the body. These people are not noticed when they invade or begin to disseminate their falsehood, but they are mostly felt when they affect the minds. They do not use guns in their attacks; however, their attacks are fierce and cunning. This apostasy is noticed everyday in circulated newspapers and books, in radio and TV programs, and in laws legislated to govern people's affairs.

Qaradawi considers this form of apostasy "more dangerous than openly announced apostasy; for the former works continuously on a wide scale, at the same time, it cannot be easily resisted in the same manner as the latter, which always makes much fuss, attracts attention, and stirs up public opinion."

As we can see, the barriers to reform are significant. That said there are a number of courageous individuals who are working to change Islam from within. They include: Edip Yuskel, Sheikh Ahmed Mansour, and others.

**FP:** There are a great deal of false moderates. What exactly is their motive?

**Haidon:** Genuine reformers are not always easy to identify. False moderates are those Muslims who purport to advocate for reform or "peaceful" Islam, while surreptitiously having other objectives/motives in mind. False moderates generally fall into two camps: those Muslims who espouse general moderate/reformist rhetoric, while maintaining association with an Islamist agenda; and Muslims, who advocate and espouse reformist rhetoric for the purposes of personal profit or gain. Both categories of false moderates undermine the work of genuine reformers.

In the immediate aftermath of 9/11 a number of false moderates belonging to the first camp began to talk about the "peace" of Islam, and the need for "inter-faith dialogue". Scholars and ulama like Tariq Ramadan, Dr Jamal Badawi, and Sheikh Yusuf Al-Qaradawi fall into this category. These men have been celebrated as moderates because of calls for dialogue and reconciliation. Yet, when speaking to Muslims, their Islamist agenda is revealed. Unfortunately, policy makers can't seem to grasp or conceptualise the ramifications of engaging these so-called moderates, who are, in reality, no better than Al-Qaeda terrorists. In fact, these false moderates are far more dangerous. They have managed to win the trust of non-Muslims and influential policy makers with their smiles, Western style suits and promises of "dialogue".

The second camp of false moderates contains those Muslims who talk about reform to non-Muslims in order to achieve personal gain. This camp is transparent. I am weary of any so-called reformer whose primary target audience is non-Muslims. This group of "moderates" seeks to maximize personal gain by warning non-Muslims of the threats that Islam faces, without offering
any concrete solutions. They seek to develop a "niche market", where they can secure places and invitations at conferences, synagogues, churches and anyone-else who will listen, anyone except Muslims.

FP: Your thoughts on Sharia?

Haidon: I am supportive of individuals who choose to follow the morals and principles of the Qur'an in their private lives. Moderate Islam does not require Muslims to abandon fundamental tenets or to abandon moral concepts such as modesty, abstaining from alcohol, etc. I am fundamentally opposed, however, to the codification of shari'ah into public legislation or the imposition of any punishment for a breach of shari'ah law.

By its very nature, shari'ah when implemented aspirationally, or at a legislative level, is prima facie discriminatory against women and non-Muslims. Shari'ah breaches accepted human rights standards contained in the primary United Nations conventions (including the International Covenant on Civil and Political Rights, the International Covenant on Economic, Cultural and Social Rights, the Convention Against Discrimination Against Women, and so forth). A genuine Islamic reform movement must fight against the imposition of shari'ah. There are a number of reformers, like Hasan Mahmud who are leading this effort.

FP: Tell us about the Qur'an Only movement.

Haidon: The Qur'anic movement is shift back to the Islam of the Qur'an. Qur'anic Muslims follow the words of the Qur'an alone, and reject the so-called traditions of Islam, as these traditions are not revelation. It is a rationalist movement that is based on the principle that the Qur'an provides a comprehensive guide and criterion for Muslims to live by. The Qur'anic movement does not consider the Sunnah and hadith as valid or reliable sources of Islam. This is primary because the Qur'an is the complete source of Islam ("And We have sent down to you the Book explaining all things, a guide, a mercy and glad tidings for those who submit" 16:89). The primary problem with the Muslim tradition is that it is often inconsistent with the Qur'an. Muslims have attempted to resolve these inconsistencies by interpreting the Qur'an through hadith, not the other way around. Put simply, the Qur'an is God's word, the Sunnah is not.

