

# Δελτία CBRNE ΧΒΡΠΠΕ Terrorism Τρομοκρατίας Newsletter



**PANDEMIC ALERT**  
LEVEL 5  
MEXICO FLU - ΓΡΩΠΗ ΜΕΞΙΚΟΥ  
Apr 09 AHP



Τεύχος 37 Volume

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«Η Δημοκρατία μας αυτοκαταστρέφεται διότι κατεχράσθη το δικαίωμα της ελευθερίας και της ισότητας, διότι έμαθε τους πολίτες να θεωρούν την αυθάδεια ως δικαίωμα, την παρανομία ως ελευθερία, την αναιδεια του λόγου ως ισότητα και την αναρχία ως ευδαιμονία»

Ισοκράτης (436 π.Χ-338 π.Χ.)

## ΠΑΝΔΗΜΙΑ ΓΡΙΠΗΣ ΜΕΞΙΚΟΥ

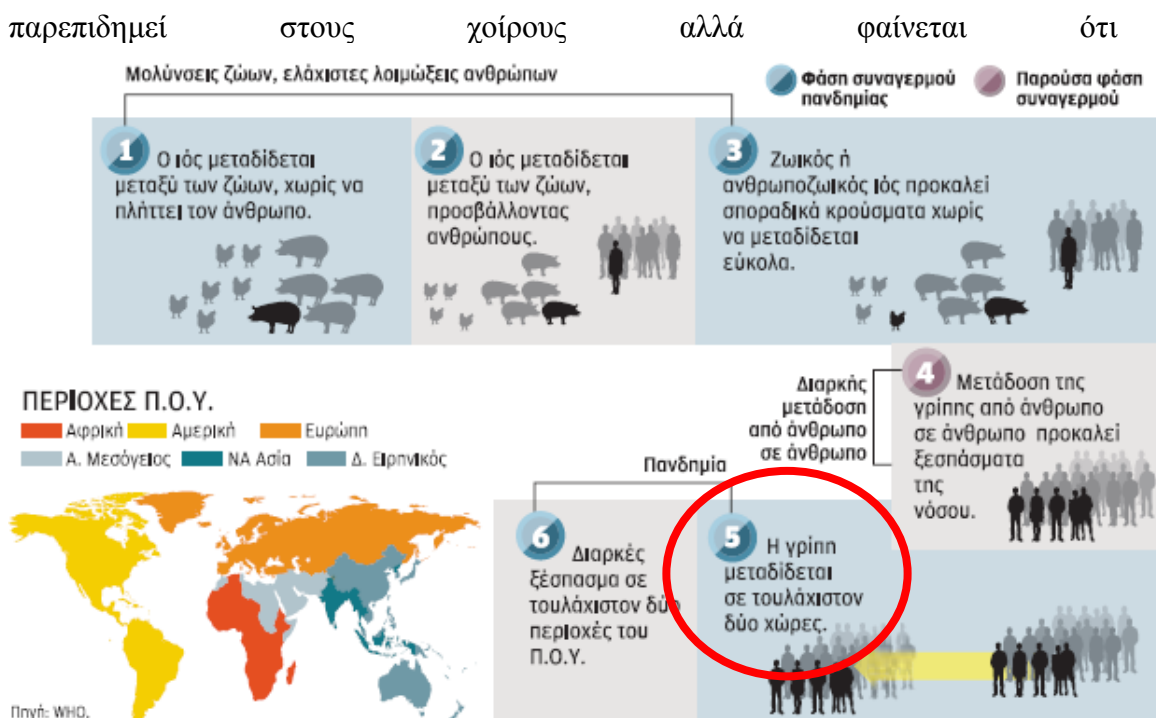
Στις 30 Απριλίου 2009 ο Παγκόσμιος Οργανισμός Υγείας (WHO) ανέβασε την Κατάσταση Συναγερμού Πανδημίας (Pandemic Alert Status) στο Επίπεδο 5. Η μετάβαση από το ισχύον επί μακρόν Επίπεδο 4 στην παρούσα κατάσταση έγινε εντός

| NEW PHASES   | OVERARCHING PUBLIC HEALTH GOALS  |
|--|--|
| <p><b>Interpandemic period</b></p> <p><b>Phase 1.</b> No new influenza virus subtypes have been detected in humans. An influenza virus subtype that has caused human infection may be present in animals. If present in animals, the risk<sup>a</sup> of human infection or disease is considered to be low.</p> <p><b>Phase 2.</b> No new influenza virus subtypes have been detected in humans. However, a circulating animal influenza virus subtype poses a substantial risk<sup>a</sup> of human disease.</p>   | <p>Strengthen influenza pandemic preparedness at the global, regional, national and subnational levels.</p> <p>Minimize the risk of transmission to humans; detect and report such transmission rapidly if it occurs.</p>  |
| <p><b>Pandemic alert period</b></p> <p><b>Phase 3.</b> Human infection(s) with a new subtype, but no human-to-human spread, or at most rare instances of spread to a close contact.<sup>b</sup></p> <p><b>Phase 4.</b> Small cluster(s) with limited human-to-human transmission but spread is highly localized, suggesting that the virus is not well adapted to humans.<sup>b</sup></p> <p><b>Phase 5.</b> Larger cluster(s) but human-to-human spread still localized, suggesting that the virus is becoming increasingly better adapted to humans, but may not yet be fully transmissible (substantial pandemic risk).</p> | <p>Ensure rapid characterization of the new virus subtype and early detection, notification and response to additional cases.</p> <p>Contain the new virus within limited foci or delay spread to gain time to implement preparedness measures, including vaccine development.</p> <p>Maximize efforts to contain or delay spread, to possibly avert a pandemic, and to gain time to implement pandemic response measures.</p> |
| <p><b>Pandemic period</b></p> <p><b>Phase 6.</b> Pandemic: increased and sustained transmission in general population.<sup>b</sup></p>   | <p>Minimize the impact of the pandemic.</p>  |

<sup>a</sup> The distinction between **phase 1** and **phase 2** is based on the risk of human infection or disease resulting from circulating strains in animals. The distinction is based on various factors and their relative importance according to current scientific knowledge. Factors may include pathogenicity in animals and humans, occurrence in domesticated animals and livestock or only in wildlife, whether the virus is enzootic or epizootic, geographically localized or widespread, and/or other scientific parameters.

<sup>b</sup> The distinction between **phase 3**, **phase 4** and **phase 5** is based on an assessment of the risk of a pandemic. Various factors and their relative importance according to current scientific knowledge may be considered. Factors may include rate of transmission, geographical location and spread, severity of illness, presence of genes from human strains (if derived from an animal strain), and/or other scientific parameters.

μιας εβδομάδας λόγω της ταχύτατης εξάπλωσης της γρίπης των χοίρων (swine flu) που ξεκίνησε από το Μεξικό και διαδόθηκε αρχικά στις ΗΠΑ και Καναδά και στη συνέχεια σε όλες τις ηπείρους (18 χώρες μέχρι σήμερα). Πρόκειται για ιό που



εξελίχθηκε περαιτέρω με προσθήκη γενετικού υλικού από το ανθρώπινο ιό της εποχικής γρίπης (seasonal flu) και το ιό της γρίπης των πτηνών (avian influenza). Μέχρι σήμερα ο ιός έχει προκαλέσει τον θάνατο άνω των 160 ατόμων στο Μεξικό και στις ΗΠΑ (1 θάνατος). Η πανδημία της Ισπανικής γρίπης (1918-19) είχε θνητότητα 2.5% αλλά προκάλεσε τον θάνατο δεκάδων εκατομμυρίων ατόμων καθώς διαδόθηκε με απίστευτους ρυθμούς. Η γρίπη των πτηνών προκάλεσε 257 θανάτους σε σύνολο 421 προσβληθέντων (θνητότητα 61%) ενώ το Σύνδρομο Σοβαρής Αναπνευστικής Ανεπάρκειας (SARS) που ξεκίνησε το 2003 από το Χονγκ-Κονγκ ευθύνεται για τον θάνατο 299 ατόμων σε σύνολο 1.755 προσβληθέντων (θνητότητα 17%).

Το ανησυχητικό στην παρούσα πανδημία είναι ότι προσβάλλει άτομα ηλικίας 25 έως 45 ετών (χωρίς να διαφεύγει κάποια άλλη ηλικιακή ομάδα) σε αντιδιαστολή με την εποχική γρίπη που στοχεύει κατά κύριο λόγο πολύ νεαρά άτομα και ηλικιωμένους. Ο χρόνος επώασης του ιού των χοίρων (H1N1) είναι 2-7 ημέρες και σε σοβαρές περιπτώσεις προκαλεί πνευμονία και θάνατο. Η κατανάλωση χοιρινού κρέατος είναι ασφαλής καθώς το μαγείρεμα (70<sup>0</sup>C) σκοτώνει τον ιό. Η λήψη σχολαστικών μέτρων ατομικής υγιεινής και η αποφυγή συγχρωτισμού σε περιβάλλοντα με μεγάλο αριθμό ατόμων αποτελούν αποτελεσματικά μέτρα περιορισμού της επιδημίας. Τα υπάρχοντα εμβόλια κατά της γρίπης δεν είναι γνωστό εάν προσφέρουν προστασία ενώ ο γενικός πληθυσμός δεν έχει αναπτύξει ανοσία έναντι του ιού των χοίρων. Ιδιαίτερη ανησυχία προκαλεί το ενδεχόμενο εξάπλωσης του ιού των χοίρων σε χώρες που ήδη έχουν ενεργό επιδημία γρίπης των πτηνών (πχ. Αίγυπτος). Εχει ήδη δρομολογηθεί η διαδικασία παραγωγής εμβολίων για την αντιμετώπιση της πανδημίας της γρίπης του Μεξικού (ο όρος γρίπη των χοίρων δεν αποδίδει ορθά την πραγματικότητα) πλην όμως η όλη διαδικασία θα απαιτήσει χρονικό διάστημα 4-6 μηνών (περί τον Σεπτ 09 αναμένεται η κυκλοφορία του εμβολίου) Τα υφιστάμενα φάρμακα για την αντιμετώπιση της ανθρώπινης γρίπης (Tamiflu<sup>TM</sup> και Relenza<sup>TM</sup>), φαίνεται ότι είναι δραστικά έναντι του ιού των χοίρων.

### Παράδειγμα προς μίμηση

Τα διδάγματα από τις προηγούμενες πανδημίες κινητοποίησαν έγκαιρα τις αρχές του Χονγκ-Κονγκ (που βρέθηκε στο δύνη του κυκλώνα κατά την πανδημία της γρίπης των πτηνών

το 2003), και σήμερα με την νέα πανδημία από τον ιό των χοίρων προ των πυλών, είναι πανέτοιμο να αντιμετωπίσει αποτελεσματικά τη νέα απειλή. Ενδεικτικά αναφέρονται τα παρακάτω:

- Μέχρι την Πέμπτη 30 Απρ 09, η χώρα θα διαθέτει έξι νοσοκομεία που θα μπορούν να διενεργούν διαγνωστικές δοκιμασίες σε γενετικό επίπεδο σε δείγματα ύποπτων ασθενών
- Χιλιάδες ιατροί και νοσηλευτές, συμπεριλαμβανομένων και των συνταξιούχων και των φοιτητών ιατρικής/νοσηλευτικής καθώς και εκείνων που διαθέτουν υγειονομική εκπαίδευση και έχουν μεταταχθεί σε άλλα επαγγέλματα έχουν συμπεριληφθεί σε βάσεις δεδομένων και είναι έτοιμοι προς κινητοποίηση
- Υπάρχουν έτοιμα σχέδια για τη συνέχιση λειτουργίας των μέσων μαζικής μεταφοράς, των εγκαταστάσεων παραγωγής ηλεκτρισμού, των εργοστασίων τροφίμων, των τηλεπικοινωνιών και άλλων ζωτικών υπηρεσιών ακόμη και όταν μεγάλο ποσοστό εργαζομένων θα απουσιάζει.
- Η πόλη διαθέτει 1.400 κλίνες σε μονάδες αναπνευστικής απομόνωσης που κατασκευάστηκαν κατά την τελευταία εξαετία για το φόβο της γρίπης των πτηνών ή του SARS ενώ οι διαθέσιμες κλίνες σε καθημερινή βάση είναι 15πλάσιες των αναγκών των κατοίκων.
- Για πληθυσμό 7 εκατομμυρίων κατοίκων υπάρχουν διαθέσιμες 20 εκατομμύρια δόσεις του φαρμάκου Tamiflu (έναντι του οποίου ο ιός των χοίρων δεν έχει εισέτι αναπτύξει αντίσταση)
- Η χώρα διαθέτει τους καλύτερους ειδικούς ιολόγους στην Ασία και εξαιρετικά ερευνητικά εργαστήρια
- Σε νομικό επίπεδο έχουν καθοριστεί ήδη όλες οι διαδικασίες που επιβάλλουν υποχρεωτικά τη δήλωση ύποπτων κρουσμάτων γρίπης των χοίρων από το ιατρο-νοσηλευτικό προσωπικό στους αρμόδιους φορείς
- Έχουν καθοριστεί επίσης οι νομοθετικές ρυθμίσεις που αφορούν περιπτώσεις απομόνωσης (quarantine) πιθανών περιστατικών και αναστολής ορισμένων ελευθεριών των πολιτών προκειμένου να καταστεί δυνατή η ανίχνευση όλων όσων ήρθαν σε επαφή με φορέα μεταδοτικής νόσου.

Τα παραπάνω αποτελούν λαμπρό παράδειγμα για την πιστοποίηση των ανθρώπων και των κοινωνιών σε αυτούς που μαθαίνουν (lessons learned) και δίνουν λύσεις (πχ. Χονγκ-Κονγκ) και σε αυτούς που απλά αναγνωρίζουν (lessons identified) τα σύγχρονα προβλήματα και κάθε φορά εκφράζουν την έκπληξη τους γιατί το «ανεπάντεχο συνέβη» ξεχνώντας ότι «το αναπάντεχο ΠΑΝΤΑ συμβαίνει!». Κατ' επανάληψη από το CBRNE-Terrorism Newsletter έχει τονιστεί εμφατικά, ότι η προληπτική οργάνωση δομών και μέτρων που βασίζονται σε αφοσιωμένους και καλά ενημερωμένους/εκπαιδευμένους ΑΝΘΡΩΠΟΥΣ είναι μονόδρομος για την αντιμετώπιση των σύγχρονων απειλών. Εξάλλου, μια πανδημία έχει τα ίδια χαρακτηριστικά με την απελευθέρωση βιολογικού όπλου σε αστικό περιβάλλον. Απλά στη περίπτωση της γρίπης του Μεξικού την ευθύνη ανέλαβε η Φύση ενώ στη δεύτερη περίπτωση θα πρόκειται για τρομοκρατική επίθεση με σκοτεινούς στόχους. Μήπως όμως η διάκριση των δύο «ενόχων» δεν είναι τόσο ξεκάθαρα διακριτή ; Δεν θα υιοθετήσουμε πρόωρα και άκριτα την αναδυόμενη στο διαδίκτυο τρομολαγνεία περί ανθρώπινης παρέμβασης στον ιό της χοίρων. Όμως, θα πρέπει να συνυπολογίσουμε σοβαρά την απορία ειδικών, έγκριτων ιολόγων παγκοσμίως, που εκφράζουν την έκπληξη τους για την ιδιόμορφη και περίπλοκη δομή του γονιδιώματος του ιού. Η πρόσφατη περίπτωση της εταιρείας παραγωγής εμβολίων Baxter στα προϊόντα της οποίας – με τελικούς αποδέκτες μεγάλο αριθμό χωρών – διαπιστώθηκε η παρουσία ζώντων ιών H5N1 (που προκαλεί τη γρίπη των πτηνών) σε

συνδυασμό με την ανάθεση από τον ΠΟΥ στην ίδια εταιρεία της παρασκευής εμβολίου κατά της γρίπης του Μεξικού, επιβάλλει εγρήγορση και το πιο σημαντικό: **ευρύτητα πνεύματος και αποφυγή δογματισμών** – για να μην εκπλαγούμε για μια ακόμη φορά (καθώς αναμένεται εντός του Μαΐου 2009 η αναβάθμιση του συναγερμού σε Επίπεδο-6).

### **Χημικός πόλεμος στην αρχαιότητα**

Πάντα η αναδρομή στην αρχαιότητα καθισχύαζει τη συνείδηση μας ότι η φρίκη των χημικών όπλων δεν αποτελεί διαταραγμένη σκέψη των σύγχρονων ανθρώπων αλλά διαχρονική διαστροφή που μεταφέρθηκε γονιδιακά μέχρι των ημερών μας. Στο άρθρο που ακολουθεί παρουσιάζονται τα νεώτερα ευρήματα επί του θέματος από την εποχή των Ρωμαίων αποτέλεσμα έρευνας του University of Leicester στη Μ Βρετανία.

### **Early chemical warfare comes to light**

Roman soldiers defending a Middle Eastern garrison from attack nearly 2,000 years ago met the horrors of war in a most unusual place. Inside a cramped tunnel beneath the site's massive front wall, enemy fighters stacked up nearly two dozen dead or dying Romans and set them on fire, using substances that gave off toxic fumes and drove away Roman warriors just outside the tunnel. The attackers, members of Persia's Sasanian culture that held sway over much of the region in and around the Middle East from the third to the seventh centuries, adopted a brutally ingenious method for penetrating the garrison wall, reported Simon James of the University of Leicester in England on January 10 at the annual meeting of the Archaeological Institute of America. "In my view, this is the earliest archaeological evidence for the use of chemical warfare, which was later used by the ancient Greeks," James said. The Roman garrison at Dura (now called Dura-Europos) was located in what is now Syria and sat on a cliff overlooking the Euphrates River. The massive Sasanian siege of the garrison occurred in 256, give or take a few years. No historical records exist of this battle. Archaeological work conducted since 1920 at the ancient garrison has provided glimpses of the fierce conflict, although much remains unknown about precisely what happened. James' new findings vividly illustrate that "you can create a real story out of battlefield patterns that archaeologists find," remarks Melissa Connor of Nebraska Wesleyan University in Lincoln. James, who has conducted fieldwork at Dura-Europos for 30 years, examined a group of about 20 men's skeletons adorned with military equipment that lay in a tunnel the Romans had dug to intercept Sasanian invaders, who were digging underneath the garrison wall via another tunnel. French investigators at the site have suggested that when the Romans reached the subterranean Sasanians, the mouth of the Roman tunnel collapsed. Trapped Romans were then killed and fell on top of one another. Although debris indeed blocked the entrance to the Roman tunnel, James doubted that explanation. First, he analyzed the positions of Roman soldiers' bodies in the tunnel and determined that they had been deliberately stacked into a pile, either when they were mortally wounded or after they had died. The Sasanians apparently wanted to create a human wall between themselves and approaching Romans. To obstruct advancing Romans, the Sasanians blocked the tunnel entrance with stones before stacking up the Roman victims. The Sasanians then threw a cloak and some straw on the Romans and set them on fire using a mix of pitch and sulfur. Signs of severe burning appear on the pile of skeletons and military equipment. Remains of pitch and sulfur crystals were found near the bodies, which had not been observed in earlier research, James reports. Toxic fumes from the fire would have driven off any further Roman soldiers hoping to enter the tunnel, James said. One skeleton in the tunnel, lying by itself on the Sasanian side of the pile of bodies, is that of a helmeted Sasanian soldier carrying a sword. He apparently had set the fire and failed to flee before succumbing to the fumes, James suggests. Research above ground at Dura-Europos indicates that, rather than surrendering, residents of the garrison

engaged in street fighting as the city fell to the Persians. But then everyone, even the conquering Sasanians, abandoned the isolated site. The garrison sat in a desolate no-man's-land that made it unappealing to the conquerors once the Romans had been vanquished. As a result, material evidence of the siege stayed in place, including a massive assault ramp built up to the garrison's wall. James suspects that the assault ramp was used to bring some type of battering apparatus up to the garrison wall.

### **Αίτια πανδημίας γρίπης 1918**

Ιδιαίτερο ενδιαφέρον στη μελέτη του Emory University αποτελεί η πρόβλεψη ότι πολλοί ειδικοί σε θέματα υγείας πίστευαν (πριν από την εκδήλωση της γρίπης του Μεξικού – 13 Απριλίου 2009), ότι μια νέα πανδημία γρίπης είναι αναπόφευκτη!

### **Bacteria, not flu, cause of 1918 pandemic**

The 1918 flu pandemic is estimated to have caused the death of between 50 million and 100 million people in approximately 18 months (Source: US National Archives) Strep infections and not influenza may have killed most people during the 1918 influenza pandemic, which suggests predictions about a new pandemic could be exaggerated, say US researchers. The findings suggest that amassing antibiotics to fight bacterial infections may be as important as stockpiling antiviral drugs to battle flu, they say. Professor Keith Klugman of Emory University, Atlanta and colleagues report their findings in the journal Emerging Infectious Diseases. The team looked at information available about the 1918 flu pandemic, which killed between 50 million and 100 million people globally in the space of about 18 months. Some research has shown that on average it took a week to 11 days for people to die - which fits in more with the known pattern of a bacterial infection than a viral infection, write Klugman and colleagues. "We observed a similar 10-day median time to death among soldiers dying of influenza in 1918." People with influenza often get what is known as a "superinfection" with a bacterial agent. In 1918 it appears to have been Streptococcus pneumonia. "Neither antimicrobial drugs nor serum therapy was available for treatment in 1918," Klugman's team write. Today there are vaccines that protect against different strains of S. pneumonia, which cause infections from pneumonia to meningitis.

### **Worst-case scenario**

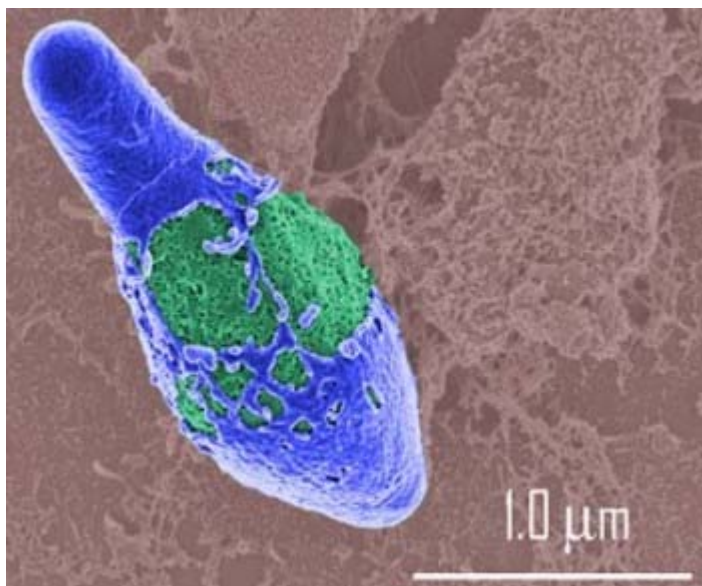
**Most health experts believe that another pandemic of influenza is inevitable.** There were smaller pandemics in 1958 and in 1967. Many government projections have been based on a worst-case 1918 scenario, in which tens of millions of people would die globally and up to 40% of the work force would be out for weeks, either sick, caring for others who are sick, or avoiding public places for fear of infection. "Based on 1918 we would project less mortality in an era of antibiotics," says Klugman. "We are currently modelling this, assuming of course that the bacterial superinfections remain susceptible to the antibiotics and that sufficient antibiotics are available." A pandemic occurs when a new strain of flu begins infecting people. One fear is that H5N1 influenza, currently infecting birds in Asia, Europe and Africa, might make the jump to people. H5N1 has infected people a relatively small number of people resulting in 254 deaths since 2003, according to the World Health Organization. Every year seasonal influenza kills between 250,000 and 500,000 people.

### **Αποτελεσματικό ρινικό εκνέφωμα (nasal spray) κατά της αλλαντίασης – πρώτες δοκιμές**

Σε πρόσφατη μελέτη στο Nature (Gene Therapy Journal), δημοσιεύθηκαν τα αποτελέσματα των πρώτων επιτυχών δοκιμών ρινικού spray κατά της αλλαντίασης (botulism) που προσβάλλει κατά μέσον όρο 145 άτομα στις ΗΠΑ (65% σε βρέφη, 20% μετά τραυματισμό). Το υπό δοκιμή φάρμακο παρείχε πλήρη προστασία (με μια δόση) έναντι μιας εκ των επτά νευροτοξινών που προκαλούν την αλλαντίαση.

### Nose-spray vaccine against botulism beneficial in first tests

A preclinical study found a new nasal spray vaccine to provide complete protection against a major botulism toxin, according to a study published today in the *Nature* journal *Gene Therapy*. Botulism is caused by a bacterium, *Clostridium botulinum*, which produces toxins that cause paralysis and often death, as the muscles that control breathing fail.



Out of an average of 145 U.S. cases each year, 65 percent are infant botulism (infants' intestines, unlike adults, are vulnerable to spore-containing dust), 20 percent are wound botulism (bacteria colonizes the wounds of severely injured patients) and about 15 percent are food-borne (improperly stored food can harbor *C. botulinum*), according to the U.S. Centers for Disease Control and Prevention (CDC). Botulinum neurotoxins (BoNTs) have been designated Category A bioterrorism agents that pose a high risk to national security because they are deadly, easily prepared and could conceivably

be spread by inhalation. Researchers are working to design a botulism vaccine that adds a second layer of immune protection against exposure to BoNTs. When complete, it would prime the disease-fighting cells in mucous membranes lining the nose, those most likely to be exposed first, along with those in the blood. Standard vaccines, given by injection, prepare only the blood-based immune system to fight a given disease. Secondly, the hope is that a new, well-defined subunit vaccine will enable authorities to provide an effective vaccine without having to mass-produce the actual toxin, the hazardous first step in the manufacture of the current, stockpiled vaccine. "In this study, we found that our vaccine could provide complete protection in one dose against one of the seven BoNTs, which strongly suggests that the same platform could be applied to build a multi-component vaccine against the remaining six," said Mingtao Zeng, Ph.D., assistant professor within Department of Microbiology and Immunology at the University of Rochester Medical Center, principal investigator and corresponding author of the study. "With these findings, we believe the design of a safe and inexpensive subunit vaccine can now proceed rapidly." The study was in mice, but much of the evidence behind the current experimental vaccine was collected in animals as well. In a challenge common to many lines of vaccine research, it is "obviously unethical to test botulism vaccines in humans using the real pathogen."

### Dangerous To Make

Without causing an actual infection, vaccines introduce weakened or detoxified versions of disease-related proteins to the immune system, which remembers to destroy them upon their next encounter. Once researchers confirm the kind of immune response needed to achieve protection, they can choose for inclusion in a multi-component vaccine the key antigenic proteins that trigger the strongest immune response. The immune system reacts, not to the presence of a whole bacterium, but instead to specific proteins residing on its surface, or secreted by it, and which reveal its nature as an invader. There is currently no licensed vaccine for protection against botulism. The U.S. Food and Drug Administration has authorized the manufacture of an experimental, injectable vaccine consisting of detoxified

versions of five types of BoNTs (serotype A, B, C, D, and E). The first step in its manufacture is to produce massive amounts of active toxins that are extremely dangerous to handle, adding greatly to cost and slowing the process. Subunit vaccines like the one in the current study include nontoxic proteins that resemble those created by the bacteria, making them much safer to work with. A specific end-piece protein called heavy chain 50-kDa fragment (Hc50) has been identified as part of the mechanism that enables BoNT/C to enter the bloodstream. Once there, the toxin locks onto nerve endings in the brain and extremities, inhibiting their ability to release of the neurotransmitter acetylcholine and causing paralysis. In an important 1995 discovery, John Middlebrook, Ph.D., of the U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID), found that Hc50 fragment of BoNTs, unlike the whole toxin used in the current vaccine, are not toxic when detached from the rest of the toxin, but still bring about the desired immune response. To insert Hc50 and prime the immune system against it, researchers took a page from gene therapy, which uses disabled viruses as delivery vehicles into cells. Viruses are precision-designed by nature to invade cells and deliver therapeutic genes, and can do so safely once the viruses' own reproductive genes have been removed. Past studies have shown that adenoviruses expressing protein antigens can be delivered by the mucosal route. In addition, adenoviruses can be quickly and inexpensively mass produced, making them an attractive platform for researchers currently developing vaccines against HIV, bird flu, tuberculosis and anthrax, as well as against BoNTs. Zeng and colleagues are currently testing a nasal anthrax vaccine as well. In the current study, the team used the virus to deliver BoNT/C Hc50 as a mucosal vaccine against botulism in a mouse model. A single dose of intranasal inoculation (nose spray) of the adenovirus vector brought about a high level of HC50-specific immune response as early as two weeks after vaccination. The response consisted of the activation of antibodies, immune cells in both mice and humans that attach to bacterial proteins like BoNTs to shut down their toxic effect. Antibodies classes start with the "Ig" prefix standing for immunoglobulin, another name for antibody, and the specific response to vaccine in the current study consisted of IgG, IgG1, and IgG2a activation in the blood and IgA activation in mucous membranes. In mice injected with lethal doses of BoNT/C toxin, all mice (8/8, or 100 percent) that received larger dose ( $2 \times 10^7$  pfu) of the BoNT/C-HC50 vaccine had survived by seven weeks after toxin challenge with no botulism symptoms, whereas none of the mice that received vector control without Hc50 survived. The protective immunity in mice could last for seven months after vaccination, researchers said. Along with Zeng, the work was led in Rochester by Qingfu Xu, DVM, Ph.D., an instructor in the Department of Microbiology and Immunology at the University of Rochester School of Medicine and Dentistry. Lance Simpson, Ph.D., director of Center for Research on Bioterrorism and Biodefense at Thomas Jefferson University, Leonard Smith, Ph.D., chief of the Department of Molecular Biology, Integrated Toxicology Division at USAMRIID and Michael Pichichero, M.D., a partner at Legacy Pediatrics in Rochester, N.Y., were major contributors as well. The work was supported by the National Institute of Allergy and Infectious Diseases. "We have demonstrated for the first time that a single, intranasal vaccination of an adenovirus-based vector encoding a humanized HC 50 of BoNT/C can provide full protection in vaccinated mice against botulinum neurotoxin type C," Zeng said. "We look forward to finalizing a vaccine, the most likely candidates for which would be active military and emergency responding personnel in forward areas."

### Ενημέρωση για το εμβόλιο της ευλογιάς

Συνοπτική αλλά εμπειριστατωμένη ανασκόπηση των προόδων που έχουν γίνει τα τελευταία χρόνια σχετικά με το εμβόλιο της ευλογιάς – από το Dryvax έως το Ankara (MVA). Σύγχρονες μελέτες από τα National Institutes of Health in Bethesda, Maryland δείχνουν ότι το εμβόλιο παρέχει πολυετή προστασία – πλησιάζει τα 88 χρόνια.

### Update on Smallpox Vaccine

In the past few years, there have been several updates to the smallpox vaccine



armamentarium, including the addition of a vaccine that appears to be safe for immunocompromised individuals. These developments are reviewed below.

### **The Original Smallpox Vaccine**

Before 2001, Dryvax was the chief vaccine available for use against smallpox. It was produced in essentially the same manner as that employed in the 18th century by Edward Jenner, who obtained live vaccinia virus directly from the skin of a calf. Because Dryvax contains live, replicating vaccinia virus, its utility has been limited by several important contraindications, including:

- use in the approximately 4% of the U.S. population that is immunocompromised and therefore at risk for disseminated vaccinia (the generalized spread of vaccinia throughout the body);
- use in the 10% to 15% of the U.S. population with atopic skin disease, because the vaccine may cause severe adverse events, including eczema vaccinatum, a condition in which vaccinia replicates in skin cells and produces a generalized and severe rash; and
- use in those who have close contact with members of the populations specified above, because shedding may spread the vaccine strain of the virus.

### **Generation II: The Current Smallpox Vaccine**

Difficulties with calf skin production led to the development of ACAM 2000, the vaccine currently in use. ACAM 2000 is manufactured by Acambis and has been procured by the U.S. government for the Strategic National Stockpile (SNS). It is fundamentally the same as Dryvax, but it has been modified to grow in Vero cells. It has an immunogenicity profile similar to that of the first generation vaccine and is contraindicated in the same populations as Dryvax.<sup>1</sup>

### **Vaccine in HIV-Infected Populations**

In the course of the scale-up of vaccination in 2004, 10 patients with undiagnosed HIV infection were inadvertently vaccinated, with no adverse results. Importantly, 7 of the 10 vaccinees had prior immunization against smallpox and none had a CD4 count below 250 cells/mm<sup>3</sup>. In fact, there is only one report of a serious adverse outcome following vaccination of a patient with HIV: in 1984, a patient with a CD4 count of approximately 25 cells/mm<sup>3</sup> was vaccinated and subsequently developed meningitis, disseminated lesions, and ulcerations that were treated successfully with Vaccinia Immune Globulin (VIG). It is assumed that many more HIV-infected persons have been vaccinated unknowingly and presumably without adverse effects in the past, since HIV testing did not start until the 1980s. It is suspected that CD4 counts below 200-300 cells/mm<sup>3</sup>, rather than HIV infection itself, may represent the true contraindication to smallpox vaccination in people with HIV infection.

### **Generation III Vaccines: Including All Populations**

To expand the uptake of smallpox vaccination and avoid the potential dangers of a live vaccine, an approach using an inactivated, nonreplicating strain of the vaccinia virus was developed in the 1960s and 1970s. It was thought that prevaccination with modified vaccinia Ankara (MVA) might ameliorate the complications of vaccination with the full-strength standard live virus. While MVA has never been tested for efficacy during a smallpox outbreak, primate studies have shown adequate protection against monkeypox virus challenges following vaccination. However, vaccination failed to protect against monkeypox virus in immunocompromised SIV-infected macaques—the chimpanzee analog of HIV—with CD4 cell counts less than 300 per mm<sup>3</sup>, illustrating the crucial role of CD4 T-cell immunity. Given its success in monkeypox primate models—a good surrogate for smallpox—the vaccine's development moved forward toward commercial availability. The MVA vaccine will be manufactured by Bavarian Nordic under the trade name Imvamune. Bavarian Nordic

recently released data from one clinical trial in which no increase in adverse events was observed among 300 HIV-infected patients with CD4 counts ranging from 250-700 cells/mm<sup>3</sup>. The company plans to release additional data on trials in patients with both HIV infection and atopic dermatitis in the latter part of 2009. Even before the release of the latest data, the U.S. government had already procured 20 million doses of Imvamune for the SNS. This is an amount sufficient to cover the 10 million Americans who are unable to receive the standard vaccines and may eventually replace the standard vaccines entirely. Another vaccine based on a different attenuated strain of vaccinia, LC16m8, has been licensed for use in Japan since 1975. This vaccine has been administered to more than 50,000 children and has produced a smaller vaccination site lesion and fewer secondary symptoms than Dryvax.

### **Comprehensive Vaccination Planning May Now Be Possible**

As more data from Imvamune trials are released, further refinements of contraindications to vaccination are likely to follow. With the ability to immunize individuals for whom first- and second-generation vaccines are contraindicated, it now may be possible to develop a comprehensive smallpox vaccination plan that will not pose undue risk to individuals who are immunocompromised or who have atopic skin disease. This is an important milestone.

### **Smallpox Vaccine Protects for Decades**

The results of a new study suggest that just one dose of the vaccinia vaccine against smallpox provides immunity for as long as 88 years -- which has implications if smallpox were used as a biological weapon. In the event of a biological attack with smallpox, the current findings suggest that smallpox vaccine should first be given to individuals who have never been immunized before, advice Dr. Dan L. Longo and colleagues from the National Institutes of Health in Bethesda, Maryland. As reported in *The American Journal of Medicine* for December, the researchers assessed antiviral antibody immunity from smallpox vaccination in 209 participants of the Baltimore Longitudinal Study of Aging (BLSA) who had been vaccinated 13 to 88 years previously. In these individuals, high vaccinia-specific IgG and neutralizing antibodies levels persisted essentially forever, the results indicate. Antivaccinia IgG titers ranged from 1:32 to 1:256 and neutralizing antibody titers were similar in the majority of individuals. The absolute level of antivaccinia antibodies was only slightly higher when multiple doses of vaccine rather than one dose had been given. A separate analysis of BLSA participants who had not been vaccinated, but had survived a smallpox infection in their youth, revealed that their antivaccinia antibody titers were comparable to those seen in vaccinated subjects. "These data imply that limited supplies of vaccine can be more usefully applied (perhaps in diluted form) to individuals who have never been vaccinated, primarily individuals born after 1972," the authors state. [*Am J Med* 2008;121:1058-1064]

### **Παιγνιδομηχανές για την εξουδετέρωση βομβών**

Ο στρατός των ΗΠΑ προσαρμόζει τον λειτουργικό μηχανισμό (Wii controllers) παιγνιδομηχανών τύπου Nintendo στη λειτουργία ρομπότ (Packbot) εξουδετέρωσης εκρηκτικών μηχανισμών.



Reports from the US have said the US military has adapted the motion-sensitive Nintendo Wii controllers (or Wiimotes) to operate bomb disposal robots. And according to metro.co.uk, scientists have created the Packbot, a machine-gun-toting robot which uses Wii technology to clear mines and bombs. Nintendo first launched the Wiimotes in 2006. Its controllers detect the motion of players' hands and beam their hand motions

to the console which are then converted to gameplay. However this is the first time they have been adapted for actual war purposes, where the use of standard remote controls is common. But Packbot is not the first weapon to use gaming technology. America's seven-tonne attack robot 'Crusher' is operated by a Microsoft Xbox 360 controller.

### **Γιατί η al Qaeda δεν έχει πραγματοποιήσει ΧΒΡΠ επίθεση μέχρι σήμερα;**

Εκτενής ανάλυση του ερωτήματος που απασχολεί τη διεθνή κοινότητα ασφάλειας και πληροφοριών και εστιάζει στο γιατί η al Qaeda δεν έχει προχωρήσει μέχρι σήμερα σε επίθεση με όπλα μαζικής καταστροφής αν και είναι σαφής ο προσανατολισμός και η επιδίωξη της χωρίς να φοβάται ότι θα χάσει την υποστήριξη εκείνων που την υποστηρίζουν. Στο παρελθόν, έχει αποδείξει ότι μπορεί να κατασκευάσει θανατηφόρα υλικά όπως κυάνιο και άνθρακα αλλά και φορείς απελευθέρωσης τους (συσκευή *mubtakkar*). Παράλληλα, η διαφαινόμενη στενή συνεργασία της οργάνωσης με τους Taliban σε Αφγανιστάν και κυρίως στο Πακιστάν προκαλεί ανησυχία που πλησιάζει τα όρια του τρόμου εάν οι Taliban επικρατήσουν στο Πακιστάν και θέσουν υπό την κατοχή τους το πυρηνικό οπλοστάσιο της χώρας. Μια «πυρηνική al Qaeda» αποτελεί τον εφιάλτη όλων καθώς πλέον δεν αποτελεί σενάριο φαντασίας αλλά ορατή – αν και απόμακρη – πραγματικότητα με βάση της τελευταίες εξελίξεις στην κοιλάδα Σουάτ του βορειοδυτικού Πακιστάν

### **Three explanations for al-Qaeda's lack of a CBRN attack**

The evidence of al-Qaeda's interest in conducting a terrorist attack with chemical, biological, radiological, or nuclear (CBRN) weapons appears compelling. As early as 1998, al-Qaeda leader Osama bin Laden declared the acquisition of CBRN weapons a "religious duty" for Muslims. He followed up in 2003 by asking for and receiving a fatwa from Saudi Sheikh Nasir bin Hamid al-Fahd that condoned the use of CBRN weapons by Muslims against infidels. Combined with the multitude of warnings from al-Qaeda associates that a CBRN attack against the West is not only forthcoming but also long overdue, the Muslim "duty to warn" has been firmly established. In al-Qaeda's opinion, no further justification is needed and no additional warnings are required. These words have also been backed up by deeds. In the early 1990s, al-Qaeda began its efforts to acquire radiological and nuclear materials. While no evidence exists that these efforts have succeeded, there is little doubt that al-Qaeda continues to pursue this capability today. Prior to the fall of the Taliban, the training camps in Afghanistan taught recipes for the manufacturing of poisons and toxins including cyanide and botulinum. A video recovered by CNN in Afghanistan in 2002 clearly demonstrates that al-Qaeda had some success in manufacturing chemical weapons in the form of a poisonous gas capable of causing death. The WMD Commission reported that al-Qaeda had similar success with biological weapons, including the acquisition of at least small quantities of the virulent strain of "Agent X" which has been widely reported to be anthrax. While some technical hurdles remain for al-Qaeda to weaponize and effectively employ CBRN weapons on a mass-casualty scale, the terrorist group clearly is capable of conducting small-scale, low-tech CBRN attacks. Given this stated desire and apparent capability to conduct a CBRN terrorist attack, why has al-Qaeda not yet launched an attack with such weapons? This analysis explores three possible explanations for this lack of a CBRN attack: disruption, deterrence and, most disturbingly, patience.

#### **Disruption**

An encouraging explanation is that al-Qaeda's efforts have thus far been disrupted through a combination of stepped-up counter-terrorist efforts after 9/11 and possibly the simple luck enjoyed by government authorities. Clearly, the al-Qaeda CBRN programs that existed in Afghanistan under the Taliban were at least temporarily disrupted by the 2001 U.S.-led invasion and subsequent need to move to safer locales. According to this explanation, al-

Qaeda's CBRN programs have yet to recover from this significant setback. Several specific CBRN attack plots have apparently been disrupted, although none advanced far beyond the initial planning stages. In May 2002, Jose Padilla arrived in the United States, reportedly planning a "dirty bomb" attack, but never got much beyond the idea stage. Similarly, Dhiren Barot (also known as Issa al-Hindi) was arrested in the United Kingdom in 2004, carrying relatively detailed plans for conducting a Radiological Dispersal Device (RDD) attack, but had not yet acquired the necessary materials. Given that an RDD attack is widely considered the CBRN attack most likely within al-Qaeda's capabilities, these disruptions could be especially significant. Al-Qaeda's chemical and biological plots have not fared much better. In 2003, UK police arrested a group of Algerians with recipes and materials for creating ricin and cyanide, although stories conflict about whether any actual poisonous material was recovered (BBC, April 13, 2005). A 2004 chemical plot against multiple targets in Jordan had apparently advanced to the point of acquiring vehicles and materials, selecting targets and assigning duties (al-Jazeera, May 2, 2004). It remains unclear whether the materials recovered were for the manufacture of conventional explosives or chemical gases. At the same time as these arrests, however, al-Qaeda succeeded in launching devastating conventional attacks in Egypt, Turkey, Tunisia, Indonesia, Jordan, Spain, the United Kingdom, Pakistan, Afghanistan and Iraq. Thus, while al-Qaeda has suffered some setbacks in its CBRN efforts, these disruptions alone do not appear sufficient to have prevented al-Qaeda from conducting a CBRN attack given its other successful attacks.