The so-called Sunnah was not written down until approximately 150 years after Muhammad's death. The rightly guided Caliphs fought against codifying the Sunnah out of fear that it would take a life of its own. Muslim jurisprudence has developed a complex approach to determining the veracity reliability of hadith. Early Muslims fought against the transcribing of the hadith, and were able to clearly see the difficulties. Each of the four rightly guided Caliph's (Muhammad's companions) were opposed to the transcribing of hadith, regardless of whether they were valid or not. The Sunnah was initially used as a political tool to consolidate the political power of the Abbasids and Ummayids. There is nothing in the Qur'an explicitly requiring Muslims to follow these traditions, only generic verses that Muslim jurisprudence has exploited to serve Islamic rules. A key element of the Qur'anic movement is that it employs a contextual exegetical approach in interpreting the Qur'an. The Qur'an, without contextual and non-literal explanation, can be dangerous (even without reliance on the Sunnah). While many hadith are innocuous, other hadith encourage violence, rape and tyranny. Other hadith (accepted as valid) are simply absurd, such as the hadith extolling the virtues of camel urine. The Qur'anic approach puts this in perspective.
In my view, the Qur'anic movement provides the only effective mechanism to comprehensive Islamic reform. Importantly, a number of Islamic scholars including Sheikh Ahmed Mansour, Tarek Abdel Hamid, and Edip Yuskel, among others, have developed devastatingly clear arguments in justification of the approach. The Qur'anic movement is also becoming better organized and strategic. Edip Yuskel and other reformers have recently developed and published the "Quran: A Reformist Translation" which provides a contextual interpretation of the Qur'an along with commentary. It also sets out a strategic framework for the reform of Islam, consistent with the Qur'anic approach. The Qur'anic movement is not without its detractors or skeptics. Unlike other reformist approaches, however, the Qur'anic approach is one based in fact and logic. As the movement becomes more organized and develops greater capacity, it will begin to reach traditional Muslims.

FP: Can you share your own intellectual and religious journey with us? You were at one time a non-Muslim. Why did you become Muslim? And now, as a Muslim, what is it like to remain part of a worldwide religion that has so many violent, totalitarian and misogynist teachings and is causing so much violence around the world?

Haidon: I was raised in the Irish Catholic tradition, and spent a significant time studying scripture, hermeneutics and the writings of Catholic philosophers like St. Augustine, St. Thomas Aquinas and St. Bonaventure. I discovered Islam during my study of comparative religions in the United States and in Cairo, Egypt. I also had the opportunity to study Islam in Cairo, Egypt and was exposed to the teachings of a number of reformers and moderates. I also studied non-Muslim perspectives on Islam. I came into Islam, with the full realisation and understanding that Islam was troubled. The pure monotheism of the Qur'an is what compelled me to become Muslim. I converted to Islam at Al-Azhar University in Cairo, Egypt in June 2001. I began to focus on reform after working and living in Khartoum Sudan in 2003. While in Sudan, I witnessed a truly horrific side to Islam that I had not witnessed previously. Among other things I witnessed Islamic punishments being meted out, and watched helplessly as hundreds of Muslims celebrated the anniversary of the 9/11 terrorist attacks. This was a defining moment for me, and caused me to begin to examine the sources of Muslim hatred and violence. While I am Muslim, I have great admiration for Christianity, its philosophy and its moral underpinnings. I am proud of my upbringing, and the values that Christianity taught me. I still find solace in the teachings of Jesus. These teachings are valid and relevant in the Islamic context as Jesus is arguably Islam's most important prophet, as Muslims believe Jesus will return. The deification of Muhammad through the Sunnah, however, has placed the peaceful teachings and "Sunnah" of Jesus off the radar of Muslim scholars and ulama. This is contrary to the principle that all prophets in Islam hold equal status.