### **Deterrence**

Another possible explanation for al-Qaeda's apparent restraint is the threat of massive retaliation. Although an intriguing possibility, the complications of deterrence theory may offer more questions than answers. Al-Qaeda's initial rationale for pursuing CBRN weapons was the desire to deter enemies such as the United States from attacking the organization. In 2001, bin Laden specifically warned, "We have [chemical and nuclear] weapons as a deterrent" (Dawn, November 10, 2001). While this particular strategy clearly failed after the September 11 attacks, al-Qaeda may still be using its CBRN efforts as part of its deterrence strategy. Traditional deterrence theory indicates that terrorist organizations are less susceptible to deterrence strategies because they lack the defined territory that can be held hostage to a retaliatory attack. Al-Qaeda's strategy, however, has long been to acquire just such territory. In his book *Knights Under the Prophet's Banner*, Ayman al-Zawahiri described this goal when he wrote, "Confronting the enemies of Islam and launching jihad against them require a Muslim authority, established on a Muslim land." Al-Qaeda is no doubt aware of the risks of acquiring territory. Previous efforts to establish al-Qaeda authority in Sudan, Afghanistan, Somalia, Pakistan and Iraq have all resulted in U.S. attacks. Nevertheless, al-Qaeda is an organization that requires territory to operate and carry out its mission and is clearly willing to accept this risk to achieve its stated goals. Today, al-Qaeda is heavily dependent on its safe haven in the tribal areas of Pakistan. This dependency may have driven al-Qaeda to compromise its immediate desire to launch CBRN attacks against the United States for the longer-term goal of establishing their authority in a Muslim land as a stepping stone to future attacks and ultimate victory. In particular, al-Qaeda may assess that a significant CBRN attack against the West (or, for that matter, another major attack on the U.S. homeland) would invite a U.S. invasion of the tribal areas. The Pakistani government—always staking a position somewhere between Washington's and al-Qaeda's interests—may have even warned al-Qaeda's leadership that such an attack will lead to U.S. troops on Pakistani soil (with or without Islamabad's consent) and the subsequent end of al-Qaeda's safe haven. The U.S. occupations of Afghanistan and Iraq, not to mention the presence of thousands of U.S. troops across the border in Afghanistan, make the threat of an American invasion more than credible. Of course, al-Qaeda is not the only combatant being deterred in this war. In fact, the United States and al-Qaeda appear to have settled into a pattern of violence acceptable to both sides. While al-Qaeda continues to launch terrorist attacks around

the world, the terrorist organization appears to be deterred from launching another major attack on the U.S. homeland or a significant CBRN attack against U.S. interests by the threat of a U.S. invasion of Pakistan. Meanwhile, the United States occasionally launches missile strikes against al-Qaeda targets on Pakistani territory, but is reportedly deterred from sending ground troops into Pakistan due to the possibility that the Musharraf government would fall and an even more dangerous Islamic terrorist threat would rise from the ashes. Al-Qaeda may very well assess that a CBRN attack would upset this delicate balance.

### **Patience**

A final possibility is that al-Qaeda simply is waiting for the right time to launch a CBRN attack. Bin Laden has often been described as an exceedingly patient man, willing to wait for the right moment to act. Major terrorist attacks such as 9/11 were in the works for years before the final order was given. Al-Qaeda's leaders reportedly view their struggle against the United States as a long one, likely to continue well after they have left this world. In this view, the attacks on September 11 were only one battle and the final destruction of the United States may take generations to complete. Under this scenario, al-Qaeda is building its capabilities in anticipation of a great victory and will not rush to act just for the sake of acting. The planned attack on the New York City subway system with the "mubtakkar" improvised chemical device may be an example of such patience. Al-Zawahiri reportedly called off the attack because it was not an adequate follow-up to September 11 [10]. Al-Qaeda apparently wanted an even more devastating attack for its second wave. Given the carnage of 9/11, it is hard to imagine al-Qaeda wreaking even more havoc, but a CBRN attack—including the physical, psychological and economic impacts—could certainly fit the bill. It is possible that al-Qaeda's success with the September 11 attacks has set the bar too high for its current CBRN capabilities. Al-Qaeda may be concerned that a CBRN attack that "only" kills dozens of people would be perceived as a relative failure and demonstrate its weakened position relative to its pre-9/11 stature. The organization may prefer to wait until its CBRN capability has matured to the point where its chances of success are greater and its capability for destruction has increased [11]. Given the fact that there is no indication that al-Qaeda has abandoned its pursuit of CBRN weapons, the possibility of a patient al-Qaeda is a disturbing possibility worth remembering.

### **Conclusion**

Many of the traditional reasons why terrorist groups do not attempt CBRN attacks do not exist for al-Qaeda. The organization has clearly demonstrated its willingness to engage in indiscriminate killing on a massive scale without fear of losing the support of its followers. Al-Qaeda has also shown it is willing to take on the technical challenges involved and has had some successes in developing lethal materials including cyanide, anthrax and especially the mubtakkar device. Unfortunately, this combination of continuing interest, growing capability and demonstrated patience may one day pay off for al-Qaeda.

### **Οι νέες τεχνολογίες μπορεί να σώζουν τις ζωές των στρατιωτών**

Οι τραυματισμοί στο πεδίο της μάχης αλλά και στη μάχη κατά της τρομοκρατίας και του εξτρεμισμού σε αστικό περιβάλλον είναι αναπόφευκτοι. Η σύγχρονη τεχνολογία ήταν πάντα αρωγός στην προσπάθεια επανόρθωσης των βλαβών των απωλειών υγείας και πολλές εξελίξεις της σύγχρονης ιατρικής αποκατάστασης προέρχονται ή εμπνέονται από τις εμπόλεμες ζώνες. Για παράδειγμα η «μαγική σκόνη» Extracellular Matrix (magic dust) που προέρχεται από στιβάδα της ουροδόχου κύστης βοηθά θεαματικά στην αναγέννηση καταστραμμένων ιστών σε συνδυασμό με μεταμόσχευση νεύρων και αγγείων. Αυτό αποτελεί ένα μόνο παράδειγμα από τις νεώτερες εξελίξεις που παρουσιάστηκαν στο πρόσφατο the 26th Army Science Convention στις ΗΠΑ

## New Army technology could save soldiers' lives

Re-growing a fingertip cut off in an accident sounds like something from a futuristic movie. But with innovative technology developed by the U.S. Army, such re-growth is possible today. This research project and a hundred others were on display this month at the 26th Army Science Convention. Some of the greatest minds in science from around the world gathered at the four-day conference to exchange ideas and showcase collaborative projects



between the Army's research laboratories, universities and partner industries. The main goal is to develop technology to make soldiers safer and more effective, said Thomas H. Killion, the Army's chief scientist. The Army's regenerative medicine study combined properties from the intestinal lining and the urinary bladder to create a regenerative substance called Extracellular Matrix. The cream-colored crystallized powder, called "magic dust," boosts the body's natural tendency to repair itself, said U.S. Army Biological Scientist Sgt. Gen Rossman. When the matrix is applied to a missing digit or limb, "the body thinks it is back in the womb," Rossman said. One civilian participated in the regenerative-medicine study after cutting off the tip of his finger in a model plane's propeller. Researchers continually applied the matrix to the wound, and after four weeks, the body grew skin and tissue to replenish the damaged area. The U.S. military branches have begun a consortium with private institutions to develop treatments for severely injured troops. With the help of grants, the Armed Forces Institute of Regenerative Medicine is studying nerve and vein transplantation, treating burns without scarring and regeneration of tissue, skin and even bone. Through both animal studies and civilian clinical trials, the institute is developing therapies for the large number of soldiers injured by improvised explosive devices and other explosives in Afghanistan and Iraq. "We are working on trying to regenerate limbs, to repair limbs and to keep them from being amputated," institute Project Director Col. Bob Vandre said. Army scientists also have developed an engineered skin substitute made in a laboratory from patients' own cells. A postage stamp-sized patch of skin could grow several times larger than the original sample. The engineered skin could then be placed over a wound or burn, protecting it from infection, and eventually cover large portions of the body that have been damaged. "Our goal is to restore the function to our wounded warriors who have given so much in battle," Vandre said. Armed Forces Institute scientists also say they also have developed a process to rebuild missing or damaged bone. A web-like tube of calcium-phosphate ceramic, called hydroxyapatite, acts as a biodegradable scaffold that is set in place of the missing bone, giving the body a platform on which to rebuild. Scientists say the scaffold allows the body to regrow its own natural tissue, bone and veins so it can support itself. Because of the complexity of the process, researchers so far have regrown only 3 centimeters of bone in clinical trials on rats, but they hope to reach 5 centimeters in two years. With the regrown bone, scientists could avoid placing titanium or other medical devices in the body. Of course,

to apply this technology, the Army needs a way to safely remove injured soldiers from combat zones. Enter the Battlefield Extraction Assist Robot, or BEAR, a human-shaped machine with eyes, ears and arms for lifting heavy objects. Built by Vecna Technologies in association with the Army, BEAR is still a prototype. But its potential is promising. BEAR is outfitted with lights, two cameras and infrared abilities, and it can travel up to 10 mph. The device also can lift 250 pounds while balancing on its toes. Vecna robotic engineer Andrew Allen says BEAR can be remotely operated, reducing the chance of injuries to soldiers' human rescuers. "BEAR can easily be replaced; it costs money and not lives," Allen said. Robot technology has exploded in the past six years, said Army scientist John Parmentola. Robot prototypes of all kinds were on display at the conference, and about 10,000 military robots are expected to be deployed in the field in 2009. Robots can be outfitted to accomplish various tasks. One can detect 38 different chemical or biological explosives from a distance of 3 to 5 meters. The robot could be used to scan car doors or truck lids for explosives or chemical residue.

Another, called Packbot, ([βλέπε ανωτέρω αναφορά](#)), is deployed in Iraq for surveillance, reconnaissance and explosives removal. Packbot has been outfitted to react to voice commands, given remotely through an earpiece. Loud background noises do not distort the commands, because the system monitors the vibrations of the operator's jawbone. Finally, some robots come with a retractable apparatus called a Zipper Mast or Situational Awareness Mast, which can be equipped with a camera or antenna and raised to peer over walls or send radio communications. The smallest Zipper Mast is not much bigger than a coffeepot and can extend to a height of 8 feet. Designed by the U.S. Army's Tank Automotive Research, Development and Engineering Center, the larger mast is affixed to tanks and can reach heights over 30 feet.

### Μύθοι και πραγματικότητα σχετικά με τις καταστροφές

Σαράντα τέσσερις λανθασμένες αντιλήψεις που αφορούν κάθε είδους καταστροφή και οι σωστές απαντήσεις. Δώστε ιδιαίτερη προσοχή στο Νο 44 και μάθετε να ζείτε με αυτό – είναι σίγουρο ότι τότε η αντιμετώπιση του αναπάντεχου θα είναι περισσότερο τραυματική και επώδυνη!

### Forty-four Common Misconceptions about Disaster

**Myth 1: Disasters are truly exceptional events.**

**Reality:** They are a normal part of daily life and in very many cases are repetitive events.

**Myth 2: Disasters cause a great deal of chaos and cannot possibly be managed systematically.**

**Reality:** There are excellent theoretical models of how disasters function and how to manage them. After more than 75 years of research in the field the general elements of disaster are extremely well known, and they tend to repeat themselves from one disaster to the next.

**Myth 3: Disasters kill people without respect for social class or economic status.**

**Reality:** The poor and marginalised are much more at risk of death than are rich people or the middle classes.

**Myth 4: Earthquakes are commonly responsible for very high death tolls.**

**Reality:** Collapsing buildings are responsible for the majority of deaths in seismic disasters. Whereas it is not possible to stop earthquakes, it is possible to construct anti-seismic buildings and to organize human activities in such a way as to minimize the risk of death. In addition, the majority of earthquakes do not cause high death tolls.

**Myth 5: People can survive for many days when trapped under the rubble of a collapsed**

**building.**

**Reality:** The vast majority of people brought out alive from the rubble are saved within 24, or perhaps even 12, hours of the impact.

**Myth 6: When disaster strikes panic is a common reaction.**

**Reality:** Most people behave rationally in disaster. While panic is not to be ruled out entirely, it is of such limited importance that some leading disaster sociologists regard it as insignificant or unlikely.

**Myth 7: People will flee in large numbers from a disaster area.**

**Reality:** Usually there is a "convergence reaction" and the area fills up with people. Few of the survivors will leave and even obligatory evacuations will be short-lived.

**Myth 8: After disaster has struck survivors tend to be dazed and apathetic.**

**Reality:** Survivors rapidly get to work on the clear up. Activism is much more common than fatalism (this is the so-called "therapeutic community"). In the worst possible cases only 15-30 per cent of victims show passive and dazed reactions.

**Myth 9: After disaster people will not make rational decisions and will therefore inevitably tend to do the wrong thing unless authority guides them.**

**Reality:** People make decisions on the basis of the information that they are able to obtain and their ability to interpret it. Within this compass, most decision-making can be judged rational.

**Myth 10: Disasters usually give rise to widespread, spontaneous manifestations of antisocial behaviour.**

**Reality:** Generally, they are characterized by great social solidarity, generosity and self-sacrifice, perhaps even heroism.

**Myth 11: Looting is a common and serious problem after disasters.**

**Reality:** The phenomenon of looting is rare and limited in scope. It mainly occurs when there are strong preconditions (i.e. a disaster is hardly necessary to start it off), as when a community is already deeply divided.

**Myth 12: In disaster, people resort to violence to protect their own interests.**

**Reality:** The 'therapeutic community' is common: people have a greater tendency to help each other than in normal times.

**Myth 13: Martial law must be imposed after disaster in order to stop society from breaking down altogether.**

**Reality:** The imposition of martial law after disaster is extremely rare and implies that normal mechanisms of government were never effective in any way.

**Myth 14: A strong military presence is required in areas affected by disaster in order to discourage law-breakers.**

**Reality:** Emergency response should have made a transition from a military activity to a fully civilian one. As increases in lawlessness are seldom a serious problem as a result of disaster, the police are usually able to deal with public order problems without the need to call for military assistance.

**Myth 15: The mass media create an accurate picture of the disasters on which they report.**

**Reality:** There is a pervasive tendency for the media to exaggerate and distort disaster-related information. Very rarely are journalists ever expert on disasters and crises. Their lack of



expertise is often easily identifiable in the quality of their reporting. They must also provide the sort of information which viewers, listeners or readers want to have, which may add further bias to the content of their reports.

**Myth 16: Unburied dead bodies constitute a health hazard.**

**Reality:** Not even advanced decomposition causes a significant health hazard. Hasty burial demoralizes survivors and upsets arrangements for death certification, funeral rites, and, where needed, autopsy.

**Myth 17: Disease epidemics are an almost inevitable result of the disruption and poor health caused by major disasters.**

**Reality:** Generally, the level of epidemiological surveillance and health care in the disaster area is sufficient to stop any possible disease epidemic from occurring. However, the rate of diagnosis of diseases may increase as a result of improved health care.

**Myth 18: Great quantities and assortments of medicines should be sent to disaster areas.**

**Reality:** The only medicines that are needed are those used to treat specific pathologies, have not reached their sell-by date, can be properly conserved in the disaster area, and can be properly identified in terms of their pharmacological constituents. Any other medicines are, not only useless, but also potentially dangerous.

**Myth 19: Field hospitals are particularly useful for treating people injured by sudden impact disasters.**

**Reality:** Field hospitals are usually set up too late to treat the injured and end up providing general medicine and continuity of care. As the transport and operation of field hospitals tends to be expensive and logistically challenging, in some cases it may be more efficient to attempt to restore or augment existing hospitals in the area, even if they are significantly damaged.

**Myth 20: In the aftermath of disaster mass vaccination is an excellent way of stopping the spread of diseases.**

**Reality:** Whereas the carefully targeted vaccination of specific groups (e.g. children, doctors and nurses) may be effective, indiscriminate mass vaccination is wasteful, as records cannot be kept properly, follow-up vaccination is difficult to administer and people move around too much for the initiative to work properly.

**Myth 21: Sanitary cordons should be set up around disaster areas to stop the spread of disease.**

**Reality:** Sanitary cordons rarely work. The movement of people and goods are too complex and chaotic to be able to control the entrance to and exit from the area in such a way as to disinfect people, which in any case may be a misguided approach. In most cases sanitary cordons do nothing for health but significantly inhibit relief efforts. The better alternative is to set up an epidemiological observatory and practise specific measures exactly where anomalous or dangerous conditions are identified.

**Myth 22: Dead bodies, survivors, streets, rubble and other things should be sprayed with disinfectant to stop the spread of disease.**

**Reality:** This common and popular measure wastes large quantities of disinfectant and does nothing whatsoever for public health.

**Myth 23: There is usually a shortage of resources when disaster occurs and this prevents them from being managed effectively.**

**Reality:** The shortage, if it occurs, is almost always very temporary. There is more of a

problem in deploying resources well and using them efficiently than in acquiring them. Often there is also a problem of coping with a superabundance of certain types of resource.

**Myth 24: In a disaster aftermath the prices of essential goods always rise steeply.**

**Reality:** Profiteering does occur in disaster aftermaths, but it is far from being the norm.

**Myth 25: Any kind of aid and relief is useful after disaster providing it is supplied quickly enough.**

**Reality:** Hasty and ill-considered relief initiatives tend to create chaos. Only certain types of technical assistance, goods and services will be required. Not all-useful resources that existed in the area before the disaster will be destroyed. Donation of unusable materials or manpower consumes resources of organization and accommodation that could more profitably be used to reduce the toll of the disaster.

**Myth 26: In order to manage a disaster well it is necessary to accept all forms of aid that are offered.**

**Reality:** It is much better to limit acceptance of donations to goods and services that are actually needed in the disaster area.

**Myth 27: One should donate used clothes to the victims of disasters.**

**Reality:** This often leads to accumulations of huge quantities of useless garments that victims cannot or will not wear.

**Myth 28: Companies, corporations, associations and governments are always very generous when invited to send aid and relief to disaster areas.**

**Reality:** They may be, but in the past disaster areas have been used as dumping grounds for outdated medicines, obsolete equipment, and unsaleable goods, all under the cloak of apparent generosity.

**Myth 29: Technology will save the world from disaster.**

**Reality:** The problem of disasters is largely a social one. We already have considerable technological resources, but they are poorly distributed and often ineffectively used. In addition, technology is a potential source of vulnerability as well as a means of reducing it.

**Myth 30: Tsunamis are tidal waves.**

**Reality:** Tsunamis are seismic, volcanic or landslide-induced sea waves with a completely different form and mode of propagation to bores or other waves caused by tides. Their coastal impact may be slightly influenced by tides, but not their causes.

**Myth 31: Earthquake magnitude is measured on the Richter scale.**

**Reality:** 'Local magnitude' ML, Charles F. Richter's scale, is inaccurate at high values and so has been replaced by body wave magnitude, moment magnitude and other more robust scales.

**Myth 32: There is such a thing as "earthquake weather".**

**Reality:** The popular credence that earthquakes occur when there is close, muggy weather has no basis of fact. Numerous scientific studies have sought to identify atmospheric conditions as earthquake precursors, but the only substantial success has been achieved regarding the release of halogens into the atmosphere, which causes light to be filtered and refracted.

**Myth 33: We are well organised to face a pandemic or CBRN attack.**

**Reality:** In most countries, including the richer and larger ones, preparedness is at best patchy and at worst seriously lacking.

**Myth 34: In a biological terrorism attack or pandemic prophylaxis will be effective and efficient.**

**Reality:** Stockpiles of antidotes and vaccines are insufficient, and so are isolation wards, field response units, decontamination units, and training for responders and physicians. It may also be difficult to achieve timely identification of the pathogen or toxin involved.

**Myth 35: CBRN decontamination is a solved problem.**

**Reality:** Many questions remain about the protocols and procedures for decontamination, including reagents and cleansers to be used, number of people who could be decontaminated per unit time, and whether to remove all clothes before being decontaminated.

**Myth 36: The main effects of a CBRN attack or pandemic would necessarily be medical.**

**Reality:** Disruption of daily life could potentially have even greater consequences (in logistical, social, psychological and monetary terms) than the medical effects of the crisis.

**Myth 37: In a CBRN attack or pandemic it will be easy to avoid contamination of hospitals and other medical centres.**

**Reality:** For certain virulent pathogens or toxins, cross-contamination would be extremely hard to avoid without absolute order and very elaborate measures which are not likely to be forthcoming.

**Myth 38: It will be easy to identify the pathogen, chemical agent or isotope involved in a CBRN attack.**

**Reality:** There are so many potential pathogens, agents and isotopes that high-level laboratory analysis may be needed, which would cause problems of transportation of samples and rapidity of analyses.

**Myth 39: Anthrax is a white powder.**

**Reality:** Bacillus anthracis is a colourless, almost invisible substance. Weaponised spores are likely to be even less easier to see than naturally grown ones.

**Myth 40: Panic and irrational behaviour are inevitable consequences of a CBRN terrorism attack.**

**Reality:** In disasters of all kinds most people make an effort to behave rationally and make rational decisions. This is antithetical to panic. However, if people do not have adequate information, their decision making may defy rational analysis.

**Myth 41: Trends in terrorism are highly irregular but show a very substantial increase in recent times.**

**Reality:** Although the locus of terrorist activity tends to shift from one place to another, the sum total of attacks and their effects, has remained stable for several decades and shows only a modest increase, if any.

**Myth 42: Emergency responders will not report to work in a disaster, they will protect their families instead.**

**Reality:** It is not common for there to be mass absenteeism among key workers during the aftermath of disasters. On the contrary, people tend to have an enhanced sense of duty.

**Myth 43: Emergency responders will not know what to do during a disaster or crisis.**

**Reality:** It is to be hoped that training and experience have turned emergency responders and disaster managers into highly capable professionals.

**Myth 44: Disasters always happen to someone else.**

**Reality:** The 'syndrome of personal invulnerability' tends to mislead people into believing that they are in some way immune from disasters. It is not so.

**Νέες μονάδες για την αντιμετώπιση επιθέσεων με όπλα μαζικής καταστροφής**

Οι ένοπλες δυνάμεις των ΗΠΑ (U.S. Northern Command), ίδρυσαν τον Οκτώβριο 2008 στην Georgia, την Chemical, Biological, Nuclear or Radiation Consequence Management Response Task Force με αρχική δύναμη 4.700 ατόμων και αποστολή την αντιμετώπιση τρομοκρατικών επιθέσεων (συμβατικών και με χρήση ΧΒΡΠ παραγόντων). Μια δεύτερη, ανάλογου προσανατολισμού, μονάδα θα ιδρυθεί το καλοκαίρι του 2009 στη Ν Καρολίνα με βάση προσωπικό της Εθνοφρουράς και η τρίτη είναι σε φάση σχεδιασμού. Οι νέες μονάδες θα υποστηρίζονται από τις ήδη υπάρχουσες (σε κάθε Πολιτεία) WBD- Civil Support Teams ταχείας επέμβασης.

**Military forms special units trained to respond to possible WMD attacks**

U.S. Northern Command, the military organization responsible for defense of the United States, is creating an array of trained and equipped units to respond to any significant event involving chemical, biological, nuclear or radioactive elements, its commander said Wednesday. Air Force Gen. Victor (Gene) Renuart said the units are a response to the recognition that following the Sept. 11, 2001, terrorist attacks the nation did not have "a standing capability to respond to an attack by weapons of mass destruction." Creation of that capability was recommended by the 9-11 Commission, and this year Defense Secretary Robert Gates directed NorthCom to act, Renuart said. The new units are to be able to deal with up to three simultaneous events involving release of chemical or biological agents or a nuclear or radioactive explosion, he said. Although primarily intended to respond to a terrorist attack, the units also could react to a natural disaster, such as an earthquake that resulted in the release of toxic elements from a chemical plant, the general explained. The major new organizations have the unwieldy title of Chemical, Biological, Nuclear or Radiation Consequence Management Response Task Force. The first unit, made up of 4,700 personnel, has been built around the 1st Brigade Combat Team of the Army's 3rd Infantry Division at Fort Stewart, Ga., and was certified as operational in October, Renuart said. A second unit will be created in the summer using South Carolina National Guard personnel and a third is planned, with its location yet to be determined, he said. Renuart said each of the units will have three task forces. One will conduct assessment and reconnaissance of an event to determine what element is involved and to do some emergency medical evacuations. The second will provide more significant medical assistance, patient decontamination and evacuation. The third will provide logistical support, Renuart explained. The Pentagon has not asked for additional funds for the new units but may need funding for specialized equipment for the Guard units involved, he said. The general emphasized that the military units will not conduct law enforcement activities, although there may be some need to isolate an area contaminated by WMD. They will go to "bring assistance to victims and to mitigate" the effects of the dangerous elements, he said. The post-Civil War Posse Comitatus Act prohibits the use of active-duty military personnel for domestic law enforcement. Renuart added that these new units will augment the 54 WMD-Civil Support Teams that have been established with state National Guard personnel. They also will complement two existing organizations -- the Chemical, Biological Incident Response Force created by the Marine Corps in 1996 and the Army's Technical Escort Unit, which responds to discovery of possible radiological materials. NorthCom is helping create task forces for emergency readiness, which will have two or three people, possibly retired military, who can help governors and their Guard commanders plan to respond to natural disasters or terrorist incidents. Task forces are being set up in five states as a trial, using grant funds, Renuart said. Asked if his command was

changing anything in response to November's deadly terrorist attacks in Mumbai, Renuart said they still were studying that event, but he thought U.S. civilian counterterrorist organizations in the major cities were much better prepared than those in India.

### Λιγότερες ενέσεις για το εμβόλιο κατά του άνθρακα

Η αμερικανική FDA ενέκρινε μικρότερο αριθμό ενέσεων για εμβόλιο του άνθρακα (BioThrax) – πέντε (αντί για έξι) σε μεσοδιαστήματα 0, 1, 6, 12 και 18 μηνών.

### Anthrax Vaccine - Now Less Shots



Emergent BioSolutions Inc. announced that FDA has approved its supplemental Biologics License Application or sBLA for Anthrax Vaccine Adsorbed or BioThrax to prevent disease caused by *Bacillus anthracis*. The approval for supplement license was based on an interim analysis of data from a large multicenter study initiated in 2002. The company said the supplement provides for a change in the route of administration and a reduction in the total number of vaccinations. The new schedule for BioThrax is five intramuscular doses at 0, 1, 6, 12 and 18 months, compared with the former schedule of six subcutaneous doses. This is good news. In addition to costing the military less to administer to troops, it will allow the CDC to stretch its anthrax vaccine stocks for its Strategic National Stockpile at no cost.

### Νέο προϊόν παρέχει προστασία από εκρήξεις

Το X-FLEX Blast Protection System αποτελεί ένα νέο υλικό που προστατεύει από τα ιπτάμενα θραύσματα (εγκαθιστάμενο στο εσωτερικό μέρος των εξωτερικών τοίχων), που εκτοξεύονται προς κάθε κατεύθυνση μετά από μια έκρηξη.

### New Blast-Protection Adhesive for Deployment

The Army has developed a new material designed to keep walls from blowing apart and sending fragments flying at high speed during explosions. The X-FLEX Blast Protection System, a wallpaper like adhesive-backed tape developed by the U.S. Army Corps of Engineers' Engineer Research and Development Center and Evansville, Ind.-based Berry Plastics Corp.'s Engineered Protective Systems division, is applied to walls and designed to absorb the shock of a blast, protecting occupants from flying concrete and metal turned into projectiles. X-FLEX is made from a polymer composite laced with reinforcing fibers that make it strong yet flexible. The material is applied by wiping away dust or particles from the wall surface, peeling away a protective film liner and pressing the tape against the wall. The wall may be coated with a water-based primer, developed by Berry, after cleaning to reduce the time it takes for the adhesive to stick to the concrete. The material is further secured at the top and bottom with fasteners to ensure it stays in place if hit by an explosion. "The material is placed on the interior side of exterior walls and intended to protect the occupants of that particular room," says Elizabeth Curran, business development manager in Berry's Tapes and Coatings division in Franklin, Mass. Berry began working with the Army in 2005 to design an adhesive-backed composite tape that would hold together during a blast, Curran says. Defense Department's interest in such a material dates back to before September 11, 2001. In fact, it had already begun



applying a reinforcing material to areas of the Pentagon prior to the attack, says Pamela Kinnebrew, technical director for the Survivability and Protective Structures division within ERDC's Geotechnical and Structures Laboratory in Vicksburg, Miss. Kinnebrew would not provide details on where or how much of the Pentagon had been reinforced, nor would she describe the material used other than to say that it was not X-FLEX. The Army is looking to purchase so-called "off the shelf" supplies made by commercial manufacturers rather than producing all of its technology in-house. "We can buy these materials and put them in the lab, but ultimately, for them to be of use to the war fighter we have to have a manufacturing capability," Kinnebrew says. She would not divulge whether U.S. soldiers in Afghanistan or Iraq are using X-FLEX at this time on military installations. In the wake of the Mumbai attacks last month, it's clear that other types of potentially vulnerable establishments might also benefit from such safeguards. Berry says it plans to make similar products available to commercial businesses. "If we want to sell to a hotel, for example, it [X-FLEX] would be sold under a different name and modified to meet that industry's specific needs," Curran says, adding that she would not estimate how much such a product would cost. Given the demand for technology to protect military personnel in combat, ERDC is also developing a \$10-million modular protective system that it claims in a promotional video is made from material "10 times stronger than concrete." The system would allow soldiers to construct temporary structures or reinforce existing ones with walls consisting of a double layer of armored panels held together by a collapsible frame. Outside the U.S., a team of Norwegian researchers is testing another option: lightweight aluminum panels that can be filled with densely packed dirt, gravel, sand or any other readily available substance to provide protection without adding a lot of weight to military vehicles or structures. The aluminum panels are designed to easily fit together and filler is emptied out at the bottom before they are moved.

### **Η Σ Αραβία επιζητά την απόκτηση πυρηνικών όπλων**

Η Σ Αραβία ζήτησε τη βοήθεια του Πακιστάν στα πλαίσια της υλοποίησης των επιδιώξεων της για απόκτηση πυρηνικών όπλων που θα της επιτρέψουν να αποκτήσει την πρωτοκαθεδρία στην ευαίσθητη περιοχή της Μέσης Ανατολής. Η εμμονή του Ιράν στο πυρηνικό του πρόγραμμα, το ήδη πυρηνικό Ισραήλ και η εν εξελίξει παγκόσμια οικονομική ύφεση σε συνδυασμό με τη δεινή οικονομική κατάσταση και πολιτική αστάθεια του Πακιστάν αποτελούν παράγοντες που διευκολύνουν τις επιδιώξεις της ισχυρότερης χώρας της αραβικής χερσονήσου.

### **Saudis Seek Nuclear Weapons**

Saudi Arabia has sought Pakistan's help, as part of its long-term plan, to attain nuclear weapons for regional dominance, says a report. "Reports have circulated for years that the Saudis have pursued a secret nuclear program with help from Pakistan, though the Saudis deny this," said a Wall Street Journal article titled 'A Middle East Arms Race', Press TV reported. For years now, media outlets have alleged that Saudi officials are interested in nuclear proliferation, citing comments by former Saudi diplomat Mohammed Khilewi -- who defected to the US in 1994. Khilewi reportedly handed over documents to US officials, which revealed that the Saudi government was interested in nuclear proliferation. According to the diplomat, who now lives undercover in the New York City area, Saudi officials have had a covert nuclear weapons research effort since 1975. Khilewi says Saudi Arabia wants bombs to counter the threat posed by Israel -- which already has Arab territory under occupation. An article published by The Guardian in 2003, made similar claims, suggesting that Riyadh was considering nuclear proliferation. According to the article, Pakistan and Saudi Arabia were engaged in secret nuclear cooperation. A 2006 report printed by a British global business magazine also alleged that Saudi Arabia had financed the Pakistani nuclear drive. "Western intelligence services are now convinced that Saudi Arabia played a large role in financing Pakistan's nuclear bomb project. Riyadh's aim was to guarantee its immediate

access to a nuclear arsenal. British Intelligence (MI6) already regards Saudi Arabia as a surrogate nuclear power, able to join the club whenever it chooses," reported The Business. The Wall Street Journal report comes as the global economic crisis continues to plague Pakistan. According to October comments by Pakistani President Asif Ali Zardari, the country is in desperate need of a \$100 billion bailout from the international community to survive the global financial crisis and fight terrorism at the same time.

### **Αποκάλυψη της δομής υποτύπου της νευροτοξίνης της αλλαντίασης**

Επιστήμονες του U.S. Department of Energy's (DOE) Brookhaven National Laboratory ανακάλυψαν σε ατομικό επίπεδο τη δομή ενός τρίτου υποτύπου της νευροτοξίνης που προκαλεί την αλλαντίαση και κατανόησαν το μηχανισμό που του επιτρέπει να δρα ταχύτερα από τους υπόλοιπους επτά υπότυπους.

### **Scientists Reveal Structure of New Botulism Nerve Toxin Subtype**

Scientists at the U.S. Department of Energy's (DOE) Brookhaven National Laboratory have determined the atomic-level structure of a third subtype of botulinum neurotoxin - a deadly toxin produced by certain bacteria that causes the disease botulism, and is also used in cosmetic and therapeutic applications such as reducing wrinkles and calming a hyperactive bladder. The detailed structure, published online December 22, 2008, by the Journal of Molecular Biology, reveals a unique arrangement of the active components that may help explain why botulinum neurotoxin subtype E (one of seven distinct subtypes) is faster-acting than other subtypes previously studied at Brookhaven Lab - and may have implications for improving vaccines and/or therapeutic agents. "Understanding the differences among the seven botulinum neurotoxin subtypes is particularly imperative at a time of heightened concern about the potential use of these toxins as bioterror weapons," said Brookhaven biologist and lead author Subramanyam Swaminathan, who has conducted extensive research on botulinum neurotoxins supported by DOE, the U.S. Army, and the National Institutes of Health. Although experimental vaccines administered prior to exposure can inhibit the neurotoxin's destructive action, no effective pharmacological treatment exists. All seven neurotoxin subtypes cause their deadly effects using a common mechanism, with each step being activated by a different portion, or domain, of the toxin protein. First the neurotoxin binds to a nerve cell; then it moves into the cell; and then it cleaves specific proteins that block the release of neurotransmitters, the chemicals nerve cells use to communicate with one another and with muscles. Without that communication, muscles, including those used to breathe, become paralyzed. "Blocking any of these steps could thwart the toxins' deadly action," Swaminathan said. "But to do that, we need to understand the details of the proteins' structures." Swaminathan and his team had previously analyzed the molecular-level structures of various fragments of botulinum neurotoxin subtypes A to F, and that of the whole neurotoxin B, using x-ray crystallography at the National Synchrotron Light Source (NSLS) at Brookhaven Lab. In this technique, scientists beam high-intensity x-rays at a crystalline sample of the protein and measure how the x-rays scatter off the sample to locate the positions of individual atoms. These studies revealed that in subtypes A and B, the three domains were arranged in the same way: with the binding and protein-cleaving domains "flanking" a longer central region known as the translocation domain, essential for moving the toxin into the cell. "Because the genes that code for these proteins have a large degree of similarity and all the subtypes incapacitate nerve cells in a very similar way, many biologists had assumed that all seven botulinum neurotoxins would have a similar structural arrangement," Swaminathan said. The current study of botulinum subtype E, also conducted at the NSLS, disproved that assumption, taking the scientists by surprise. Instead of the flanking arrangement, the binding and protein-cleaving domains of subtype E are both on the same side of the translocation domain. In addition, while all other subtypes are made of two protein chains, subtype E is a single-chain molecule. "This arrangement may have an effect

on translocation, with the molecule strategically positioned for quick entry into the cell," Swaminathan said. Though he emphasizes that further confirming research is essential, this could be a plausible explanation for why botulism caused by subtype E sets in faster than that caused by other subtypes. This finding may help scientists develop faster-acting vaccines and therapeutic agents. For example, in the treatment of hyperactive bladder disorders, botulinum neurotoxin subtype A is currently used to inhibit neurotransmitter release and control bladder muscles. But it can take days or a week for the drug to be effective. A faster-acting neurotoxin might improve the response. Additionally, patients sometimes develop resistance to botulinum treatments, developing antibodies that break down the toxin. So having an additional subtype for therapeutic use could be of benefit in situations where treatments must be repeated. Finally, considering the threat of botulinum neurotoxin being used as a bioterror weapon, Swaminathan said, "The finding of a significant variation in the structural arrangement of subtype E also makes it clear that we must study the structures of the four remaining subtypes to gain a better understanding of their individual characteristics so that appropriate countermeasures can be developed for all seven forms." This study was funded by grants from the Defense Threat Reduction Agency/Joint Science and Technology Office for Chemical and Biological Defense. Data for this study were measured at beamline X25 of the NSLS, which is supported by the Offices of Biological and Environmental Research and of Basic Energy Sciences of DOE's Office of Science, and from the National Center for Research Resources of the National Institutes of Health.

### Ανίχνευση ραδιενέργειας

Η συσκευή ABC-M1A1 RADIAC Calculator χρησιμοποιείται από τον στρατό των ΗΠΑ για τη μέτρηση των δόσεων και του βαθμού έκθεσης του προσωπικού σε ραδιενεργό περιβάλλον.

### ABC-M1A1 RADIAC Calculator

The ABC-M1A1 RADIAC Calculator is used by the US Army to determine the dose rates and doses to personnel after a nuclear explosion. It is the military version of the "Radiation Dosage Calculator" developed by William Orr. If the exposure rate (rads/hr) is known at a given time after an explosion, the calculator predicts the exposure rate at any other time. It also estimates the dose to personnel who are in the area at specified periods of time after the explosion. The back of the slide rule has the (none too clear) instructions.



### U.S. Army M4A1 Nuclear Yield Calculator

This calculator is used to estimate the yield, in kilotons, of a nuclear weapon. It permits various measured parameters of the explosion to be used: the time in seconds from the flash to the bang and the observed width of the cloud; the distance to ground zero and the observed width of the cloud; the fireball illumination time, and; the flash to bang time and the elevation angle. The M4A1 is a component of the U.S. Army M28A1 RADIAC calculator set. Detailed information can be found in the FM-3-3-1 Field Manual.

### Ερασιτέχνες οικόσιτοι γενετιστές

Πολλές από τις σύγχρονες τεχνολογικές εξελίξεις έχουν γίνει στα σπίτια ή τα γκαράζ εμπνευσμένων ανθρώπων που δεν είχαν πρόσβαση σε μεγάλα, πλήρως εξοπλισμένα εργαστήρια αλλά διέθεταν γνώσεις και υπομονή με αγαθό (ή οικονομικό) σκοπό (Apple computer, Google). Τι θα γίνει όμως όταν ερασιτέχνες γενετιστές θα επιχειρήσεις μη επαρκώς



ελεγχόμενες έρευνες σε βιολογικά υλικά;

### **Amateurs are trying genetic engineering at home**

The Apple computer was invented in a garage. Same with the Google search engine. Now, tinkerers are working at home with the basic building blocks of life itself. Using homemade lab equipment and the wealth of scientific knowledge available online, these hobbyists are trying to create new life forms through genetic engineering — a field long dominated by Ph.D.s toiling in university and corporate laboratories. In her San Francisco dining room lab, for example, 31-year-old computer programmer Meredith L. Patterson is trying to develop genetically altered yogurt bacteria that will glow green to signal the presence of melamine, the chemical that turned Chinese-made baby formula and pet food deadly. "People can really work on projects for the good of humanity while learning about something they want to learn about in the process," she said. So far, no major gene-splicing discoveries have come out anybody's kitchen or garage. But critics of the movement worry that these amateurs could one day unleash an environmental or medical disaster. Defenders say the future Bill Gates of biotech could be developing a cure for cancer in the garage. Many of these amateurs may have studied biology in college but have no advanced degrees and are not earning a living in the biotechnology field. Some proudly call themselves "biohackers" — innovators who push technological boundaries and put the spread of knowledge before profits. In Cambridge, Mass., a group called DIYbio is setting up a community lab where the public could use chemicals and lab equipment, including a used freezer, scored for free off Craigslist, that drops to 80 degrees below zero, the temperature needed to keep many kinds of bacteria alive. Co-founder Mackenzie Cowell, a 24-year-old who majored in biology in college, said amateurs will probably pursue serious work such as new vaccines and super-efficient biofuels, but they might also try, for example, to use squid genes to create tattoos that glow. Cowell said such unfettered creativity could produce important discoveries. "We should try to make science more sexy and more fun and more like a game," he said. Patterson, the computer programmer, wants to insert the gene for fluorescence into yogurt bacteria, applying techniques developed in the 1970s. She learned about genetic engineering by reading scientific papers and getting tips from online forums. She ordered jellyfish DNA for a green fluorescent protein from a biological supply company for less than \$100. And she built her own lab equipment, including a gel electrophoresis chamber, or DNA analyzer, which she constructed for less than \$25, versus more than \$200 for a low-end off-the-shelf model. Jim Thomas of ETC Group, a biotechnology watchdog organization, warned that synthetic organisms in the hands of amateurs could escape and cause outbreaks of incurable diseases or unpredictable environmental damage. "Once you move to people working in their garage or other informal location, there's no safety process in place," he said. Some also fear that terrorists might attempt do-it-yourself genetic engineering. But Patterson said: "A terrorist doesn't need to go to the DIYbio community. They can just enroll in their local community college."

### **Πρόβλεψη αμερικανικών υπηρεσιών πληροφοριών για βιολογική επίθεση**

Σε εσωτερική έκθεση του Υπουργείου Εθνικής Ασφάλειας αναγράφεται πρόβλεψη για βιολογική επίθεση κατά των ΗΠΑ εντός της επόμενης 5ετίας (2013). Παράλληλα επισημαίνεται ότι διαπιστώνεται αύξηση των ριζοσπαστών ισλαμιστών στη χώρα πολλοί από τους οποίους διαθέτουν πολεμική εμπειρία από τα πεδία μαχών στο Ιράκ, το Σουδάν και τη Σομαλία.

### **American intelligence has predicted a biological attack on the United States.**

According to an internal report of Ministry of National Security in the next five years, the most tangible terrorist threat to America will come from the use of weapons of mass

destruction: nuclear, biological and chemical weapons. In the 38-page report, which was able to familiarize agency Associated Press, contains a forecast of terrorist activity prior to 2013. According to the forecast in the next five years, the terrorists will attempt to conduct a large-scale biological attack on the United States. In doing so, however, that such an attack and the risk associated with the use of other types of WMD - the most serious - are also the most unlikely of all possible. This is because the force in the world terrorist organizations would be extremely difficult to find everything necessary to implement such ambitious plans resources. Another element contained in the report is an analysis of the forecast of an increase in the number of those in the U.S. radical Islamists. This will be due to the fact that, as expected, will increase the influx of immigrants from Iraq, Sudan and Somalia, as in these countries are fighting. At the same time, as proposed to limit the number of refugees from Africa to the United States up to 12 thousand people, it is projected that many Africans are trying to enter the country illegally through. Among other reasons for the influx of illegal immigrants in the United States called the tightening of procedures for granting political asylum in Europe, as well as the complexity of the official immigration procedures. Predicted that under the guise of migrants in the United States might try to infiltrate the terrorist attacks of potential participants. Remember, the prognosis of the dangers of WMD - and biological terrorist attack in particular - earlier in the year 2008 has already made a Special Commission of the U.S. Congress. His report to the broader analysis of changes in the world, also published the National Council for exploration dollars.

### Το επίσημο όχημα του Προέδρου Obama

Η προεδρική Cadillac One γνωστή και ως Obamobile θα το συνοδεύει σε όλα του τα ταξίδια στο εξωτερικό. Το ιδιαίτερο χαρακτηριστικό του εν λόγω αυτοκινήτου είναι η ικανότητα παροχής προστασίας από επίθεση με χημικά όπλα και ρουκέτες.

### The Obamobile: New presidential limo is unveiled - and it can withstand rocket and chemical attacks

Its official call sign is Cadillac One, but it will always be known as the Obamobile. This is the top - security armoured limousine, which has been custom built to be Barack



Obama's presidential car. It will travel with him wherever in the world he goes. His Secret Service agents have already been familiarising themselves with the machine they call 'The Beast', built by General Motors in Detroit and based on a Cadillac chassis. The company

refuses to give precise details of how it will perform its primary purpose - protecting the president. But bulletproof glass and armourplating are standard throughout and the car is hermetically sealed to withstand chemical weapons. As with previous presidential limos it is packed with electronic communication systems to allow Mr Obama to keep in contact with the outside world. One personal touch will be the remote-controlled ten-CD changer on which he can play his favourite artists, said to include Stevie Wonder and Bob Dylan.