My academic and professional experience in the field of human rights has also informed my views on Islamic reform. I am a firm believer that human rights are universal and that there is no place for cultural relativism where fundamental rights are concerned. There is a growing tension in international human rights law between individual and collective rights (rights of groups). This debate will be an important one to keep an eye on, Collective rights have traditionally been considered outside the scope of fundamental human rights, but the debate is shifting. This will have great implications on the shar'iah debate.
I remain Muslim, because I believe in the Qur'an and its message. Islam is capable of redemption, despite Muslim and non-Muslim detractors, and can be construed in a manner consistent with the respect for the fundamental human rights of all. Redemption will come when Muslims reject man-made traditions created by Muslims, and exclusively follow the messages of the Qur'an. In doing so, they must also develop contextualised, non-literal exegetical approaches to interpreting the Qur'an.

There has been enough rhetoric, it’s time for Muslims to act. We all know that there are problems within Islam, we're beyond that now. We need to develop viable solutions. Otherwise, the work of reformers is meaningless.

**FP:** Thomas Haidon, thank you for joining us.

**Haidon:** Thank you Jamie.

ELEANOR HALL: While a survey published today shows that many Australians think the threat of terrorism has been exaggerated, a former CIA (Central Intelligence Agency) agent says there are now more potential terrorists than there were in 2001, partly because of the Iraq war, and that they're likely to be more dangerous.

Marc Sageman was a CIA operative in Afghanistan and in Pakistan in the late 1980s. He gave evidence to the 9/11 Commission in the US and now advises governments on counter-terrorism tactics. He has written two books on the nature of Islamic terrorism. The latest, to be published in December this year is called *Leaderless Jihad*.

Dr Sageman is in Australia this week to speak at a counter-terrorism conference and when I caught up with him he told me about the shift towards a leaderless jihad since 2001.

MARC SAGEMAN: In the old days, Al Qaeda used to cherry-pick and they picked the most dedicated and smarter people who came to Afghanistan in the hope of being selected by Al Qaeda.

Now, anybody can declare themselves a member of Al Qaeda. So you have, in a sense, less careful terrorists, but on the other hand, you have far more of them.

ELEANOR HALL: So is that more of a challenge then for counter-terrorism authorities?

MARC SAGEMAN: Oh, absolutely. It's much more of a challenge because the previous terrorist could be tracked because they used to go to Afghanistan. They used to connect with Al Qaeda central.

Now, people who decide one day to be Al Qaeda, let's say in Sydney or Canberra, can then start accumulating material to build a bomb and do things on behalf of Al Qaeda. And those are much more difficult to detect than people who leave a trace by going to a country and crossing borders.

ELEANOR HALL: Would you say that Al Qaeda is now weaker or stronger than since the leadership has been tracked down, by the United States in particular, since 9/11?

MARC SAGEMAN: When people talk about Al Qaeda, they really talk about two things. Al Qaeda central, which is classical Al Qaeda that people swore by to bin Laden, that definitely has been weakened, but another meaning of the word Al Qaeda is the social movement itself. So they're not formally connected to bin Laden, but they do things on behalf of bin Laden. Those have grown tremendously. There are thousands of them and those are more dangerous than the old Al Qaeda central. It's been morphed into this leaderless jihad.
ELEANOR HALL: Now, you've said that the war of ideas is critical in this fight against terrorism. What do you mean by a war of ideas, how do you fight it?

MARC SAGEMAN: I'm kind of walking backwards from that. The war of ideas was critical in the first two waves. First with young people who were ideologically motivated going to Afghanistan to join Al Qaeda and doing things on behalf of the whole group.

But the third wave, the post-Iraqi invasion young people, those are not really religious scholars, they're not intellectual, they are very young, you're going to see them, you know, in both Melbourne and Sydney. They are not ideologues, so one of the contributors of their attempt to bomb within Australia was really a sound-bite: "this is a war on Islam".

In a sense, it's that we need to fight against the frame that they put on their personal experience - what they see globally, what they see locally - and it's critical to fight that. But beyond that they're not really that sophisticated, unlike the previous generations of Al Qaeda that were.

ELEANOR HALL: So are you saying that the current leaderless jihad, they're people motivated by different things from the original Al Qaeda block?

MARC SAGEMAN: Uh, that's possibly true, yes. They're motivated by fame and thrill. The older generation was more motivated by ideology. They were much better educated and tried to educate themselves in terms Islam. The new people now, they're very young, they don't know much about Islam, but they just want to be heroes, they want to be like Osama bin Laden.

ELEANOR HALL: So how do you fight this new generation?

MARC SAGEMAN: We give them different models of heroism. You try to have them emulate other local heroes.

ELEANOR HALL: And you argue in your book that the sort of violent extremism that forms that the leaderless jihad will self-destruct, but can we wait?

MARC SAGEMAN: Ah, yes I think we can. But it won't so much self-destruct as it will fade away. Right now what's fuelling it is a sense of moral outrage that young Muslims see in terms of Iraq. Iraq is still fuelling it. I don't mean that it's as simple as just leaving Iraq, but definitely, as long as we are in Iraq, it's going to keep the fire up. But otherwise, its appeal is fairly self-limiting. The atrocities that are committed on behalf of this movement are turning young people off.

The key question is: "Why are young people attracted to this ideology, to this notion?" And that's really what we have to understand because the ideology has been there for quite a while. It's a little bit like the communist ideology. It's still around but nobody's attracted to it. And so we have to analyse this from the bottom up and try to understand why, at certain times, some young people are attracted to communist ideology, and at other times to a Salafi-Jihadi ideology.
ELEANOR HALL: That's Dr Marc Sageman who's in Australia this week to speak at a counter-terrorism conference.

http://www.abc.net.au/worldtoday/content/2007/s2049834.htm
In the post-September 11 world, al Qaeda is no longer the central organizing force that aids or authorizes terrorist attacks or recruits terrorists. It is now more a source of inspiration for terrorist acts carried out by independent local groups that have branded themselves with the Al Qaeda name. Building on his previous groundbreaking research on the Al Qaeda network, forensic psychiatrist Marc Sageman has greatly expanded his research to explain how Islamic terrorism emerges and operates in the twenty-first century.

In *Leaderless Jihad*, Sageman rejects the views that place responsibility for terrorism on society or a flawed, predisposed individual. Instead, he argues, the individual, outside influence, and group dynamics come together in a four-step process through which Muslim youth become radicalized. First, traumatic events either experienced personally or learned about indirectly spark moral outrage. Individuals interpret this outrage through a specific ideology, more felt and understood than based on doctrine. Usually in a chat room or other Internet-based venues, adherents share this moral outrage, which resonates with the personal experiences of others. The outrage is acted on by a group, either online or offline.

*Leaderless Jihad* offers a ray of hope. Drawing on historical analogies, Sageman argues that the zeal of jihadism is self-terminating; eventually its followers will turn away from violence as a means of expressing their discontent. The book concludes with Sageman's recommendations for the application of his research to counterterrorism law enforcement efforts.
War and Technology

By Martin van Creveld

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War and technology have always been linked very closely. Indeed, without technology, there would probably have been no war. After all, without technology, if only in the form of sticks and stones, man’s ability to kill his own kind is extremely limited. He can hit—a purpose for which his arms are much better suited than those of any other animal—and bite, but he can hardly kill; he can choke, but doing so takes time, and few people are so strong that they could not be overpowered by a few others. Under such circumstances early human warfare might perhaps have resembled the kind of strife we witness among chimpanzees. There would no doubt have been fights over living space, access to resources such as food water, females, and precedence. Some fights might even have been motivated by the sheer fun of taking on an enemy and overcoming him. However, almost certainly there would have been no real war.

From the first day that technology was introduced to war, it has helped shape the latter. Flint-made daggers and spears, and leather or wickerwork shields, did quite as much to shape the tactics adopted by ancient societies as horses did during the middle ages and as tanks, aircraft, and various combat ships do today. They determined, for example, whether formations would be close or open, deep or shallow, rigid or lose. Other technologies determined how far different units comprising a single force could get away from each other without losing touch; thus playing a critical role in strategy. Technology also helped determine which kinds of formations were most suitable for fighting which enemies in what kind of terrain, under what kind of circumstances, and so on.

The same is true of horses, chariots, mechanical artillery, and gunpowder. Of course we have far more, and better, technology than our ancestors did. But technology is becoming more expensive all the time, both absolutely and in comparison with manpower; this, indeed, is one reason why the number of the most powerful weapon systems in particular has been going down from 1945 on. However, technology is not playing any greater role in shaping war than it has done at any
time in the past. To say so is a form of hubris that is not without importance to the American way of making war in particular.