### **Χρήση, από τρομοκράτες, βιολογικών όπλων από έντομα**

Σύμφωνα με τον Καθηγητή Εντομολογίας Jeffrey Lockwood, του Wyoming University, οι τρομοκράτες, αντί να προσπαθήσουν να κατασκευάσουν ή να αποκτήσουν πυρηνικά ή χημικά όπλα, μπορούν να εισάγουν σε μια αποσκευή χειρός έντομα μολυσμένα με διάφορες μεταδοτικές ασθένειες όπως ο πυρετός Rift Valley ο οποίος στην ανατολική Αφρική σκοτώνει ανθρώπους και ζώα μεταδιδόμενος από μολυσμένα έντομα.

### **Terrorists could use 'insect-based' biological weapon**

Professor Lockwood said it would be easier to develop insect-based weapon than developing a nuclear or chemical weapon. Jeffrey Lockwood, professor of entomology at Wyoming University and author of Six-legged Soldiers: Using Insects as Weapons of War, said such Rift Valley Fever or other diseases could be transported into a country by a terrorist with a suitcase. He told BBC Radio 4's Today programme: "I think a small terrorist cell could very easily develop an insect-based weapon." He said it would "probably be much easier" than developing a nuclear or chemical weapon, arguing: "The raw material is in the back yard." He continued: "It would be a relatively easy and simple process. "A few hundred dollars and a plane ticket and you could have a pretty good stab at it." Governments, he advised, needed to have robust "pest management infrastructure that's able to absorb and respond to an introduction" of infected insects, he said. Trying to stop everything coming in at the border would not work, he said. Rift Valley Fever is an east African disease which "can cause severe disease in both animals and humans, leading to high rates of disease and death" according to the World Health Organisation. However, WHO says "the vast majority of human infections result from direct or indirect contact with the blood or organs of infected animals."

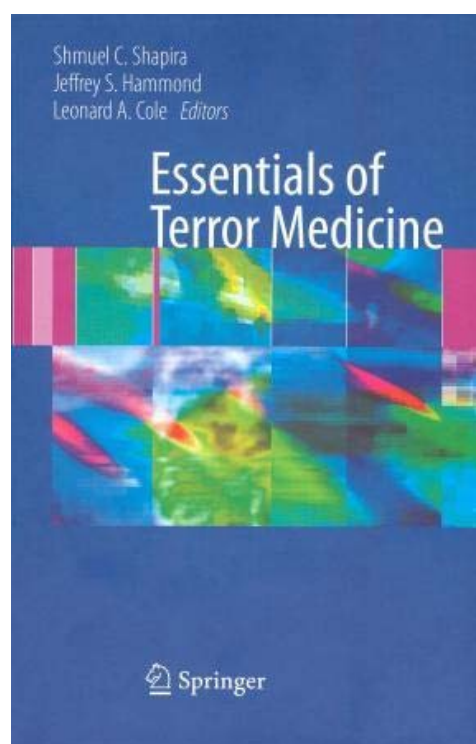
### **Η «τρομοκρατική ιατρική» μπορεί να σώσει ζωές**

Η τρομοκρατική ιατρική (terror medicine) αφορά εξαιρετικά σύγχρονη εξειδίκευση της ιατρικής και στοχεύει στην αποτελεσματικότερη αντιμετώπιση βιολογικών απειλών όπως ο άνθρακας αλλά και των επιπτώσεων τρομοκρατικών επιθέσεων ανεξαρτήτως των όπλων που χρησιμοποιήθηκαν. Η νέα αυτή «ειδικότητα» ανέκυψε από τις ιδιαιτερότητες των σύγχρονων απειλών αλλά και από το γεγονός ότι οι ιατροί στο σύνολό τους σχεδόν αγνοούν σε μεγάλο ποσοστό τον ορθό τρόπο αντιμετώπισης των απωλειών υγείας μετά από κάθε είδους τρομοκρατικές επιθέσεις. (ΣΣ: Μετά τους Ολυμπιακούς Αγώνες του 2004, αποτελεί έντονη πεποίθηση του γράφοντος ότι η «Υγειονομική ΧΒΡΠΕ Άμυνα» πρέπει να αποτελέσει διδακτικό αντικείμενο για τους τελειόφοιτους της ιατρικής και νοσηλευτικής προκειμένου οι νέοι ιατροί και νοσηλευτές που θα κληθούν να στελεχώσουν, στα πλαίσια της περαιτέρω ιατρικής τους εκπαίδευσης, τα τμήματα επειγόντων περιστατικών των νοσοκομείων να έχουν κατά νουν βασικές αρχές αντιμετώπισης των απωλειών από όπλα μαζικής τρομοκρατίας και σύγχρονα οπτικά συστήματα. Πως είναι δυνατόν να απαιτείται πρώιμη κινητοποίηση του υγειονομικού συστήματος σε περίπτωση επίθεσης με άνθρακα όταν ο ιατρός δεν έχει διδαχτεί σχετικά ώστε να πραγματοποιήσει την κατάλληλη διαφορική διάγνωση που θα τον οδηγήσει να θέσει σε συναγερμό τις αρμόδιες υγειονομικές υπηρεσίες; Όμως τα εκπαιδευτικά συστήματα, παγιδευμένα στα προβλήματα και την καθημερινότητα τους, αδυνατούν να επιδείξουν

«φαντασία» και να προηγηθούν έστω και για μια φορά των εξελίξεων – μέχρι την επόμενη επιδημία ή την επόμενη τρομοκρατική επίθεση ευρείας κλίμακας αποδεικνύοντας ότι εκείνοι που αναγνωρίζουν τα προβλήματα είναι πολύ περισσότερου εκείνων που μπορούν να τα επιλύσουν.) – **Η έκδοση Essentials of Terror Medicine του Shimuel C. Shapira αποτελεί εξαιρετική εισαγωγή στο αντικείμενο θέματος και συνιστάται ανεπιφύλακτα !**

### Terror medicine can save lives

Critics of U.S. biosecurity policy contend that the threat of terrorism has been overblown and that too much money is going to biodefense and related programs. The \$6 billion-odd now spent annually in this area will doubtless be scrutinized by the new Obama administration. But the threat remains real. While some cuts may be justified, education and training in the new field of terror medicine warrants full support. Terror medicine concerns not only biological agents like anthrax, but also the medical management of terrorist attacks



regardless of the weapon. In fact, bombs and explosives have been the weapons most commonly used by terrorists. The emergence of terror medicine as a distinctive discipline has been prompted by the global proliferation of terrorism especially since the end of the 20th century. It involves anyone who would be called to service during or after a terror incident - from emergency responders to long-term caregivers. Yet ironically, most physicians and other health providers let alone members of the public, are still unfamiliar with many of its features. Efforts to prevent terrorist assaults should be among a society's highest priorities. No less important are the requirements to prepare for, respond to, and recover from such events. As such, terror medicine ranges broadly from preparedness and treatment of injuries to psychological effects. Some aspects of this new field require preparedness that is contrary to common practice. The need for reordered thinking was evident after the bombings of the Oklahoma City federal building in 1995 and the Madrid trains in 2004. In both cases, most victims were taken to

the nearest hospital, as is usual in emergencies. But the influx of hundreds soon overwhelmed the facilities and care became inefficient and delayed. Had there been an advance plan to distribute some of the patients to more distant hospitals, fewer lives might have been lost. During the London metro bombings in July 2005, faulty preparedness bred other miscues. Confusion among rescue workers and ambulance drivers meant some victims were still awaiting transportation to a hospital four hours after the explosions. Advance planning for terrorist and disaster events is an essential element of terror medicine. Another is the unique approach to patient care posed by terrorist attacks, especially suicide bombings. Close-quarter victims often suffer burns, crushed bones, ruptured eardrums and intestines, and penetrations from nails that were packed with the explosives. Accidents or other acts of violence rarely produce combinations of these wounds in a single individual. Yet, in a suicide bombing, scores of people may suffer most or all of these injuries. In such a situation, trauma surgeons typically are unprepared to make informed determinations about treatment priorities. But terror medicine provides answers based on approaches developed by doctors in societies like Israel, which have experienced many such attacks. Israeli doctors can now make rapid credible decisions about which injuries to treat first and which can wait, a skill that is

essential to saving lives. Still another area of the new discipline involves treating the emotional effects of terror incidents, which commonly are more intense than other traumatic events. After an automobile accident, for example, survivors may benefit from group therapy in which they share feelings about their stressful experience. But group interaction after a terror incident could heighten emotional turmoil. This has happened to victims who were surrounded by smoke and saw nothing. They became distraught when hearing others describe what they saw, like the dismembered head of the suicide bomber, says Israeli psychiatrist Esti Galili. The increase in terror incidents also has raised novel ethical questions regarding medical responses: Should a critically wounded terrorist receive care ahead of victims who may be less severely injured? Is delaying a pregnant woman from reaching a hospital justifiable to search her for concealed explosives, even if she seems in acute need of medical attention? These and similar conundrums are only beginning to be explored by bioethicists. The November terror attack in Mumbai is the most recent demonstration of the need for a broad understanding of terror medicine. An Indian journalist, Jagdish Singh, observed that the event showed many inadequacies in India's response including delayed arrivals of paramedics and other rescue personnel, and unavailability of medical supplies and equipment. These lapses all worsened the effects of the tragedy. Since the jetliner attacks in the United States on Sept. 11, 2001, and the subsequent anthrax attacks via the mail, this country has become better positioned to care for victims in similar incidents. Surgical supplies, antibiotics and antidotes to chemical and radiological agents are now stockpiled in greater quantities for emergencies. Some hospitals have conducted drills in cooperation with police, fire, and other emergency personnel. But many hospitals and response personnel remain inadequately prepared. These deficiencies should be remedied by education, rehearsals and understanding the distinctive challenges posed by terrorist attacks. The more that individuals and institutions become familiar with the issues concerning terror medicine, the greater the protection they can provide themselves and others.

#### **Πρωτοποριακό λογισμικό για σενάρια καταστροφών**

Το αυτόνομο λογισμικό EMCAPS (Electronic Mass Casualty Assessment & Planning Scenarios), που ανέπτυξαν από κοινού τα Johns Hopkins Office of Critical Event Preparedness and Response (CEPAR) και Johns Hopkins University Applied Physics Laboratory (JHU/APL), το βοηθά τους χρήστες να σχεδιάζουν σενάρια καταστροφών αλλά και για εκπαιδευτικούς σκοπούς. Το σύστημα μπορεί να υπολογίσει απώλειες υγείας από ΧΒΡΠΕ επιθέσεις ενώ περιέχει και έτοιμα σενάρια (Department of Homeland Security Planning Scenarios).

#### **Electronic Mass Casualty Assessment & Planning Scenarios - EMCAPS**

This standalone software program is intended to allow users to model disaster scenarios for drill planning and to use as an education resource. The EMCAPS Model allows you to estimate casualties arising from biological (Anthrax, Plague, Food Contamination), chemical (blister, nerve and toxic agents) radiological (dirty bomb) or explosive (IED) attacks. These scenarios are based on the Department of Homeland Security Planning Scenarios (April 2005). When you run the EMCAPS Model, you are able to select one of the scenarios we have listed above and adjust the various inputs (e.g., bomb size, population density, quantity of release, wind speed, etc) to most closely simulate your own environment. For the selected scenario, EMCAPS will then estimate casualties including levels of acuity. In other words, EMCAPS allows you to model the selected scenarios for your own community. This tool is intended to allow plausible scenarios to be reasonably modeled to help planners better understand and assess preparedness and response capabilities needs. It is not intended to precisely model the physical behavior of WMD threat agents or the outcomes of specific threat condition. EMCAPS was developed by The Johns Hopkins Office of Critical Event Preparedness and Response (CEPAR) and the Johns Hopkins University Applied Physics Laboratory (JHU/APL). This project was developed via

funding from the Maryland Special Project program under the Health Resources and Services Administration (HRSA) FY 2005 Bioterrorism Hospital Preparedness Program. We hope you find this helpful to your planning efforts.

### Μουσουλμάνοι της Αμερικής

Διασπαρμένοι σε όλες τις αμερικανικές Πολιτείες υπάρχουν 35 στρατόπεδα ισλαμιστών τρομοκρατών γνωστά ως «Muslims of America» υπό τη διεύθυνση του ριζοσπάστη Πακιστανού κληρικού Sheikh Mubarak Gilani.

#### Muslims of America

They may be living right next door... Scattered across the United States, unknown to all but a handful of citizens, are 35 Islamic terrorist training compounds known as “Muslims of America.”



Under the leadership of a radical Pakistani cleric, Sheikh Mubarak Gilani, Muslims of America has thousands of devoted followers who are being groomed for homegrown jihad. In never-before-seen video footage, the Christian Action Network exposes these dangerous terrorist compounds and reveals for the first time a secret training tape in which American Muslims are recruited to “join one of the most advanced training courses in Islamic military warfare”... right here in America! They are called “Soldiers of Allah” and they are trained in explosives, kidnapping,

murder, firing weapons, and guerilla warfare. They are told, “Act like you are a friend, then kill him just like from the book.”

#### Ευρύτερο θεραπευτικό παράθυρο για την αλλαντίαση ;

Η άριστη θεραπευτική αντιμετώπιση της αλλαντίασης απαιτεί τη χορήγηση αντι-τοξίνης εντός 24 ωρών από της έναρξης της κλινικής συμπτωματολογίας η οποία μπορεί να εκδηλωθεί εντός 6 ωρών από την είσοδο των σπορίων του *Clostridium botulinum* στον οργανισμό. Όμως σύμφωνα με μελέτη που δημοσιεύθηκε πρόσφατα στο *The Journal of Infectious Diseases* η τοξίνη της αλλαντίασης ανιχνεύεται έως και 11 ημέρες μετά την έκθεση γεγονός που υποδηλώνει ότι η θεραπεία μπορεί να χορηγηθεί εντός του πρώτου 12ημέρου αναμένοντας επιτυχή έκβαση της πορείας του ασθενή.

#### Longer Treatment Window for Botulism?

Optimal treatment of botulism requires administration of anti-toxin within 24 hours of symptom onset, which can occur as soon as 6 hours after ingestion of spores of *Clostridium botulinum*. Rapid treatment is necessary to ameliorate the paralysis associated with production of toxin and subsequent disruption of acetylcholine transmission at the synaptic junction. Results from a new study published in *The Journal of Infectious Diseases* demonstrate the persistence of botulinum toxin in the serum of patients up to 11 days after exposure. All were exposed through food. The prolonged persistence of toxin may allow for initiation of anti-toxin as long as 12 days after toxin ingestion with the expectation of efficacy.

#### Toxin Identified at 11 Days Post-exposure in Alaskan Cases—Role for Toxinotype B?

The authors of the study reviewed records of botulism cases in Alaska from 1959-2007 and identified cases with a valid toxin ingestion date, serum collection date, and serum toxin assay result to include in the study. From a total of 180 cases, 64 met the inclusion criteria. Toxin

assays performed at the Centers for Disease Control and Prevention (CDC) and the Alaska State Public Health Laboratory identified persistence of toxin in patient serum as long as 11 days after exposure. In all, 20% of specimens revealed the presence of toxin 10 days or more after exposure.

Of 15 toxin-positive specimens that were collected after more than 3 days following exposure, 73% were type B, including those of the two patients with positivity at 11 days.

### **Do Toxinotypes Matter?**

In Alaska, of the 7 toxinotypes of *C.botulinum*, toxinotype B is responsible for only 14% of food-borne botulism cases, yet it was detected in 73% of patients with measurable toxin 3 days or more after exposure. Toxinotypes are geographically distributed, with type A more common in the U.S. and type B more common in Europe. The authors hypothesize that patients exposed to type B toxin may present for medical care later or have a longer time to diagnosis because of the milder clinical illness, longer incubation period, and lower case fatality rates (6.7% vs. 0% in cases occurring between 1990-96) associated with type B toxin.

### **Is There a Longer Treatment Window?**

The implications of this study are important because the results support the administration of antitoxin up to 12 days after food-borne exposure, as was done in a recent case in Florida. However, it is not clear if the results of this study will apply to inhalational botulism, which is believed to be the likely route of exposure in a bioterrorist event. Furthermore, delineation of the exact nature of the relationship between toxin dose and serum half-life is needed. As botulism is a class A bioweapon for which an effective countermeasure is available, defining the maximum time after exposure for which treatment may be effective is a key component of response planning.

### **Νανοτεχνολογία και ατομικός προστατευτικός εξοπλισμός**

Η εισαγωγή νανοτεχνολογίας στο υλικό Demron της εταιρείας Radiation Shield Technologies παρέχει προστασία όχι μόνον έναντι της ραδιενέργειας, αλλά και σε περιβάλλον με χημικές και βιολογικές πολεμικές ουσίες.

### **Unique Nanotechnology Surpasses the Current NBC Suits to Provide Total Protection**

Radiation Shield Technologies (RST), announced the company has been granted U.S. nanotechnology patent No. 7,476,889 titled "Radiation Detectable and Protective Articles" by the U.S. Patent & Trademark Office. It secures the nanotechnology in RST's proprietary Demron, the world's first and only protective material for all types of chemical, biological, radiological and nuclear incidents. Demron, which also has many other U.S. and international patents, consists of an advanced radiopaque nanopolymeric compound fused between layers of fabric and manufactured into lightweight nuclear-radiation blocking garments including full-body suits, vests, blankets and medical X-ray vests and aprons. Demron's nanotechnology surpasses current NBC suits, which provide limited radioactive protection. Its patent describes and protects the use of nanopolymeric compounds that enable the latest version of Demron, called "Demron-W," to provide enhanced chemical, biological, radiation and flame protection. Demron-W is the world's first and only NFPA 1994-2007 Certified Fabric for Protective Ensembles for First



Responders to CBRN Terrorism Incidents. RST manufactures Demron and the nano materials at its research and development facility in Miami. Demron is a lead-free, toxin-free and PVC-free material that allows heat dissipation and resists chemical penetration and cracks. Made of liquid metal, Demron nuclear protection fabrics feel cool and, unlike traditional nuclear suits, they're lightweight, flexible and foldable. Demron has proved to block gamma rays, X-rays and other nuclear emissions by the Lawrence Livermore National Laboratory, part of the National Nuclear Security Administration within the U.S. Department of Energy, the Georgia Institute of Technology and the Columbia University College of Physicians and Surgeons. Demron is currently deployed worldwide by NATO, NASA, the National Guard, US Navy, UAE and the governments of South Korea, China, Saudi Arabia and Australia, among others. Scientists have selected it for thermo-mechanical suits for future space travel.

### Τηλεχειριζόμενο σκαθάρι

Επιστήμονες από το University of California παρουσίασαν πρόσφατα ένα γιγαντιαίο σκαθάρι εξοπλισμένο με ασύρματο τηλεχειρισμό και προοριζόμενο για αποστολές έρευνας και διάσωσης σε επικίνδυνο ή μολυσματικό περιβάλλον. Μπορεί να φέρει μικροσκοπική κάμερα και ανιχνευτές θερμότητας ώστε να μην απαιτείται η έκθεση του προσωπικού διάσωσης σε επιπλέον κινδύνους.

### The Army's Remote-Controlled Beetle



A giant flower beetle with implanted electrodes and a radio receiver on its back can be wirelessly controlled, according to research presented this week. Scientists at the University of California developed a tiny rig that receives control signals from a nearby computer. Electrical signals delivered via the electrodes command the insect to take off, turn left or right, or hover in midflight. The research funded by the Defense Advanced Research Projects Agency (DARPA), could one day be used for surveillance purposes, for search-and-rescue or detection missions (including CBRN agents). Beetles and other flying insects are masters of flight control, integrating sensory feedback from the visual system and other senses to navigate and maintain stable flight, all the while using little energy. Rather than trying to recreate these systems from scratch, Michel Maharbiz and his colleagues aim to take advantage of the beetle's natural abilities by melding insect and machine. His group has previously created cyborg beetles, including ones that have been implanted with electronic components as pupae. But the current research, presented at the IEEE MEMS in Italy, is the first demonstration of a wireless beetle system. The beetle's payload consists of an off-the-shelf microprocessor, a radio receiver, and a battery attached to a custom-printed circuit board, along with six electrodes implanted into the animals' optic lobes and flight muscles. Flight commands are wirelessly sent to the beetle via a radio-frequency transmitter that's controlled by a nearby laptop. Oscillating electrical pulses delivered to the beetle's optic lobes



trigger takeoff, while a single short pulse ceases flight. Signals sent to the left or right basilar flight muscles make the animal turn right or left, respectively. Most previous research in controlling insect flight has focused on moths. But beetles have certain advantages. The giant flower beetle's size--it ranges in weight from four to ten grams and is four to eight centimeters long--means that it can carry relatively heavy payloads. To be used for search-and-rescue missions, for example, the insect would need to carry a small camera and heat sensor. In addition, the beetle's flight can be controlled relatively simply. A single signal sent to the wing muscles triggers the action, and the beetle takes care of the rest. "That allows the normal function to control the flapping of the wings," says Jay Keasling, who was not involved in the beetle research but who collaborates with Maharbiz. Minimal signaling conserves the battery, extending the life of the implant. Moths, on the other hand, require a stream of electrical signals in order to keep flying. The research has been driven in large part by advances in the microelectronics industry, with miniaturization of microprocessors and batteries.

### **Πρόοδος στη φαρμακευτική αντιμετώπιση της ευλογιάς**

Ερευνητές από το Oklahoma State University υπό τον Ass. Professor Junpeng Deng ανακοίνωσαν στο περιοδικό Proceedings of the National Academy of Sciences ότι αποκωδικοποίησαν την τρισδιάστατη κρυσταλλική δομή μιας πρωτεΐνης του poxvirus της ευλογιάς που ευθύνεται για τον αποκλεισμό της ιντερλευκίνης-18 απαγορεύοντας της να στείλλει το κατάλληλο μήνυμα στο ανοσιακό σύστημα του ανθρώπου ότι δηλαδή δέχεται επίθεση προκειμένου να αντιδράσει ανάλογα.

### **Progress made toward smallpox medication**

U.S. scientists say they have taken the first step toward developing a pharmaceutical medication to treat smallpox and the emerging human monkeypox. A major breakthrough by Oklahoma State University Assistant Professor Junpeng Deng and Ph.D. student Brian Krumm demonstrated (Proceedings of the National Academy of Sciences) the three-dimensional crystal structure of a poxvirus protein in the act of blocking a human immune molecule -- interleukin 18. The human immune system is rendered helpless against poxviruses partly because the viruses block interleukin-18 from sending a signal to the immune system that it's being attacked, the researchers said. The body thinks everything is fine and the deadly disease is able to take hold. The finding might lead to a drug that can stop the poxvirus from blocking the protein, Deng said. Since there is no medication for poxvirus-caused diseases, the breakthrough could aid national and international security efforts against potential poxvirus use as bioterrorism.

### **Καθορισμός δομής ενζύμου κατά των χημικών πολεμικών ουσιών**

Το ένζυμο DFPase από το καλαμάρι *Loligo vulgaris* μπορεί ταχέως και αποτελεσματικά να αδρανοποιήσει χημικές πολεμικές ουσίες όπως το Sarin (που χρησιμοποιήθηκε στη επίθεση στο μετρό του Τόκιο το 1995).

### **Structure of Enzyme Against Chemical Warfare Agents Determined**

The enzyme DFPase from the squid *Loligo vulgaris*, is able to rapidly and efficiently detoxify chemical warfare agents such as Sarin, which was used in the Tokyo subway attacks in 1995. A detailed understanding of the mechanism by which enzymes catalyze chemical reactions is necessary for efforts aiming to improve their properties. A group of researchers at the University of Frankfurt, the Bundeswehr Institute for Pharmacology and Toxicology in Munich, and Los Alamos National Laboratory in New Mexico, USA, have successfully determined the structure of DFPase using neutron diffraction (Proceedings of the National Academy of Sciences). The team used the neutron source at Los Alamos National Laboratory,

one of only three sources worldwide equipped for protein crystallography. In contrast to structure determination using X-rays, neutrons are able to locate the positions of hydrogen atoms, which make up half of all atoms in proteins, and are crucial for chemical reactions. As X-rays interact with the electron cloud around an atomic nucleus, so heavier elements are



more easily seen, while neutrons interact with the atomic nuclei, and atoms in proteins such as hydrogen, oxygen, nitrogen, carbon, and sulfur, all scatter neutrons in a similar manner. Yet despite being so widespread, hydrogen atoms in proteins are quite elusive. As X-rays interact with the electron cloud around an atomic nucleus, hydrogen atoms, with only one electron, are normally invisible in structures. In contrast, neutrons interact with the atomic nuclei, such that atoms in proteins, hydrogen, oxygen, nitrogen, carbon, and sulfur, all scatter neutrons in a similar manner. The two techniques

therefore yield complementary information about a protein structure. This information about hydrogen atoms is therefore essential for a basic understanding of the reaction mechanism of DFPase. Neutron structures of proteins are quite rare and technically demanding, requiring large crystals and long measurement times. Though the first neutron structure of a protein was reported 40 years ago, in 1969, to date only about 20 unique structures have been solved, out of 50000 entries in the Protein Data Bank. "The effort has been absolutely worth it," says Junior-Prof. Julian Chen, who published this work together with Dr. Marc-Michael Blum and Prof. Heinz Rueterjans. "Based on the results of this study, we can now create targeted changes to DFPase to augment the activity, as well as diversify the substrate range of the enzyme."

#### **Έντομα: Το νέο πρόσωπο της τρομοκρατίας;**

Μια δεύτερη αναφορά στη δυνατότητα τρομοκρατικής επίθεσης με φορείς τα έντομα και τις ασθένειες που μπορεί να μεταδώσουν στον άνθρωπο

#### **Insects: The New Face of Terrorism?**

The nature of modern terrorism shows that people are often caught off guard by the attacks that use the most seemingly innocent devices. In a column published in UK's The Times Online, guest contributor Jeffrey A. Lockwood issued a warning against overlooking ecoterrorists' use of insects as weapons. "A great strategic lesson of 9/11 has been overlooked. Terrorists need only a little ingenuity not sophisticated weapons, to cause enormous damage. Armed only with box-cutters, terrorists hijacked aircraft and brought down the World Trade Center," Lockwood writes. "Insects are the box-cutters of biological warfare - cheap, simple and wickedly effective." "Insects are one of the cheapest and most destructive weapons available to terrorists today, and one of the most widely ignored: they are easy to sneak across borders, reproduce quickly and can spread disease and destroy crops with devastating speed." Lockwood is an entomologist, a professor of philosophy and creative writing at the University of Wyoming, and author of the book "Six-Legged Soldiers: Using Insects as Weapons of War." Lockwood said the 9/11 attacks resulted in the loss of thousands of lives as and \$27.2 billion. In comparison, the Asian long horned beetle, which arrived in 1996, and the emerald ash borer, found in 2002, could take out more than \$700 billion worth of forests, according to US Department of Agriculture estimates. What's more, insects carry diseases, which could transfer onto crops and eventually humans. America saw the effects of insect-borne diseases on a smaller scale when West Nile virus found its way into the nation's borders in 1999. The nation's defences were useless against the disease, which killed 654

people and sickened 7,000. Lockwood said the US's losing battle against West Nile virus is another reason why the nation should be concerned about its African cousin, Rift Valley fever. "Originally discovered in 1931, this viral disease caused miscarriages in livestock while young animals suffered 10 to 70 per cent mortality rates. Mosquitoes spread the virus from Kenya. In 1997 a virulent strain appeared, able to infect the human nervous system. About 200,000 Egyptians fell ill, of whom 2,000 lost their sight and 598 died of encephalitis. Every region of the US has a mosquito species that is capable of carrying the disease." And Lockwood said it would be easy for an ecoterrorist to introduce the disease into the US with \$100 worth of supplies, simple instructions and a plane ticket. "Stacking a nation's defences along its borders is a strategic error," wrote Lockwood. "The better model is that of public health. Rather than hoping to stop every sick traveller entering a country, a wise government would stockpile vaccines, train health professionals and educate the public." "Western societies tend to think in terms of the short-term spectacle and heroic saviours of Hollywood action movies. Our disconnection from the natural world makes us believe that risk and benefit unfold at a blistering pace," Lockwood writes. "For a terrorist group with patience, a slow-motion disaster in ecological time would be a perfect tactic against an enemy that thinks in terms of days or months, but would suffer across the generations," he concluded.

### **Η ιστορία με τα γράμματα-άνθρακα μάλλον δεν έκλεισε...**

Φαίνεται ότι η ιστορία με τα γράμματα-άνθρακα και η διασύνδεση τους με τον επιστήμονα Bruce Ivins που κατηγορήθηκε σχετικά δεν έχει κλείσει οριστικά και αμετάκλητα. Πρόσφατα διαπιστώθηκε ότι τα σπόρια στα γράμματα μοιράζονται ένα χημικό «αποτύπωμα» που δεν υπάρχει στην ποσότητα σπορίων που υποτίθεται ότι χρησιμοποίησε ο κατηγορηθείς επιστήμονας των Sandia National Laboratories in Albuquerque, New Mexico.

### **Anthrax investigation still yielding surprising findings**

The deadly bacterial spores mailed to victims in the US anthrax attacks, scientists say, share a chemical 'fingerprint' that is not found in bacteria from the flask linked to Bruce Ivins, the biodefence researcher implicated in the crime. At a biodefence meeting on 24 February 2009 in Baltimore, Maryland, Joseph Michael, a materials scientist at Sandia National Laboratories in Albuquerque, New Mexico, presented analyses of three letters sent to the New York Post and to the offices of Senators Tom Daschle and Patrick Leahy. Spores from two of those show a distinct chemical signature that includes silicon, oxygen, iron, and tin; the third letter had silicon, oxygen, iron and possibly also tin, says Michael. Bacteria from Ivins' RMR-1029 flask did not contain any of those four elements.

### **Ζιζάνιο των οικιακών φυτών στον πόλεμο κατά του άνθρακα**

Ένα φυτικό βακτήριο (*Pectobacterium chrysanthemi* (*Dickeya dadantii*)) μελετήθηκε από ερευνητική ομάδα του University of Warwick προκειμένου να διαπιστωθεί ο τρόπος με τον οποίο προσβάλλει τα οικιακά φυτά τα οποία ανταγωνίζεται ως προς την πρόσληψη σιδήρου προκειμένου να αναπτυχθεί. Η μελέτη αυτή μπορεί να ανοίξει νέους δρόμους στην κατάποληση των διαφόρων λοιμώξεων – συμπεριλαμβανομένου και του άνθρακα.

### **Houseplant pest gives clue to potential new anthrax treatment**

Researchers at the University of Warwick have found how a citric acid-based Achilles heel used by a pathogen that attacks the popular African Violet house plant could be exploited not just to save African Violets but also to provide a potentially effective treatment for Anthrax. The researchers examined how a chemical structure is assembled in a bacterial

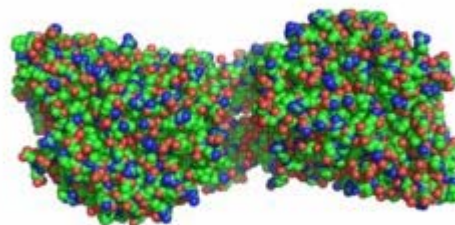
pathogen called *Pectobacterium chrysanthemi* (*Dickeya dadantii*) that afflicts plants – particularly the African Violet which often appears in many homes as a decorative houseplant. Like many bacteria *Pectobacterium chrysanthemi* competes with its host for iron. Without a supply of this essential nutrient the bacterium cannot grow. The University of Warwick researchers Dr Nadia Kadi, Dr Daniel Oves-Costales, Dr Lijiang Song and Professor Gregory Challis worked with colleagues at St Andrews University to examine how a "siderophore", one of the key tools the bacterium uses to harvest iron is assembled. They discovered how an enzyme catalyst in the assembly of this particular siderophore – called achromobactin – binds citric acid, a vital iron-binding component of the structure. Their findings show that this chemical pathway could be blocked or inhibited to prevent the



bacterium from harvesting iron, essentially starving it. While an interesting piece of science in itself and of even more interest to owners of African Violet houseplants the Warwick research team found that this work also has major implications for the treatment of several virulent and even deadly mammalian infections including Anthrax. A second piece of research conducted by three of the University of Warwick researchers (Dr Daniel Oves-Costales, Dr Lijiang Song and Professor Gregory L. Challis ) found that the deadly pathogen which causes Anthrax in humans uses an enzyme to incorporate citric acid into another siderophore that is very similar to the one used by the African Violet pathogen. The

researchers showed that both enzymes recognise citric acid in the same way. This means a common strategy could be used to block both the Anthrax and African Violet pathogen siderophore synthesis pathways. Professor Greg Challis from the University of Warwick said:

"Inhibiting this citric acid-based process could be even more effective in combating an anthrax infection than it would be in combating the African violet pathogen, because the African Violet pathogen has a second siderophore that can harvest iron from the host and could attempt to struggle on with just this, whereas the anthrax pathogen appears not to have such a back up mechanism." This new discovery could lead to the design of drugs that might eliminate the anthrax pathogen's ability to harvest iron and



stop an infection dead in its tracks. A respiratory anthrax infection is nearly always fatal but this discovery opens new possibilities for combating such infections. The benefits of the discovery may even go beyond treatments of Anthrax. The researchers are now looking at similar enzymes involved in the assembly of citric acid-derived siderophores in *E. coli* and MRSA, which may offer further targets for drug development. Funding for the research reported in both papers was provided by the Biotechnology and Biological Sciences Research Council (BBSRC).

#### Ήρθαν οι Ε-βόμβες ;

Φαίνεται ότι οι βόμβες ηλεκτρομαγνητικού παλμού δεν αποτελούν επιστημονική φαντασία αλλά μάλλον καθοδόν πραγματικότητα με την ενσωμάτωση σιδηρομαγνητικής γεννήτριας που παράγει μέσω ειδικής διεργασίας (pressure-induced magnetic phase transition), παλμό ικανό να καταστρέφει ηλεκτρικά κυκλώματα.

## Electromagnetic Pulse E-Bombs Could Go Mainstream

E-bombs, weapons that destroy electronics with an intense pulse of electromagnetic radiation, have been discussed for decades. But despite years of research and development, there is little sign of their deployment. The prospect of knocking out communications and



other electronic systems is attractive, but commanders prefer proven weapons with known effects. Now the U.S. Army is developing technology to provide the best of both worlds, by creating munitions that combine conventional and e-bomb effects in one package. Explosive munitions rely on blast, fragmentation and sometimes armor-piercing shaped charges for their effects. Researchers want to add an electromagnetic pulse (EMP) damage mechanism as well. This is in contrast to

previous e-bomb projects that were intended to be nonlethal so they could destroy materiel without causing casualties. The Army program seeks to enhance existing warheads, adding the feature without affecting blast, fragmentation or armor penetration, and with minimal extra weight. The power supply in traditional e-bomb design is a magnetic flux compression generator with metal coils carrying current. The coils rapidly compress in an explosion, producing an intense pulse of energy. The generator is bulky and cannot easily be integrated into existing munitions. An alternative approach explored by the Army is a shockwave ferromagnetic generator. This is a magnet that blows up and spontaneously demagnetizes, releasing energy as a pulse of power. The effect is known as pressure-induced magnetic phase transition, and only occurs with some types of magnets in certain situations. In 2005, researchers from the U.S. Army Aviation and Missile Research Development and Engineering Center (Amrdec), working with contractor Loki and scientists from Texas Tech University, demonstrated an explosive pulsed-power source based on neodymium alloy magnets, a type used in speakers and headphones. Having proven that the principle works, the researchers moved on to more exotic lead zirconate titanate magnets. This enabled them to reduce the volume of the power generator from 50 cu. cm. (3 cu. in.) to 3 cu. cm., excluding explosives. Army requirements call for assembly of the power generator, power conditioning and aerial in a 1-in. space. Power output will be measured in hundreds of megawatts for microseconds. The aerial needed to shape and direct the electromagnetic energy is an engineering challenge, due to the intense force of the explosion and the size required. Allen Stults of Amrdec is working on a “conducting aerosol plasma warhead.” A flame conducts electricity due to the presence of charged particles in it. By altering the chemical mixture of a fireball produced by an explosion, Stults aims to turn it into an electrically conductive aerial, a “plasma antenna.”

### Τα σκευάσματα της Baxter απειλή για πανδημία γρίπης...

Το άρθρο αυτό αναρτήθηκε στο διαδίκτυο πριν από την εν εξελίξει πανδημία της γρίπης του Μεξικού (βλέπε εισαγωγικό άρθρο) και αναφέρεται στο σκάνδαλο της εταιρείας παραγωγής εμβολίων Baxter μετά τη διαπίστωση παρουσίας ενεργών ιών γρίπης στα προς πώληση εμβόλια της. Όσο και να θέλει κανείς να είναι ταυτόχρονα λογικός και αντικειμενικός, τα σενάρια που κινούνται γύρω από το θέμα ενδεχόμενου σύγχρονου βιολογικού πολέμου (έλεγχος αριθμού πληθυσμού σε ορισμένες ηπείρους), αρχίζουν και ενσπείρουν αμφιβολίες και γεννούν προβληματισμούς για σκοτεινές επιδιώξεις της φημολογούμενης αόρατης ολιγαρχίας του σκότους...

## **Baxter's H5N1 as global flu pandemic threat**

There is no excuse! According to the scientific network PROMED, Baxter International Inc. in Austria "unintentionally contaminated samples with the bird flu virus that were used in laboratories in 3 neighbouring countries, raising concern about the potential spread of the deadly disease". Austria, Germany, Slovenia and the Czech Republic - these are the countries in which labs were hit with dangerous viruses. Not by bioterrorist commandos, but by Baxter. In other words: One of the major global pharmaceutical players seems to have lost control over a virus which is considered by many virologists to be one of the components leading some day to a new pandemic. Was it H5N1, or the even more risky H3N2? And what about the BSL3-Standards Baxter is operating when handling the viruses? What happened? And who failed? These questions have to be answered not only by Baxter itself. It looks difficult to believe that viral and potentially lethal samples can cross the US border, pass the Atlantic, arrive the European Union and get into three countries without any or adequate control. While every tourist has to present his fingerprints and electronic registered passports entering the United States, institutions like the US Homeland Security should stay alert: Lacks in pharmaceutical companies may be the deadly door to future bioterrorist attacks. The anthrax mailings from 2001 still are in mind of the FBI. Baxter shows that 8 years after that disaster there is no efficient control, at no level. To pronounce it this way is legitimated by the facts. H5N1 never should get on unknown travel routes with unwanted destinations. And H3N2 is no "sorry, it's an error" substance. It can be deadly for birds and humans, as virologists know. The subprime crisis and the fate of many broken banks are an example for poor regulations. For the financial markets, for the entire economy this may have resulted in global recession. Meanwhile, failure of control and regulations for labs operating with viruses like H5N1 will have another outcome: the risk of a new global pandemic, bioterrorist attacks or millions of deaths. This is the only message, and lesson, for President Barack Obama and his team: Get things in biohazard labs under control at home.

### **Νέο εμβόλιο κατά της ευλογιάς**

Σύμφωνα με μελέτη που δημοσιεύθηκε πρόσφατα στο έγκριτο JAMA, η χορήγηση εμβολίου (LC16m8) τρίτης γενεάς κατά της ευλογιάς από καλλιέργεια ιστών φαίνεται ότι είναι πολύ υποσχόμενο και χωρίς σοβαρές ανεπιθύμητες ενέργειες.

## **Tissue-cultured smallpox vaccine appears promising**

Administration of a tissue-cultured smallpox vaccine showed signs of an effective vaccine response with no serious adverse events, according to a study in the March 2009 issue of JAMA. 'The threat of smallpox bioterrorism has prompted reconsideration of the need for smallpox vaccination. Serious adverse events associated with first-generation vaccines such as the New York City Board of Health (Dryvax), Lister, and Ikeda strains have raised obstacles to vaccination campaigns in the United States,' the authors write. They add that certain second-generation vaccines are also often accompanied by a high frequency of adverse events. 'Developing a vaccine that is safer than first-generation vaccines yet highly immunogenic [producing immunity or an immune response] is crucial to constructing a prevention plan in the event of bioterrorist attack.' Tomoya Saito, M.D., Ph.D., of Keio University, Tokyo, and colleagues examined the clinical and immunological responses to the LC16m8 vaccine in adults who had been previously vaccinated (n = 1,692) and in those who had not (n = 1,529). LC16m8 is a live, attenuated (reduced in strength), tissue-cultured third-generation vaccine that was administered to more than 100,000 infants in Japan between 1973 and the beginning of 1976. The adults in this study, who are in the Japan Self-Defense Forces, received the LC16m8 vaccine between 2002 and 2005. Vaccinees were examined 10 to 14 days after vaccination to determine if they had developed a major skin reaction ('take;' a

measure of immune response). The researchers monitored vaccinees for adverse events for 30 days after the vaccination. The researchers found that administration of the vaccine was associated with high levels of seroconversion (development of antibodies) in adults who were not previously vaccinated and yielded an effective booster response in some previously vaccinated individuals. Seroconversion or an effective booster response among the individuals with take was elicited in 37 of 41 (90.2 percent) participants who had not been vaccinated before and in 93 of 155 (60.0 percent) previously vaccinated participants. The overall proportion of clinical take was significantly higher in primary vaccinees (1,443/1,529 [94.4 percent]) than in revaccinees (1,465/1,692 [86.6 percent]). 'Appropriate training in vaccination technique may help achieve a higher proportion of takes, because we observed a higher proportion of takes in later vaccination rounds,' the authors write. One case of allergic dermatitis and another of erythema multiforme (a rash), both of which were mild, were suspected to be caused by vaccination. No severe adverse events were observed. 'We demonstrated the immunogenicity of LC16m8 vaccine in vaccinia-naive adults by a single vaccination. LC16m8 vaccine also induces a good booster response in previously vaccinated individuals. Our study also offers supportive evidence for the safety of LC16m8 vaccine in adults; LC16m8 vaccine appears to be a viable alternative to first-, second- and other third-generation vaccines in a smallpox preparedness program,' the researchers conclude.

### Στολές που καταστρέφουν τα χημικά όπλα

Η ομάδα της Γαλλίδας Valérie Keller πειραματίζεται με νέα υφάσματα τα οποία με την προσθήκη νανοσωληνίσκων (nanotubes) που δίνουν στο ύφασμα την ικανότητα να απενεργοποιεί χημικές πολεμικές ουσίες με τη βοήθεια της ηλιακής ενέργειας. Οι δοκιμές με μουστάρδα και dimethyl methylphosphonate (DMMP) [που προσομοιάζει με το αέριο νευρών sarin] ήταν ιδιαίτερα αποτελεσματικές και πολλά υποσχόμενες για μια νέα γενιά ατομικού προστατευτικού εξοπλισμού.

### Clothing that destroys chemical weapons

The deployment of chemical weapons in an urban population center isn't simply a hypothetical threat; it has actually happened, most notably in Tokyo. Protection of first responders from toxic and corrosive chemicals usually comes in the form of bulky suits.



Outside of suits, there are some other ways to prevent skin exposure like using ointments and creams that neutralize toxins, but, topical treatments are not ideal, as they may require frequent reapplication, and they could end up penetrating the skin to become a health risk themselves. Chemically modified clothing could be a more effective form of protection, as it would be more accessible than a specialized suit and provide better coverage than a skin cream. Perhaps most importantly, modifications can

give clothing the ability to decontaminate warfare agents by catalyzing chemical reactions at its surface. French scientists, led by Valérie Keller, sought to enhance textiles with nanotubes to make clothes that can deactivate chemical warfare agents. Keller and his colleagues chose a system that utilizes solar energy to catalyze reactions. By using layer-by-layer deposition, they were able to create a homogenous and thin layer of nanotube material (titanate nanotubes impregnated with tungstate salt) atop mundane textile fibers. The ingredients necessary for

making the nanotubes are commercially available and layer-by-layer deposition is a well-known technique. The authors claim that their method "offers the advantages of low-cost preparation with high-throughput layer fabrication." The researchers tested the nanotube-layered textiles against mustard gas and dimethyl methylphosphonate (DMMP), a stand-in for the nerve agent sarin in research experiments. Mustard gas used in war since WWI, causes severe blistering and burning on any unprotected part of the body. Even if people manage to survive an initial exposure, the highly mutagenic and carcinogenic nature of the chemical will significantly increase their chances of developing cancer. Sarin attacks the nervous system and can cause death within minutes even at low concentrations. In accordance with standard NATO testing procedures, the authors exposed their nanotube textile to DMMP and mustard gas at concentrations of 10 g/m<sup>2</sup>. Provided with sunlight, the nanotube material photocatalytically degraded the toxins in a few minutes. These results are promising, but one notable issue is that sunlight is required. Alternative designs would be necessary for use in situations that lack solar illumination. The authors have shown that, instead of just designing protection based on the idea of creating barriers, you can also create "an active destructive layer" that can simultaneously destroy toxic chemicals. This would not only increase the chance of survival during chemical attacks, it would also minimize decontamination procedures, as some of the toxins would already be degraded.

### Βάση δεδομένων βιολογικών περιστατικών

To United Nations Office for Disarmament Affairs αναπτύσσει online Biological Incident Database (BID) στην οποία θα καταχωρούνται τα παγκόσμια βιολογικά περιστατικά σε τρεις κατηγορίες: φυσικά, τυχαία και εκ προθέσεως.

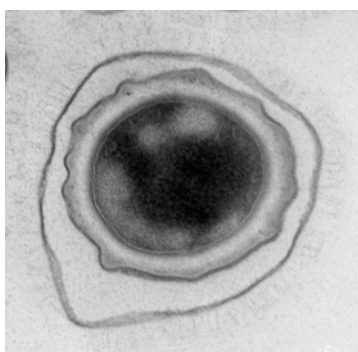
### Developing a biological incident database

"As part of the UN Global Counter-Terrorism Strategy, UNODA [United Nations Office for Disarmament Affairs] is developing an online Biological Incident Database (BID). To assist Member States in preventing and combating terrorism, BID categorizes the causes of disease outbreaks as natural, accidental or deliberate. It provides a platform for information sharing, fostering a better understanding of the range of biological incidents as well as past responses and lessons learned. BID should serve as an invaluable preparation tool should a similar incident occur in the future. UNODA hopes that Member States will use the available pilot system of BID and provide feedback."

### Νέα τεχνική καταγραφής του γονιδιώματος του άνθρακα

Επιστήμονες του Georgia Institute of Technology χρησιμοποίησαν μια νέα προσέγγιση (RNA-Seq), για την καταγραφή του γονιδιώματος του βακτηρίου *Bacillus anthracis* που προκαλεί τον άνθρακα και την κατανόηση του τρόπου που τα βακτήρια ρυθμίζουν την έκφραση των γονιδίων τους.

### New Technique Used To Profile Anthrax Genome



Scientists at the Georgia Institute of Technology have used a new approach, known as RNA-Seq, to profile the gene expression of the bacterium that causes anthrax, *Bacillus anthracis*. Their study, published March 20, 2009 online by the Journal of Bacteriology, marks the first time any bacterial transcriptome—the complete collection of mRNAs produced by a bacterium as it expresses different genes—has been comprehensively defined, and provides a much more detailed view of how bacteria regulate their gene expression. "Sequencing a bacterial genome has



gotten to be pretty routine, but going to a deeper level and defining the transcriptome has been a much more difficult task,” said Nicholas Bergman, assistant professor in the School of Biology at Georgia Tech and senior research scientist in the Electro-Optical Systems Laboratory at the Georgia Tech Research Institute. “With traditional methods, transcript structure and abundance really have to be determined one gene at a time, and a completely defined transcriptome was out of reach for even the most widely studied species,” said Bergman. “The RNA-Seq approach allowed us to get around the limitations of traditional methods so that we can see in a much more detailed way how each of the 5,000+ genes in *B. anthracis* genome is expressed and regulated.” The RNA-Seq approach works by using a technique known as high throughput sequencing, which counts millions of messenger RNA (mRNA) sequences simultaneously. Although the method was used to define the transcriptomes of several eukaryotic organisms in 2008, applying it to bacteria has been difficult, said Bergman, because bacterial mRNAs have a different structure and cannot be easily separated from the other RNAs in the cell. To solve this problem, the Georgia Tech team worked with researchers from Life Technologies, a biotechnology tools company, and ultimately developed a set of procedures that can be used to apply RNA-Seq to any bacterium. In using this approach to study *B. anthracis*, Bergman and colleagues sequenced mRNA samples that were collected from *B. anthracis* cells growing in a variety of conditions. They collected more than 270 million sequence “tags,” each of which corresponds to a short fragment of an RNA molecule, and pieced them together using a custom software tool that they developed for the project. “Once the data were together, it was very easy to see transcript structure across the genome,” said Bergman. “We could see clear boundaries between transcribed and non-transcribed regions of the genome, which represent where individual transcripts start and stop. This was really exciting, because transcript boundaries tell us precisely where to find the regulatory sequences that govern gene expression, and these sequences are extremely hard to find otherwise.” The researchers also found that since RNA-Seq is essentially just a very high-throughput counting technique, it also provides a way of determining how abundant each transcript is in the cell. They showed that this approach is a much more sensitive way of measuring gene expression than the more conventional microarray-based methods. “We can very easily see which genes are the most highly expressed, but we were also able to detect very rare transcripts—the ones that are only being produced by 1 in 100 or 1 in 1000 cells—and with this level of sensitivity we can actually get a glimpse of the random events that make individual cells different from one another,” said Bergman. Combining the structure and abundance information for every gene in a bacterial genome allows researchers to take a more rational approach to tasks like antibiotic discovery and microbial engineering, Bergman noted. “Sequencing-based transcriptome profiling has several huge advantages over array-based profiling,” said Bergman. “Right now array-based methods are still a little less expensive, and take a little less effort in terms of the bioinformatics, but I don’t think those obstacles will last long. I think we’ll see a lot more studies taking this approach in the near future.”

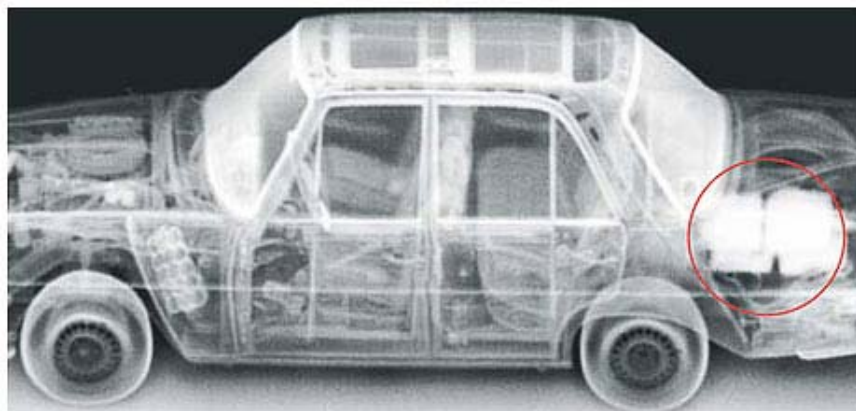
### **Νέα συσκευή ανίχνευσης για τις μονάδες ελέγχου των συνόρων**

Οι αμερικανικές μονάδες ελέγχου συνόρων (border patrol) δοκιμάζουν ένα ειδικό όχημα (Z Backscatter Van – ZBV) για τη διερεύνηση κρυπτών σε οχήματα στις οποίες μπορεί να κρύβονται εκρηκτικά, πλαστικά όπλα, ΧΒΡΠ όπλα και ναρκωτικά. Με τη μέθοδο αυτή, έχουν ανιχνευθεί μέχρι σήμερα πάνω από 1.500 rounds μαριχουάνας που ήταν κρυμμένα σε κρυφές δεξαμενές αυτοκινήτων.

### **New Border Patrol device uses see-through scanning**

See-through technology that stirred concerns about privacy of passengers being scanned at airports has been adapted for less sensitive use by the U.S. Border Patrol. The agency is checking vehicles for hidden compartments and contraband with a breakthrough X-

ray detection technology mounted in vehicles it calls 'Z Backscatter Vans,' or ZBV. The mobile device, loaded on a Ford F-350 pickup truck like a camper shell, can scan any vehicle, including semi-trailer trucks, in minutes. It can detect explosives, plastic weapons, nuclear, radioactive or organic threats as well as drugs, said Al White, patrol agent in charge of the Border Patrol's station at Nogales, Ariz., about 60 miles south of Tucson. It also can detect stowaways, although White said the system wouldn't intentionally be used to scan bodies or humans, just vehicles. "This is closer to the vehicle cargo inspection systems used at most ports of entry," said White. "It uses non-intrusive inspection technologies." So-called backscatter radiation technology uses a narrow, low-intensity X-ray beam the size of a laser pointer. The X-rays are reflected from their target to a receiver and then transmitted to a



laptop in the truck's cab that displays the images. "It does not contain a source of radiation," White said. "It creates its own X-rays by using an X-ray tube. Therefore, the safety zone is much smaller." In February 2007,

the federal government began testing a machine at Phoenix Sky Harbor International Airport that used backscatter radiation to scan a person's entire body. The low-intensity beam scanned the entire body at a high speed, and the amount of radiation given off was equal to 15 minutes of exposure to natural background radiation such as the sun's rays. Essentially, it looked through people's clothing, and early versions showed the human body's contours with embarrassing clarity. The Transportation Security Administration adjusted the equipment to give the image a line drawing likeness but still manage to detect concealed items. The TSA has stopped testing the backscatter devices because their leases ran out and haven't been renewed, said Nico Melendez, a spokesman in Los Angeles. Instead, another device, a "millimetre wave" machine, which began testing late in 2007 is now being used, still on a pilot basis, in about 20 airports around the country, Melendez said. People who support using such scanners insist that they will ease detection of concealed objects like plastic weapons or liquids that traditional metal detectors miss. But critics in the United States and the European Union called the scanners an unacceptable invasion of human dignity. "I continue to believe that these are virtual strip searches," Barry Steinhardt, director of the program on technology and liberty for the American Civil Liberties Union, said at the time. The Border Patrol said the technology's versatility is a huge boon for security and smuggling detection. "This is what's impressive," said White. "It's able to reveal things such as car and truck bombs, explosives ... and other organic threats, radioactive threats including nuclear devices and dirty bombs. "It's capable of detecting low levels of radioactivity from gamma rays and neutrons. This is ideal for dirty bombs and conventional explosives. And on top of that, stowaways who could be illegal immigrants or potential terrorists." The devices cost \$750,000 and one has been in use since Feb. 13 at the Border Patrol's interim checkpoint on Interstate 19 between Nogales and Tucson. The patrol has three more deployed in California and Texas. So far, the device in use along I-19 has detected more than 1,500 pounds of marijuana hidden in gas tanks, in tractor-trailers and other compartments. It also helped agents nab five illegal immigrants squirreled in a compartment covered with nailed-down plywood that was secreted beneath the sleeping quarters on a big rig truck.

## Η υπεριώδης ακτινοβολία στη μάχη της καταπολέμησης της φυματίωσης στα νοσοκομεία

Η υπεριώδης ακτινοβολία μπορεί να βοηθήσει στην καταπολέμηση της φυματίωσης στους νοσοκομειακούς θαλάμους καθώς προκαλούν ανεπανόρθωτη βλάβη στο DNA του βακτηρίου καθιστώντας το ανενεργό για περαιτέρω ανθρώπινη λοίμωξη. Ο συνδυασμός συσκευών UV και ανεμιστήρων διανομής στο ταβάνι των θαλάμων που νοσηλεύονται περιστατικά φυματίωσης (ακόμη και από στελέχη ανθεκτικά στα ειδικά φάρμακα), μπορεί να είναι ιδιαίτερα αποτελεσματικός.

### Ultraviolet light could beat hospital TB

Ultraviolet light could help beat TB on wards in hospitals, say scientists. The rays damage the bacteria's DNA so they cannot infect people, grow or divide and are already used in ambulances and operating theatres as a disinfectant. Researchers found 35 per cent of guinea pigs given air straight from a ward of 69 TB patients became infected themselves - compared to 9.5 per cent of animals that breathed in the same oxygen that was first exposed to UV radiation. They say TB bacteria - including drug-resistant strains - can be killed by



hanging a shielded UV light from the ceiling with a fan to mix the air. Dr Rod Escombe, of Imperial College London, said: "When people are crowded together in a hospital waiting room, it may take just one cough to infect several vulnerable patients. "Our previous research showed that opening windows in a room is a simple way to reduce the risk of tuberculosis transmission, but this is climate-dependent - you can't open the windows in the intensive care ward of a Siberian hospital for

example." The rate of TB infection in the UK and other western countries is relatively low and people who are infected can be treated using antibiotics. But people are more likely to die from the disease in developing countries like Peru because there are limited resources for isolating patients, diagnosing them quickly and starting effective treatment. Dr Escombe, whose findings are published in PLoS (Public Library of Science) Medicine, said: "Also, the prevalence of drug-resistant TB is much higher in the developing world. Preventing infection is much easier and cheaper than treating a patient with tuberculosis." Plans are already underway to install upper room UV lights in the chest clinic at St Mary's Hospital, London, which will be the first hospital to have them in the UK. Dr Cath Noakes, of the University of Leeds' Faculty of Engineering, said: "The lights must be set high enough to ensure patients and health workers are not overexposed, but if the lights only treat air at that level, there will be little benefit. "To be most effective, ventilation systems need to create a constant flow of treated air down to patient level, and potentially infected air up towards the lights."

### Νέα γενιά προβιοτικών εμβολίων

Ερευνητής του Northwestern University Feinberg School of Medicine στο Σικάγο ανέπτυξε ένα νέο εμβόλιο με χρήση προβιοτικών (probiotics) και λήψη από το στόμα που θα μπορούσε να χρησιμοποιηθεί και για την αντιμετώπιση του άνθρακα (προ-κλινικές δοκιμές).

### New vaccine delivered via smoothie

A new generation vaccine has big benefits beyond eliminating the "ouch!" factor, say U.S. researchers working on a vaccine delivered via a smoothie. Mansour Mohamadzadeh of the Northwestern University Feinberg School of Medicine in Chicago have developed a new

oral vaccine using probiotics, the healthy bacteria found in dairy products such as yogurt and cheese. Mohamadzadeh said he has successfully used the approach in a preclinical study to create immunity to anthrax exposure. In addition, Mohamadzadeh is using the method to develop vaccines for various infectious diseases. Delivering the vaccine to the gut -- rather than injecting it into a muscle -- harnesses the full power of the body's primary immune force, which is located in the small intestine, Mohamadzadeh said. "This is potentially a great advance in the way we give vaccines to people," Mohamadzadeh said in a statement. "You swallow the vaccine, and the bacteria colonize your intestine and start to produce the vaccine in your gut, then it's quickly dispatched throughout your body. If you can activate the immune system in your gut, you get a much more powerful immune response than by injecting it. The pathogenic bacteria will be eliminated faster." The findings are published in the Proceedings of the National Academy of Science.

### Απόδειξη ταυτότητας μέσω οσμής σώματος

Το αμερικανικό Department of Homeland Security (Science and Technology Directorate), σχεδιάζει να μελετήσει την πιθανότητα χρήσης της οσμής του σώματος για να καθορίζει εάν ένα άτομο ψεύδεται ή για την αναγνώριση της ταυτότητας των ατόμων με τρόπο παρόμοιο με τα συμβατικά δακτυλικά αποτυπώματα.

### Body odor: New proof of ID?

The Department of Homeland Security plans to study the possibility that human body odor might be used to determine when people are lying, or to identify individuals in the same way that fingerprints can. In a federal procurement document posted on the Web, the department's Science and Technology Directorate says it will conduct an "outsourced, proof-of-principle study to determine if human odor signatures can serve as an indicator of deception. ... As a secondary goal, this study will examine ... human odor samples for evidence to support the theory that an individual can be identified by that individual's odor signature." Officials said the work was at a very early stage, but the announcement brought criticism. Barry Steinhardt, of the American Civil Liberties Union's Technology and Liberty project, said the plan showed that the department had "misplaced priorities." "The history of DHS' deployment of these technologies has been one colossal failure after another. There is no lie detector. This research has been a long, meandering journey which has taken us down one blind alley after another." Mr. Steinhardt said that even well-established biometric identity technologies such as fingerprinting had resulted in inaccurate identifications of people, including Oregon lawyer Brandon Mayfield, who received an apology from the FBI after being wrongfully accused of having had a hand in the 2004 Madrid train bombings. "None of the biometrics for identity have worked very well, with the possible exception of DNA," he said, adding that even fingerprint evidence was "increasingly being challenged in courts around the country." The procurement notice says the department is already "conducting experiments in deceptive behavior and collecting human odor samples." The research it hopes to fund "will consist primarily of the analysis and study of the human odor samples collected to determine if a deception indicator can be found." "This research has the potential for enhancing our ability to detect individuals with harmful intent," the notice says. "A positive result from this proof-of-principle study would provide evidence that human odor is a useful indicator for certain human behaviors and, in addition, that it may be used as a biometric identifier." Amy Kudwa, a Homeland Security spokeswoman, said "proof-of-concept" work was the earliest stage of technological development. The directorate "is trying to determine what factors of human behavior and chemistry can provide clues to the intent to deceive," she said. The work would be carried out by the Federally Funded Research and Development Center run by the nonprofit Mitre Corp., which conducts cutting-edge research for the U.S. military, Homeland Security and intelligence agencies, Ms. Kudwa said. Scientific research shows those so-called volatile organic compounds present in human sweat,

saliva and urine can be analyzed using a technique known as gas chromatograph-mass spectrometry. Research published by the Royal Society in London in 2006 found "a substantial number of marker compounds [in human sweat] that can potentially differentiate individuals or groups." Researchers took five samples each from 179 people over a 10-week period and analyzed them, finding hundreds of chemical markers that remained more or less constant for each person over time. An analysis of these compounds "found strong evidence for individual [odor] fingerprints" the researchers concluded. They warned, however, that some people appear to have less distinctive odors than others. "The reason for the variation in distinctiveness is unclear," the researchers said. More importantly, the odors of some people changed during the course of the study. "Not all subjects had consistent marker compounds over time, which might be due to physiological, dietary, or other changes," they concluded. The researchers also cautioned that some of these marker compounds might be "exogenous chemical contaminants," from skin care or perfume products, or tobacco smoke and other substances present in a person's environment. About a quarter of the 44 apparently distinctive marker compounds they were able to analyze appeared to be artificial contaminants, the researchers said. "Determining the origins of individual and sex-specific odors - and controlling exogenous chemical contaminants - may provide the most important challenge for future ... studies," the researchers said. Analysts said those challenges are likely to be significant, and they will multiply if the techniques are deployed in the field. "While some of these sensors perform well in the lab, the real world may be different," said technology consultant and author John Vacca. "The technology is still in its infancy."

#### **Γενετική επεξεργασία βακτηρίων για τον έλεγχο της ποιότητας του νερού**

Ερευνητική ομάδα του Tel Aviv University κατασκεύασε ένα εργαστήριο σε μέγεθος microchip που μπορεί να χρησιμοποιηθεί για τον έλεγχο της ποιότητας του νερού καθώς γενετικά τροποποιημένα βακτήρια εκπέμπουν μετρήσιμα σήματα όταν έρχονται σε επαφή με προκαθορισμένους ρύπους. Για την εφαρμογή αυτή και τη δυνατότητα ανίχνευσης βιοτρομοκρατικών επιθέσεων εξέφρασε ενδιαφέρον και η United States Department of Defense Projects Agency (DARPA).

#### **Genetically engineered bacteria to test quality of water**

Researchers at Tel Aviv University have developed a laboratory the size of a microchip that can be used to measure water quality. Using genetically engineered bacteria



that light up when in contact with pre-determined pollutants, this water quality lab will detect and communicate "contact" with monitoring systems. It's a nano sized version of the robot fish that we recently looked at. "We've developed a platform - essentially a micro-sized, quarter-inch square 'lab' - employing genetically engineered bacteria that light up when presented with a stressor in water," says team lead Professor Shacham-Diamand. Other potential uses of this micro-scale monitoring system include almost any biological process that can affect or be

affected by purpose-designed bacteria, including stem cell and cancer investigations. Even the United States Department of Defense Projects Agency (DARPA) is interested, as these nanotechnology labs may become a defense against future biological warfare attacks.

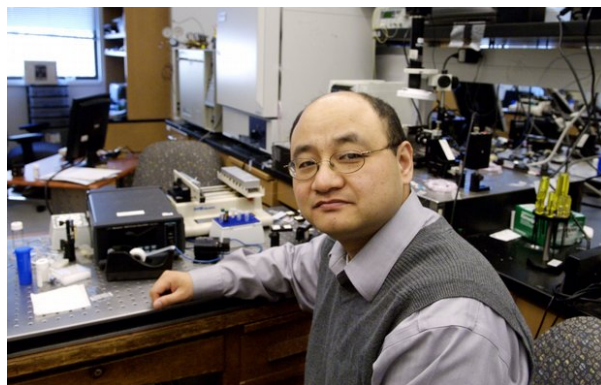
#### **Διάγνωση μόλυνσης με εκπνεόμενο αέρα**

Ο ερευνητής Xudong "Sherman" Fan του University of Missouri τελειοποίησε μια νέα συσκευή

με την οποία η μόλυνση ενός ανθρώπου από χημικές πολεμικές ουσίες μπορεί να γίνει με ανάλυση της σύστασης του εκπνεόμενου αέρα. Η μέτρηση μπορεί να γίνει σε πραγματικό χρόνο και τα αποτελέσματα να μεταδοθούν τηλεματικά σε μεγάλη απόσταση στα μετόπισθεν. Η μέθοδος αυτή μπορεί να έχει πολλές εφαρμογές στη γενικότερη παθολογία του ανθρώπου και να αντικαταστήσει στο μέλλον τις επώδυνες/επεμβατικές διαγνωστικές εξετάσεις.

### **Researcher catches breath for study**

There are ways to test a patient's health with a pin prick, and there are ways to test it through a surgical biopsy. But Xudong "Sherman" Fan of the University of Missouri believes the future might be in the air we exhale. Fan is a researcher and assistant professor of biological engineering who is making breakthroughs in gas molecule analysis.



The work has possible applications in medicine to test breath for signs of cancer or diabetes and on the battlefield as soldiers test for airborne chemicals. The device being perfected by Fan in his laboratory at the Kit Bond Life Sciences Center is a thin capillary tube that can be hooked up to a computer detection device. Vapor molecules are directed inside the tiny tube, which is lined with

polymer and ringed with a diode laser. Because each molecule interacts differently with the polymer and laser, they are separated one by one and noted on the computer. The device can detect trace molecules so faint they weigh about one-trillionth of a gram. This technology already exists in some laboratories, but Fan said it's not convenient and costs a whopping \$50,000. "Typically the gas chromatography devices are probably about 100 pounds. You need to get two guys to lift it. And they require a large power source," he said. "We're trying to shrink everything down." Fan also said even the speediest gas molecule analysis in a lab takes hours. He'd like to shrink that, too. "We are trying to build one that's battery driven, so out in the field, a soldier can carry one without a power supply," Fan said. "For example, if they go to a suspicious chemical weapon site, they go there and pick up a sample, and they can get results in situ in real time, probably in a few minutes rather than picking up a sample and sending it back to a central lab that's probably 100 kilometers away." It's this type of application that has the U.S. Department of Defense excited. Several years ago, Fan gave a presentation to executives from ICx Technologies, a private homeland security firm based in Virginia. The executives liked Fan's ideas and offered to collaborate. The group initially received funding through the defence department's DARPA office and recently received a \$400,000 grant from the National Science Foundation. Greg Frye-Mason, ICx vice president of research and development, said what's most exciting about research by Fan and others is the potential degree of precision. Some soldiers in the field now have handheld devices known as "ion-mobility spectrometers" that alert people if something toxic is in the air without necessarily identifying the substance. "What is unique about this would be the ability to provide improved confidence of detecting an agent rather than something else in the air that is not as toxic," Frye-Mason said. A practical application of the device might still be years away, said Frye-Mason, who works in Albuquerque, N.M. Eventually Fan would like to see its use expanded to doctor's offices, where it's rare to study a patient's breath. He said breath is mostly made up of carbon dioxide, oxygen and nitrogen, but there are thousands of other tiny biomarkers that can give clues to what is going on inside the body. One biomarker indicates a high level of blood sugar, another possibility of cancer. These days, breath analysis mostly is used by police to detect alcohol. "However, there are many more biomarkers that have a very low concentration, and those are related to diseases," he said. Fan is confident that patients given the option of a blood test, a biopsy or a breath analysis would

ask for the least-invasive test. "What we want to do eventually is have nurses use these," he said of his breath-analysis device. "You exhale, and then you wait outside, and in a few minutes, they give you the results. It provides a complementary analysis of the human body to blood tests. Blood tests are fine, ... but breath analysis is much easier."

### **Εγκεφαλικές διαταραχές στους βετεράνους του Πολέμου του Κόλπου**

Ο επιδημιολόγος Robert Haley, του UT Southwestern ανακοίνωσε σε πρόσφατη μελέτη της ομάδας του ότι οι βετεράνοι του Πολέμου του Κόλπου εμφανίζουν εγκεφαλικές διαταραχές σε συγκεκριμένες χημικές ουσίες. Σε άλλες μελέτες διαπιστώθηκε συρρίκνωση της λευκής ουσίας του εγκεφάλου στον ίδιο πληθυσμό που εκτιμάται ότι είχε εκτεθεί σε χημικές πολεμικές ουσίες (sarin) στον πόλεμο του 1991.

### **Gulf War veterans display abnormal brain response to specific chemicals**

Dr. Robert Haley, chief of epidemiology at UT Southwestern and lead author of the study, said the research uncovers and locates areas of the brain that function abnormally. Recent studies had shown evidence of chemical abnormalities and shrinkage of white matter in the brains of veterans exposed to certain toxic chemicals, such as sarin gas during the 1991 Persian Gulf War. The research, published in the March issue of the journal *Psychiatry Research: Neuroimaging*, enables investigators to visualize exact brain structures affected by these chemical exposures, Dr. Haley said. "Before this study, we didn't know exactly what parts of the brain were damaged and causing the symptoms in these veterans," he said. "We designed an experiment to test areas of the brain that would have been damaged if the illness was caused by sarin or pesticides, and the results were positive." In designing the study, Dr. Haley and his colleagues reasoned that if low-level sarin or pesticides had damaged Gulf War veterans' brains, a likely target of the damage would be cholinergic receptors on cells in certain brain structures. If that was so, administering safe levels of medicines that stimulate cholinergic receptors would elicit an abnormal response in ill veterans. In the study, 21 chronically ill Gulf War veterans and 17 well veterans were given small doses of physostigmine, a substance that briefly stimulates cholinergic receptors. Researchers then measured the study participants' brain cell response with brain scans. "What we found was that some of the brain areas we previously suspected responded abnormally to the cholinergic challenge," Dr. Haley said. "Those areas were in the basal ganglia, hippocampus, thalamus and amygdala, and the thalamus. Changes in functioning of these brain structures can certainly cause problems with concentration and memory, body pain, fatigue, abnormal emotional responses and personality changes that we commonly see in ill Gulf War veterans." A previous study funded by the U.S. Army found that repetitive exposure to low-level sarin nerve gas caused changes in cholinergic receptors in lab rats. "An added bonus is a statistical formula combining the brain responses in 17 brain areas that separated the ill from the well veterans, and three different Gulf War syndrome variants from each other with a high degree of accuracy," Dr. Haley said. "If this finding can be repeated in a larger group, we might have an objective test for Gulf War syndrome and its variants." An objective diagnostic test, he said, sets the stage for ongoing genetic studies to see why some people are affected by chemical exposures, and why others are not. New studies would also allow the selection of homogenous groups of ill veterans in which to run efficient clinical trials for treatments. Dr. Haley first described Gulf War syndrome in a series of papers published in January 1997 in the *Journal of the American Medical Association*. In previous studies, research from Dr. Haley showed that veterans suffering from Gulf War syndrome had lower levels of a protective blood enzyme called paraoxonase, which usually fights off the toxins found in sarin. Veterans who served in the same geographical area and did not get sick had higher levels of this enzyme. Dr. Haley and his colleagues have closely followed the same group of test subjects since 1995. In 2006, UT Southwestern and the Department of Veterans Affairs

established a dedicated, collaborative Gulf War illness research enterprise in Dallas, managed by UT Southwestern. Texas Sen. Kay Bailey Hutchison, a long-time supporter of Gulf War research, facilitated that agreement and secured a \$75 million appropriation over five years for Gulf War illness research. This study was funded, in part, by the U.S. Army Medical Research and Materiel Command. Other UT Southwestern researchers involved in the current study included Drs. Jeffrey Spence and Patrick Carmack, assistant professors of clinical sciences; Drs. Michael Devous and Frederick Bonte, professors of radiology; and Dr. Madhukar Trivedi, professor of psychiatry. Researchers from Southern Methodist University also participated.

### **Πειραματικό εμβόλιο προστατεύει πειραματόζωα από τον ιό Ebola**

Ερευνητές στο Foundation for Biomedical Research (SFBR) στο San Antonio ανακοίνωσαν θετικά αποτελέσματα με τη χρήση εμβολίου κατά του ιού Ebola που παράγεται σε κύτταρα εντόμων. Το νέο εμβόλιο είναι εξαιρετικά ασφαλές και αποτελεσματικό και μπορεί να αποτελέσει τη βάση για το πρώτο ανθρώπινο εμβόλιο κατά ενός εκ των πλέον θανατηφόρων ιών παγκοσμίως.

### **Experimental Vaccine Protects Animals From Deadly Ebola Virus; May Prove Effective In Developing The First Human Vaccine**

Protection against Ebola, one of the world's deadliest viruses, can be achieved by a vaccine produced in insect cells, raising prospects for developing an effective vaccine for humans, say scientists at the Southwest Foundation for Biomedical Research (SFBR) in San Antonio. "The findings are significant in that the vaccine is not only extremely safe and effective, but it is also produced by a method already established in the pharmaceutical industry," says SFBR's Ricardo Carrion, Ph.D., one of the primary authors of the study. "The ability to produce the vaccine efficiently is attractive in that production can be scaled up quickly in the case of an emergency and doses can be produced economically." The new study was published in the *Journal of Virology* (2009), and was supported by the National Institutes of Health. Jean Patterson, Ph.D., also of SFBR, participated in the research. Ebola viruses, which cause severe bleeding and a high fatality rate in up to 90 percent of patients, have no effective treatment or vaccine. Since its first identification in Africa in 1987, Ebola outbreaks have caused some 1,800 human infections and 1,300 deaths. Outbreaks have become increasingly frequent in recent years, and are likely to be caused by contact with infected animals followed by spread among humans through close person-to-person contacts. Ebola viruses cause acute infection in humans, usually within four to 10 days. Symptoms include headache, chill, muscle pain, followed by weight loss, delirium shock, massive bleeding and organ failure leading to death in two to three weeks. Ebola viruses are considered a dangerous threat to public health because of their high fatality rate, ability to transmit person-to-person, and low lethal infectious dose. Moreover, their potential to be developed into biological weapons causes grave concern for their use as a bioterrorism agent. While some vaccines show protection in non-human primate studies, the strategies used may not be uniformly effective in the general human population due to pre-existing immunity to the virus-based vaccines. In the new study, a vaccine using Ebola virus-like particles (VLPs) was produced in insect cells using traditional bio-engineering techniques and injected into laboratory mice. A VLP vaccine is based upon proteins produced in the laboratory that assemble into a particle that, to the human immune system, looks like the virus but cannot cause disease. Two high-dose VLP immunizations produced a high level immune response in mice. And when the twice-immunized mice were given a lethal dose of Ebola virus, they were completely protected from the disease. In contrast, mice that were not immunized had a very low immune system response and became infected. In another experiment, a three low-dose VLP immunization effectively boosted immune system response in mice and protected them against the Ebola virus. This finding is important because it demonstrates that since the



vaccine produces immunization in dilute quantities, many more vaccine doses can be generated compared with a poorly immunogenic vaccine. VLPs are attractive candidates for vaccine development because they lack viral genomic material and thus are not infectious, are safe for broad application, and can be administered repeatedly to vaccinated individuals to boost immune responses. The findings will be validated in additional animal systems. The vaccine will then undergo FDA safety and efficacy testing prior to use in humans in potentially five years.

### Σκύλοι και ανίχνευση χημικών πολεμικών ουσιών

Στα τέλη της δεκαετίας του 1960, ο τσεχοσλαβακικός στρατός είχε μελετήσει τη συμπεριφορά των σκύλων σε ερεθιστικές ουσίες όπως chloropicrin, chloroacetophenone- CN, bromobenzyl cyanide-CA και adamsite-DA (diphenylamine chloroarsine) καθώς και στο εξαιρετικά τοξικό αέριο νεύρων soman-GD (pinacolyl methylphosphonofluoridate). Τα απόρρητα τότε πειράματα και η έκβαση τους δόθηκαν πρόσφατα στη δημοσιότητα και παρουσιάζουν ιδιαίτερο ενδιαφέρον.

### How dogs can help detect CW?

For generations, domestic animals have been ‘man’s best friend’ in war, transportation, rescue, security, safety and operations. Dogs still play a special role. The mass deployment of chemical weapons during World War I resulted in the urgent need to protect armies, which relied on animal-drawn mobility by using horses, mules, and army service dogs. We should therefore learn from those terrible days about various means of protection to



prevent the inhalation of toxic substances. Dogs have long been used for explosives detection at airports and police work and it is vital to protect service dogs against physical injuries during rescue and tracking duties, and against potential chemical and radiological exposure. Apart from a dog’s sense of orientation, its olfactory centre has tremendous odour threshold sensitivity and selectivity and its nasal cavity wall cells are also sensitive to exposure of irritant and toxic substances. Attempts have even been made in the past to ‘jam’ tracking or sleuth canines’ sense of smell. Live trials conducted by the Czechoslovakian Army in the late 1960s assessed the behaviour of tracking dogs exposed to irritants such as chloropicrin, chloroacetophenone- CN, bromobenzyl cyanide-CA and adamsite-DA (diphenylamine chloroarsine) and also to the extremely toxic nerve agent, soman-GD (pinacolyl

methylphosphonofluoridate). The experiments aimed to clarify how far tracker dogs could be diverted from tracing a perpetrator using irritants, and also how they could be paralysed or killed. This information is being released to the public for the first time since the end of the last century.

### Case 1 Following up a scent contaminated with the irritant lachrymatorchloropicrin

A mock perpetrator generated a burning scent in grassy terrain. After c. 200 m the scent was contaminated with chloropicrin in an area 1.5 m wide, 15 m long, with a density of

50g/m<sup>2</sup>. After 15 and 30 minutes two dogs followed up the scent precisely through the critically contaminated area. The dogs did not show irritation or excitation during the entire exercise; they obeyed commands and were even willing to return to the critical area. One of the dogs even retrieved an empty bottle previously filled with chloropicrin.

### **Case 2 Following up a scent contaminated with the irritant lachrymatorbromobenzyl cyanide**

The scent was contaminated with bromobenzyl cyanide in an area 1 m wide, 10 m long, with a density of 25g/m<sup>2</sup>. Three dogs were put on the trail of the scent after 15, 25 and 35 minutes respectively. Each resolutely followed up the scent through the critically contaminated area. However, the agent irritated all three dogs, pushing them to bypass the critically contaminated area with a 'high nose' posture. When forced by the dog handler back into the contaminated area the dogs turned their heads away and stopped breathing. Once they passed the contaminated area, they easily followed the original scent again. No physiological irritation of the dogs was demonstrated.

### **Case 3 Exposure of dogs in an environment contaminated with the nerve agent soman**

A grassy 3-sq m area was contaminated with soman at a density of 20g/m<sup>2</sup>. After 15 minutes of being exposed to contamination, the first dog was forced into this area and exposed for 16 seconds. The dog calmly obeyed the dog handler's commands to enter and exit from the contaminated site. In addition, the dog at one juncture voluntarily licked the contaminated grass. Within one minute after its exit from the contaminated area, the dog began to demonstrate severe symptoms of nerve agent intoxication such as strong salivation, progressing rapidly to the typical symptoms of poisoning caused by lethal exposure. Within a further four minutes the dog became comatose and was expected to die within 10 to 15 minutes. Euthanasia was applied to the unconscious dog by a vet. A second dog went into the contaminated area after 30 minutes of initial contamination and was also exposed to the soman for 16 seconds. It perceived the presence of an unknown substance and tended to put its head outside of the 'smelling' area and reduced its breathing. After early withdrawal from the contaminated site it demonstrated slight salivation only, then 15 minutes later, had a stomach upset then settled down. After 50 minutes, however, the dog demonstrated typical lethal signs and symptoms of nerve agent intoxication, leading to its death within the following hour. A third dog was sent into the contaminated site after 65 minutes and was exposed for 18 seconds. After this exposure no signs or symptoms of poisoning were shown, and it behaved and performed normally.

Those groundbreaking initial experiments, which have never been repeated, show that incapacitating and irritating substances that are shown to be effective to humans do not significantly affect dogs. They can continue their tracking and search and rescue duties in these adverse conditions. Dogs can also manage by themselves how to limit inhalation exposure by reducing their sniffing and breathing and by bypassing a hostile environment. Nature has, in the canine, provided us with the perfect example for creating effective modelling sensors. Specialised training of dogs can be extended beyond the detection of drugs and explosives to other hazardous chemicals such CWAs and TICs. Olfactometry as a scientific discipline needs to be expanded to help first responders carry out first and fast indication of hazardous materials and, thence, to protect the public. The 'sniffer dog' may become an essential front-line detector, and arguably as effective as some emerging high-tech detection and identification technologies. However, if dogs are forcefully exposed to a very toxic substance, in obeying and following 'His Master's Voice' they pay for this trust and

obedience with their lives. If they are to be used for tracking dangerous substances and chemical weapons, service dogs must be adequately kitted out in masks and disposable protective paw booties – and even whole-body PPE – so that they can perform vital duties for the benefit and safety of their human masters.

### **Γρίπη και υγρασία**

Η συσχέτιση του χειμώνα με τη γρίπη στις εύκρατες περιοχές του κόσμου είναι συνήθης και μέχρι σήμερα αποδιδόταν στην επίδραση της σχετικής υγρασίας στον ιό της γρίπης. Πρόσφατα, ερευνητές από το Oregon State University (Corvallis) και το Oregon Health Department (Portland) ανακοίνωσαν ότι καθοριστικός παράγων είναι η «απόλυτη υγρασία» που βοηθά στην επιβίωση του ιού και την εξάπλωση της γρίπης.

### **Flu: It's the Humidity. Absolutely**

Winter is flu season in the world's temperate regions, but scientists still aren't sure why. Now, it turns out that the answer may have been staring them in the face all along. A reanalysis of data from past studies suggests that low absolute humidity--not low relative humidity, the factor many scientists have studied--helps the virus survive and the flu spread. Explanations abound for why flu is king in winter, only to disappear come summer. Researchers have suggested that the virus might survive better in colder temperatures, that people are more exposed when huddled indoors, and that lower melatonin and vitamin-D levels can weaken immune systems. Humidity has also been implicated. Indoor heating makes the air in many homes drier, and several studies have shown that the virus survives better, and is more easily transmitted, when there's less moisture in the air. As a measure of air moisture, researchers have always taken relative humidity, which is the ratio of actual water content in the air to the maximum possible level. That maximum increases exponentially with temperature, however; a 75% relative humidity at 25°C means much more vapor in the air than at 5°. Climate physicist Jeffrey Shaman of Oregon State University in Corvallis and epidemiologist Melvin Kohn of the Oregon Health Department in Portland believed that what might matter more to the virus is absolute humidity--especially because the evidence for the impact of relative humidity was never all that strong. The duo first reanalyzed data from a 2007 paper (ScienceNOW) in PLoS Pathogens by Peter Palese of Mount Sinai School of Medicine in New York City and his colleagues, who found that virus transmission between two guinea pigs housed in neighboring cages falls as relative humidity rises. The link was only marginally statistically significant. When Shaman and Kohn performed a similar analysis using absolute humidity--which is easy to calculate if you know the temperature--they found a much stronger correlation. Then, the researchers reanalyzed the data from several other studies on virus survival and transmission, by Palese's group and others, including some over 40 years old. They found the same pattern, they report online today in the Proceedings of the National Academy of Sciences. Shaman says he has no idea why other researchers never looked at absolute humidity. "Maybe it's because they always see the local weatherman talking about relative humidity," he says. Palese read the paper at Science's request but declined to comment on it. Raymond Tellier, a microbiologist at the Hospital for Sick Children in Toronto, Canada, says the work is promising but that new studies are needed to confirm it. "In order to make the point definitively, you'd really like to see more data points," he says. Shaman and Kohn say the data bolster the idea, suggested previously by others, that increasing humidity in nursing homes and emergency rooms might help prevent flu among vulnerable patients. Tellier agrees, but he warns that this might boost the numbers of other pathogens, such as molds.

### **Νέο καθολικό εμβόλιο κατά της βιοτρομοκρατίας**

Επιστήμονες του Scripps Research Institute αναπτύσσουν μια νέα μέθοδο εμβολιασμού που

μπορεί να παρέχει προστασία ανεξάρτητα από το εάν ο στόχος είναι καρκινικά κύτταρα, ιοί γρίπης, ή άνθρακας μετά από βιοτρομοκρατική επίθεση προκαλώντας καθολική ανοσιακή απάντηση του οργανισμού.

### Scientists developing one-size-fits-all bioterrorism vaccine

Scientists at the Scripps Research Institute are developing a new method of vaccination that could potentially be used to provide instantaneous protection whether the target is a cancer cell, flu virus, or a toxin like anthrax in the event of a bioterrorism attack. Normally, it takes days or weeks for the body to build immunity against a pathogen. The scientists injected mice with chemicals designed to trigger a universal immune reaction, as well as “adapter molecules” that they had developed to recognize the target cells causing the disease. The adapter molecules cooperate with the antibodies to create “covalent antibody-adapter complexes” within the body of the animal. “The antibodies in our vaccine are designed to circulate inertly until they receive instructions from tailor-made small molecules to become active against a specific target,” says Scripps professor Carlos Barbas III. “The advantage of this method is that it opens up the possibility of having antibodies primed and ready to go in the time it takes to receive an injection or swallow a pill.” This presents an exciting possibility for the field of biodefense, especially.

### Προετοιμασία του Καναδά για ΧΒΡΠ επιθέσεις κατά τη διάρκεια των Ολυμπιακών του 2010

Για την αποτροπή επιθέσεων με όπλα μαζικής καταστροφής κατά τη διάρκεια των χειμερινών Ολυμπιακών Αγώνων στο Vancouver του Καναδά το 2010 λαμβάνονται ειδικά μέτρα από την ειδική μονάδα της Έφιππης Αστυνομίας με την ονομασία Vancouver 2010 Integrated Security Unit.