Whereas weapons have always helped determine tactics, tactics in turn helped determine organization, operations, strategy, logistics, and command and control systems. All these were driven by the technology in use and, in turn, drove it along. Thus the relationship between the two—war and technology, doctrine and the hardware required for putting it into effect—is two-sided. For example, did the development of mechanical transport before 1914 permit the huge artillery pieces of World War I, or did the need to break through fortifications lead to the development of those pieces as well as the mechanical transport without which they would have been useless?

And yet the quest for technological superiority is eternal. From the first moment that Homo sapiens went to war, attempts were made to obtain victory by designing weapons that would be better than those of the enemy. Flint blades were replaced by copper ones. They in turn were replaced by bronze ones, which were replaced by iron ones, which were replaced by ones that were made of steel. Simple bows were replaced by long and composite ones, until finally firearms took over and did away with the bow altogether. Firearms in turn underwent a long, and near continuous, process of development that took them from the primitive devices of 1400 all the way to today's assault rifles, machine guns, and artillery. Armor, fortifications, and means of transportation all underwent similar development. Although here and there the collapse of a society led to a return to a simpler technology, the retreat was always temporary.

Finally, while the goal was always to win victory by means of technological superiority, some new and irresistible device, that goal was rarely attained. First, war is an imitative activity par excellence. To win, it is necessary to understand the enemy; to understand the enemy means learning from him and, to some extent, becoming like him. If only because any weapon used in war will inevitably fall into the hands of the enemy and be copied, technological superiority, even if achieved, rarely lasted for very long.

Second, war, conducted as it is against an enemy who is as intelligent, as resourceful, and as free to bring his will and resources to bear as oneself, is among, if not the, most complex of all human activities. The number of factors that help determine the outcome is huge. In particular it is necessary to mention morale, cohesion, and sheer fighting power; all three of which, being intangible, are very difficult to evaluate. Since technology is but one of the factors that shape war, technological superiority alone has seldom led to a decision. And the longer the war, the more true this is.

**Nuclear Weapons and Their Impact on War**

From the earliest times to 1945, technology drove war without changing its essence. Since the objective was always to achieve victory by smashing the enemy, it is scant wonder that war always tended to become more powerful. In terms of size, technology was one of the factors that permitted armed forces to grow from a few dozen tribal warriors into millions of modern soldiers. The distances over which operations could be conducted and the speed with which individuals, units, and machines moved about (which, however, is not the same as the speed with
which offensives advanced) both increased dramatically. Starting with clubs and culminating in Intercontinental Ballistic Missiles, so did the range at which power was brought to bear against the enemy.

A very important effect of developing technology was to enable war to spread into environments that used to be inaccessible to it. From the land to rivers, lakes and coastal waters; from coastal waters into the sea; from the surface of the sea into the latter's depths; as well as into the air and, most recently, into outer space. Generally speaking, no sooner does technology open any environment to human activity than that environment becomes the theater of warlike operations, either actual or planned. At times, so rapid was the increase that five years made all the difference. For example, the armies of 1918 would have sliced through those of 1914 like a knife through butter. The armies of 1945 would have done the same to those of 1939, and those of 1950 to those of 1945.

For all that, technology did not change the nature of war. War remained what it had been since the time when the first band of cavemen, carrying sticks and stones, went out to attack its neighbor. Namely, a violent, two-sided activity governed by action and reaction, challenge and response; in the sense that it was used to advance or defend the interests of the group or organization that waged it, it also remained an instrument of politics. All this was as true in 2000 BCE, and presumably 50,000 BCE, as it was in 1945.

Next, a vast revolution took place, causing not only the methods by which war is waged but its very essence to change. Unlike most revolutions, this one can be dated not only to the day, but also to the hour. Over Hiroshima, August 6, 1945 was a beautiful summer day. At 9:15 am, out of a clear blue sky, there appeared a single bomber, the largest that had been built up to that time. The bomb doors opened, and a single bulky device dropped out. As the aircraft banked steeply away, the device fell, gathering speed. A few minutes later it exploded. A thousand suns shone, an estimated 75,000 people lay dead, and the nature of war had changed, presumably forever.