### Canada Preparing for WMD Strikes at 2010 Olympics

A team of Canadian security specialists yesterday said it is preparing strategies to defend against potential attacks involving weapons of mass destruction at the 2010 Winter Olympic Games in Vancouver, the Vancouver Sun reported. The threat of WMD attacks has long been a focus of the Vancouver 2010 Integrated Security Unit, a group overseen by the Royal Canadian Mounted Police. The team would not reveal any of its specific preparations for such incidents, threats that it said have taken high priority since Vancouver was awarded the 2010 Olympics four years ago. "If they are not thinking about this, then they're not doing their jobs," said security analyst David Harris, former strategic operations director for the Canadian Security Intelligence Service. "We are involved in a technological war with actual adversaries and we have seen ample evidence of medieval minds that are consumed with finding the means of intimidating and destroying civilization," he said. "If you get a lousy little radiological weapon made from material cast off by a hospital, and set off with dynamite, you have the possibility of an entire city being contaminated," Harris added, describing a potential radiological "dirty bomb" attack. "I am deeply concerned that



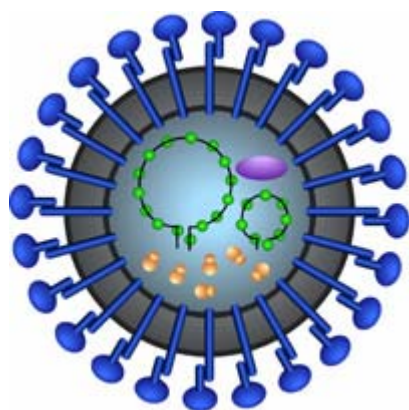
we might not be in a position to anticipate and deal realistically with these kinds of threats." More than 100 Canadian emergency responders and military personnel this week were briefed on potential attacks at the Olympics that could involve deadly materials such as ricin, mustard blister agent, sarin nerve agent or radiological and nuclear substances. They were also provided information on "multithreat detection systems" capable of scanning for WMD ingredients across large areas. "It is becoming good practice that when you have events that are high-profile, that attract a lot of media attention and a lot of people, that law enforcement agencies need to err on the side of caution," said Mark Deasey, a spokesman for security equipment supplier MSA.

#### **Απομόνωση νέου θανατηφόρου ιού ;**

Στη νότια Αφρική ανακαλύφθηκε νέος ιός που προκαλεί θανατηφόρους αιμορραγικούς πυρετούς. Ανήκει στην οικογένεια arenavirus και έχει προκαλέσει ήδη τον θάνατο τεσσάρων ατόμων και τη νόσηση πέμπτου. Οι ιοί αυτής της κατηγορίας είναι συνήθεις στα αποξηραμένα ούρα των τρωκτικών και μολύνουν τον άνθρωπο που θα τα εισπνεύσει.

#### **Deadly New Virus Thought to Be Contained**

A new virus that causes fatal hemorrhagic fevers has been discovered in southern Africa. It killed four people in South Africa and sickened a fifth, but health authorities believe the outbreak has been contained. The virus is a member of the arenavirus family, which also includes the causes of Lassa fever in West Africa and several South American fevers. While new viruses are often found in animals — a new blue-tongue virus was found in Swiss goats



last month, for example — it is relatively rare to discover one fatal to humans, like the SARS coronavirus in 2002 or the sin nombre hantavirus in 1993. How the first victim was infected is unknown, but arenaviruses are common in rodents; their dried urine, inhaled while sweeping, can transmit infection. Confirmation that it is a new virus was made by the National Institute for Communicable Diseases in South Africa and by the Centers for Disease Control and Prevention in Atlanta . The first victim was Cecilia Van Deventer, a safari tour booker in Lusaka , Zambia , who fell ill on Sept. 2 and was airlifted to Johannesburg . She apparently infected Hannes Els, the paramedic who accompanied her, and

Gladys Mthembu, a nurse tending her at the Morningside Medi-Clinic in a Johannesburg suburb. The fourth to die was Maria Mokubung, who cleaned the room where Ms. Van Deventer died on Sept. 14. According to South African news reports, the last death was originally misdiagnosed because the victim had tuberculosis and meningitis and was haemorrhaging and confused when her family sought medical care. A fifth victim, a nurse who cared for Mr. Els, was in critical condition but responded to early treatment with the antiviral drug Ribavirin. The disease progresses from flu symptoms to diarrhoea and a measles-like rash and then to respiratory and circulatory collapse. The authorities said they knew of no new cases but would wait until 21 days from the last infection to declare the outbreak over. Disease detective work was difficult, South African news media said. Because Ms. Van Deventer feared needles, little blood was drawn from her in Zambia ; also, her body was cremated before the alarm was raised. Tissue samples from later victims had to be taken carefully in a high-security laboratory that was under renovation and had to be reopened. Arenaviruses are named for their round sandy granules; “arena” is Latin for sand. A name for the new virus is being debated; Zambian authorities do not want one that will hurt tourism. According to a government news service, Zambia ’s first response to the outbreak was to

close its border with Congo , the former Zaire, where Ebola fever, which is not related, originated.

### **Θανατηφόρα μαθηματικά**

Πόσο ασφαλείς ήμαστε μετά την επίθεση με sarin στο Τόκιο (1995) και τις επιθέσεις με γράμματα-άνθρακα (2001); Αναφορά στα κεφάλαια που διατέθηκαν για την αύξηση της ασφάλειας των πολιτών και στην επιτήρηση βιολογικών προβλημάτων και στα μέχρι σήμερα συμπεράσματα αποτελεσματικότητας που απ' ό τι φαίνεται αν και βελτίωσαν αρκετά την εικόνα της κρατικής επαγρύπνησης δεν κατάφεραν να προσφέρουν ασφάλεια και αποτροπή παρόμοιων επιθέσεων στο μέλλον.

### **Bioterrorism's Deadly Math**

The death cult Aum Shinrikyo, which used sarin gas to horrific effect in the Tokyo subway system in 1995, had also sought to weaponize anthrax. The White House wanted to know: How much safer are Americans today than they were on October 4, 2001? That was the day when a photo editor in Florida became the first reported case of inhalation anthrax in America in decades. In what became biology's 9/11, five letters containing less than a quarter-ounce of anthrax total the equivalent of two pats of butter killed five people, infected 17, put more than 20,000 on antibiotics, and traumatized thousands more. Decontamination alone, including at the Hart Senate Office Building in Washington, took over three years and cost some \$200 million. With these disturbing facts in mind, and keenly aware that al-Qaida and other terrorist groups have sought germ weapons, the White House in 2006 quietly directed the Department of Homeland Security to commission studies from teams of researchers on what Americans had received for the billions of dollars spent on preparing for a bioterrorist attack since 2001. Taken together, the papers whose contents remain secret and whose authors have been asked by the DHS not to discuss them constitute what officials call the first recent assessment to focus exclusively on the issue. Though many of the papers were delivered to the DHS months ago, the net assessment remains unfinished and is likely to be handed over to the next administration, officials say. Still, its thrust is that while the estimated \$50 billion spent since 2001 on countering bioterrorism has left us far better prepared for a bioterrorist attack, we remain vulnerable and, in some ways, may even be losing ground. President Bush himself is said to have privately expressed frustration with the pace of biosecurity progress. At a meeting with cabinet members and other senior biodefense officials in the White House situation room on June 30, the president was briefed on yet another internal review of the administration's biodefense effort. After hearing that his agencies were unlikely to complete most of their 56 assigned tasks by the end of his term in office, says one official who was told about the meeting, Bush echoed the old Nike ad, in a display of irritated determination: Just do it! Officials and independent analysts agree that much has been done to prepare for an attack and mitigate its consequences. One of the most important advances is the least quantifiable. We understand the problem far better than we did before the anthrax mailings, says Kenneth Bernard, a former White House biodefense advisor in both the Clinton and Bush administrations. We now see the risks and our vulnerabilities far more clearly and have spent billions addressing them. Scientists know much more today than they did seven years ago about the importance of timely detection in any suspicious outbreak of disease, for example, and about the difficulty of delivering drugs and vaccines quickly and cheaply to affected populations. They also know more about the genomic structure of pathogens. Federally funded research has vastly improved scientific understanding of many entries in the government's list of some 70 preselect agents, the world's most contagious or lethal bacteria and viruses. Between 2001 and 2008, research funding by the National Institutes of Health on bioweapons agents increased from \$53 million to \$1.6 billion. At the same time, the Pentagon more than doubled its investment in biodefense research, to over \$1 billion. Bioforensics, too, has seen great advances. Using techniques that hadn't even been invented when the anthrax

letters arrived in 2001, for instance, scientists working with the FBI's Amerithrax investigation broke ground in microbial forensics, decoding the anthrax genome to trace the powder used in the letters to a flask labeled RMR-1029 that was stored at the Army Medical Institute of Infectious Diseases, the military's main biodefense lab, in Fort Detrick, Maryland. Another source of pride is the Strategic National Stockpile, a repository of drugs and antibiotics stored at sites throughout the country that can be sent to any city within 12 hours. Launched nearly a decade ago under the Clinton administration, the stockpile now contains enough antibiotics to treat more than 40 million Americans who might be exposed to anthrax, as well as other vaccines and drugs to combat a wide range of illnesses. One of these, smallpox, used to be a major concern. The World Health Organization had declared the disease eradicated in 1980, but scientists have long suspected that countries or labs might be hiding samples of the deadly virus that could fall into terrorist hands. But the Strategic National Stockpile has virtually removed the disease from the list of America's bioterrorism concerns, according to James W. LeDuc, associate director of the University of Texas Galveston National Laboratory. The number of smallpox-vaccine doses in the stockpile has increased from 90,000 before 9/11 to 300 million today. In the event of a smallpox outbreak today, we would have access to enough vaccine for every American, LeDuc says. It cost close to \$1 billion, but it is a tremendous insurance policy. Yet another advance is the crown jewel of the Department of Homeland Security biodefense effort: a vast research complex at Fort Detrick, an hour drive from the capital, centered on the new National Biodefense Analysis and Countermeasures Center. The NBACC already operates in temporary offices; its state-of-the-art, \$150 million, 160,000-square-foot headquarters is scheduled to be completed by March 2009. It will contain a large Biosafety Level 4 (BSL-4) laboratory, authorized to work on the world's most dangerous germs, such as Ebola and Marburg, for which neither vaccines nor cures yet exist. Its 150 scientists will characterize existing biological threats the bulk of its research identify future sources of potential vulnerability, and conduct the kind of bioforensic research that was used in Amerithrax in the event of future bioterrorist attacks. The agency's original plan was to operate the NBACC mostly in secret by classifying the entire center as a Sensitive Compartmented Information Facility (SCIF) a place where top-secret information and materials could be stored and discussed. But the NBACC's new director, J. Patrick Fitch, says that he intends to operate the lab with the greatest possible transparency. Eighty percent of our projects and their results will be unclassified, and we will encourage our scientists to publish, he says. While his facility would be SCIFable in an emergency, he intends to encourage as much interaction as possible between NBACC scientists and their American and foreign counterparts. In such a fast-moving area, he explains, it's self-defeating to isolate yourself. Fitch also denies reports that the lab plans to invent new superbugs just to see if it can be done. Our research must be grounded in indications of a real threat and in science, he says. And in another course correction, Fitch has appointed a panel of seven independent scientists to review the lab's work three times a year to ensure that its research is not only safe, but in compliance with the 1972 international treaty banning the acquisition, production, and development of germ weapons for anything other than defensive purposes. The panel has allayed some of the concerns of Tara Toole, director of the University of Pittsburgh's Center for Biosecurity, formerly a forceful critic of the lab and now a panel member. Fitch has made earnest efforts to be responsible and transparent and must continue on this path, says Toole. Taken together, all these achievements have dramatically altered the biodefense landscape since the anthrax letter attacks, many analysts agree. I don't think there's any doubt that we are safer today than we were seven years ago, said Michael Chertoff, the secretary of the Department of Homeland Security, at a forum on September 10, though he also warned Americans against complacency. Getting the ship of state to move 10 degrees to port is a big deal, says Bernard. You can always show how it might have been done better. But this has been tantamount to putting a man on the moon an exercise in imperfect incrementalism, as one administration official calls it. I really don't think we went down any major wrong roads, Bernard ventures. The perfect is inevitably the enemy of the good. But many experts believe

that the government has taken detours from the highway to better biosecurity. Some even question what had looked like unqualified successes. Consider the Amerithrax investigation. The impressive scientific achievement that enabled the FBI to trace the anthrax in the letters back to the RMR-1029 flask has been largely overshadowed by allegations that the bureau once again rushed to judgment in blaming Bruce E. Ivins, one of more than 100 researchers at the Army's biodefense lab who had access to the flask. Ivins' committed suicide before he could be indicted. According to several analysts who attended the bureau's classified briefings on its investigation, the case is based largely on the kind of circumstantial information that led the FBI to finger Steven J. Hatfill as the likely culprit five years ago, and would have been unlikely to hold up in court. Hatfill, who doggedly fought his designation as a person of interest in the press and the courts for five years, was recently vindicated when the FBI paid him \$5.8 million for the damage done to his reputation and career. Moreover, while there is no doubt that Ivins had psychological problems that ultimately prompted his suicide, his attorney and family say that being subjected to such intense federal scrutiny was also partly to blame. And those who worked most closely with the eccentric scientist at Fort Detrick have openly challenged the bureau's claim that Ivins was the perpetrator. Critics have called for more congressional hearings and even an independent commission to examine the entire Amerithrax investigation. In any event, the controversy over the case highlights the continuing difficulty of attribution identifying the source of an attack so that its sponsors can be punished and future strikes deterred even in an age of sophisticated bioforensics. Some scientists though they're in the minority view the proliferation of high-containment, top-security labs as a liability. Government officials like Anthony S. Fauci, the National Institutes of Health official who heads biodefense research, maintain that there was a critical shortage of such labs in 2001 and that the expansion will eventually result in better diagnostics and next-generation drugs. But Elisa D. Harris, a biosecurity expert at the University of Maryland, warned in the New York Times that the increase of high-containment labs and undertrained personnel was creating the very threat that it was intended to thwart. The correct response to the anthrax letter attacks, agrees Richard H. Ebright, a biochemist at Rutgers, should have been to curtail the number of people and institutions with access to the deadliest agents and to dramatically increase security surrounding such research. Keith Rhodes, chief technologist at the Government Accountability Office, also warned Congress last October that the nation was at greater risk because of the increase of BSL-4 labs from five before 2001 to 15 today. His agency estimated that at least 15,000 technicians were working with dangerous pathogens in BSL-3 and BSL-4 labs the vast majority of them for the first time and that, though no one knew exactly how many public and private BSL-3 labs were in operation, the number was surely in the thousands. Moreover, he added, articulating a more widely shared concern, though 12 federal agencies were involved in some aspect of biological research, no single agency was responsible for monitoring the labs and managing the risks. While most of the scientists in the field welcome the additional lab capacity, they do worry about the lack of direct federal oversight and insufficient safety and security standards at these new labs. We have not wildly expanded over what we need, Toole says. But we do need better training and to ensure that the labs and people in them conform to rigorous standards. As for the Strategic National Stockpile, its drugs will help combat bioterrorist attacks only if they can be delivered and distributed rapidly enough and at present, the government doubts that they can be. When we began in 2001, we could get antibiotics to people in 2.5 weeks, says a senior official. Today it takes four days, but that's still not good enough. We need to do it in two days. We've moved mountains, but not enough of them. Among the recommendations that President Bush endorsed in the June meeting was a proposal to support additional testing of drug and vaccine delivery by mail and other methods. For example, instead of using mainly public buildings as PODs (points of distribution), as New York and other cities currently plan, government might also use large commercial enterprises like Wal-Mart. But even then, who would administer the drugs after an attack? A federal scheme in 2003 to inoculate half a million health-care workers against smallpox foundered after Washington failed to provide guarantees that



workers who fell ill because of the vaccine would be compensated; only 40,000 workers volunteered to be vaccinated, 8 percent of the target. Supplying the Strategic National Stockpile is another challenge. BioShield is a multibillion-dollar fund to encourage the development of vaccines and other drugs for the stockpile. But major pharmaceutical companies have proved reluctant to develop drugs whose main customer would be the government, fearing that the market for such drugs is likely to be limited, absent an attack, and that research costs wouldn't be recouped. As for smaller firms, the government was forced in 2006 to cancel its contract with VaxGen, a biotech start-up that had never produced a vaccine before. VaxGen was to help supply 75 million more doses of a safer, second-generation anthrax vaccine, but repeatedly missed its deadlines. Even if drugs can be manufactured sufficiently and delivered promptly, they depend on our ability to detect an attack in the first place. In a project called BioWatch, Washington has deployed equipment in more than 30 cities to sniff out deadly germs in the air but because the sniffers' filters must be checked manually and transported to labs for diagnosis, detecting the germs can take up to 36 hours. New York City has been testing six automated sensors that detect the existence of an unwelcome pathogen more quickly the only such units yet deployed in the nation. We want to know when something happens as soon as it happens, says Dani-Margot Zavasky, an infectious-disease specialist who advises the NYPD on WMD-related medical issues. But the Department of Homeland Security has rejected the city's appeal for more units, which last September led police commissioner Raymond W. Kelly, for whom counterterrorism is a religion, to berate BioWatch's anemic budget and the low priority that the federal government places on biosurveillance. (Amy Kudwa, a DHS spokesperson, counters that the department's investment of almost \$400 million in BioWatch proves its commitment to the detection effort.) Then there are the federal government's bureaucratic mistakes. Numerous officials, advisors, and independent analysts criticize what they say is the government's lack of emphasis on the personnel needed to staff labs, produce drugs, and create and operate detectors and other expensive technology. It is our passion for things, for quick technical fixes, gadgets and more labs, better detectors, that obscures our real needs and vulnerabilities, says Colonel David R. Franz, a former commander of the defense lab at Fort Detrick. Federal budgetary decisions have reflected this bias, health officials complain, with cuts almost invariably targeting not equipment but nurses, lab technicians, and other first responders' critical in the immediate aftermath of an attack. Complaints about the government's episodic focus on biosecurity are also common. While Washington threw money at biosecurity soon after the anthrax letter attacks, it took the White House almost three years to produce a blueprint for the nation's future biodefense program and that blueprint mandated that the net assessment be completed in four more years. Further, the White House didn't lay out a strategy for public health and medical preparedness for catastrophes until last October, Toole says. Although we're in better shape than we were before the anthrax attacks, biosecurity no longer seems to have national priority, says Richard Falkenrath, the NYPD deputy commissioner for counterterrorism, who previously coordinated biodefense in the Bush White House. A lack of coordination among federal agencies in biodefense preparations is another problem, critics say. The federal government has no single, central oversight to ensure that its departments many grants are financing research likely to result in useful drugs, vaccines, and equipment. It has, in sum, no obvious way to determine if the billions allocated to biodefense are being spent wisely. There is clearly a need to rethink how we would respond to a major terrorist event, says Penrose Parney Albright, a former senior defense official and national security expert, and for a biodefense management system that sets requirements and oversees agency programs to ensure they are responsive to those needs. Stories about federal turf battles abound, in particular, the dysfunctional split between the Department of Health and Human Services (DHHS) and that younger, bureaucracy-bound behemoth, the Department of Homeland Security. At a conference in Baltimore last August, scientists from the Centers for Disease Control and Prevention, a notoriously independent fiefdom within DHHS, disclosed that they no longer had confidence that the BioWatch monitors would detect the presence of

germs other than anthrax and plague a concern that they had not previously shared with Homeland Security, which is responsible for the monitors. And two key papers in the net assessment—one by Robert P. Kadlec, a physician who is now the White House’s senior director for biological defense policy, and another by Albright—say that America remains vulnerable partly because its early plans rested on unrealistic assumptions about the federal government’s role in responding to bioterrorism. After the anthrax mailings, we initially thought that because all crises are local, our states and high-value-target cities would be able to manage a serious or sustained attack if they received enough federal dollars to help them prepare, says an official privy to the ongoing debate in Washington. We now know, as Hurricane Katrina demonstrated, that the federal government would have to take the lead in a true bioterror emergency. But the feds aren’t yet prepared for taking that lead. While they are ready to deliver an emergency supply of vaccine from the stockpile to a state, say, they still have no plans in place to deploy the army or order governors to send the National Guard to help with distribution of the vaccine. DHS officials say that they have plans and guidelines in place to help cities respond to bioterrorism, but city officials’ call these plans vague and nonoperational. Two of the papers written for the net assessment discuss New York City in particular, and their conclusions are apparently grim. One, a 50-page study of New York’s response plans and its decision sequence in the event of an attack, was written by Edward Hamilton, a former New York deputy mayor, and Terrance Leighton, a scientist at Children’s Hospital Oakland Research Institute in California. According to experts who described the study, it found that despite New York’s extensive plans and preparations, the city would be severely challenged by a major anthrax attack and would have difficulty recovering. Officials who had read the papers said that neither New York nor any other American city had plans that could manage a true catastrophe. The city would struggle to distribute drugs and transport public health emergency workers, since contamination would probably close its subways. The city has no decontamination plans; decontaminating skyscrapers would be a forbidding challenge; and there are no federal standards on how clean an area must be before it can be reoccupied. No locality can set such standards, one expert says. This is yet another federal function that has not been done, and it is not trivial. The Hamilton-Leighton study builds on earlier work by Lawrence Wein, a Stanford University business school professor. In 2003, he calculated that a large aerosolized anthrax attack in New York might result in 100,000 deaths, even if early cases were successfully diagnosed and drugs quickly delivered and taken. Two years later, he calculated that decontaminating New York by traditional methods could cost well over \$20 billion and take 314 years. Wein has also argued that current plans for distribution of antibiotics from PODs could result in delays costing up to 10,000 lives a day. In a new study for the net assessment, experts say, Wein urges the government to consider distributing antibiotics before an attack, or after one, through a variety of alternative methods including by mail to people’s homes, the approach he endorsed in his earlier work. The government could encourage postal workers to come to work a recent DHHS study predicts absentee rates of some 40 percent during a severe pandemic by guaranteeing them and their families’ early doses of antidotes. New York officials, however, doubt that drugs could be delivered by the postal system; they fear that postal workers would stay home regardless, and that New York would be unable to provide sufficient security for those who did show up. One bright spot is that New York has bolstered the federal BioWatch initiative by investing heavily in its own biological surveillance programs. The city electronically monitors everything from over-the-counter drug sales to hospital entries to emergency-clinic visits, says Isaac B. Weisfuse, New York’s deputy commissioner of public health, and the city’s 6,000-person health department is widely regarded as among the nation’s best. But technologically speaking, most public health networks lag a decade behind New York and can afford neither the technology nor the personnel in which the city has invested. The challenge grows larger each day as the biotech revolution spreads skills and knowledge around the globe. Margaret Hamburg, a physician who served in senior health posts in the federal government and in New York City, calls the explosion of biotechnology frightening. In a

speech last September, she speculated on a variety of weapons, some already existent and others still being researched, that foes might deploy one day: aerosol technology to deliver infectious agents more efficiently into the lungs; gene therapy vectors that could cause a permanent change in an infected person's genetic makeup; stealth viruses that could lie dormant in victims until triggered; and biological agents intentionally engineered to be resistant to available antibiotics or evade immune response. Those who regard such weapons as permanently beyond terrorists' capability should bear in mind that techniques that were theoretical just a decade ago can now be performed by high school chemistry students. Recent research by former Navy secretary and now Barack Obama advisor Richard J. Danzig drives the point home. While it was known that Aum Shinrikyo, the Japanese group that released nerve gas into the Tokyo subway in 1995, had experimented with botulism and anthrax and had sought to obtain Ebola, scientists once believed that the group's efforts to weaponize anthrax had failed because it had relied on a harmless vaccine strain. But Danzig's recent interviews with cult members in Japan suggest that over a decade ago, Aum nearly succeeded in making a benign strain lethal through genetic modification. No one should take comfort in Aum's failure, said Hamburg. The tools of biotechnology have jumped light-years since then. Hamburg's observation underscores the ongoing need for intelligence about America's rivals and enemies in fighting bioterrorism, an ounce of prevention really is worth a pound of cure, and our first line of defense against a devastating biological attack is still the intelligence community, whose knowledge of what is being cooked up in foreign laboratories remains inadequate. In bioterrorism, warns Franz, intentions are more important than capabilities. Should an attack occur, there is no question that our capacity to respond, while improved, would still fall short. What we have been trying to prepare for is obviously unprecedented, says one senior official. Pandemics are tough enough, and for those there are precedent the 1918 flu and even seasonal outbreaks. It's so much harder to prepare for something you never experienced. You are obviously going to make some mistakes.

### Ο πόλεμος κατά του Δάγκειου Πυρετού

Ο Δάγκειος Πυρετός που προκαλείται από τα κουνούπια (*Aedes aegypti*) έχει σχετικά χαμηλό ποσοστό θνητότητας – περίπου 2.5% σε νοσηλευόμενους ασθενείς. Όμως επειδή απαιτείται συνεχής και συστηματική παρακολούθηση των ατόμων που νοσούν, είναι μια από τις πλέον πολυέσυχες παθήσεις και προκαλεί περίπου 500.000 νοσοκομειακές νοσηλείες ετησίως παγκοσμίως. Ο πυρετός εκδηλώνεται σπάνια στις ΗΠΑ και την Ευρώπη, μπορεί όμως να αποτελέσει σημαντική απειλή για της ένοπλες δυνάμεις που επιχειρούν στο εξωτερικό (ΝΑ Ασία και Αφρική) και καθιστούν αναγκαία την παρασκευή αποτελεσματικών εμβολίων.

### The War on Dengue Fever

There was little that doctors could do for a 3-year-old boy brought to Bangkok's main children's hospital two weeks ago with dengue fever. Like thousands before him, he had reached the most dangerous phase of the disease, dengue shock syndrome, and he died of internal bleeding and organ failure three days after being admitted. Directly across the street, in the United States Army's largest overseas medical research laboratory, military scientists are offering hope for future generations: a vaccine. Developed after decades of trying, it is one of two



experimental vaccines that experts believe may be commercially available by the middle of the next decade. Dengue (pronounced DENG-ee), a mosquito-borne illness once known as

breakbone fever for its intense joint and muscle pain and crushing headaches, has a relatively low death rate — about 2.5 percent of hospitalized patients, the World Health Organization reports. But because patients can require constant, careful monitoring, it is one of the costliest diseases in tropical countries. Each year, it leads to about 500,000 hospitalizations around the world. Dengue is seldom seen in the United States or Europe, though it is the second-most common cause (after malaria) of feverish symptoms for Western tourists returning from developing countries. But it is important to the Army: American soldiers have contracted dengue as recently as the 1990s, on missions in Haiti and Somalia. So it is one of the tropical diseases that are the focus of research here at the Armed Forces Research Institute of Medical Sciences, which the Army has operated with the Royal Thai Army for five decades. The research facility, which employs several hundred people, is housed in an unremarkable 1960s building alongside a greasy alley where food vendors hawk fried grasshoppers and freshly mashed papaya salad. “There’s no dengue in Kansas,” said Col. James W. Boles, the commander at the laboratory. “No malaria, either. That’s why we are here.” In wars past, disease has often proved a greater foe than opposing armies. During the Anglo-Boer War in South Africa in the late 19th century, more soldiers died of typhoid than in battle. Thousands of cases of hepatitis during the Vietnam war among soldiers spurred Army researchers to help develop two of the vaccines now in use to prevent hepatitis A and B. “All we care about is that we get a vaccine that protects soldiers,” said Lt. Col. Stephen J. Thomas, a medical doctor who is director of dengue vaccine development in the Bangkok laboratory. “Fortunately a lot of our concerns are also global health concerns.” For many years, the leading drugs used to treat malaria were developed by the Army. Today research on tropical diseases is spread across a broader constellation; in the hunt for a dengue vaccine, money and research have come from the Thai government, non-profit organizations like the Bill and Melinda Gates Foundation, and drug companies like GlaxoSmithKline, which is working with the Army. The other vaccine at an advanced stage of development is being jointly developed by the French drug company Sanofi-Aventis and a Thai university on the same Bangkok Street as the Army lab. “We’re further along with the dengue vaccine than we’ve ever been,” said Duane J. Gubler, director of the emerging infectious diseases department of the Duke-N.U.S. Graduate Medical School in Singapore. “There’s a good possibility that we’ll have a vaccine in five to seven years.” The dengue virus is transmitted mainly by a mosquito called *Aedes aegypti*, which survives on human blood. *Aedes* rarely travels more than about 100 yards from its birthplace and thrives in populated areas. The mosquito can breed in something as small as a soda bottle, but its ideal breeding conditions are large containers common in many parts of Southeast Asia to store drinking water. (Unlike other mosquitoes, *Aedes aegypti* prefers clean water, according to Thomas W. Scott, a professor at the University of California, Davis, who is a leading expert on the species.) The mosquito cannot survive freezing weather, and though it is endemic to some parts of the United States, mainly the South, experts say good sanitation practices have kept it from spreading the dengue virus. It commonly lives inside people’s homes, lingering in closets or curtains. The World Health Organization estimates that 50 million people are infected every year. But most of those infected, perhaps as many as 90 percent, experience only minor flu like symptoms or none at all. In more serious cases, like that of the boy who died here last month, symptoms include severe headaches, rapid onset of a high fever, debilitating joint and muscle pain, nausea, vomiting and internal bleeding. Generally, though, dengue is considered treatable as long as patients are brought to the hospital on time and the disease is properly diagnosed. Scientists believe the disease has existed for centuries — an outbreak appears to have occurred in Philadelphia in 1780 — but dengue has become more common and more virulent over the past half-century. In 1970, only nine countries were known to have had epidemics of the most serious form of the disease, dengue hemorrhagic fever. By the mid-1990s that number had quadrupled, and experts say a quirk makes the disease particularly well adapted to an age of air travel and international trade. There are four types of dengue virus. Patients who have been infected with one of them are believed to develop immunity to that type only — and,

paradoxically, are more vulnerable to dengue hemorrhagic fever if they are exposed to a second type. The four types have intermixed as people carried them on airplanes to far-flung places; outbreaks of the hemorrhagic fever have been traced to specific flight paths and trade routes. “What we’ve done is provided the ideal mechanism for these viruses to move around the world,” said Dr. Gubler, who has researched dengue for nearly four decades. It was probably soldiers who caused the original spread of dengue hemorrhagic fever around Southeast Asia, during World War II. “You had a movement of soldiers from England, the U.S., Australia and Japan,” said Dr. Suchitra Nimmannitya, a pioneer in dengue research who developed a handbook on how to treat the disease. “Soldiers flew from city to city.” A Japanese scientist first isolated the virus during the war, and a United States Army physician, Albert Sabin, made the discovery that there were distinct virus types. (Dr. Sabin went on to help develop the polio vaccine.) “Dengue is very unique,” said Dr. Harold S. Margolis, formerly of the Centers for Disease Control and Prevention and now director of the Pediatric Dengue Vaccine Initiative, a non-profit organization based in South Korea. “I’ve done a lot of infectious-disease work over the years, and dengue is probably one of the most complicated.” The development of a vaccine is especially difficult because it will need to counter all four types of virus. “If dengue was a single virus we would have had a vaccine already, for sure,” said Dr. Jean Lang, director of research and development at Sanofi’s emerging vaccine program. Sanofi’s dengue vaccine, which will undergo trials in 4,000 children in Thailand in a few months, is one of the first vaccines to be produced using genetic engineering. The Army’s vaccine, which is at a similar stage of development and has been tested on volunteers in the United States, Puerto Rico and Thailand, was produced using live attenuated viruses, a more traditional technique. The two or three doses, spaced months apart, are administered by injection. Experts say the wide array of researchers involved — some with profit motives and others without — increases the chances of success and could help make the vaccine affordable to people in developing countries. “We have always tried to broaden the R.&D. base,” said Joachim Hombach, who coordinates vaccine research at the World Health Organization in Geneva. “At the end of the day, what drives down the price of the product is competition.”

### **Η φρίκη του απεμπλουτισμένου ουρανίου στο Ιράκ –παγκόσμια απειλή**

Η μαζική (330 τόνοι – κατ’ άλλους 820 τόνοι), αλόγιστη και κατά πολλούς παράνομη χρήση πυρομαχικών απεμπλουτισμένου ουρανίου στο Ιράκ από τις αμερικανικές δυνάμεις, αποτελεί απειλή για την παγκόσμια υγεία καθώς η εκπεμπόμενη ραδιενέργεια επιμένει για πάνω από 4.500.000.000 χρόνια και μεταφερόμενη με τον αέρα μπορεί να προκαλέσει λευχαιμία, καρκίνο, εγκεφαλικές βλάβες και γενετικές ανωμαλίες σε νεογνά. Το ουράνιο που ενσωματώθηκε στο ιρακινό έδαφος μπορεί να προκαλέσει πάνω από μισό εκατομμύριο θανάτους από καρκίνο στο Ιράκ στα επόμενα 10 χρόνια.

### **The horror of U.S. depleted uranium in Iraq threatens the world**

“I’m horrified. The people out there — the Iraqis, the media and the troops — risk the most appalling ill health. And the radiation from depleted uranium can travel literally anywhere. It’s going to destroy the lives of thousands of children, all over the world. We all know how far radiation can travel. Radiation from Chernobyl reached Wales and in Britain you sometimes get red dust from the Sahara on your car.” The speaker is not some alarmist doomsayer. He is Dr. Chris Busby, the British radiation expert, Fellow of the University of Liverpool in the Faculty of Medicine and UK representative on the European Committee on Radiation Risk, talking about the best-kept secret of this war: the fact that, by illegally using hundreds of tons of depleted uranium (DU) against Iraq, Britain and America have gravely endangered not only the Iraqis but the whole world. For these weapons have released deadly, carcinogenic and mutagenic radioactive particles in such abundance that — whipped up by sandstorms and carried on trade winds — there is no corner of the globe they cannot penetrate

— including Britain. For the wind has no boundaries and time is on their side: the radioactivity persists for over 4,500,000,000 years and can cause cancer, leukemia, brain damage, kidney failure and extreme birth defects — killing millions of every age for centuries



to come. A crime against humanity which main the eyes of historians, rank with the worst atrocities of all time. Yet, officially, no crime has been committed. For this story is a dirty story in which the facts have been concealed from those who needed them most. It is also a story we need to know if the people of Iraq are to get the medical care they desperately need, and if our troops, returning from Iraq, are no to suffer as terribly as the veterans of other conflicts in which depleted uranium was used. 'Depleted' uranium is in many ways a misnomer. For 'depleted' sounds weak. The only weak thing about depleted uranium is its price. It is dirt cheap, toxic waste from nuclear power plants and bomb production. However, uranium is one of earth's heaviest elements and DU packs a Tyson's punch, smashing through tanks, buildings and bunkers with equal ease, spontaneously catching fire as it does so, and burning people alive. 'Crispy critters' is what U.S. servicemen call those unfortunate enough to be close. And, when John Pilger encountered children killed at a greater distance he wrote: "The children's skin had folded back, like parchment, revealing veins and burnt flesh that seeped blood, while the eyes, intact, stared straight ahead. I vomited." The millions of radioactive uranium oxide particles released when it burns can kill just as surely, but far more terribly. They can even be so tiny they pass through a gas mask, making protection against them impossible. Yet, small is not beautiful. For these invisible killers indiscriminately attack men, women, children and even babies in the womb — and do the gravest harm of all to children and unborn babies. Doctors in Iraq have estimated that birth defects have increased by 2-6 times, and 3-12 times as many children have developed cancer and leukemia since 1991. Moreover, a report published in *The Lancet* in 1998 said that as many as 500 children a day are dying from these sequels to war and sanctions and that the death rate for Iraqi children under 5 years of age increased from 23 per 1000 in 1989 to 166 per thousand in 1993. Overall, cases of lymphoblastic leukemia more than quadrupled with other cancers also increasing "at an alarming rate". In men, lung, bladder, bronchus, skin and stomach cancers showed the highest increase. In women, the highest increases were in breast and bladder cancer, and non-Hodgkin's lymphoma. On hearing that DU had been used in the Persian Gulf in 1991, the UK Atomic Energy Authority sent the Ministry of Defense a special report on the potential damage to health and the environment. It said that it could cause half a million additional cancer deaths in Iraq over 10 years. In that war the authorities only admitted to using 320 tons of DU — although the Dutch charity LAKA estimates the true figure is closer to 800 tons. Many times that may have been spread across Iraq by this war. The devastating damage this entire DU will do to the health and fertility of the people of Iraq now, and is beyond imagining. We must also count the many thousands of miscarried babies. Nobody knows how many Iraqis have died in the womb since DU contaminated their world. But it is suggested that troops who were only exposed to DU for the brief period of the war were still excreting uranium in their semen 8 years later and some had 100 times the so-called 'safe limit' of uranium in their urine. The lack of government interest in the plight of veterans of the 1991 war is reflected in a lack of academic research on the impact of DU, but informal research has found a high incidence of birth defects in their children and that the wives of men who served in Iraq have three times more miscarriages than the wives of servicemen who did not go there. Since DU darkened the land, Iraq has seen birth defects which would break a

heart of stone: babies with terribly foreshortened limbs, intestines outside their bodies, huge bulging tumors where their eyes should be, or a single eye-like Cyclops, or without eyes, or without limbs, and even without heads. Significantly, some of the defects are almost unknown outside textbooks showing the babies born near A-bomb test sites in the Pacific. Doctors' report that many women no longer say "Is it a girl or a boy?" but simply, "Is it normal, doctor?" Moreover, this terrible legacy will not end. The genes of their parents may have been damaged forever, and the damaging DU dust is ever present. What the governments of America and Britain have done to the people of Iraq, they have also done to their own soldiers in both wars. And they have done it knowingly. For the battlefields have been thick with DU and soldiers have had to enter areas heavily contaminated by bombing. Moreover, their bodies have not only been assaulted by DU but also by a vaccination regime which violated normal protocols — experimental vaccines, nerve agent pills and organophosphate pesticides in their tents. Yet, though the hazards of DU were known, British and American troops were not warned of its dangers. Nor were they given thorough medical checks on their return — even though identifying it quickly might have made it possible to remove some of it from their body. Then, when a growing number became seriously ill, and should have been sent to top experts in radiation damage and neurotoxins, many were sent to a psychiatrist. Over 200,000 U.S. - troops who returned from the 1991 war are now invalids with ailments officially attributed to service in Iraq — that's British government's failure to assess fully the health of returning troops, or to monitor their health, means no one even knows how many have died or become gravely ill since their return. However, Persian Gulf veterans' associations say that, of 40,000 or so fighting fit men and women who saw active service, at least 572 have died prematurely since coming home and 5000 may be ill. An alarming number are thought to have taken their own lives, unable to bear the torment of the innumerable ailments which have



combined to take away their career, their sexuality, their ability to have normal children and even their ability to breathe or walk normally. As one veteran puts it, they are "on DU death row, waiting to die". Whatever other factors there may be, some of their illnesses are strikingly similar to those of Iraqis exposed to DU dust. For example, soldiers have also fathered children without eyes. And, in a group of eight servicemen whose babies lack eyes seven are known to have been directly exposed to DU dust. They too have fathered children with stunted arms and rare abnormalities classically associated with radiation damage. They too seem prone to cancer and leukemia. Tellingly, so are EU soldiers who served as peacekeepers in the Balkans, where -DU was also used. Their leukemia rate has been so high that several EU governments have protested the use of DU. Despite all that evidence of the

harm done by DU, governments on both sides of the Atlantic have repeatedly claimed that as it emits only 'low level' radiation, DU is harmless. Award-winning scientist, Dr. Rosalie Bertell who has led UN medical commissions, has studied 'low-level' radiation for 30 years. She has found that uranium oxide particles have more than enough power to harm cells, and describes their pulses of radiation as hitting surrounding cells 'like flashes of lightning' again and again in a single second. DU radioactivity persists for over 4,500,000,000 years killing millions of every age for centuries to come. This is a crime against humanity which may rank with the worst atrocities of all time, Like many scientists worldwide who have studied this type of radiation, she has found that such 'lightning strikes' can damage DNA and cause cell mutations which lead to cancer. Moreover, these particles can be taken up by body fluids and travel through the body, damaging more than one organ. To compound all that, Dr. Bertell has found that this particular type of radiation can cause the body's communication systems to break down, leading to malfunctions in many vital organs of the body and to many medical problems. A striking fact, since many veterans of the first Persian Gulf War suffer from innumerable, seemingly unrelated, ailments. In addition, recent research by Eric Wright, Professor of Experimental Hematology at Dundee University, and others, has shown two ways in which such radiation can do far more damage than has been thought. The first is that a cell which seems unharmed by radiation can produce cells with diverse mutations several cell generations later. (And mutations are at the root of cancer and birth defects.) This "radiation- induced genomic instability" is compounded by "the bystander effect" by which cells mutate in unison with others which have been damaged by radiation — rather as birds swoop and turn in unison. Put together, these two mechanisms can greatly increase the damage done by a single source of radiation, such as a DU particle. Moreover, it is now clear that there are marked genetic differences in the way individuals respond to radiation — with some being far more likely to develop cancer than others. So the fact that some veterans of the first Persian Gulf War seem relatively unharmed by their exposure to DU in no way proves that DU did not damage others. That the evidence from Iraq and from our troops, as well as the research findings of such experts, has been ignored may be no accident. A U.S. report, leaked in late 1995, allegedly says, the "potential for health effects from DU exposure is real; however it must be viewed in perspective . . . the financial implications of long-term disability payments and healthcare costs would be excessive." Clearly, with hundreds of thousands gravely ill in Iraq and at least a quarter of a million UK and U.S. troops seriously ill, huge disability claims might be made not only against the governments of Britain and America if the harm done by DU were acknowledged. There might also be huge claims against companies making DU weapons and some of their directors are said to be extremely close to the White House. How close they are to Downing Street is a matter for speculation, but arms sales make a considerable contribution - to British trade. So the massive whitewashing of DU over the past 12 years, and the way that governments have failed to test returning troops — seemed to disbelieve them, and' washed their hands of them — may be purely to save money. The possibility that financial considerations have led the governments of Britain and America to cynically avoid taking responsibility for the harm they have done, not only to the people of Iraq but to their own troops, may seem outlandish. Yet DU weapons weren't used by the other side and no other explanation fits the evidence. For, in the days before Britain and America first used DU in war its hazards were no secret. One American study in 1990 said DU was "linked to cancer when exposures are internal, [and to] chemical toxicity-causing kidney damage". While another openly warned that exposure to these particles under battlefield conditions could lead to cancers of the lung and bone, kidney damage, non-malignant lung disease, neurocognitive disorders, chromosomal damage and birth defects. In 1996 and 1997 UN Human Rights Tribunals condemned DU weapons for illegally breaking the Geneva Convention and classed them as "weapons of mass destruction", "incompatible with international humanitarian and human rights law". Since then, following leukemia in European peacekeeping troops in the Balkans and Afghanistan (where DU was also used), the EU has twice called for DU weapons to be banned. Yet, far from banning DU, America and



Britain stepped up their denials of the harm from this radioactive dust as more and more troops from the first Persian Gulf War and from action and peacekeeping in the Balkans and Afghanistan have become seriously ill. This is no coincidence. In 1997, while citing experiments by others in which 84 percent of dogs exposed to inhaled uranium died of cancer of the lungs, Dr. Asaf Durakovic, then Professor of Radiology and Nuclear Medicine at Georgetown University in Washington, was quoted as saying, the “[U.S. government’s] Veterans Administration asked me to lie about the risks of incorporating depleted uranium in the human body”. He concluded, “uranium does cause cancer, uranium does cause mutation, and uranium does kill. If we continue with the irresponsible contamination of the biosphere, and denial of the fact that human life is endangered by the deadly isotope uranium, then we are doing disservice to ourselves, disservice to the truth, disservice to God and to all generations who follow”. Not what the authorities wanted to hear and his research was suddenly blocked. During 12 years of ever-growing British whitewash the authorities have abolished military hospitals, where there could have been specialized research on the effects of DU and where expertise in treating DU victims could have built up. And, not content with the insult of suggesting the gravely disabling symptoms of Persian Gulf veterans are imaginary, they have refused full pensions to many. For, despite all the evidence to the contrary, the current British House of Commons briefing paper on DU hazards says “it is judged that any radiation effects from possible exposures are extremely unlikely to be a contributory factor to the illnesses currently being experienced by some Persian Gulf war veterans”. Note how over a quarter of a million sick and dying U.S.: and UK vets are called some’. Britain and America not only used DU in this year’s Iraq war, they dramatically increased its use — from a minimum of 320 tons in the previous war (1991) to a minimum-of 1500 tons in this one (2003). And this time the use of DU wasn’t limited to anti-tank weapons — as it had largely been in the previous Persian Gulf war — but was extended to the guided missiles, large bunker busters and 2000-pound mega-bombs used in Iraq’s cities. This means that Iraq’s cities have been blanketed in lethal particles — any one of which can cause cancer or deform a child. In addition, the use of DU in huge bombs, which throw the deadly particles higher and wider in huge plumes of smoke, means that billions of deadly particles have been carried high into the air — again and again and again as the bombs rained down — ready to be swept worldwide by the winds. The Royal Society has suggested the solution is massive decontamination in Iraq. That could only scratch the surface. For decontamination is hugely expensive and, though it may reduce the risks in some of the worst areas, it cannot fully remove them. For DU is too widespread on land and water. How do you clean up every nook and cranny of a city the size of Baghdad? How can they decontaminate a whole country in which microscopic particles, which cannot be detected with a normal Geiger counter, are spread from border to border? And how can they clean up all the countries downwind of Iraq, and indeed, the world? So there are only two things we can do to mitigate this crime against humanity. The first is to provide the best possible medical care for the people of Iraq, for our returning troops and for those who served in the last Persian Gulf war and, through that, minimize their suffering. The second is to relegate war, and the production and sale of weapons, to the scrap heap of history- along with slavery and genocide. Then, and only then, will this -crime against humanity be expunged, and the tragic deaths from this war truly bring freedom to the people of Iraq, and of the world. Britain and America not only used DU in this year’s Iraq war, they dramatically increased its use — from a minimum of 320 tons in the previous war (1991) to a minimum of 1500 tons in this one And this time the use of DU wasn’t limited to anti-tank weapons — as it had largely been in the previous Persian Gulf war — but was extended to-the guided missiles, large bunker busters and 2000 pound mega-bombs used in Iraq’s cities.

#### **Ανιχνευτές ραδιενέργειας σε νοσοκομείο**

Στο μεγαλύτερο ιδιωτικό νοσοκομείο (Washington Hospital Center) της πρωτεύουσας των ΗΠΑ – δυναμικότητας 926 κλινών, τοποθετήθηκαν πρόσφατα εξελιγμένοι ανιχνευτές ραδιενέργειας

για το ενδεχόμενο πυροδότησης βρώμικης βόμβας. Οι εν λόγω ανιχνευτές θα μπορούν να διακρίνουν αυτόματα τη ραδιενέργεια για τη θεραπεία του καρκίνου από τη ραδιενέργεια που αποτελεί δημόσιο κίνδυνο ενώ θα έχουν τη δυνατότητα αποστολής τηλεφωνικών μηνυμάτων συναγερμού στο προσωπικό του νοσοκομείου.

### US Hospital Installs Radiation Detectors

The largest private hospital in the nation's capital on Tuesday began installing sophisticated new radiation detectors in an effort to better prepare for a terrorist attack with a radiological "dirty bomb." The sensors, which will be placed out of public view at the 926-bed Washington Hospital Center, will immediately let doctors, nurses and other hospital staff know if someone contaminated with dangerous radiation enters the emergency room or other areas of the hospital. The goal is to prevent victims of an attack from compounding the disaster by contaminating the hospitals and emergency workers who are there to treat them. "If they're contaminated and you don't know it, you've got another enormous problem," says Susan Eckert, who is in charge of nurse preparedness at the hospital, which treated Pentagon victims of the 9/11 attacks. It also treated anthrax victims a month later. The sensors, which can differentiate between dangerous radiation and the radiation used in cancer treatments, will be tested for several months to see how well they work. They are designed not to trigger an alarm if patients -- such as those treated for cancer -- walk past. Other tests of radiation-detection equipment have been done at hospitals in Washington and in New York City, both of which are considered top terrorism targets. None has used sensors that can identify radioactive isotopes. The system can also send text messages to cellphones of hospital employees, notifying them of an alarm. The sensors also would go off if someone tried to take radioactive waste or material used for cancer treatments out of the hospital. This fall, the Homeland Security and Energy departments began a program to secure the machines that house radioactive material in hospitals to try to prevent someone from stealing it to make a bomb. Although a "dirty bomb" would not kill many people, it would cause sickness by spreading radiation. "This is an important potential threat ... and there are two different problems for a hospital: what comes in and what goes out," says former envoy to Iraq Paul Bremer, chairman of Splinternet Holdings. The company, based in Norwalk, Conn., makes the sensors being tested.

### Εμβολιασμός κατά της γρίπης στο αυτοκίνητο

Πολλές κλινικές και νοσοκομεία στο Las Vegas των ΗΠΑ προσφέρει η δυνατότητα εμβολιασμού κατά της γρίπης μέσα στα αυτοκίνητα των πολιτών καθώς αυτά διέρχονται από ειδικούς υγειονομικούς σταθμούς (drive-by flu shots) με απόδοση 300 ατόμων εντός 3 ½ ωρών. Αν και υπάρχουν εύλογες αντιρρήσεις για τη μεθοδολογία – άτομα αλλεργικά στο αυγό ή άτομα που έχουν ήδη εκδηλώσει πυρετό – αποτελεί μια πολύ καλή ιδέα για περιπτώσεις μαζικού εμβολιασμού του πληθυσμού σε περίπτωση επιδημίας ή πανδημίας.

### Drive-By Flu Shots



In Las Vegas, you can get cash, booze, even a wedding license at a drive-through, so why not a flu shot? With a record 140 million flu vaccinations expected to be administered this year in the U.S., hospitals and health clinics from Norwood, Mass., to Randolph County, Ala., have started offering drive-by shootings, using concern about the regular old flu to help prep for outbreaks of potentially far graver diseases like avian flu and anthrax. The curbside care is

simple: you pull up, read about the risks and sign a consent form, then bare your bicep and get a shot—all without leaving the driver's seat. In October in Lynchburg, Va., the Central Virginia Health District's first drive-by clinic served 300 patients in 3 1/2 hours. That's less than 45 seconds per vaccination (and no time cooped up in a room with possible germ spreaders). But critics say that the process is dangerous and that the last place you want to be if something goes wrong is speeding down the highway. It takes time to hash out the risk factors associated with flu shots, such as being allergic to eggs or already having a fever when you get vaccinated. "Vaccines are not innocuous," says Barbara Loe Fisher, president of the National Vaccine Information Center, a consumer-led nonprofit in Vienna, Va. "We don't support a drive-by as if you're ordering a bottle of spring water." Still, Dr. Kerry Gateley, Central Virginia's health director, says doctors' offices dole out the shots almost as quickly. The biggest risk, he adds, may be that some drivers get woozy after the shot. "If anybody was looking a little pale," he says, "we had a place for them to pull over." Reclining seat backs optional.

### **Νέο οπλικό σύστημα για χώρους αποθήκευσης όπλων μαζικής καταστροφής**

Σύμφωνα με πληροφορίες, το Πεντάγωνο διαθέτει ένα νέο όπλο για την καταστροφή χώρων (kinetic fireball incendiaries) που περιέχουν χημική ή βιολογικά όπλα – τις ροκετόσφαιρες (rocket balls). Οι σφαίρες αυτές περιέχουν καύσιμα ρουκετών και αναφλέγονται προκαλώντας την πλήρη καταστροφή του χώρου-στόχου (πχ. εργαστηρίου, υπόγειας αποθήκης) υφίστανται ήδη σε δύο μοντέλα – CrashPAD (για μαλακούς στόχους) και BLU-119/B Shredder (για καταφύγια και προστατευμένους στόχους).

### **Secret Rocket Balls Target WMD Bunkers**

The Pentagon has a new secret weapon to neutralize sites containing chemical or biological weapons: rocket balls. These are hollow spheres, made of rubberized rocket fuel; when ignited, they propel themselves around at random at high speed, bouncing off the walls and breaking through doors, turning the entire building into an inferno. The makers call them "kinetic fireball incendiaries." The Pentagon doesn't want to talk about them, but published documents show that the fireballs have undergone tests on underground bunkers. There are plenty of bombs which could destroy a lab, and bunker-busting weapons can tackle hardened



underground facilities. But blowing up weapons of mass destruction is not a good idea. Using high explosives is likely to scatter them over a wide area, which is exactly what you want to avoid. Two special high-temperature incendiary bombs — named "CrashPAD" and "Shredder" — were quietly rushed into service for the use against WMDs few years ago. CrashPAD is based on the Mk.84 bomb and is intended for soft targets; the BLU-119/B Shredder is a modified BLU-109 bunker-buster for hardened or underground targets. The filler for both is a combination of explosive

and incendiary, which is more effective than explosive alone, but hardly safe. An explosion causes overpressure and releases a plume of hazardous material. However, without any explosive the incendiary will not be adequately dispersed. The incendiary must also maintain the temperature for a prolonged period, to ensure that anything dangerous is destroyed. That means heating up the entire structure for more than just a few seconds. Existing incendiaries tend to burn fiercely but quickly. One solution is replacing the standard explosive or incendiary with a load of kinetic fireballs, described in this proposal. Each fireball is a hollow spherical shell with a hole in it; when the inside is ignited, the hole acts as a rocket nozzle. The kinetic fireballs eject an extremely high-temperature exhaust which will heat up the surrounding volume to over 1,000 F within seconds. Their random ricocheting around ensures

that they will fill any space they occupy, and they are capable of diffusing throughout a multiroom structure. This really is rocket science. The inventor, Kevin Mahaffy, was an engineer at Air Force Research Laboratory's Rocket Propulsion Division, and spent three years as the Chief of the Motor Branch overseeing solid and hybrid rocket propulsion. Mahaffy's company, Exquadrum Inc., has received contracts from the Pentagon's Defense Threat Reduction Agency, or DTRA, which is tasked with tackling WMD threats. The DTRA acknowledges that the fireball project progressed under an SBIR program completed in 2006. The culmination was a 2,000-pound BLU-109 bomb, filled with a payload of fireballs, and tested against a multiroom bunker. DTRA would not comment on any more recent developments. However, I discovered a later contract running from 2006 to 2008, which indicates that the fireballs were taken further — possibly into some kind of low-rate production. The DTRA declined to comment further and suggested that I try filing an Freedom of Information Act request — a polite way of telling me to go away. I contacted Mahaffy directly about the fireball technology, but he was understandably unable to comment even on uses not related to the DTRA work. The kinetic fireballs might be an effective way of dealing with chemical and biological WMDs safely. They might also be effective against nuclear facilities, as again they can effectively spread destruction throughout a complex without breaking it open and spreading radioactivity. Smaller fireball payloads have been suggested for shoulder-fired rockets and grenades for tactical use. The DTRA is known to be interested in a payload for the 84mm SMAW rocket launcher for agent defeat; at present, ground forces have no tactical options for dealing with a suspected chemical/biological lab operated by terrorists or others. They might find other uses for the fireballs as a "low collateral-damage technology." A warhead filled with fireballs offers a way to take out all the occupants of a building without causing it to collapse, and without damaging any adjacent structures. No blast, no fragmentation. Of course incendiary weapons can cause media and political backlash, but as the increasing deployment of thermobarics has shown, this need not be an obstacle. For the present kinetic fireball technology seems set to stay on the secret list. And if you're running a chem/bio weapons lab and assuming they won't risk attacking you — be afraid.

### Άμυνα ταχυδρομείων έναντι άνθρακα

Στο αγώνα για τη θωράκιση των ταχυδρομείων έναντι βιολογικών απειλών όπως ο άνθρακας, η νέα συσκευή Mail Defender αναμένεται να αποτελέσει σημαντικό βοήθημα καθώς καταστρέφει αποτελεσματικά κάθε είδους βιο-παθογόνα με τη βοήθεια τεχνολογίας μικροκυμάτων και υπεριώδους ακτινοβολίας.

### Mail Defender™ now available to combat "white powder" and fake anthrax bio-chemical assaults



BioDefense Corporation, producers of the new Mail Defender™ complete mailroom security solution, is on the front lines of combating bio-chemical assaults. "Incoming mail containing white powder discovered on October 30, 2008 at the Boston Herald, Christian Science Monitor and more than 100 media offices across the country are not 'hoaxes.' Rather, they are 'bio-chemical assaults,' with obvious intent to harm, disrupt, or even kill," said a BioDefense Corporation spokesperson. Reporters, editors, writers, bloggers and branch offices of major financial institutions are the bio-criminal's 'bull's eye.' The combination of a hotly contested election and continuing bad news about the global economy is partially responsible for this latest outbreak of assaults. Recent media tracking shows that coverage of

"anthrax" and "white powder" hoaxes number in the thousands every week. "Mail Defender, already hard at work at several high-level government and financial institutions, is the first line of defense against these criminal acts," the BioDefense spokesperson added. "A simple letter mailed for 42 cents should not have the power to disrupt and stop large organizations, unfairly tie up first-responder resources, and otherwise add to today's already anxiety-ridden environment," he said. Bio-chemical assaults happen continuously -- Mail Defender™ is a tested, proven disinfection technology. To combat this continual battering, BioDefense Corporation is now taking orders and shipping Mail Defender™. The easy-to-use system is safe, proven, and kills any bio-pathogen, as well as anthrax, smallpox and/or ricin -- all very dangerous substances. Mail Defender™ is an innovative combination of electronic energy, stainless steel and aluminum hardware, and advanced computer technology that processes up to approximately 200 pieces of mail -- in a disinfection cycle. The system combines Microwave and infrared energy, intense ultraviolet, and broadbeam light. A rotating barrel containing the incoming mail ensures even distribution of the energies during the decontamination process. A complex computer algorithm controls the energy sources and automatic safety features deliver ideal, controllable performance.

### Τσούχτρες κατά της τρομοκρατίας

Με βάση υλικό που υπάρχει στις θαλάσσιες τσούχτρες, επιστήμονες και μηχανικοί του Massachusetts Institute of Technology's (MIT) Lincoln Laboratory κατασκεύασαν βιοαισθητήρα που μπορεί να ανιχνεύσει βακτήρια ή ιούς στον αέρα σε χρόνο μικρότερο των 2 λεπτών.

### Jellyfish fight terrorism

Now, this innovative biosensor developed by scientists and engineers at Massachusetts Institute of Technology's (MIT) Lincoln Laboratory can identify harmful bacteria or viruses in the air in less than two minutes. Engineers invented a device to bring air



samples into contact with genetically engineered biosensors in the effort to detect dangerous biological agents. The technology uses multiple collections of altered cell antibodies, each collection designed to respond to a specific pathogen by releasing photons of a unique wavelength upon finding it. Detectors measure the photons' wavelengths and interpret the pathogens they represent. Anthrax, plague and small pox are some of the possible pathogens terrorists could use against us; but now, researchers

say jellyfish are helping prevent these kinds of attacks. From public transportation to federal and government buildings, experts are naming likely targets of bioterrorism. Now, this innovative biosensor developed by scientists and engineers at Massachusetts Institute of Technology's (MIT) Lincoln Laboratory can identify harmful bacteria or viruses in the air in less than two minutes. "It's at least ten times faster than any other automated sensor that's available," says James Harper, a biochemist and engineer at MIT.

### Θάνατος σε μικρά πακέτα

Οι μέλισσες και τα τρωκτικά ήταν πάντα στο οπλοστάσιο του ανθρώπου από την Παλαιολιθική Εποχή που οι πρωτόγονοι χρησιμοποιούσαν τις λεγόμενες «βόμβες μελισσών» (bee bombs) κατά των εχθρικών φυλών μέχρι τη διαβόητη Unit 731 των Ιαπώνων που χρησιμοποίησαν κατά των Κινέζων μολυσμένους με πανώλη αρουραίους. *Η ευρηματικότητα*

του ανθρώπου για να επιφέρει τον θάνατο είναι διαχρονική και ατέρμονος.

### Death comes in small packages

Little inspires human ingenuity, or overcomes moral scruples, like the desire for improved means of smiting one's enemies. From sharper swords to bigger bombs, soldiers have always sought an edge. And long before either swords or explosives existed, scholars believe, Paleolithic warriors were hurling "bee bombs"—nests of stinging insects—into enemy caves. That was 100,000 years ago, notes Jeffrey Lockwood, entomologist and author of *Six-Legged Soldiers* (Oxford UP), and it marked, of course, only the beginning. By the end of the Second World War, the Nazis had 30 million Colorado potato beetles ready to unleash on British crops, and Japan's Unit 731 had killed more people in China with infected fleas and flies than atomic bombs had killed in Japan. Less well known than bacteriological warfare, with which it is intimately linked—nothing delivers epidemic disease like an insect host—war by bug has left its mark on the historical record. Roman engineers liked to toss entire beehives into besieged cities, and defenders too deployed insects, along with boiling oil and large rocks. On



their south-facing sides, some medieval castles had bee boles, warm recesses attractive to hive builders, which ensured there would always be a ready source of six-legged defenders. Before the 20th century, however, insect conscripts never caused a fraction of the mortality that freelance bugs did. In the American Civil War, in which some 620,000 soldiers died, two-thirds were felled by

disease, most of it spread by insects. After scientists established the insect-disease role in epidemics, everything changed. The Japanese were the first to grasp the military implications. In the Russo-Japanese war of 1904 the Imperial army became the first in history to lose fewer men to sickness than to weapons. But the possibilities of knowledge always cut both ways with humans. It was the very strength of Japanese medical science—galvanized by a ruthless microbiologist named Shiro Ishii—that later unleashed the most horrific insect-fought war ever. Ishii set up shop in the puppet state of Manchuria to test his biowarfare theories on human guinea pigs. His Unit 731 grew to have a budget rivalling that of the Manhattan Project, and a staff of 10,000. At first, despite barbarous procedures—infected prisoners were vivisected so precise records of the disease's effects could be kept—Unit 731 was unable to kill people in sufficient numbers to impress the high command. Fragile pathogens tended to die off before initiating epidemics. Then Ishii had his conceptual breakthrough: insects, he realized, not only delivered diseases, they protected them en route. So Ishii devised a Dante-esque perpetual plague machine. A four-storey granary was built to attract, feed and house a rat colony. Rats were captured, infected with plague, and held immobile. Fleas were dumped from test tubes onto the rats' shaved stomachs. Once infected, they were harvested by semi-nude workers, whose bare skin gave them a chance to detect and brush off escaped fleas before they could bite. Infected fleas were then placed in incubators with uninfected rats and fleas. In this way Ishii ramped up monthly production to an astonishing 15 kg of plague fleas, 45 million individual fleas. It worked so well for Ishii—bombers dropped flea canisters on Chinese villages, sparking plague outbreaks that continued erupting into the 1950s—that he sought, and found, a related method to deliver something even more lethal. In May 1942, Japanese bombers attacked the city of Baoshan with standard explosives and a few ceramic

shells, known to Unit 731 as “maggot bombs.” They burst open on impact, disgorging their contents—houseflies in a slurry of cholera bacteria. The bombers came back three times that week, for the sole purpose of driving the sick into the countryside. The explosive bombs killed 10,000 in Baoshan, but the regional cholera epidemic took 200,000 lives. In all, Japanese biological warfare killed 580,000 Chinese, most by insect. There were war crimes trials in Tokyo after the war, as there were in Nuremberg, but Ishii and his men never appeared in court. He retired on a full military pension, while some of his staff rose to high positions—between 1947 and 1983, every head of the Japanese National Institute of Health, with one exception, had served in Unit 731. Why such leniency? The Americans, focused on a possible war with the Soviets—and seeking an edge—had cut a deal with Ishii in return for his research.

### Η Νόσος του Κόλπου είναι πραγματική

Πρόσφατη πολυσέλιδη αναφορά (Gulf War Illness and the Health of Gulf War Veterans Report), καταλήγει στο συμπέρασμα ότι η Νόσος του Κόλπου (Gulf War illness) είναι πραγματική και έχει όντως επιπτώσεις και σοβαρές συνέπειες στην υγεία του στρατιωτικού προσωπικού που συμμετείχε στις επιχειρήσεις στο Ιράκ. Η εν λόγω κλινική οντότητα χαρακτηρίζεται από επίμονα προβλήματα μνήμης και συγκέντρωσης, χρόνιες κεφαλαλγίες, διάχυτο πόνο, γαστρεντερικό προβλήματα και άλλες χρόνιες ανωμαλίες.

### Gulf War illness is real, new federal report says

An extensive federal report released Monday concludes that roughly one in four of the 697,000 U.S. veterans of the 1990-91 Gulf War suffer from Gulf War illness. That illness is a condition now identified as the likely consequence of exposure to toxic chemicals, including pesticides and a drug administered to protect troops against nerve gas. The 452-page report states that "scientific evidence leaves no question that Gulf War illness is a real condition with real causes and serious consequences for affected veterans." The report, compiled by a panel of scientific experts and veterans serving on the congressionally mandated Research Advisory Committee on Gulf War Veterans' Illnesses, fails to identify any cure for the malady. It also notes that few veterans afflicted with Gulf War illness have recovered over time. "Today's report brings to a close one of the darkest chapters in the legacy of the 1991 Gulf War," said Anthony Hardie, a member of the committee and a member of the advocacy group Veterans of Modern Warfare. "This is a bittersweet victory, [because] this is what Gulf War veterans have been saying all along," Hardie said at a news conference in Washington. "Years were squandered by the federal government ... trying to disprove that anything could be wrong with Gulf War veterans." The committee's report, titled "Gulf War Illness and the Health of Gulf War Veterans," was officially presented Monday to Secretary of Veterans Affairs James Peak. Noting that overall funding for research into Gulf War illness has declined dramatically since 2001, it calls for a "renewed federal research commitment" to "identify effective treatments for Gulf War illness and address other priority Gulf War health issues." According to the report, Gulf War illness is a "complex of multiple concurrent symptoms" that "typically includes persistent memory and concentration problems, chronic headaches, widespread pain, gastrointestinal problems, and other chronic abnormalities." The illness may also be potentially tied to higher rates of amyotrophic lateral



sclerosis (ALS) -- more commonly known as Lou Gehrig's Disease -- among Gulf War veterans than veterans of other conflicts. The illness is identified as the consequence of multiple "biological alterations" affecting the brain and nervous system. While it is sometimes difficult to issue a specific diagnosis of the disease, it is, according to the report, no longer difficult to identify a cause. The report identifies two Gulf War "neurotoxic" exposures that "are causally associated with Gulf War illness." The first is the ingestion of pyridostigmine bromide (PB) pills, given to protect troops from effects of nerve agents. The second is exposure to dangerous pesticides used during the conflict. The report does not rule out other possible contributors to Gulf War illness -- including low-level exposure to nerve agents and close proximity to oil well fires -- though it fails to establish any clear link. The report concludes there is no clear link between the illness and a veteran's exposure to factors such as depleted uranium or an anthrax vaccine administered at the time. "Gulf War illness isn't some imaginary syndrome," said Ken Robinson, the senior intelligence officer for the initial Department of Defense investigation into Gulf War illness in 1996-97. "This is real, and it has devastated families. Now is the time to restore the funding cuts that have been made in the Veterans Administration. Our mission has to be to ensure that these veterans get help and become whole again." Robinson noted that soldiers in the field today are not at risk for Gulf War illness, because the military is no longer using the PB pills or pesticides that led to the illness in 1990 and 1991. The report backs Robinson's conclusion, noting that no problem similar to Gulf War illness has been discovered among veterans from the conflict in Bosnia in the 1990s or in the current engagements in Afghanistan and Iraq. The committee report also backs Robinson's call for more effective treatments among veterans suffering from Gulf War illness. Noting that overall funding for research into Gulf War illness has declined dramatically since 2001, it calls for a "renewed federal research commitment" to "identify effective treatments for Gulf War illness and address other priority Gulf War health issues." Specifically, the report calls for at least \$60 million in new annual federal funding on research committed to improving the health of Gulf War veterans

#### **Φορητή συσκευή για την ανίχνευση σπορίων άνθρακα**

Μια νέα φορητή συσκευή (Scout) φιλοδοξεί να βάλει τέρμα στο χάος που προκαλεί το ενδεχόμενο παρουσίας σπορίων άνθρακα σε σκόνες. Τα αποτελέσματα θα είναι διαθέσιμα εντός λίγων λεπτών και η τεχνολογία ανίχνευσης βασίζεται στη χρήση υπεριώδους ακτινοβολίας και ειδικών αλγορίθμων ανίχνευσης ενώ η λειτουργία της συσκευής είναι εξαιρετικά απλή.

#### **Kiwi scanner promises to end anthrax hoax chaos**

A Christchurch company's invention of a hand-held scanner quickly and accurately identifies the presence of potentially lethal spores in powder samples promises to end the chaos of anthrax scares. The Scout, developed by Veritide and based on optical detection technology developed at the University of Canterbury, accurately identifies the presence of



potentially lethal spores in powder samples within minutes. Existing technologies and products take between 30 minutes and three days to do the same job. The testing is non-invasive using ultraviolet light and detection algorithms to identify bacterial spores and does not consume or destroy the sample being tested. A team led by Professor Lou Reinisch, Dean of Science at the University of Canterbury, who is also now part of Veritide's management team, invented the technology. Veritide CEO Andrew Rudge, the 2004 MacDiarmid Young Scientist of the Year, says the company has sales requests for all its



available Scouts from customers including hazardous materials teams in major US cities and US defence agencies. "Existing technologies rely on reagent-based wet chemistry," says Rudge. "They are typically unreliable and hard to use in real world situations and also destroy the suspicious sample in the analysis process, preventing follow up testing. "[The Scout] is simple to use. Analysis begins with the press of a single button and returns a result within minutes. That saves both time and money in terms of disruptions and evacuations, because security staff get immediate feedback on whether they are dealing with a hoax or the real thing." Ultimately, Veritide plans to have its technology tested at the "gold standard" facility for testing biological and chemical weapons, the US Army's Dugway Proving Ground. R&D is continuing to extend the Scout's detection capability to include other dangerous biological threats such as botox and ricin.

### **Νέα αναφορά επισημαίνει τον κίνδυνο πυρηνικής τρομοκρατίας**

Μια νέα αναφορά με τίτλο «Securing the Bomb 2008» υποδεικνύει ότι αν και έχει γίνει σημαντική πρόοδος για να μειωθεί ο κίνδυνος της πυρηνικής τρομοκρατίας, εξακολουθούν να υφίστανται κενά που καθιστούν άμεσα ορατό τον κίνδυνο απόκτησης πυρηνικών όπλων από τρομοκράτες.

### **New Report Calls Nuclear Terrorism Serious Risk**



The new report, called "Securing the Bomb 2008," says major progress has been made to reduce the danger of nuclear terrorism. The report warns, however, there are still major gaps in these efforts and says the risk of terrorists acquiring a nuclear weapon remains unacceptably high. The author of the report, Harvard professor Matthew Bunn, says the potential for a disastrous attack is very real. "That would incinerate the heart of a major city," he said. "It could turn the center of Washington, D.C. or the center of Manhattan into a smoking, radioactive ruin that would be unusable for decades to come. That would have profound and catastrophic effects on our society, really reverberating around the world." The study is the seventh annual report from Harvard University's Belfer Center for Science and International Affairs and was commissioned by the Nuclear Threat Initiative, a nonproliferation group based in Washington, D.C. The report details a series of events around the world in recent years it says highlights the risk of poor security at nuclear installations. These include an armed break-in at a South African site with hundreds of kilograms of highly enriched uranium, the arrest of a Russian colonel for soliciting bribes to overlook violations of nuclear security rules and the increasing terrorist threats amid the ongoing strife in Pakistan. The report says the materials for a nuclear bomb exist in hundreds of buildings in dozens of countries. Professor Bunn says there are currently about 130 research reactors around the world that still use highly enriched uranium for fuel. "I think they are a quite serious concern because many of these facilities have very minimal security measures," he said. "Some of them are on university campuses and other locations where it is really not plausible that you would ever have the kind of security that in my view is required when you are talking about potential nuclear bomb material." The report says there has been progress in the former Soviet Union in recent years. It says U.S.-sponsored security upgrades have been completed for 75 percent of the buildings that contain weapons-grade material and for about 65 percent of Russia's nuclear warhead sites. The study says major issues remain, however, ranging from insider theft and corruption to chronic underinvestment in nuclear security. The report also recommends expanding efforts to secure nuclear materials in China, India, Pakistan and South Africa. The study contains an agenda for the next U.S. president to prevent nuclear terrorism and Professor Bunn says President-elect Barack Obama

needs to accelerate efforts to combat the threat. "They really need a comprehensive strategy to prevent nuclear terrorism, starting with locking down nuclear stockpiles all over the world, making sure that every nuclear weapon, every kilogram of plutonium or highly enriched uranium, wherever it may be, is secure and accounted for," he said. Professor Bunn says the Obama administration should appoint a senior White House official, with direct access to the President, to supervise all efforts focused on preventing nuclear terrorism.

### Ο νέος καλύτερος φίλος του ανθρώπου ;

Ίσως οι αρουραίοι αποδειχτούν οι καλύτεροι φίλοι του ανθρώπου στον αγώνα του κατά των ναρκών και της φυματίωσης,!!!

### Mankind's new best friend?

Reviled as vermin through the ages, rats are becoming unlikely soldiers in the struggle against two scourges of the developing world: land mines and tuberculosis. In Mozambique, special squads of raccoon-size rats are sniffing out lethal explosive devices buried across the countryside, remnants of the country's anticolonial and civil wars of the last century. In neighboring Tanzania, teams of rats use their twitchy noses to detect TB bacteria in saliva samples from four clinics serving slum neighborhoods. So far this year, the 25 rats trained for the pilot medical project have identified 300 cases of early-stage TB - infections missed by lab technicians with their microscopes. If not for the rodents, many of these victims would have died and others would have spread the disease. "It's fair, I think, to call these animals 'hero rats,' " said Bart Weetjens, the Belgian conceiver of both programs. The rat squads, at first derided by some international aid officials as ridiculous, have won support from the World Bank and praise from the UN and land mine eradication groups. Now there are plans to deploy the creatures to Angola, Congo, Zambia, and other land mine-infested lands. The rats' "noses are far more sensitive than all current mechanical vapor detectors,"



Havard Bach, a mine-clearing specialist with the Geneva International Center for Humanitarian Demining, wrote in a study. Although rats make almost everyone's short list of horrors - associated with filth, disease, and destruction of food crops - they "are really nice creatures," according to Weetjens. "They are organized, sensitive, sociable, and smart," said the former product engineer in a telephone interview from Antwerp, Belgium, home base

for Apopo International, the nonprofit organization that trains and deploys the rats. In the 1990s, he journeyed to Africa to study land mine clearance techniques. He put his engineer's mind to the expensive, clumsy, and often risky methods employed to detect the lethal contraptions of metal and explosive that detonate underfoot. Land mines claim casualties for decades after the last shot is fired in a conflict; millions are strewn in former and present fighting zones across Africa, Asia, and Europe. The wickedly durable antipersonnel devices kill or maim thousands of people every year, mainly in the poorest of countries. Removal of the weapons is a priority of the United Nations and other groups. "In Africa, it came to me: Rats can be part of this great effort," Weetjens recalled. So he started training giant pouched

rats - an African species known for its large size, sunny disposition, and ultra-keen nostrils - to detect the faintest whiff of TNT and other explosives. Because the rats are too light to trigger the explosive, they are not harmed in the exercise; they simply signal the location of the explosive to a handler, who has it defused and removed. The rat land mine-clearing program in Mozambique, although still small in scale, has been operational for two years - with 34 trained rats deployed to the field, each overseen by a pair of armor-clad handlers. Another 250 mine-detecting rats are undergoing schooling at Tanzania's Sokoine University of Agriculture. It takes 8 to 10 months to fully train a rat, said Weetjens. A single rat can inspect 1,000 square feet in about 30 minutes, according to Apopo; that's at least a full day's labor for a human working with an electronic detector at terrible risk. Rat teams are credited with clearing 270 square miles of former farm and village land in southern Mozambique, allowing for the return of peasant families dislocated since the 1980s. Dogs can perform the same task. But rats are less expensive to train (\$3,000 to \$5,000 per animal, compared with \$40,000 for a canine), easier to house and transport, and far less susceptible to tropical disease. Also, dogs can trip land mines. Also, rats don't form deep emotional attachments to a single handler. A rat will happily work with anyone who gives the right commands and provides the correct payoff - a few peanuts or a nice ripe banana for locating a land mine, said Andrew Sully, Mozambique program manager for Apopo. The rodents are hitched to a light leash and scamper in tight grid patterns in suspected land mine sites. When they scent explosive, they signal with furious digging motions. They typically work from 5 to 9 a.m., quitting when the ferocious African sun gets too hot. "People are so surprised to see this" project, said Alberto Jorge Chambe, a Mozambican rat handler for Apopo. "Rats are usually considered pests or enemies of humanity. But rats are helping my country escape the shadow of death." Meanwhile, in a conceptual leap, Weetjens decided to turn the rats' sharp olfactory sense to disease detection, starting with tuberculosis. "The medical applications, I believe, will eventually prove even more important than the hunt for land mines," he predicted. In the pilot project in the Tanzanian capital of Dar es Salaam and the nearby city of Morogoro, Apopo-trained rats evaluate saliva samples at a rate of 40 every 10 minutes; that's equal to what a skilled lab technician, using a microscope, can effectively complete in a day. A TB rat signals with unmistakable paw motions when it detects sputum infected by Mycobacterium tuberculosis, the infectious bug responsible for 1.7 million deaths and 9.2 million new TB cases each year, mainly in poor countries, according to the World Health Organization. Scientists at Germany's Max Planck Institute are now trying to determine whether the rats are detecting the scent of the actual TB bacteria or some metabolic reaction produced by the infection. For both TB and land mines, the rats are trained to respond to the sound of a clicker; when the rat makes the scratching motion that means it has detected an explosive or the odor of disease, the handler or trainer responds by snapping the clicker, which means a nut or fruit is on the way. So why don't the animals just scratch every few minutes to win a treat? "That would be human behavior," said Weetjens. "Rats are more honest."

### **Είμαστε πλέον ασφαλείς από την 9/11 ;**

Άλλη μια μελέτη – αυτή το φορά από τον ανεξάρτητο, μη κερδοσκοπικό οργανισμό ProPublica με ενδιαφέρουσες πληροφορίες σχετικά με την προσπάθεια καταπολέμησης μελλοντικών τρομοκρατικών επιθέσεων με όπλα μαζικής καταστροφής

### **Are We Safer Since 9/11? A Special Report Investigates**

ProPublica, an independent, nonprofit newsroom that produces investigative journalism in the public interest, suggests otherwise. Despite some \$48 billion in federal spending on biodefense—including a new nationwide network of research labs and a \$1 billion detection system called BioWatch operating in more than 30 cities—the nation may be just as vulnerable to an attack today as it ever was. Indeed, some biodefense experts warn, we may be less safe. In recent months, government auditors, public health experts, and outside

watchdog groups have unearthed a litany of failures and mistakes in the nation's vast and burgeoning bio-defense program. In September, the Partnership for a Secure America, a bipartisan group of leading national-security experts, issued a report stating that the United States remains "dangerously vulnerable" to nuclear, chemical, and biological attacks. Margaret Hamburg, MD, a former New York City health commissioner and a former assistant secretary at the U.S. Department of Health and Human Services, warns that another anthrax attack would likely still be met with "chaos, uncertainty, and delayed and missed diagnoses." While higher-risk areas such as New York City tend to be further along, in many parts of the country, emergency plans to prepare hospitals for an influx of bioterrorism victims are still in early stages. "Individual hospitals have gotten more prepared," says Tara O'Toole, MD, director of the Center for Biosecurity at the University of Pittsburgh Medical Center, who is completing a study on the subject commissioned by Health and Human Services. "But we still aren't able to care for large or sustained increases in patient demand such as you would see during a bioterror attack. We don't have rapid diagnostic tests that say you have anthrax or flu ... even though the technology exists." Frustrated weapons-proliferation experts complain that biodefense programs are haphazard and disorganized, spread across the Department of Homeland Security and at least 11 other departments and agencies, with no single person in



charge. Critics point out that BioWatch can't detect pathogens released indoors, underground, on planes and buses, or in most subways. Others worry that the system is not capable of providing real-time information to first responders, potentially a fatal flaw. But these troubling findings seem like mere side notes when compared with the main concern of some scientists: that government programs have heightened the level of danger

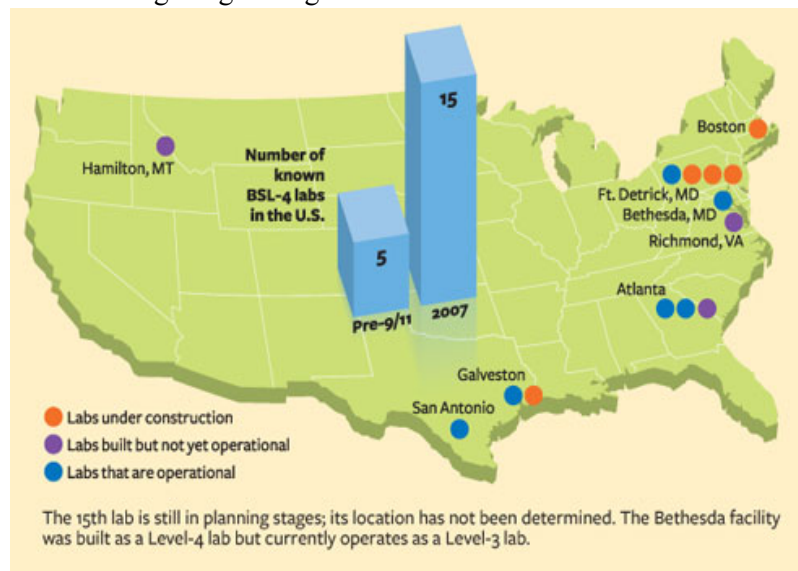
by vastly increasing the number of researchers and labs authorized to handle deadly substances. When the government released its case last summer against the man they believe engineered the 2001 anthrax attack, the possibility of an insider abusing the system to deadly effect became very real. While antiterrorist programs focused on international terrorism, this suspect was homegrown: He was a longtime research scientist named Bruce Ivins who worked in a government lab. A similar incident, or one much worse, could happen again. In its efforts to protect Americans, the government has vastly increased the number of researchers with access to deadly agents. But, say critics, it has failed to implement sufficient oversight and stringent security procedures to screen them. Any terrorist looking to infiltrate a lab today has hundreds more targets to choose from than he did seven years ago. Brian Finlay, a senior associate at the Henry L. Stimson Center, a nonpartisan think tank, puts it bluntly: "There's no question that the proliferation of bio research is leaving us less secure by the day.»

### Από τον τρόπο στο λάθος

Με πάνω από 1350 εργαστήρια βιοασφάλειας επιπέδου 3 σε όλη τη χώρα ο κίνδυνος διαφυγής επικίνδυνων παθογόνων καθίσταται ορατός καθημερινά και μπορεί να προκληθεί είτε από τυχαίο γεγονός ή από πλημμελή τήρηση των κανόνων λειτουργίας τους.

## From terror to error

With its quaint brick buildings, wooded parks, and weekend tailgate parties, the campus of Texas A&M University hardly looks like a front in the war on terror. But teams of researchers there have long been part of the government's growing army of scientific soldiers. Recently they have also become something else: poster children for the dangers inherent in the willy-nilly expansion of the nation's bioresearch program. Biosafety Level-4 labs, which handle the most deadly pathogens, like Ebola, have tripled since 9/11. The number of Level-3 labs handling dangerous germs like anthrax has swelled to more than 1,350--too many to map.



It all started when a private watchdog organization, the Sunshine Project, uncovered problems at one of the university's Biosafety Level-3 labs, which can handle "select agents"-dangerous pathogens, such as anthrax and tularemia, that can be aerosolized and used in terrorist attacks and for which a treatment or vaccine may exist. (BSL-4 labs handle

select agents with no vaccine or cure, including Ebola and Lassa fever, as well as smallpox, which does have a vaccine.) Last year, the CDC temporarily halted research on select agents at A&M when it found the school had allowed unauthorized access to contagious pathogens, misplaced vials of hazardous agents, and kept poor records on who entered the labs. Several employees showed signs of exposure to contagious and potentially fatal bacteria. The university, however, failed to report the cases. In one troubling incident, on February 9, 2006, a PhD lab worker with no training in handling the highly infectious.

## Αφρική – το νέο μέτωπο της τρομοκρατίας

Χιλιάδες χιλιόμετρα μακριά από τα πεδία των μαχών στο Ιράκ και το Αφγανιστάν, ένα άλλο μέτωπο στο πόλεμο κατά της τρομοκρατίας αρχίζει να ξεδιπλώνεται στη δυτική Αφρική – Αλγερία, Τσαντ, Μαυριτανία, Μαρόκο, Νίγηρας, Νιγηρία, Σενεγάλη και Τυνησία σε μια προσπάθεια να μην εξαπλωθεί η τρομοκρατία με τρόπο παρόμοιο με εκείνο της Σομαλίας. Βέβαια και στις χώρες αυτές, η διάκριση της τρομοκρατίας, των απελευθερωτικών κινημάτων και του οργανωμένου εγκλήματος δεν είναι εντελώς διακριτή και αποσαφηνισμένη αλλά είναι γεγονός ότι η διήθηση της al Qaeda στην αφρικανική ήπειρο είναι δεδομένη και ταχέως εξελισσόμενη.