Until then, every new weapon that appeared on the scene had been met by a technological or tactical development that, to a large extent, neutralized it—or why else did technological progress continue? Now, for the first time, a weapon had been built against which there was no effective defense. As more and more nuclear weapons were built, and as more countries acquired them, the outcome, to speak with the greatest of all nuclear strategists, Thomas Schelling, was that the link between victory and survival was cut.

A few people, notably Bernard Brodie, then a young teacher at Columbia University, understood the nature of the change almost at once. Previously, though a victor might suffer losses as grievous as those suffered by King Pyrrhus in his proverbial triumph over the Romans in 279 BCE, he was at any rate assured that his forces and his country would survive. In a world where both sides had nuclear weapons, this no longer applied. Thus the very nature of war as an instrument in the hands of politics was put into question. Its nature as a two-sided activity consisting of action, counteraction, and counter-counteraction also underwent a decisive change. A nuclear war would surely see a first strike and possibly a second strike as well. However, given the magnitude of the destruction that would be inflicted, very few analysts ever tried to
look into the possibility of a third strike. To the extent that they did so, they characterized it as “broken back warfare,” a term that speaks for itself.

Over six decades have passed since Hiroshima. During those decades, in every single region where nuclear weapons were introduced, large-scale war between the countries that possessed them has disappeared. Countless doctrines were written, and weapons and delivery vehicles deployed, to fight a nuclear war if it came; in the end, however, the balance of terror always prevailed. To the extent that war still took place, it only did so between, or against, third- and fourth-rate powers that did not have nuclear weapons.

Probably for the first time in history, developing technology had caused not just the way war was waged and fought but its nature, as well as its usefulness as an instrument of policy, to change. Nothing that came before, not even the horse or the wheel or gunpowder, and nothing that came after, not even missiles and satellites and computers, has had anything like a similar impact; compared with nuclear weapons, too, all other so-called weapons of mass destruction are as pigmies to giants. Nor, sixty-two years later, and in spite of the development of various of anti-ballistic missile defenses by various countries around the world, does it appear likely that the impact in question will be undone in the foreseeable future.

**The American approach to military technology**

Two developments probably explain the American love story with technology, and military technology in particular.

First there was the shortage of labor, especially skilled labor, in a vast, almost empty, continent. One solution, adopted mainly in the southern part of the country, was to import slaves; the other, increasingly adopted in its northern part from the last decades of the eighteenth century on, was technology. By the middle of the nineteenth century, American technology, including also the use of standardized production and interchangeable parts, begun to flood the world and “Yankee ingenuity” was becoming proverbial.

Certainly until 1939 or even 1945, American technology, including military technology, tended to be as good as that of others but no better. The weapons it produced, such as combat aircraft and tanks and artillery and ships and submarines, were characterized not so much by top of the line performance as by the methods by which they were produced, the scale on which they were produced, and the price at which they were produced. As General Dwight D. Eisenhower put it, it was “Detroit” that won World War II for America; as one German officer allegedly put it, in an encounter between an American and German units, the Germans ran out of shells before the Americans ran out of tanks. One outcome was that, at the end of that war, theaters of war the world over were littered with surplus American equipment. Rather than transport it all home, which would have been exceedingly expensive, the Americans either sold it to their allies on the cheap or else simply left it to rust.

By that time, the U.S. had convinced itself that, in any future war, it would fight outnumbered. The idea was confirmed during the early years of the Cold War and in Korea, when Chinese “human wave” attacks could only be stopped by superior U.S. firepower; however, as NATO got
organized it lost much of its force even in Europe. As to war in other parts of the world, the opposite was the case. Counting its allies, in Vietnam, in Gulf War I, in Serbia, and in Gulf War II, the U.S. actually enjoyed numerical superiority. Still, the notion that the U.S. was inferior in manpower—or, if it was not inferior in manpower, could not afford as many casualties as its opponents—persisted; to compensate, the U.S. would rely on the superior technology at its disposal. The idea was voiced by several secretaries of defense, including Robert McNamara, James Schlesinger, and Harold Brown. Its strongest advocate was probably Donald Rumsfeld during the heady days of the so-called Revolution in Military Affairs. He even set up an Office of Transformation to look after it; though just what it did was never quite clear.