## Africa: Another anti-terrorism front

Thousands of miles from the battlefields of Iraq and Afghanistan, another side of America's fight against terrorism is unfolding in this remote corner of West Africa. Green Berets are training African armies to guard their borders and patrol vast desolate expanses against infiltration by Al Qaeda's militants so the United States does not have to. A recent exercise by the United States military here is part of a wide-ranging plan since the Sept. 11,

2001, attacks, to take counterterrorism training and assistance to places outside the Middle East, including the Philippines and Indonesia. The five-year, \$500 million partnership between the State and Defense Departments, aimed at Africa, also includes Algeria, Chad, Mauritania, Morocco, Niger, Nigeria, Senegal and Tunisia, and, possibly soon, Libya. American efforts to fight terrorism in the region also include nonmilitary programs, like instruction for teachers and job training for young Muslim men who could be singled out by militant recruiting campaigns. One goal of the program is to act quickly in these countries before terrorism becomes as entrenched as it is in Somalia, an East African nation where there is a heightened militant threat. And unlike Somalia, Mali is willing and able to permit dozens of American and European military trainers to conduct exercises here, and its leaders are plainly worried about militants who have taken refuge in its vast Saharan north. "Mali does not have the means to control its borders without the cooperation of the United States," Ibrahim Boubacar Keita, a former Prime Minister of Mali, said in an interview. Mali, a landlocked former French colony nearly twice the size of Texas, has one of the more stable, but still fragile, democracies in West Africa. But it borders Algeria, whose well-equipped military has chased Qaeda militants into northern Mali, where they have adopted a nomadic lifestyle, making them even more difficult to track. With only 10,000 military and other security forces, and just two working helicopters and a few airplanes, Mali acknowledges how daunting a task it is to try to drive out the militants from their territory. The biggest potential threat comes from as many as 200 fighters from an offshoot of Al Qaeda called Al Qaeda in the Islamic Maghreb, which uses the northern Malian desert as a staging area and support base, American and Malian officials say. About three months ago, the Qaeda affiliate threatened to attack American forces that operated north of Timbuktu in Mali's desert, three Defense Department officials said. One military official said this warning contributed to a decision to shift part of the recent training exercise out of that area. The government in neighboring Mauritania said 12 of its troops were killed in a militant attack there in September. By some accounts, the soldiers were beheaded and their bodies were booby-trapped with explosives. Two Defense Department officials expressed fear that a main leader of the Qaeda affiliate in Mali, Mokhtar Belmokhtar is under growing pressure to carry out a large-scale attack, possibly in Algeria or Mauritania, to establish his leadership credentials within the organization. Members of the Qaeda affiliate have not attacked Malian forces, and American and Malian officials privately acknowledge that military officials here have adopted a live-and-let-live approach to the Qaeda threat, focusing instead on rebellious Tuareg tribesmen, who also live in the sparsely populated north. To finance their operations, the militants exact tolls from smugglers whose routes traverse the Qaeda sanctuary, and collect ransoms for kidnapping victims. Last month two Austrians were released after a ransom of more than \$2 million was reportedly paid. They had been held in northern Mali after being seized in southern Tunisia in February. For those reasons, American officials still eye the largely ungoverned spaces of Mali's northern desert with concern. This year, the United States Agency for International Development is spending about \$9 million on counterterrorism programs here. Some of the money will expand an existing job-training program for women to provide young Malian men in the north with the basic skills to set up businesses like tiny flour mills or cattle enterprises. The agency is also building 12 FM radio stations in the north to link far-flung villages to an early-warning network that sends bulletins on bandits and other threats. Financing from the Pentagon will produce radio soap operas in four national languages that will promote peace and tolerance. "Young men in the north are looking for jobs or something to do with their lives," said Alexander Newton, the development agency's mission director in Mali. "These are the same people who could be susceptible to other messages of economic security." Concern about Mali's vulnerability also brought a dozen Army Green Berets from the 10th Special Forces Group in Germany, and several more Dutch and German military instructors, to Mali for the two-week training exercise that ended last month. The mock skirmish lasted just a few minutes. The Malians, shouting to one another and firing at their attackers, retreated from the ambush rather than try

to fight through it. "We're still learning," said Captain Yossouf Traore, a 28-year-old commander, speaking in English he learned in Texas and at Fort Benning, Georgia, as a visiting officer. "We're getting a lot of experience in leadership skills and making decisions on the spot." Still, some worrisome indicators are giving some Malian government and religious leaders, as well as American officials, pause about the country's ability to deal with security risks. Mali is the world's fifth-poorest country and, by some measures, getting poorer, according to United Nations and State Department statistics. One of every five Malian children dies before the age of 5. The average Malian does not live to celebrate a 50th birthday. The country's population, now at 12 million people, is doubling nearly every two decades. Literacy rates hover around 30 percent and are much lower in rural areas. There are also small signs that radical clerics are beginning to make inroads into the traditionally tolerant form of Islam practiced here for centuries by Sunni Muslims. The number of Malian women wearing all-enveloping burqas is still small, but the increase is noticeable from just a few years ago, religious leaders say. New mosques are springing up, financed by conservative religious organizations in Saudi Arabia, Libya and Iran, and scholarships offered to young Malian men to study in those countries are also on the rise, Malian officials say. American and African diplomats here said Mali was one of the few countries in the region that had good relations with most of its neighbors, making it a likely catalyst for the broader regional security cooperation the United States is trying to foster. American commanders expressed confidence that by training together, the African forces might work together against transnational threats like Al Qaeda. "If we don't help these countries work together, it becomes a much more difficult problem," said Lieutenant Colonel Jay Connors, the senior American Special Forces officer on the ground here during the exercise. American officials say their strategy is to contain the Qaeda threat and train the African armies, a process that will take years. The nonmilitary counterterrorism programs are just starting, and it is too early to gauge results. "This is a long-term effort," said Connors, 45, an Africa specialist from Burlington, Vermont, who speaks French and Portuguese. "This is crawl, walk, run, and right now, we're still in the crawl phase."

**Άλλη μια σημαντική έκδοση με θέμα την τρομοκρατία από το Jamestown Foundation που απέσπασε αξιόλογες κριτικές από τους ειδικούς στο θέμα**

### IMPORTANT NEW EDITION ON TERRORISM

The Jamestown Foundation is pleased to announce the release of the fourth



volume of its globally renowned Unmasking Terror series. Edited by Andrew McGregor, **Unmasking Terror Volume IV** continues the work of previous volumes by providing an unparalleled collection of indigenous terrorism analyses to the media, intelligence, and academic communities. Like its previous volumes, Unmasking Terror Volume IV serves as an invaluable reference tool to understanding militant jihadi movements worldwide.

*"The Jamestown Foundation provides an invaluable service, analyzing and tracking developments in terrorism and insurgency. For professionals in the field, Jamestown reports have gained 'required reading' status for their clarity and timeliness. Unmasking Terror is a crucial*

*analytical reference: I have every volume of the series and refer to it regularly. This year's edition looks set to continue the high standard Jamestown has set in previous years. I commend it to any student or professional in the fields of terrorism and insurgency."*

—David Kilcullen

Special Advisor for Counterinsurgency to the Secretary of State, U.S. State Department

*"Jamestown is one of the rare organizations tracking terrorism that analyzes the full scope of terrorist movements objectively and without ideological bias. Unlike so many other analyses that view the terrorist phenomenon from a narrow and shallow police perspective, Jamestown's work sets terrorist activities in the broader political, cultural, sociological, and geopolitical context in which they operate--the only way it is possible to understand them--and defeat them. Indispensable reading."*

—Graham E. Fuller

Former Vice Chair of the National Intelligence Council at CIA; Adjunct Professor of History at Simon Fraser University and author of *The Future of Political Islam* (2003)

*"Like its predecessors, the new Unmasking Terror volume provides the most comprehensive annual survey of global terrorism trends and developments available. It is an essential research tool for anyone seeking to understand the dynamics of terrorism today and its impact on international, regional, and local security."*

—Bruce Hoffman

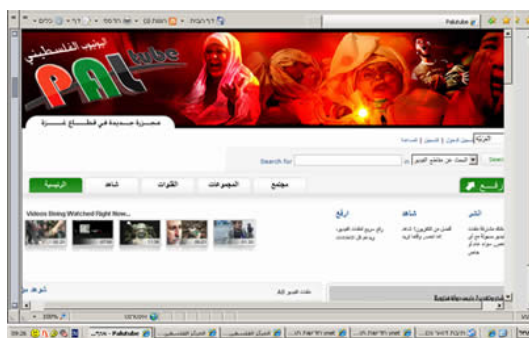
Professor, Georgetown University School of Foreign Service and author of *Inside Terrorism* (2006)

### Η Hamas εξακολουθεί να εκσυγχρονίζεται

Στα πρότυπα του πασίγνωστου YouTube, η Hamas ανέπτυξε την ιστοσελίδα PaluTube ενώ η προηγούμενη AqsaTube άλλαξε όνομα και τώρα λειτουργεί υπό την ονομασία TubeZik. Όμως ακόμη κι αν τα ονόματα άλλαξαν, το περιεχόμενο παραμένει το ίδιο και οι ιστοσελίδες αυτές αποτελούν αποτελεσματικά μέσα ανταλλαγής απόψεων, προπαγάνδας, στρατολόγησης και ανάρτησης υλικού που συντηρεί την πυρκαγιά στη Μέση Ανατολή.

### PaluTube by Hamas

The Internet and terrorism: Hamas has recently launched PaluTube, its new file sharing website. AqsaTube, the previous file sharing website, has changed its name and appearance and is now known as TubeZik. Those changes resulted from the refusal of French and Russian Internet service providers to continue hosting Aqsa Tube. PaluTube, the new file sharing website. Hamas has recently launched a new website called PaluTube. Also launched was a website called TubeZik, being a new version of AqsaTube. The file sharing





website AqsaTube was taken offline twice after a French company and a Russian company stopped providing it with technical services. PaluTube and TubeZik are file sharing websites, such as YouTube, in which users can upload video clips. The clips featured on the websites include incitement against Israel, preaching terrorism, and glorification of Hamas and terrorism. Also found on the websites are posters and clips pertaining mostly to Operation Cast Lead, portrayed as a “holocaust”. As is the case with Hamas's other websites, the information published complies with the radical ideology and the terrorist policy of the Hamas movement. Those websites are yet another constituent in the extensive Internet infrastructure of Hamas, which kept developing its websites during Operation Cast Lead and still does so.

### **Οδηγός Δεξαμενών Σκέψης**

Οι δεξαμενές σκέψης (think tanks), αποτελούν συνηθισμένη πρακτική στο εξωτερικό (5.465 οργανισμοί και ιδρύματα) και το παραγόμενο έργο είναι στις περισσότερες περιπτώσεις ιδιαίτερα αξιόλογο και αφορά υφιστάμενες διαταραγμένες καταστάσεις παγκοσμίως αλλά και προβλέψεις σχετικά με τα πράγματα που θα έλθουν ή θα ακολουθήσουν. Στην Ελλάδα, ο θεσμός είναι στα σπάργανα και οι δεξαμενές σκέψης συγκριτικά ελάχιστες καθώς δεν γίνεται εκμετάλλευση του υπάρχοντος ανθρώπινου δυναμικά και ιδιαίτερα των εξειδικευμένων εκείνων ατόμων που αποχωρούν κάποια στιγμή από την ενεργό υπηρεσία παίρνοντας αναγκαστικά μαζί τους εμπειρία και δεξιότητες ετών – καθώς κανείς δεν ενδιαφέρεται να συγκεντρώσει αυτή τη γνώση για περαιτέρω ανάλυση και εκμετάλλευση.

### **The Think Tank Field Guide**

Prior to launching the Think Tank Index, extensive research was conducted to develop a comprehensive list of all think tanks in the world. Relying on previous studies, think tank directories and databases, and experts in the field, 5,465 institutions worldwide were identified for inclusion in the study. To create a more manageable list from which to identify leading think tanks, an international group of scholars, think tank executives, public and private donors, and policymakers were then asked to nominate think tanks they consider to be the best in the world. These experts used selection criteria such as a think tank's ability to retain elite scholars and analysts; access to elites in policymaking, media, and academia; media reputation; reputation with policymakers; scholarly output; and usefulness of the organization's information, among others. This effort resulted in a list of approximately 400 think tanks worldwide that were then included in the Think Tank Impact Survey. The Think Tank Impact Survey was then sent to hundreds of think tank scholars, think tank executives, and government and NGO personnel who fund think tanks. More than 150 responses from this panel of experts were received. These respondents ranked the list of think tanks by region and research area, the results of which are seen here. James McGann is assistant director of the international relations program at the University of Pennsylvania and director of the Think Tanks and Civil Societies Program.

### **The Think Tank Index - Top 30 U.S. Think Tanks**

#### **1. Brookings Institution**

Location: Washington

Annual budget: \$60.7 million

Specialties: U.S. foreign policy, Middle East

Boldface names: Strobe Talbott, Kenneth Pollack, Alice Rivlin

#### **2. Council on Foreign Relations**

Location: New York

Budget: \$38.3 million  
Specialties: U.S. foreign policy, national security  
Boldface names: Richard Haass, Michael Gerson, Walter Russell Mead, Angelina Jolie

### 3. Carnegie Endowment for International Peace

Location: Washington  
Budget: \$22 million  
Specialties: Nuclear nonproliferation, China  
Boldface names: Jessica T. Mathews, Robert Kagan, Minxin Pei

### 4. Rand Corporation

Location: Santa Monica, Calif.  
Budget: \$251 million  
Specialties: Military strategy, political economy  
Boldface names: James Dobbins, Gregory Treverton, William Overholt

### 5. Heritage Foundation

Location: Washington  
Budget: \$48.4 million  
Specialties: Tax policy, missile defense  
Boldface names: Edwin Meese, Peter Brookes, James Jay Carafano

### 6. Woodrow Wilson International Center for Scholars

Location: Washington  
Budget: \$34.5 million  
Specialties: Regional studies, democracy promotion  
Boldface names: Lee Hamilton, Haleh Esfandiari

### 7. Center for Strategic & International Studies (CSIS)

Location: Washington  
Budget: \$29 million  
Specialties: Defense policy, diplomacy  
Boldface names: John Hamre, Richard Armitage, Zbigniew Brzezinski, Anthony Cordesman

☞ Διαβάστε την τελευταία τους μελέτη: «**Study on a possible Israeli strike on Iran's nuclear development**» (14 Μαρτίου 2009) – λέγεται ότι η μελέτη έχει αναπαραχθεί σε εκατοντάδες αντίτυπα και μελετάται αναλυτικά από του ιρανούς Φρουρούς της Επανάστασης (λεπτομερής καταγραφή σεναρίων, δυνατοτήτων εμπλεκόμενων ενόπλων δυνάμεων, μεθοδολογία επίθεσης, επιπτώσεις κá)

### 8. American Enterprise Institute

Location: Washington  
Budget: \$23.6 million (2006)  
Specialties: Trade, defense  
Boldface names: Newt Gingrich, David Frum, Richard Perle

### 9. Cato Institute

Location: Washington  
Budget: \$19 million  
Specialties: Libertarianism, deregulation  
Boldface names: David Boaz, Edward Crane, Christopher Preble

### 10. Hoover Institution

Location: Stanford, Calif.

Budget: \$34.1 million  
Specialties: Defense policy, conservatism  
Boldface names: Larry Diamond, Michael McFaul, Victor Davis Hanson

#### 11. Human Rights Watch

Location: New York  
Budget: \$35.5 million  
Specialties: Human rights, international justice  
Boldface names: Kenneth Roth

#### 12. Peterson Institute for International Economics

Location: Washington  
Budget: \$9.5 million  
Specialties: Trade, globalization  
Boldface names: C. Fred Bergsten, Anders Åslund, William Cline

#### 13. United States Institute of Peace

Location: Washington  
Budget: \$24.7 million  
Specialties: Conflict resolution, postconflict stability  
Boldface names: Richard Solomon, Scott Lasensky, J. Alexander Thier

#### 14. National Bureau of Economic Research

Location: Cambridge, Mass.  
Budget: \$29.8 million  
Specialties: Economic growth, empirical research  
Boldface names: James Poterba, Robert Lipsey, Martin Feldstein

#### 15. Center for Global Development

Location: Washington  
Budget: \$9.8 million  
Specialties: Globalization, inequality  
Boldface names: Nancy Birdsall

16. World Policy Institute

17. Center for American Progress

18. Carter Center

19. Hudson Institute

20. Urban Institute

21. EastWest Institute

22. New America Foundation

23. Manhattan Institute

24. Resources for the Future

25. Baker Institute for Public Policy

26. Henry L. Stimson Center
27. Center for Transatlantic Relations
28. Independent Institute
29. International Peace Institute
30. National Center for Policy Analysis (tied)
31. Mercatus Center (tied)

### **The Think Tank Index - Top 20 Non-U.S. Think Tanks**

#### **1. Chatham House**

Location: London

Budget: \$12.4 million

Specialties: International economics, regional studies

☞ Στο Chatham House επικρατεί ο λεγόμενος «**Chatham Rule**» - δηλαδή, τίποτα από όσα λέγονται στις συνεδριάσεις της δεξαμενής σκέψης δεν βγαίνει έξω από το Chatham House, γεγονός που επιτρέπει την χωρίς όρους ανάλυση καταστάσεων και έκφραση απόψεων μακριά από πολιτικές και άλλες σκοπιμότητες και περιορισμούς.

#### **2. International Institute for Strategic Studies**

Location: London

Budget: \$15.3 million

Specialties: Nonproliferation, counterterrorism

#### **3. Stockholm International Peace Research Institute**

Location: Solna, Sweden

Budget: \$5.3 million

Specialties: Arms control, conflict management

#### **4. Overseas Development Institute**

Location: London

Budget: \$25.9 million

Specialties: International development, humanitarian issues

#### **5. Centre for European Policy Studies**

Location: Brussels

Budget: \$8.6 million

Specialty: EU affairs

#### **6. Transparency International**

Location: Berlin

Budget: \$13.3 million

Specialty: Anticorruption

#### **7. German Council on Foreign Relations**

Location: Berlin

Budget: \$6.4 million

Specialties: German foreign policy, international relations

**8. German Institute for International and Security Affairs**

Location: Berlin

Budget: \$16.4 million

Specialties: German foreign policy and security

**9. French Institute of International Relations**

Location: Paris

Budget: \$8.1 million

Specialties: Trans-Atlantic relations, European affairs

**10. Adam Smith Institute**

Location: London

Budget: \$500,000

Specialties: Free-market and social policies

11. Fraser Institute (Canada)

12. European Council on Foreign Relations (multiple)

13. Centre for Policy Studies (Britain)

14. Institute of Development Studies (Britain)

15. Centre for Economic Policy Research (Britain)

16. Centre for European Reform (Britain)

17. International Crisis Group (Belgium)

18. International Institute for Democracy and Electoral Assistance (Sweden)

19. Kiel Institute for the World Economy (Germany)

20. Canadian International Council (Canada)

The Think Tank Index

**Top Think Tanks for Innovative Ideas****1. Cato Institute**

Cato's libertarian stance, once viewed as fringe, is now considered respectable. With its anti-incumbent, anti-Washington attitude, Cato has antagonized liberals with its push to privatize Social Security, as well as conservatives with its vigorous opposition to the Iraq war.

**2. Brookings Institution**

From healthcare reform to recommendations on closing the prison at Guantánamo Bay, Brookings has a breadth of expertise that allows it to offer innovative fixes for nearly every critical issue facing the United States today.

**3. Carnegie Endowment for International Peace**

Carnegie's role in opposing the invasion of Iraq and providing critical research on issues such as Iran's and North Korea's nuclear weapons programs places it at the heart of some of Washington's defining policy debates.

**Best New Think Tanks (of the last 5 years)****1. European Council on Foreign Relations**

Populated by European heavyweights like Nobel Peace Prize laureate Martti Ahtisaari and former German Foreign Minister Joschka Fischer, the ECFR aims to craft a common foreign policy for an increasingly integrated Europe.

**2. Bruegel**

Funded by EU member states and located in Brussels, Bruegel specializes in driving European economic growth and making the continent more competitive in the global economy.

**3. Center for American Progress**

Thanks to its all-star roster of experts and savvy use of new media, CAP has emerged as the intellectual center of Democratic D.C.

**Most Impact on Public Policy Debates****1. Brookings Institution**

When important debates occur in Washington—whether over Middle East peace, global finance, or urban strategy—it's a fair bet that Brookings is driving the conversation.

**2. Heritage Foundation**

A partisan approach, obsession with the latest policy issues, an effective marketing strategy, and proximity to the seat of power (it is steps away from the U.S. Congress) give Heritage an influential edge.

**Top 5 Think Tanks in Latin America and the Caribbean**

1. Consejo Argentino para las Relaciones Internacionales (Argentina)
2. Facultad Latinoamericana de Ciencias Sociales (Costa Rica)
3. Libertad y Desarrollo (Chile)
4. Centro de Estudios Públicos (Chile)
5. Centro de Implementación de Políticas Públicas para la Equidad y el Crecimiento (Argentina)

**Top 5 Think Tanks in Asia**

1. Chinese Academy of Social Sciences (China)
2. Japan Institute of International Affairs (Japan)
3. Institute for Defence Studies and Analyses (India)
4. Centre for Strategic and International Studies (Indonesia)
5. Institute for International Policy Studies (Japan)

**Top 5 Think Tanks in the Middle East and North Africa**

1. Al-Ahram Center for Political and Strategic Studies (Egypt)
2. Center for Strategic Studies (Jordan)
3. Institute for National Security Studies (Israel)
4. Gulf Research Center (United Arab Emirates)

5. Emirates Center for Strategic Studies and Research (United Arab Emirates)

#### **Top 5 Think Tanks in Sub-Saharan Africa**

1. Centre for Conflict Resolution (South Africa)
2. South African Institute of International Affairs (South Africa)
3. Institute for Security Studies (South Africa)
4. Free Market Foundation (South Africa)
5. Council for the Development of Social Science Research in Africa (Senegal)

#### **Top 5 Security and International Affairs Think Tanks**

1. Brookings Institution
2. Chatham House
3. Carnegie Endowment for International Peace
4. Council on Foreign Relations
5. International Institute for Strategic Studies

#### **Top 5 International Development Think Tanks**

1. Brookings Institution
2. Overseas Development Institute
3. Council on Foreign Relations
4. Rand Corporation
5. Woodrow Wilson International Center for Scholars

#### **Top 5 International Economic Policy Think Tanks**

1. Brookings Institution
2. Peterson Institute for International Economics
3. Fraser Institute
4. National Bureau of Economic Research
5. Adam Smith Institute

#### **Think Tank Fast Facts**

 **There are 5,465 think tanks worldwide.**

Breakdown:

- 1,872 in North America
  - 1,208 in Western Europe
  - 653 in Asia
  - 538 in Latin America and the Caribbean
  - 514 in Eastern Europe
  - 424 in sub-Saharan Africa
  - 218 in the Middle East and North Africa
  - 38 in Oceania
- There are 1,777 think tanks in the United States.
  - Nine out of 10 U.S. think tanks were created since 1951.
  - The number of U.S. think tanks has more than doubled since 1980.

- Approximately 350 think tanks are based in Washington, more than in any country other than the United States.

### Αντι-τρομοκρατική εκστρατεία της αστυνομίας του Λονδίνου

Η αστυνομία του Λονδίνου εγκαινίασε πρόσφατα δημόσια αντι-τρομοκρατική εκστρατεία προσκαλώντας τους πολίτες της βρετανικής πρωτεύουσας να έχουν τα μάτια τους ανοικτά για οτιδήποτε ύποπτο υποπέσει στην αντίληψη τους. Κεντρικό σύνθημα της εκστρατείας είναι: "Μη βασίζεσαι στους άλλους. Εάν υποψιάζεσαι κάτι, ανάφερε του». Η λελογισμένη συμμετοχή των πολιτών στην καταπολέμηση της τρομοκρατίας είναι ζωτικής σημασίας καθώς είναι γνωστό ότι οι τρομοκράτες είναι πάντα «ένα βήμα μπροστά» από τις αρχές ασφαλείας.

### London Police Launch Counter-terrorism PR Campaign

London police launched a new counter-terrorism publicity campaign on Monday, calling on residents of the capital to keep their ears and eyes open for anything suspicious and to report it. The campaign is not linked to any specific threat, police said, but rather a reminder that attacks have happened in the past and could easily happen again. The slogan is:



“Don’t rely on others. If you suspect it, report it.” “Terrorists can be stopped in their tracks if suspicious activity is passed to the police,” Deputy Assistant Commissioner John McDowall, the head of the Metropolitan Police counter-terrorism command, said in a statement. “They will not succeed if people report something unusual they have seen while going about their daily lives. “We want people to look out for the unusual — some activity or behaviour which strikes them as not quite right and out of place in

their normal day-to-day lives — and to take responsibility for reporting it.” London has seen several failed and successful attacks in recent years, most notably the July 7, 2005, suicide bombings on the Underground and the bus network which killed 52 people. The Metropolitan Police have overall responsibility for counter-terrorism policing and have been at the forefront of gathering evidence in a series of cases against suspected terrorism plotters in recent years. The campaign calls on London’s 8 million residents to pay particular attention to anyone suspicious who is buying chemicals, logging on to militant websites or carrying out surveillance of prominent buildings.

### Διακλαδικά κέντρα καταπολέμησης απειλών

Στις ΗΠΑ έχουν αρχίσει και ιδρύονται «διακλαδικά κέντρα καταπολέμησης απειλών» (fusion centers) μέσω των οποίων οι διάφορες εμπλεκόμενες υπηρεσίες ασφαλείας μπορούν συνεργικά και αποτελεσματικά να διαχειριστούν τις σύγχρονες απειλές που κυμαίνονται από την τρομοκρατία έως τα δίκτυο οργανωμένου εγκλήματος.

### Fusion Centers Combat Threats from Terrorist and Criminal Networks

In Arizona, after determining the subjects of an international terrorism case were involved in local criminal activity, the case was referred to local law enforcement. In New Mexico, several individuals linked to FBI investigations-including an MS-13 gang member-were identified. In Tennessee, we developed-with our partners-a formal process for collecting, sharing, and analyzing suspicious activity reports, looking for trends and patterns. These



cooperative efforts-and many more like them-have been made possible through the work of intelligence fusion centers around the country. These centers, usually set up by states or major urban areas and run by state or local authorities, are often supported by federal law enforcement, including the FBI. Speaking at the Kansas City conference, our Chief Intel



Officer Don Van Duyn said that “while we still have work to do to make the information process more seamless,” the FBI is committed to “expanding our interconnectedness” to help combat threats from terrorist and criminal networks. He also said that during the past year we have rolled out-to all of our 56 field offices-standardized intelligence operations structures, roles, and procedures to enhance our collaboration with our partners. This week, nearly

2,000 local, state, tribal, and federal representatives working in these centers gathered in Kansas City to continue the process of standardizing fusion center operations. The ultimate goal? To create a network of centers presenting a unified front against terrorism and other national security and criminal threats that put Americans at risk. Although a few were already in existence before 9/11, fusion centers really began to crop up after the attacks when local and federal officials recognized the need to quickly coordinate information-sharing related to terrorism. Their number has been growing ever since. Today, there are some 70 centers around the country-50 state and 20 regional. And some have expanded their focus to include public safety matters and major criminal threats. Fusion center personnel “fuse” intelligence from participating agencies to create a more comprehensive threat picture, locally and nationally. They don’t just collect information-they integrate new data into existing information, evaluate it to determine its worth, analyze it for links and trends, and disseminate their findings to the appropriate agency in the best position to do something about it.

**Το νέο κινητό τηλέφωνο του Προέδρου Obama**

**The ObamaPhone**



The Sectera Edge, a combination phone-PDA that's been certified by the National Security Agency as being acceptable for Top Secret voice communications and Secret e-mail and Web sites.

### Ισλαμιστική τρομοκρατία σε Ευρώπη και ΗΠΑ

Διαμάχη απόψεων μεταξύ κορυφαίων ειδικών σχετικά με τα ποσοστά ισλαμιστικής τρομοκρατίας στην Ευρώπη και τις Ηνωμένες Πολιτείες και την αποτελεσματικότητα των υπηρεσιών ασφαλείας στις δύο ηπείρους. *Όμως έχουν τα ποσοστά τόσο μεγάλη σημασία ;*

### Islamist terrorism: higher in Europe or US?

"Since 9/11, there have been over 2,300 arrests connected to Islamist terrorism in Europe in contrast to about 60 in the United States." Thus writes Marc Sageman in his influential new book, *Leaderless Jihad: Terror Networks in the Twenty-First Century* (University of Pennsylvania Press). This one statistical comparison inspires Sageman, in a chapter he calls "The Atlantic Divide", to draw sweeping conclusions about the superior circumstances of American Muslims. "The rate of arrests on terrorism charges per capita among Muslims is six times higher in Europe than in the United States." The reason for this discrepancy, he argues, "lies in the differences in the extent to which these respective Muslim communities are radicalized." He praises "American cultural exceptionalism," admonishes European governments "to avoid committing mistakes that risk the loss of good will in the Muslim community," and urges Europeans to learn from Americans. Sageman's argument rehashes what Spencer Ackerman wrote in a *New Republic* cover story of late 2005, when he found that "Europe's growing Muslim culture of alienation, marginalization, and jihad isn't taking root" in the United States. But Sageman's entire case is premised on the figures of 2,300 and 60 arrests. Aside from possible other causal explanations for these differences, such as the European legal system permitting more latitude to make terrorism-related arrests, are those figures even correct? He supports them with only a brief, vague footnote: "Updating Eggen and Tate, 2005; Lustick 2006: 151-52 agrees with this estimate." Here, "Eggen and Tate, 2005" refers to a two-part newspaper article and "Lustick 2006" sources a discredited extremist screed.

In fact, Sageman's numbers are **scandalously inaccurate**.

- **European arrests:** His European number is inflated. The European Police Office (Europol) issued statistics showing that in 2007, 201 Islamists were detained in the European Union (other than the United Kingdom) on terror-related charges, compared to 257 in 2006. Earlier Europol statistics are less clear, but a close review of the evidence conducted for me by Jonathan Gelbart of Stanford University shows 234 arrests made in 2005, 124 in 2004, and 137 in 2003. In all, the total West European terrorism-related arrests appear to number less than 1,400.
- **US arrests:** According to the US Department of Justice, Sageman's American figure is too low by a factor of almost ten. Department spokesman Sean Boyd indicated, according to a Fox News report, that "527 defendants have been charged in terrorism or terrorism-related cases arising from investigations primarily conducted after Sept. 11. Those cases have resulted in 319 convictions, with an additional 176 cases pending in court." Plus, as I documented (at "Denying [Islamist] Terrorism" and a follow-up blog), politicians, law enforcement personnel, and the media are loathe to acknowledge terrorist incidents, so the real number of terrorism-related arrests is substantially higher.

Given that the Muslim population in the United States is about 1/7th size of its West European counterpart (three million vs 21 million), using the figures of 527 arrests for the United States and 1,400 for Europe suggests that the Muslim per-capita arrest rate on terrorism-related charges in the United States is 2.5 times higher than in Europe, not, as Sageman asserts, six times lower. In fact, Sageman (who was offered a chance to reply to this

article but declined) is off by a factor of about 15. His error has major implications. If the United States, despite the much better socio-economic standing of its Muslims, suffers from 2.5 times more terrorism per capita than does Europe, socio-economic improvements are unlikely to solve Europe's problems. This conclusion fits into a larger argument that Islamism has little to do with economic or other stresses. Put differently, ideas matter more than personal circumstances. As I put it in 2002, "The factors that cause militant Islam to decline or flourish appear to have more to do with issues of identity than with economics." Whoever accepts the Islamist (or communist or fascist) worldview, whether rich or poor, young or old, male or female, also accepts the ideological infrastructure that potentially leads to violence, including terrorism. In policy terms, Americans have no reason to be smug. Yes, Europeans should indeed learn from the United States how better to integrate their Muslim population, but they should not expect that doing so, will also diminish their terrorism problem. It could, indeed, even worsen.

### **Ιδεολογική σύγκρουση στο εσωτερικό της al Qaeda**

Ιδεολογικός πόλεμος φαίνεται πως έχει ξεσπάσει στο εσωτερικό της al Qaeda μεταξύ των σκληροπυρηνικών της οργάνωσης και εκείνων που υποστηρίζουν την ιδέα της ειρηνικής δημιουργίας μιας Ισλαμικής κοινωνίας (Ισλαμικό χαλιφάτο). *Εάν η κατάσταση αυτή εξελιχθεί περαιτέρω πιθανόν να δρομολογήσει μια κορυφαία τρομοκρατική επίθεση κατά Δυτικού στόχου προκειμένου η al Qaeda να επανακτήσει τη συνοχή της και να ενδυναμώσει την αποδοχή της από τους υποστηρικτές της παγκοσμίως.*

### **Ideological clash of two jihadi titans shakes Al Qaeda**

A bitter, yearlong feud that has shaken Al Qaeda's ideological pillars grew even sharper last month. A former associate of Ayman al-Zawahiri accused him of working for Sudanese intelligence, wearing "women's garments" to flee Afghanistan, and spreading an incorrect Islamic theory of jihad. Mr. Zawahiri "is only good at fleeing, inciting, collecting donations, and talking to the media," wrote Sayyed Imam al-Sharif in his latest attack on Al Qaeda's No. 2. Sayyed Imam, serving a life sentence in Egypt, is an esteemed theoretician of jihad whose ideas helped shape Al Qaeda's ideology. But now he's decrying its stock in trade – mass murder – in a clash that is an example of how some once-fierce zealots of violent jihad are having second thoughts. "It is really an argument about ... what means are militarily effective and Islamically legitimate," says William McCants, a Washington area-based analyst of militant Islamism. Imam, he adds, is saying that only "a guerrilla war conducted against enemy soldiers" is permitted. Imam's prison writings were preceded by a series of books and commentaries from imprisoned members of Islamic Group, a group that waged a guerrilla war against the Egyptian government in the 1990s. Their so-called "revisions" renounced violence and some put forward ideas on how to peacefully create an Islamic society. Terrorism experts disagree on the impact that Imam's scathing critiques of Zawahiri and Al Qaeda will have on the global jihadi movement, particularly since he writes from prison where he is believed subject to influence from Egyptian and US intelligence agencies. But his writings have put Zawahiri on the defensive. And they come amid other pressures, including the disabling of several Al Qaeda-linked online forums – presumably by Western and Middle Eastern intelligence agencies – and an intensification of US military activity in Pakistan's tribal areas, where Zawahiri and Osama bin Laden are believed to be hiding. "One shouldn't overestimate the impact of this [ideological feud] in the overall war on terror, but it is definitely going to divert some of Zawahiri's creative energy away from operations," says Thomas Hegghammer, a fellow in Harvard Kennedy School's international security program. "Zawahiri's support among jihadis is still strong, but he is losing the media battle to convince the public that Al Qaeda is winning," adds Mr. McCants, who monitors Al Qaeda Web activity at jihadica.com. "That, coupled with the US Predators attacks in Pakistan, put him under tremendous pressure." Bruce Hoffman, a professor of security studies at Georgetown

University and author of "Inside Terrorism," says he does not believe that Imam's writings are going to have a huge adverse impact on Al Qaeda's hard-core followers. If you are a hard-line militant, "are you going to listen to an elderly, geriatric guy in an Egyptian prison?" Mr. Hoffman asks. "It's not as if Zawahiri himself changed his mind." Far more problematic for Al Qaeda, Hoffman says, is the sabotage of its online forums, some of which have not been working since September. As the principle means of communicating with followers and potential recruits, their loss "has been a serious blow," Hoffman says. Imam, also known as Dr. Fadl, was a close ally of Zawahiri when Imam led Egypt's Islamic Jihad in the 1980s. His reputation as a top jihadi ideologue rested on his books, particularly his 1994 "A Compendium for the Pursuit of Divine Knowledge." But Imam and Zawahiri disagreed about many things and grew estranged. When Imam stepped down as Islamic Jihad leader in 1993, Zawahiri took his place. Though Al Qaeda cited Imam's writings, he never joined the group. In Nov. 2007, Imam released "Rationalizing Jihad in Egypt and the World," a book that refuted Al Qaeda's terrorist tactics and ideology and was especially critical of Zawahiri. After months of heated debate among militants on jihadi online forums, Zawahiri responded in March with a 200-page book called "Exoneration." He charged that Imam lacked credibility because he wrote from prison and was supervised by US intelligence. Last month, Imam's reply to Zawahiri, a book titled "Denudation of the Exoneration," was serialized in Cairo's Al Masri Al Youm newspaper. It also was published at IslamOnline.net and in the Saudi-owned Al-Sharq al-Awsat newspaper, according to McCants, who posted English summaries of the Masri Al Youm installments on his site. In the first, called "The Lies of Zawahiri," Imam claims that Zawahiri told him in 1993 that "he had to carry out 10 operations for the Sudanese in Egypt and that he received \$100,000 from them." Apparently aiming to play down Zawahiri's importance inside Al Qaeda, Imam asserts that "only three people knew of the 9/11 operation before it happened: Khalid Sheikh Mohammed, Abu Hafz al-Masri, and a third person – not Zawahiri." The third person was only told 24 hours before the attack. As for Al Qaeda's idea of violent jihad, Imam calls it "a corrupt, wayward school [of Islamic thinking] to justify excess in shedding blood." In order to sell it, the group launched "media propaganda to promote the corrupt idea that America is the cause of all the ills afflicting Muslims." Imam's latest attacks on Zawahiri are so vituperative that some analysts say he has damaged his own credibility. "This is an embarrassment," former Islamic Jihad member Kamal Habib told Agence France-Presse in Cairo. "I don't think he realizes what this does to his image." McCants argues that Imam's arguments will likely be most influential outside Al Qaeda's inner circle of die-hard jihadis. "We shouldn't be assessing the impact of Imam's book on jihadis but rather on neutral pious, educated Arabs, particularly high school and college-age youth, whom Imam considers his primary audience," McCants wrote on his website. McCants also singles out Imam's "vigorous rejection of the victimization" theme in jihadist thinking. "The cause of Muslims' problems is Muslims themselves," Imam writes. Noting that Muslims are killing Sudanese in Darfur, Imam asks: "What was the reason the US opened the Guantanamo Bay prison in Cuba for imprisoning Muslims? Bin Laden's stupidity.... Putting blame on others while not accepting it yourself ... is the school of Satan.» Some analysts say Imam's writings are not all that significant because he does not reject jihad per se, only Al Qaeda's tactics. But a total abandonment of jihad would be tantamount to rejecting a Koranic concept integral to Islam since its inception, leaving Imam with no credibility. For centuries, jihad was embedded in the legal framework of Islamic law, or sharia, making it pretty much the prerogative of an Islamic ruler, that is, of the state. Sharia also imposed clear rules on jihad, prohibiting the slaughter of innocent civilians, for example. It is this legal framework that Al Qaeda has tossed aside in its glorification of jihad. Perhaps Zawahiri's strongest argument against Imam is that he is a prisoner. Indeed, some passages in Imam's latest book seem made-to-order for intelligence agencies. For example, he writes, "Regardless of the legitimacy of their presence, the American forces did not kill a single Muslim in Saudi Arabia during their presence there after Iraq's invasion of Kuwait in 1990." He does not mention Iraqi deaths caused by US forces during the war in Iraq. Instead, he focuses on Al Qaeda in

Iraq, which he said "killed far more Iraqis than it killed Americans."

## Τα 50 κορυφαία βιβλία με θέμα «Τρομοκρατία» και «Αντι-τρομοκρατία»

### Top 50 Books on Terrorism and Counterterrorism

Terrorist rebellions, in all their configurations, constitute the primary warfare threats facing the international community. This was especially the case following September 2001, when al-Qaeda demonstrated that it had world class ambitions to inflict catastrophic damages on its adversaries. In other conflicts, such as the Palestinian-Israeli arena, terrorist targeting is primarily localized, although as demonstrated by Hizballah's rocket and guerrilla warfare against Israel in summer 2006, even localized conflicts have regional and international repercussions. Because of the worldwide reach of al-Qaeda and its affiliates, including what are referred to as al-Qaeda-inspired "self-starter" home-grown cells in Western Europe, North America, and elsewhere, many nations have been upgrading their homeland security defenses, and calling on their academic communities to provide analytical understanding of the origins, nature and magnitude of the terrorist threats around the world and how to counteract and resolve them. In response, academic courses and research institutes have been proliferating at colleges and universities worldwide, with graduate certificates and degrees offered in terrorism studies. To meet the great demand for academic and public policy resources on this subject, the publishing industry has been releasing a plethora of books on terrorism in general, the groups that engage in terrorist warfare, the radical religious movements that drive individuals to join terrorist groups and employ terrorist tactics on their behalf, the conflict zones where such warfare is being waged, and the types of counteraction that governments are employing in response. Despite the great attention being expensed on terrorism and counterterrorism studies, however, the general state of the discipline is uneven. One problem is that terrorism is first and foremost a covert activity, with governments' intelligence services, but not academic analysts (with few exceptions), possessing primary data about terrorist groups and their activities, causing terrorism studies to be less scientifically valid than the natural sciences. This is especially the case in compiling data on terrorist incidents, whether aborted, thwarted, or "successful," or the size and leadership trees of terrorist organizations, since such data is largely unavailable in open sources. In some flagrant cases, certain writers on terrorism have been found to fabricate their data. Fortunately, there still are plenty of excellent books on this subject to merit recommending them to general and academic readers. The books reviewed in this essay are divided into nine sections, which are not intended to be mutually exclusive: textbooks on terrorism, using the social sciences to study terrorism, terrorism and the Internet, radical Islam, suicide terrorism, 9/11 and its aftermath, Palestinian terrorism, terrorism in the United States, and counterterrorism. This list of 50 books is not intended to be final, but will be continuously expanded with additional titles. Readers are encouraged to nominate additional books for inclusion in future lists.

#### Textbooks on Terrorism

- Despite its relative brevity (133 pages of text), **Leonard Weinberg's Global Terrorism: A Beginner's Guide** [Second Edition] (Oneworld Publications, 2008; \$14.95) succeeds in explaining the history of terrorism, how to define terrorism, what is new about al-Qaeda's type of terrorism, the conditions that give rise to terrorism, the types of individuals that become terrorists, the nature of governments' responses, and how terrorism ends. The author is a veteran academic specialist on terrorism and readers will greatly benefit from the accumulated wisdom that is sprinkled throughout this wonderfully written book.
- **Gus Martin's Understanding Terrorism: Challenges, Perspectives, and Issues** [Second Edition] (Thousand Oaks, CA: Sage Publications, 2006; 696 pages; \$63.95)

is one of the finest stand-alone, comprehensive textbooks for university courses. Its 696 pages cover the spectrum of all issues involved in studying terrorism, ranging from the early history of terrorism, how terrorism is defined, causes of terrorism, the “morality” of terrorist violence, the objectives, tactics and targets of terrorists, the role of the media, the phenomenon of religious terrorism, the role of women in terrorism, the nexus between terrorism and organized crime, terrorism in the United States and internationally, the components of counterterrorism, and future terrorism trends. Each chapter is organized pedagogically, with opposing viewpoints and issues for classroom discussion. Since its original publication in 1998, Bruce Hoffman’s *Inside Terrorism* [Second Edition] (New York: Columbia University Press, 2006; 456 pages; \$24.95) has become one of the most widely read books on terrorism. This revised and expanded edition incorporates new developments and trends in terrorism, particularly since 9/11’s catastrophic attacks by al-Qaeda. The book’s chapters discuss how to define terrorism, the origins of contemporary terrorism, the internationalization of terrorism, the role of radical religions in driving terrorism, suicide terrorism, the exploitation by terrorist groups of old (e.g., print) and new (e.g., internet) media, terrorists’ objectives, “tradecraft,” technological innovations in their use of weapons, targeting, and future trends in terrorist warfare. The author may be faulted for adopting the thesis that a strategic logic drives suicide terrorism (when, in fact, it is hugely self-destructive to their group’s cause), but otherwise the book’s comprehensiveness will generate much interest from general readers.

- **Countering Terrorism and Insurgency in the 21st Century:** International Perspectives [Three Volumes] (Westport, CT: Praeger Security International, 2007; 2016 pages; \$400.00), edited by James J.F. Forest, brings together chapters by dozens of experts (including this reviewer) to discuss terrorist threats around the world and how to defeat them. Volume I covers “Strategic and Tactical Considerations”, Volume II examines “Sources and Facilitators”, and Volume III discusses “Lessons Learned from Combating Terrorism and Insurgency”. Dr. Forest is Director of Terrorism Studies at West Point’s Combating Terrorism Center. Christopher C. Harmon’s *Terrorism Today* [Second Edition] (New York: Routledge, 2007; 248 pages; \$39.95) is a substantially revised and updated edition of the author’s original edition, published in 2000. The textbook is comprehensive in scope, covering the history of terrorism, strategies of terrorist groups, terrorist modus operandi, technologies and tactics, counterterrorism, and an analysis of how terrorism ends.

### Using the Social Sciences to Study Terrorism

Despite the limitations in data acquisition due to the covert nature of terrorist activities, the academic study of terrorism has greatly benefited from concepts and methodologies produced by the social sciences. As a result, academic analysts are able to draw on social science disciplines to investigate characteristics of terrorism such as the underlying causes driving terrorist rebellions, the psychological nature of terrorist operatives, and the factors driving individuals to become radicalized and join terrorist groups.