Relying on superior technology, however, had its disadvantages. The more advanced the technology, the more complex it was and the greater the difficulties involved in its development. These difficulties, in turn, translated themselves into time and money. In theory, costs could be kept down by spreading development costs over large number of weapons and weapon systems. In practice, very often such was the cost of development that Congress, horrified, cut down the number of weapons in order to avoid even larger budget shortfalls than those that actually occurred. As a result, the order of battle tended to shrink and shrink. Most problematic of all, when it came to fighting (as opposed to deterring) nuclear-armed opponents, such as the Soviet Union and China, the new weapons were essentially useless.

As to non-nuclear countries, in theory, the highly sophisticated weapons now being produced and deployed gave the U.S. an overwhelming advantage over them. In practice, the populations of quite a number of such countries were still able to challenge the U.S. They did so by engaging in what has been variously called guerrilla, or Low Intensity Conflict, or non-trinitarian warfare, or terrorism, or asymmetric warfare, or insurgency, or whatever. All these forms of conflict have in common that they rely on stealth and unfold in immensely complex environments. Either natural ones, made up of mountains, jungles, or swamps; or artificial ones, made up of human beings, their dwellings, their means of production, their transport arteries, and their communications. Already World War II, in the form of the German counter-partisan operations in Yugoslavia and elsewhere, had shown that, in such complex environments, the most modern, most sophisticated technology does not work nearly as well as in simpler ones. It was a lesson that the U.S., to its very great cost, has simply refused to learn.

Looking back, the outcome of the approach that put technology at the heart of military affairs and exaggerated what it could do is only too clear. Since 1945, the U.S. has engaged in four major wars. Out of these, one, Korea, ended in a draw. One, the First Gulf War, ended in victory. One, Vietnam, ended in defeat; the fourth, the Second Gulf War, is very likely to end in the same way. Clearly technology has not provided a formula for victory in war against nuclear states, either. To the contrary, all it has done is to render such wars unthinkable. It has also failed to provide such a formula in war against terrorists, guerrillas, or whatever they are called. At best it has enabled the U.S. to vanquish one or two opponents, such as Serbia, which were so small, weak, and remote as to raise the question why they had to be fought at all. That is not a very good outcome for something on which oceans of money have been spent.

**Conclusion**
To sum up, technology has always driven war, and been driven by it; however, contrary to the common wisdom, there is no sign that its role in shaping war has either increased or diminished. While the quest for technological superiority, the silver bullet as it is sometimes known, is as old as war itself, technology is but one of the factors that shape war and determines its outcome. As a result, victories due solely to technological superiority have been rare; and such superiority, even if it was achieved, usually did not last for very long. On the whole, the effect of technology has tended to increase, or help increase, the size of war, the power and speed with which it is waged, and the range at which it is waged. It has also expanded the environments in which it was waged. For millennia, however, it was incapable of changing either the nature of war or the purpose that it served.

With the advent of nuclear technology, things changed. Provided enough bombs are available, war in its old sense, consisting of action, counteraction, an counter-counteraction, has probably become impossible; if not for all time to come, at any rate as far into the future as we can look at present. Provided both belligerents are nuclear armed, the purpose it serves has also become extremely problematic. The second of these factors explains why, since 1945, wars waged between powerful countries have become exceedingly rare. Technological superiority could only be used, if it could be used at all, against non-nuclear, weak opponents.

The U.S., however, has consistently refused to learn this lesson. Whereas initially the American love affair with technology led to large numbers of fairly good weapons, after 1945 things changed. Holding on to the idea that it would fight outnumbered long after that idea ceased to be true, the U.S. has persisted in sinking fortunes into new weapons and weapons systems. The results, as the list of victories and defeats shows, have been mixed at best.

http://www.fpri.org/footnotes/1225.200710.vancreveld.wartechnology.html
Wearing technology on your sleeve

November 26, 2007

You think the switch from typewriter to computer was a revolution? The next stage could see many of us interacting with computers inserted into our very clothes. A new project is exploring a range of applications where wearable technology could significantly improve productivity and even help save lives.

Assimilate, assimilate!” You trekkies out there will recognise the Borg mantra for the bloodcurdling ‘assimilation’ of humans by machines. On the other side of the sci-fi divide, many may recall Star Wars’ recently revived Darth Vader, the half-man, half-machine dark lord of intergalactic evil.

From science fiction to science fact, the pairing of man and machine has always been at the forefront of our fears of what the technological future might have in store. But it has also been the basis of many of our conceptions for dealing with the challenges of the future: efficient multi-medial communications, improved ecologically friendly transport and revolutionary medical applications. After all, for every space villain there is a light sabre ready to be used to chop his head off.

Today’s instances of the association between man and technology are perhaps not as impressive to the jaded cinemagoer, but just as ambitious for the impact they could have on our daily lives. The focus, though, is perhaps not so much on assimilation as it is on integration and usability.

European researchers have been carrying out wide-ranging testing of new wearable technology with applications in a variety of fields and with the potential of protecting and even saving lives. The vital innovation is that the technology facilitates a new form of human-computer interaction comprising small, easily accessible body-worn computers that are always on and always responsive.

If you have a desktop application, then there is always a screen, a keyboard and a computer unit, but if you have a wearable computing solution, then it can be completely different,” says Michael Lawo, technical manager of the wearIT(at)work project. “You can have speech control in one instance, gesture control in another, though the application should always be the same,” he says. The Open Wearable Computing Framework being developed essentially comprises a central, easily wearable and hardware-independent computing unit which gives access to an ICT environment. Some of the basic components include wireless communication, positioning systems, speech recognition, interface devices, and low-level software platforms or toolboxes allowing these features to work together.

New paradigm
The pattern of this EU-funded project is woven as much out of applications as it is technology. It uses a number of commercial, off-the-shelf components and brings them together to create a new tool with the potential to revolutionise the way we work.

“Wearable computing is a completely new working paradigm,” says Lawo. “It is a technology which can support you in a particular environment. Instead of working at the computer, you are directly supported by the technology, a bit like when you are driving a car and you get information from the navigation system supporting you in your primary tasks.”

WearIT(at)work, the largest civilian wearable computing effort worldwide, is currently being tested in four different fields. These include aircraft maintenance, emergency response, car production and healthcare. Pilot projects in the areas of bush-fire prevention, e-inclusion and cultural heritage have also recently been launched.

In most cases, the technology is being applied to people who are not accustomed to using computers at the workplace, such as blue-collar workers. “The basic idea was to make the technology available to the workers and directly improve productivity,” says Lawo.

“We address fields where there are no similar applications today. Take the example of an aircraft technician. There is a person doing paperwork who has to find the relevant documentation on a computer. He has to find the aircraft maintenance manual and the parts manual, and produce a printout. These documents are handed over to the technician who then goes to the aircraft to do his work. He then has to write a report on a sheet of paper. And that is the way things work today. What we are doing is giving the worker support and direct access to the ICT system from the workplace. We get rid of the paper.”

**Working with fire**

With a considerable number of applications potentially possible, perhaps the most challenging test case for the project is the one involving emergency response teams, in collaboration with the Paris Fire Brigade. The technology helps support the communication, collaboration and information processes of rescue forces.

The efficiency and safety of firemen can be considerably improved by a number of light, easy-to-use and resistant devices, such as biosensors monitoring their physiological condition and improved localisation of hazards, personnel and retreat paths.

The technology has largely been well received by workers. “They recognise that this is a new technology where you can monitor working activities, but they do not hesitate to use it, and they see the advantage of it,” says Lawo.

Difficulties might nonetheless emerge in the future. “As soon as you come to the actual introduction of the technology and start negotiating with the unions, privacy will undoubtedly be an issue,” says Lawo.

WearIT(at)work already has some 42 partners, including IT giants Microsoft, Hewlett-Packard
and Siemens, but Lawo says the project is always on the lookout for new ventures.

“Research will continue for components or for positioning systems. There is a lot of further research that can be carried out, but you can basically already do quite a lot with the application and with the technology that already exist,” he confirms.

Testing is due to continue until mid-2008 and will be followed by an initial 12-month period where the focus will shift to exploitation. “What we really want to do is introduce the system into everyday working methods,” says Lawo.