- **Mapping Terrorism Research: State of the Art, Gaps and Future Direction,** edited by Magnus Ranstorp (New York: Routledge, 2007; 352 pages; \$37.95), is an attempt to take inventory of the strengths and weaknesses in terrorism research in order to identify a set of priorities for future research. Fourteen academic experts (including this reviewer) contributed chapters on new trends in terrorism studies, the impact of 9/11 on terrorism research, responding to the roots of terror, the socio-psychological component of terrorist motivation, al-Qaeda’s warfare, recruitment of Islamist terrorists in Europe, the landscape of intelligence analysis and counterterrorism, terrorism in cyberspace, and the components of terrorism and counterterrorism studies.
- **Root Causes of Terrorism: Myths, Reality and Ways Forward** (New York:

Routledge, 2005; 288 pages; \$47.95), edited by Tore Bjorgo, is the product of an experts workshop (in which this reviewer participated) that was held in Oslo, Norway, in June 2003. This was the first time that an academic meeting had ever been held to explore, in a systematic manner, concepts and methodologies to conduct analysis on root causes of terrorism. John Horgan's *The Psychology of Terrorism* (New York: Routledge, 2005; 224 pages; \$41.95) is one of the best applications of a social science discipline, in this case, psychology, to explain the drivers that motivate individuals to become terrorists, function as terrorists, and, in ideal cases, disengage from terrorism. Also noteworthy is the author's discussion on how to define terrorism and conduct academic research on terrorism.

- **Ely Karmon's *Coalitions Between Terrorist Organizations: Revolutionaries, Nationalists and Islamists*** (Leiden: Martinus Nijhoff Publishers, 2005; 426 pages; \$176.00) is an important and innovative study of how terrorist organizations form cooperative coalitions and how they function within the changing international system. Dr. Karmon focuses on the cooperation between European left-wing terrorist organizations from 1984 to 1988 and cooperation between European and Palestinian terrorist organizations during the period of 1968 to 1990, in order to use these findings to develop a broader theory concerning cooperative coalitions between organizations involved in international terrorism in the 1990s and early 21st century. In a masterful 70-page chapter on the Islamist terrorist networks, the hypotheses generated by the previous case studies are tested to determine whether the new terrorist actors who emerged in the 1990s, such as al-Qaeda and other Islamist groups around the world, who are driven by religious motivation, act in a similar fashion as their ideological and nationalist predecessors in forming cooperative coalitions.
- In ***Forecasting Terrorism: Indicators and Proven Analytical Techniques*** (Lanham, MD: Scarecrow Press, Inc., 2004; 103 pages; \$40.00), Sundri Khalsa identifies 68 indicators of terrorist activity, based on terrorist capability and intention. These indicators, when applied to actual terrorist group activity, are intended to be used in a warning framework to anticipate terrorist activity that requires early warning. A CD-ROM is included to graphically display the forecasting system and explain the author's methodology.
- The actual and potential resort by terrorist groups to weapons of mass destruction (WMD) warfare is an issue of great concern to governments that might be targeted by such intentions. One of the best treatments of this subject is ***The New Face of Terrorism: Threats from Weapons of Mass Destruction*** (New York: I.B. Tauris Publishers, 2002; 336 pages; \$29.95) by Nadine Gurr and Benjamin Cole.
- Terrorist organizations and criminal enterprises, especially narco-traffickers, share a number of characteristics, especially adaptability to changes in governmental law enforcement responses. In ***From Pablo to Osama: Trafficking and Terrorist Networks, Government Bureaucracies, and Competitive Adaptation*** (University Park, PA: The Pennsylvania State University Press, 2007; 312 pages; \$24.95), Michael Kenney examines how narcotics traffickers and terrorists "learn" to adapt to new countermeasures against them and the lessons from such "learning" experiences that can be used for more effective governmental responses.

### **Terrorism and the Internet**

As today's generations of terrorists are hunted by counterterrorist organizations, they possess a distinct advantage that their older predecessors lacked: access to computers, the worldwide Internet and cyberspace's myriad technological benefits in conducting communications and warfare.

- According to Gabriel Weimann's ***Terror on the Internet: The New Arena, the New Challenges*** (Washington, DC: United States Institute of Peace, 2006; 320 pages; \$20.00), which is the first comprehensive study of this issue, terrorists have

established a sophisticated and dynamic presence on the Net, which has completely transformed the way they communicate, obtain information, conduct propaganda and issue threats. They use it to radicalize and recruit new members, raise funds and train, organize and carry out warfare, and then broadcast such incidents on their own websites.

- The Internet has become the "seductive hypermedia" for radical Islamic terrorists, with official and unofficial Web sites, forums and chat-rooms that appeal to supporters worldwide. Most Web sites are intended to advance a group's propaganda to increase their supporting audience, while some have operational intentions. How can we defeat such terrorism in cyberspace? **Hypermedia Seduction for Terrorist Recruiting**, edited by Boaz Ganor, Katharina Von Knop and Carlos Duarte (Amsterdam: IOS Press, 2007; 300 pages; \$150.00) is an important collection of papers by an eclectic group of international experts (in which this reviewer participated) in terrorist use of the Internet, advertising and graphic design specialists, who had been convened to formulate a comprehensive response campaign. The volume's chapters examine radical Islamist websites, the use of symbolism in Islamic fundamentalism and Jihad, mining the Jihadist network in cyberspace, the use of the Internet as a "seductive" recruitment technology, and practical ways to counter the "seductive" terrorist web.

### Radical Islam

Radical Islam has not emerged in a vacuum, but is the product of the confluence of historical and contemporary religious drivers and "real world" factors. To understand the narrative that is central to Muslim belief, it is essential for those engaged in countering religiously-inspired radicalization and terrorism to first read the Quran. The following five books provide an excellent overview of the revival of militant Islam, within the context of the larger Muslim world, which is largely mainstream.

- **Globalized Islam: The Search for a New Ummah** (New York: Columbia University Press, 2004; 320 pages; \$19.95) by Olivier Roy, discusses the driving forces behind the revival of militant Islam in Western Europe. Mr. Roy, a leading French academic expert on political Islam, explains how many Muslims in Western Europe have turned to radical Islamic ideologies as a way of coping with political and psychological crises in their own lives and what they perceive to be threats against their Muslim brethren around the world.
- In **Fundamentalism: The Search for Meaning** (New York: Oxford University Press, 2005; 254 pages; \$16.95), Malise Ruthven provides a penetrating analysis of the nature of fundamentalism around the world, including Islam. Fundamentalism in other religions, such as Christianity and Judaism, are discussed, as well. Mr. Ruthven is a British writer who has taught at several universities.
- Bassam Tibi's **Political Islam, World Politics and Europe: Democratic Peace and Euro-Islam versus Global Jihad** (New York: Routledge, 2007; 328 pages; \$41.95), assesses the impact and manifestations of political Islam, particularly in Europe, which faces a growing conflict between radical segments within its large Muslim minority and the continent's democratic and pluralist institutions and values. Dr. Tibi, one of the world's foremost experts on political Islam and Arab nationalism, is Professor of International Relations at the University of Goettingen, in Germany and a visiting professor at Cornell University.
- In **Bad Faith: The Danger of Religious Extremism** (Amherst, NY: Prometheus Books, 2007; 327 pages; \$26.00), Neil J. Kressel, a professor of psychology at William Paterson University, incisively explains the nature of religious extremism. To Dr. Kressel, religious extremists are "those persons who — for reasons they themselves deem religious — commit, promote or support purposely hurtful, violent, or destructive acts toward those who don't practice their faith." It is not only Islam



that fosters religious extremism, Dr. Kressel points out. Christianity and Judaism have their share of anti-secularists who elevate sacred religious texts, such as the Bible or Koran, to a position of supreme authority in a state. While Dr. Kressel is critical of religious extremism, this is emphatically not an anti-religion treatise. He recommends that once a religiously extremist minority within a religion begins to act violently, then mainstream leaders must immediately identify and "self-police" such outbreaks. In this way, constructive elements have the best chance of overtaking destructive ones. All those in the counterterrorism community who wish to understand and respond to the characteristics of religious extremism that lead to terrorism will greatly benefit from reading Dr. Kressel's important book.

- **Unmodern Men in the Modern World: Radical Islam, Terrorism, and the War on Modernity** (New York: Cambridge University Press, 2007; 304 pages; \$19.99) by Michael Mazarr, is one of the best diagnoses of the resentment by Islamist forces toward modernity, which has led them to utilize terrorism to retaliate against the effects of modernity on traditional life in their respective societies. In one of his many insightful passages, Dr. Mazarr, a professor at the National War College, writes that modernization challenges the religious and spiritual element of tradition by threatening to secularize society "in order to replace a religious view of the world with a scientific, rationalist one... modernization and modernity place faith under stress, call it into greater question, threaten to trade it out in favor of rationalist humanism. And one result, unsurprisingly, is a flight back to religion, so that the actual effect of modernization in many contexts is an upwelling of devotion."

### Suicide Terrorism

One of the manifestations of radical Islamic terrorism is suicide martyrdom bombings, in which the goal of the perpetrator is to kill himself (or herself) together with the intended victims. *Suicide Bombers: Allah's New Martyrs* (London: Pluto Press, 2005; 288 pages; \$27.95) by Farhad Khosrokhavar, a French social scientist, discusses the concept of martyrdom in Islam, how it expresses itself in Iran, Palestine (vis-à-vis Israel), and Lebanon, and al-Qaeda's use of martyrdom operations in its worldwide operations.

- In **The Martyr's Oath: The Apprenticeship of a Homegrown Terrorist** (John Wiley & Sons Canada, 2005; 288 pages; \$36.95) Stewart Bell, a Canadian journalist, chronicles the story of Mohammed Jabarah, a young Canadian Muslim who became radicalized and recruited by al-Qaeda for a bombing mission in Singapore in 2001. By investigating why an intelligent young person who grew up in a comfortable middle class family in Canada (although originally from Kuwait) would end up as an operative in a terrorist organization in East Asia, Mr. Bell searches for answers on how best to counter the proliferation of similar types of recruits in North America and Europe into radical Islamic terrorism.

### 9/11 and its Aftermath

- According to Evan F. Kohlmann's extensively researched **Al-Qaida's Jihad in Europe: The Afghan-Bosnian Network** (New York: Berg, 2004; 256 pages; \$19.95), the Hamburg cell that had carried out the 9/11 attacks across the continent was an outgrowth of the infiltration of Europe by al-Qaeda's operatives and allies beginning in the early 1990s. As a fragile state with a Muslim majority, Bosnia afforded Osama bin Laden's Saudi, Egyptian and Yemeni lieutenants, and their North African "Jihad foot soldiers" with a safe haven to establish the infrastructural seeds for the European and Canadian " sleeper cells " that would threaten Western European states and America in the succeeding years.
- Once al-Qaeda started its devastating bombing campaign against America in East Africa in 1998, the world's attention began to focus on the group and its leader, Osama bin Laden. One of the best of the first crop of books on this topic was Peter

Bergen's **Holy War: Inside the Secret World of Osama bin Laden** (New York: Free Press, 2002; 320 pages; \$14.95), which was based on first-hand investigative reporting and interviews with bin Laden, his associates, and counterterrorism officials. In 2006, Mr. Bergen published *The Osama bin Laden I Know: An Oral History of al Qaeda's Leader* (New York: Free Press, 2006; 528 pages; \$15.00), which updates his account by drawing on primary documents and interviews with more than fifty people who knew bin Laden personally.

- Terry McDermott's **Perfect Soldiers: The Hijackers: Who They Were, Why They Did It** (New York: HarperCollins Publishers, 2008; 368 pages; \$14.95) is an excellent account of the personal histories of al Qaeda's 9/11 hijackers and the beliefs and motivations that drove them to commit such horrendous acts. McDermott, a Los Angeles Times correspondent, traveled to some 20 countries to conduct research for the book.
- Although primarily focusing on the al-Qaeda-led Global Salafi Jihad, Marc Sageman's **Understanding Terror Networks** (Philadelphia: University of Pennsylvania Press, 2004; 232 pages; \$29.95) is considered one of the most original and innovative social science studies conducted on how individuals are driven to join terrorist organizations. Utilizing his background as a forensic psychiatrist, political sociologist and former CIA case officer in Pakistan, Dr. Sageman's study is based on his knowledge of radical Islamic ideologies and compilation of dozens of biographies of terrorist operatives which enable him to generate a myriad of findings on trends in recruitment and operational warfare by today's Jihadi operatives.
- Dr. Sageman's **Leaderless Jihad: Terror Networks in the Twenty First Century** (Philadelphia: University of Pennsylvania Press, 2008; 208 pages; \$24.95), updates and expands his earlier work on what drives radical elements of a society to terrorism. According to Dr. Sageman, the pre-9/11 al-Qaeda has become morphed into a social movement consisting of several thousand members. This makes al-Qaeda even more dangerous because as a social movement it has dramatically grown beyond its organizational origins. How do al-Qaeda's supporters become radicalized? Dr. Sageman formulates a four phase process that depends on an individual's sense of moral outrage in response to perceived suffering by fellow Muslims around the world; how he might interpret such moral outrage within the context of a larger war against Islam; whether or not the sense of "moral outrage" resonates with one's own experience, for example, discrimination or difficulty in making it in Western society and, finally, being mobilized by networks that take one to the next level of violent radicalization in the form of terrorist cells. To counter the social movement inspired by al-Qaeda, Dr. Sageman proposes a strategy to "take the glory and thrill out of terrorism." Military operations against them should be conducted swiftly and precisely, with such terrorists considered "common criminals." The sense of "moral outrage" by young Muslims can be diminished by helping to resolve local conflicts that al-Qaeda's propaganda highlights as injustices against the Muslim world. The young jihadists want to become heroes, so they need to be provided with alternative role models, such as Muslim soccer stars and other successful community leaders. Dr. Sageman's incisive observations based on carefully examined evidence, astute insights and scholarship make "Leaderless Jihad" the gold standard in al-Qaeda studies.
- To understand how terrorist groups operate, it is crucial to uncover how they go about recruiting new operatives to maintain themselves as viable organizational networks and, if possible, expand their activities. Such insight is provided in **The Lesser Jihad: Recruits and the Al-Qaida Network** (Lanham, MD: Rowman & Littlefield Publishers, Inc., 2007; 174 pages; \$24.95), by Elena Mastors and Alyssa Deffenbaugh. Focusing primarily on the al-Qaeda network, the authors examine "why, how, and where individuals" become involved in that network, which they

define as “financial backers and fund-raisers, operators, logisticians, recruiters, trainers, and leaders.” It is important to uncover such recruitment patterns to enable counterterrorism agencies to derive potential strategies for dealing with the “entry” points into their networks. By focusing on the al-Qaeda network’s recruitment processes, *The Lesser Jihad* is an important contribution to our understanding of the measures required to counter and defeat such a terrorist network.

- Brynjar Lia’s **Architect of Global Jihad: The Life of Al Qaeda Strategist Abu Mus'ab al-Suri** (New York: Columbia University Press, 2008; 256 pages; \$28.95), is a biography of an important al Qaeda theoretician. In addition to writing an influential 1,600-page book, al-Suri had trained a generation of young jihadists in the Afghan training camps and helped establish the organization’s European networks. Syrian-born Al-Suri was captured in Pakistan in late 2005. Lia is a research professor at the Norwegian Defence Research Establishment (FFI).

### Palestinian Terrorism

While the threats posed by al Qaeda and its worldwide affiliates occupy the attention of most books, other terrorist conflicts also merit close attention. For example, in a stunning upset, in January 2006 Hamas’s political arm won the Palestinian parliamentary elections.

- **Hamas: Politics, Charity, and Terrorism in the Service of Jihad** (New Haven, CT: Yale University Press, 2007; 336 pages; \$17.00) by Matthew Levitt explains how Hamas was able to blend terrorism, political activism, and social welfare services to become the dominant force in the Palestinian territories. The book is meticulously documented.
- Anne Marie Oliver and Paul Steinberg explore the underpinnings of the cult of martyrdom among the Palestinians in **The Road to Martyr's Square: A Journey Into the World of the Suicide Bomber** (New York: Oxford University Press, 2006; 304 pages; \$19.95). Their book is based on their extensive field research in the West Bank and Gaza Strip, which enabled them to see first hand and collect documentation and video materials to which most outsiders are not privy. According to the authors, suicide bombings have become so deeply ingrained in Palestinian society as a 'cult of martyrdom' that "lengthy indoctrination and training sessions for suicide bombers were no longer deemed necessary. Indeed, the script was so well known that someone who wanted to become a bomber, it was said, was simply given a bomb; he decided the coordinates for himself." This beautifully written yet disturbing book offers a unique perspective on the intifada and the Palestinian-Israeli conflict, written by authors who demonstrate great understanding of the Palestinians' internal and external struggles.
- Anat Berko's **The Path to Paradise: The Inner World of Suicide Bombers and Their Dispatchers** (Westport, CT: Praeger Security International, 2007; 216 pages; \$49.95) is an insightful examination of Palestinian suicide bombers and the men who dispatch them on their missions. While concrete grievances against Israel and its occupation policy — primarily in the West Bank (since Israel has withdrawn from the Gaza Strip) — drive most Palestinian suicide bombers to attack Israelis, the cult of death through martyrdom is reinforced daily through indoctrination and hate propaganda in Palestinian mosques, schools, media and popular music. How can suicide bombings be stopped? The key, Dr. Berko believes, rests with Muslim religious leaders, who "have the moral responsibility to forcefully condemn suicide bombing attacks and to issue unequivocal fatwas [religious rulings] against them." They must emphatically state that those who carry out such attacks" not only do not automatically go to paradise, but that they automatically go to hell." The book contains a wealth of information about Palestinian society, such as the impact of polygamous families and arranged marriages on the sons and daughters who decide to become suicide martyrs.

- Bernard Rougier's **Everyday Jihad: The Rise of Militant Islam among Palestinians in Lebanon** (Cambridge, MA: Harvard University Press, 2007; 333 pages; \$28.95) is based on the author's intensive fieldwork in the Palestinian refugee camp of Ain al-Hilweh, the country's largest concentration of Palestinians. Mr. Rougier is a Middle East scholar affiliated with Sciences-Po in Paris. Although he is chiefly concerned with how militant pan-Islamism took hold in Ain al-Hilweh, he offers extensive evidence of similar developments in Nahr al-Bared and other refugee camps. He shows how a growing number of disaffected Palestinian refugees now view themselves as part of the global geography of radical Islam, pointing out that this is a position that has led them to identify with the rhetoric of al-Qaeda. Mr. Rougier concludes that militant Islamism among the Palestinians can be mitigated by re-invigorating the Palestinian-Israeli peace process and offering the Palestinians a viable state.

### Terrorism in the United States

- In **Holy War on the Home Front: The Secret Islamic Terror Network in the United States** (New York: Sentinel, 2006; 256 pages; \$21.00) Harvey Kushner (with Bart Davis) assert that for more than two decades a secret network of Islamic extremists belonging to al-Qaeda and Hamas has been entrenching itself in American society, where some of them function as leaders of local and national Islamic organizations and charities, religious preachers, soldiers, drug smugglers, and prison chaplains. Mr. Kushner is chairman of the department of criminal justice at Long Island University and a well-respected terrorism expert.
- The **Terrorist Next Door: The Militia Movement and the Radical Right** (New York: Thomas Dunne Books, 2002; 416 pages; \$27.95) by Daniel Levitas cautions us that far-right extremist groups in America have always posed a terrorist threat, as exemplified by Neo-Nazi groups such as the Aryan Nations and individuals such as Timothy McVeigh. Extensively researched and documented, this is the most definitive account ever written on America's far-right militia movements.

### U.S. Counter-terrorism

The political and intelligence failures by the Clinton and Bush administrations to prevent 9/11 have resulted in the publication of numerous books, of which nine are briefly reviewed here.

- The first was **Breakdown: How America's Intelligence Failures Led to September 11** (Washington, DC: Regnery Publishing Inc., 2002; 256 pages; \$19.95) by Washington Times' investigative reporter Bill Gertz, which places the blame on the lack of political will by successive administrations and Congress to vigorously counter al-Qaeda's growing threat.
- In **Terrorism and U.S. Foreign Policy** (Washington, DC: Brookings Institution Press, 2003; 285 pages; \$36.95 hardcover; \$20.95 paper), Paul Pillar provides a framework for understanding the history and current posture of U.S. counterterrorism policy. The concluding chapter provides recommendations for improving America's counterterrorism capability. Dr. Pillar is a former deputy chief of the CIA's Counterterrorist Center, and currently a visiting professor at Georgetown University.
- With the benefit of time and a full complement of staff to conduct its research and call on expert witnesses, **The 9/11 Commission Report: Final Report of the National Commission on Terrorist Attacks Upon the United States** (New York: W.W. Norton & Company, 2004; 568 pages; \$10.00) provides the most comprehensive critique of the events and policies that led to 9/11 (although since its publication questions have arisen over its glossing of evidence that more may have been known than what was included in its report by U.S. intelligence units about al-Qaeda's pre-9/11's preparatory activities).

- Daniel Benjamin's and Steven Simon's **The Next Attack: The Failure of the War on Terror and a Strategy for Getting it Right** (New York: Times Books, 2005; 352 pages; \$16.00), believe that America is losing the war on terrorism. Due to the Bush administration's post-September 11 policies, they write, America's strategic position is weakening; increasing numbers of Muslims are joining the radical Islamists in terrorist violence. Jihadist ideology has become the bloody banner for grievances around the world, "merging into a pervasive hatred of the United States, its allies, and the international order they uphold." This hatred has loosened Muslim religious and social inhibitions on violence that it now justifies an attack on "infidels" such as the United States using weapons of mass destruction. As a consequence of what Messrs. Benjamin and Simon (but not necessarily others) consider to be the Bush administration's failure to understand that radical Islam is a transnational problem and the intervention in Iraq, which has turned that country into the "central theater of the jihadist struggle," they argue that "Unwittingly, we are clearing the way for the next attack — and those that will come after."
- One of the most sweeping and extensively researched narrative of the events leading to al-Qaeda's 9/11 attacks is provided by Lawrence Wright's **The Looming Tower: Al-Qaeda and the Road to 9/11** (New York: Knopf, 2006; 480 pages; \$27.95). It also examines al-Qaeda's activities from the perspectives of American counterterrorism agencies that had tried, but ultimately failed, to stop them.
- In **The One Percent Doctrine: Deep Inside America's Pursuit of Its Enemies Since 9/11** (New York: Simon & Schuster, 2006; 384 pages; \$27.00) veteran journalist Ron Suskind argues that the failure to anticipate 9/11 led the Bush Administration to adopt a new preemptive counterterrorism doctrine in which even the possibility of a one percent likelihood of a nuclear detonation.
- The **Terrorist Watch: Inside the Desperate Race to Stop the Next Attack** (New York: Crown Forum, 2007; 272 pages; \$26.95) by Ron Kessler is an insightful and revealing look at how U.S. counterterrorism agencies and their top players conducted America's attacks on al-Qaeda and its affiliates prior to and following September 11. Kessler is a veteran Washington-based investigative journalist on national security and the author of 16 books. His unparalleled access to top players in America's counterterrorism campaign allowed him a rare glimpse into their tradecraft, making *The Terrorist Watch* a riveting account.
- **Evolution of U.S. Counterterrorism Policy** [Three Volumes], edited by Yonah Alexander and Michael B. Kraft (Westport, CT: Praeger Security International, 2007; 1456 pages; \$299.00), is a comprehensive collection of key documents, statements, and testimony on U.S. government counterterrorism policies, laws and programs as they evolved prior to and following 9/11. One of the co-authors, Mr. Kraft, is a former high level State Department official, so the volume greatly benefits from his extensive knowledge of these issues.
- Michael A. Sheehan's **Crush the Cell: How to Defeat Terrorism Without Defeating Ourselves** (Random House, 2008; 320 pages; \$24.95), recommends using "offensive operational intelligence" to identify and defeat terrorist cells, some of which are loosely affiliated "wannabes". Mr. Sheehan is a former Deputy Commissioner for Counterterrorism in the New York City Police Department and Ambassador at Large for Counterterrorism at the State Department.

#### Counter-terrorism - General

- In **The Counter-Terrorism Puzzle: A Guide for Decision Makers** (New Brunswick, NJ: Transaction Publishers, 2005; 334 pages; \$39.95) Boaz Ganor, one of Israel's top counterterrorism academic experts, identifies terrorist threats and delineates ways in which governments can most successfully counteract them. The "puzzle" of the book's title hints at the myriad ways a response to a terrorist threat can

take shape in the form of policy making, intelligence collection and analysis, deterrence, and offensive and defensive countermeasures (and how to avoid the "boomerang effect").

- Emanuel Gross's **The Struggle of Democracy Against Terrorism: Lessons from the United States, the United Kingdom, and Israel** (Charlottesville, VA: University of Virginia Press, 2006; 320 pages; \$35.00) is one of the best studies on the legal challenges and moral dilemmas faced by democracies in balancing security against civil liberties, human rights and the rule of law in countering the threats posed by terrorists. Mr. Gross covers the spectrum of relevant topics including defining terrorism, the laws of war in countering terrorism, interrogating terrorists, the powers of military commanders in administering areas where terrorists operate (such as in Iraq or the West Bank), administrative detention, the right to privacy by citizens during emergency periods, the use of civilians by terrorists or armies as human shields, and thwarting terrorist acts through targeted killings of terrorist leaders and operatives.
- **Making the Nation Safer: The Role of Science and Technology in Countering Terrorism**, by the National Research Council of the National Academies (Washington, DC: The National Academies Press, 2002; 440 pages; \$41.36), is considered one of the "classic" studies in homeland security. Comprehensive in scope and authoritative in its technical expertise, the volume's chapters discuss scientific and technical approaches to mitigate vulnerabilities in key infrastructural sectors, such as transportation, information and telecommunications systems, health systems, the electric power grid, food and water supplies, and others that may be susceptible to terrorist attacks. It also discusses nuclear and radiological threats, bioterrorism, toxic chemicals and explosive materials, cyberterrorism, and potential threats to energy systems, such as the electrical power grid and oil and gas. For each of the critical infrastructure sectors discussed, the volume provides recommendations on how to apply knowledge and technology to make the nation safer, as well as the research and development programs that are required to produce innovations to protect the nation against future threats.
- **Homeland Security: A Complete Guide to Understanding, Preventing, and Surviving Terrorism** (New York: McGraw-Hill, 2005; 556 pages; \$75.00) by Mark A. Sauter and James Jay Carafano is a theoretical and practical treatment of terrorism, counter-terrorism and homeland security. The book is divided into three sections: the emergence of homeland security as a modern concern, how to understand terrorism and an overview of America's homeland-security system. Although primarily written as a textbook for the academic market—with each chapter beginning with an overview and learning objectives and ending with a chapter summary, discussion topics, notes on sources and even a quiz—"Homeland Security" is much more than a textbook. It is an indispensable reference resource for those seeking to understand how terrorists operate and the structures and mechanisms that have been developed to respond to the magnitude of the terrorist threats confronting us.
- **Countering Terrorism and WMD: Creating a Global Counter-Terrorism Network** (New York: Routledge, 2006; 300 pages; \$45.95), edited by Peter Katona, Michael D. Intriligator and John P. Sullivan, brings together experts from a range of disciplines to discuss the components necessary for comprehensive counter-terrorism. What sets this book apart from other initiatives are the authors' specializations in clinical medicine, public health, economics, political science and public policy, law enforcement, military and intelligence.
- Daniel Byman's **The Five Front War: The Better Way to Fight Global Jihad** (Wiley, 2007; 320 pages; \$25.95) proposes a comprehensive approach to countering terrorism, involving the use of intelligence, law enforcement, a counter narrative to al-Qaeda's ideology, reforms in the targeted countries, and strong alliances among

governments. Dr. Byman directs Georgetown University's Security Studies Program and the Center for Peace and Security Studies.

### Μπλε μικρά χάπια στον αγώνα κατά της τρομοκρατίας

Ορισμένες φορές είναι απίστευτη η ευρηματικότητα των οργάνων των υπηρεσιών ασφαλείας. Όπως για παράδειγμα η χρήση του Viagra στον προσεταιρισμό γηραιών φυλάρχων στο Αφγανιστάν προκειμένου να έχουν θετική στάση προς τις μαχόμενες δυνάμεις της συμμαχίας στον αγώνα τους κατά των Taliban. Όμως πέρα από την εύθυμη πλευρά της είδησης θα πρέπει να αναγνωρίσουμε ότι ακόμη και στη συγκεκριμένη περίπτωση απαιτείται λεπτομερής ανάλυση των χαρακτηριστικών του αντιπάλου προκειμένου να βρεθούν τα αδύνατα σημεία του τα οποία θα τύχουν ανάλογης εκμετάλλευσης.

### Little Blue Pills Among the Ways CIA Wins Friends in Afghanistan

The Afghan chieftain looked older than his 60-odd years, and his bearded face bore the creases of a man burdened with duties as tribal patriarch and husband to four younger women. His visitor, a officer, saw an opportunity, and reached into his bag for a small gift. Four blue pills. "Take one of these. You'll love it," the officer said. Compliments of Uncle Sam. The enticement worked. The officer, who described the encounter, returned four days later to an enthusiastic reception. The grinning chief offered up a bonanza of information about movements and supply routes -- followed by a request for more pills. For U.S. intelligence officials, this is how some crucial battles in Afghanistan are fought and won. While the CIA has a long history of buying information with cash, the growing Taliban insurgency has prompted the use of novel incentives and creative bargaining to gain support



in some of the country's roughest neighbourhoods, according to officials directly involved in such operations. In their efforts to win over notoriously fickle warlords and chieftains, the officials say, the agency's operatives have used a variety of personal services. These include pocket-knives and tools, medicine or surgeries for ailing family members, toys and school equipment, tooth extractions, travel visas, and, occasionally, pharmaceutical enhancements for aging patriarchs with slumping libidos, the officials said. "Whatever it takes to make friends and influence people -- whether it's building a school or handing out Viagra," said one long-time agency operative and veteran of several Afghanistan tours. Like other field officers interviewed for this article, he spoke on the condition of anonymity when describing tactics and operations that are largely classified. Officials say these inducements are necessary in Afghanistan, a country where warlords and tribal leaders expect to be paid for their cooperation, and where, for some, switching sides can be as easy as changing tunics. If the Americans don't offer incentives, there are others who will, including Taliban commanders, drug dealers and even Iranian agents in the region. The usual bribes of choice -- cash and weapons -- aren't always the best options, Afghanistan veterans say. Guns too often fall into the wrong hands, they say, and showy gifts such as money, jewellery and cars tend to draw unwanted attention. "If you give an asset \$1,000, he'll go out and buy the shiniest junk he can find, and it will be apparent that he has suddenly come into a lot of money from someone," said Jamie Smith, a veteran of CIA covert operations in Afghanistan and now chief executive of SCG International, a private security and intelligence company. "Even if he doesn't get killed, he becomes ineffective as an informant because everyone knows where he got it." The key, Smith said, is to find a way to meet the informant's personal needs in a way that keeps him firmly on your side but leaves little or no visible trace.

"You're trying to bridge a gap between people living in the 18th century and people coming in from the 21st century," Smith said, "so you look for those common things in the form of material aid that motivate people everywhere." Among the world's intelligence agencies, there's a long tradition of using sex as a motivator. Robert Baer, a retired CIA officer and author of several books on intelligence, noted that the Soviet spy service was notorious for using attractive women as bait when seeking to turn foreign diplomats into informants. For some U.S. operatives in Afghanistan, Western drugs such as Viagra were just part of a long list of enticements available for use in special cases. Two veteran officers familiar with such practices said Viagra was offered rarely, and only to older tribal officials for whom the drug would hold special appeal. While such sexual performance drugs are generally unavailable in the remote areas where the agency's teams operated, they have been sold in some Kabul street markets since at least 2003 and were known by reputation elsewhere. "You didn't hand it out to younger guys, but it could be a silver bullet to make connections to the older ones," said one retired operative familiar with the drug's use in Afghanistan. Afghan tribal leaders often had four wives -- the maximum number allowed by the Koran -- and aging village patriarchs were easily sold on the utility of a pill that could "put them back in an authoritative position," the official said. Both officials who described the use of Viagra declined to discuss details such as dates and locations, citing both safety and classification concerns. The CIA declined to comment on methods used in clandestine operations. One senior U.S. intelligence official familiar with the agency's work in Afghanistan said the clandestine teams were trained to be "resourceful and agile" and to use tactics "consistent with the laws of our country." "They learn the landscape, get to know the players, and adjust to the operating environment, no matter where it is," the official said. "They think out of the box, take risks, and do what's necessary to get the job done." Not everyone in Afghanistan's hinterlands had heard of the drug, leading to some awkward encounters when Americans delicately attempted to explain its effects, taking care not to offend their hosts' religious sensitivities. Such was the case with the 60-year-old chieftain who received the four pills from a U.S. operative. According to the retired operative who was there, the man was a clan leader in southern Afghanistan who had been wary of Americans -- neither supportive nor actively opposed. The man had extensive knowledge of the region and his village controlled key passages through the area. U.S. forces needed his cooperation and worked hard to win it, the retired operative said. After a long conversation through an interpreter, the retired operator began to probe for ways to win the man's loyalty. A discussion of the man's family and many wives provided inspiration. Once it was established that the man was in good health, the pills were offered and accepted. Four days later, when the Americans returned, the gift had worked its magic, the operative recalled. "He came up to us beaming," the official said. "He said, 'You are a great man.' " "And after that we could do whatever we wanted in his area."

### **Ισλαμική επανάσταση στη Βοσνία**

Δεκατρία χρόνια μετά τον πόλεμο που κόστισε τη ζωή 100.000 ατόμων, στην πλειοψηφία τους Μουσουλμάνων, συντελείται στη Βοσνία μια Ισλαμική επανάσταση με τη δημιουργία νέων τζαμιών, εκπαιδευτικών σχολών (madrasas) και σχολείων και την εμφάνιση ανδρών με μακριές γενειάδες και γυναικών με φορέματα που καλύπτουν όλο τους το σώμα. Αναμένεται με ιδιαίτερο ενδιαφέρον η αντίδραση των τοπικών κοινωνιών στη νέα τάση καθώς τα πάθη του παρελθόντος δεν εξαλείφονται εύκολο και γρήγορα.

### **An Islamic Revival in Bosnia Tests a Fragile Nation's Secular Cast**

Thirteen years after a war in which 100,000 people were killed, a majority of them Muslims, Bosnia is undergoing an Islamic revival. More than half a dozen new madrasas, or religious high schools, have been built in recent years, while dozens of mosques have sprouted, including the King Fahd, a sprawling \$28 million complex with a sports and cultural center. Before the war, fully covered women and men with long beards were almost unheard



of. Today, they are common. Many here welcome the Muslim revival as a healthy assertion of identity in a multiethnic country where Muslims make up close to half the population. But others warn of a growing culture clash between conservative Islam and Bosnia's avowed secularism in an already fragile state. Two months ago, men in hoods attacked participants at a gay festival in Sarajevo, dragging some people from vehicles and beating others while they chanted, "Kill the gays!" and "Allahu Akbar!" Eight people were injured. Muslim religious leaders complained that the event, which coincided with the holy month of Ramadan, was a provocation. The organizers said they had sought to promote minority rights and meant no offense. In this cosmopolitan capital, where bars have long outnumbered mosques, Muslim religious education was recently introduced in state kindergartens, prompting some secular Muslim parents to complain that the separation between mosque and state was being breached. Bosnia's Muslims have practiced a moderate Islam that stretches back to the Ottoman conquest in the 15th century. Sociologists and political leaders say the religious awakening is partly an outgrowth of the war and the American-brokered Dayton agreement that ended it, dividing the country into a Muslim-Croat Federation and a Serb Republic. The Serbs committed genocide against us, raped our women, made us refugees in our own country," said Mustafa Efendi Cerić, the grand mufti and main spiritual leader of Bosnia's Muslim community. And now we have a tribal constitution that says we have to share political power and land with our killers," he said. "We Bosnian Muslims still feel besieged in the city of Sarajevo." That resentment is evident. As several thousand worshippers streamed into the imposing King Fahd mosque on a recent Friday, a young man sat outside selling a popular conservative Muslim magazine with President-elect Barack Obama on the cover. "Hussein, Will Your America Kill Muslims?" the headline asked, using Mr. Obama's middle name, a source of pride for many Muslims here. Religious and national identity has long been fused in multi-faith Bosnia. It was tradition in villages to refer to neighbors by their religion Muslim, Orthodox, Catholic, rather than as Bosniak, Serb or Croat. In the nation building that followed Dayton, that practice has become stronger. In Sarajevo, a predominantly Muslim city, dozens of streets named after Communist revolutionaries were renamed after Muslim heroes, and political parties stressing Muslim identity gained large constituencies. Catholic Croats and Orthodox Serbs, meanwhile, cleave to their own religious and cultural identities. Church attendance is on the rise; in the Serb Republic, even ministries and police departments have their own Orthodox patron saints. Muharem Bazdulj, deputy editor of the daily *Oslobodenje*, the voice of liberal, secular Bosnia, said he feared the growth of Wahhabism, the conservative Sunni movement originating in Saudi Arabia that aims to strip away foreign and corrupting influences. Analysts say Saudi-financed organizations have invested about \$700 million in Bosnia since the war, often in mosques. Wahhabism arrived via hundreds of warriors from the Arab world during the war and with Arab humanitarian and charity workers since, though sociologists here stress that most Bosnian Muslims still believe that Islam has no place in public life. Dino Abazović, a sociologist of religion at the University of Sarajevo, who recently conducted a detailed survey of 600 Bosnian Muslims, said 60 percent favored keeping religion a private matter; only a small minority prayed five times a day. Still, violent episodes have occurred. Earlier this year, after an explosion at a shopping mall in the town of Vitez killed one person and wounded seven, Zlatko Miletić, head of uniformed police of the Muslim-Croat Federation Interior Ministry, warned that a group in Bosnia linked to Salafism, an ultraconservative Sunni Islamic movement, was bent on terrorism. Nonetheless, Grand Mufti Cerić said Wahhabism had no future in Bosnia, even if more people were embracing religion. Children are fasting on Ramadan, going to the mosque more than their parents," he said. "We had de-Islamification for 40 years during Tito's time, so it is natural that people are now embracing the freedom to express their religion." Some critics of the mufti argue that he has allowed religion to encroach on civic life. Vedrana Pinjo-Neuschul, who comes from a mixed Serb and Muslim household, has led the fight against Islamic classes in state-financed kindergartens across Sarajevo. Parents may remove their children from the religious classes, but Ms. Pinjo-Neuschul, whose husband is part Jewish, Catholic and Serb, said the policy

would stigmatize non-Muslim children. She recently withdrew her two young children from a public kindergarten and gathered 5,000 signatures against the policy, which has also been criticized by the Organization for Security and Cooperation in Europe, the Vienna-based group monitoring democracy. "I do not want to explain to my 4-year-old son, Sven, who is in love with his Muslim classmate Esma, why they suddenly have to sit in different rooms," she said at a Jewish community center in Sarajevo. "Nobody has the right to separate them." But she says she has been harassed by Islamic radicals on the street and has received hate mail in Arabic. "There are some people who want to turn Bosnia into a Muslim state," she said. Mustafa Effendi Spahic, a prominent liberal Muslim intellectual and professor at the Gazri Husrev-beg Madrasa in Sarajevo, went further, calling the introduction of religious education in kindergarten "a crime against children." The Prophet says to teach children to kneel as Muslims, only after the age of 7," said Professor Spahic, who was imprisoned under Communism for Islamic activism. "No one has any right to do that before then because it is an affront to freedom, the imagination and fun of the child's world." Milorad Dodik, prime minister of Bosnia's Serb Republic, has referred to Sarajevo as the new Tehran, and talks of a "political Islam and a fight against people who don't share the same vision." But Muslim leaders and most Western analysts here counter such assertions, saying they do not correspond to Bosnia's secular reality and are part of an attempt by Serb nationalists to justify the brutal wartime subjugation of Muslims by both Serbs and Croats.

### Η μπούρκα βλάπτει σοβαρά την υγεία

Σύμφωνα με μελέτη επιστημόνων από την Osteoporosis Unit στο Νοσοκομείο St James's hospital στο Dublin, η χρήση της μπούρκας προδιαθέτει για αυξημένο κίνδυνο καταγμάτων της πυέλου κατά τη διάρκεια των τοκετών καθώς η έλλειψη βιταμίνης D λόγω έλλειψης έκθεσης στο ηλιακό φως. Παράλληλα, και τα παιδιά που γεννιούνται είναι περισσότερο επιρρεπή σε σπασμούς κατά την πρώτη εβδομάδα της ζωής τους.

### Ireland: Burqa bad for your health

Muslim women who wear the burqa in Ireland are at increased risk of pelvic fractures during childbirth because of vitamin D deficiency due to a lack of sunlight, a consultant warns. Babies born to women with vitamin D deficiency are also more prone to seizures in their first week of life, according to Dr Miriam Casey, of the Osteoporosis Unit in St James's



hospital in Dublin. A burqa is an enveloping outer garment worn by some Muslim women. In hot countries, enough sunlight gets through to give them sufficient vitamin D, but this may not happen in countries where there is limited sunshine, such as Ireland and Britain. Casey said she was aware of cases involving pelvic fractures, and warned that these could become more frequent as Ireland's Muslim population increased. "Ireland's temperate climate doesn't have the intense sunlight that keeps burqa-clad women from becoming vitamin D-deficient in their own countries," she said. Vitamin D helps the body to absorb calcium and is crucial for making bones strong. The greatest source is sunlight. Casey said the fractures occur at sites of particular weakness, which develop in under-mineralised pelvic bones. In these women's babies, low calcium can cause "serious complications such as seizures, growth retardation, muscle weakness and fractures". "As a toddler, carrying the weight of the torso can force the development of a bow-legged appearance and a waddling gait," she said. "Later, there can be rickets, which is caused by vitamin D deficiency, with swollen wrists and bones that fail to fuse in adolescence." Darker skins can produce as little as 1% of the vitamin D that fairer skins produce. Moreover, studies have found that the rate of many diseases rises the further north one moves leading researchers to suspect that vitamin D

may play a greater role in health than previously thought. Casey said: "As we see a rise in the number of Muslims in Ireland, it's going to become a massive problem. It's worse in England whose Muslim community is older. There are already problems in the Rotunda [a maternity hospital in Dublin] and the paediatric hospitals." A spokeswoman for the Islamic community in Ireland said she was unaware of health problems suffered by women wearing burqas.

### Ο εκφυλισμός της al Qaeda


Ενδιαφέρουσα ανάλυση για το παρόν της al Qaeda από την έγκριτη δεξαμενή σκέψης Straffor (βλέπε σχετική αναφορά ανωτέρω), στην οποία γίνεται κριτική των προβλέψεων για τη δράση και την εξέλιξη της οργάνωσης κατά το 2008 ενώ παρατίθενται προβλέψεις και τάσεις για το 2009.

### The Devolution of Al Qaeda

For the past several years, we have published an annual forecast for al Qaeda and the jihadist movement. Since the January 2006 forecast, we have focused heavily on the devolution of jihadism from a phenomenon focused primarily on al Qaeda the group to one based primarily on al Qaeda the movement. Last year, we argued that al Qaeda was struggling to remain relevant and that al Qaeda prime had been marginalized in the physical battlefield. This marginalization of al Qaeda prime had caused that group to forfeit its position at the vanguard of the physical jihad, though it remained deeply involved in the leadership of the ideological battle. As a quick reminder, Stratfor views what most people refer to as "al Qaeda" as a global jihadist network rather than a monolithic entity. This network consists of three distinct entities. The first is a core vanguard, which we frequently refer to as al Qaeda prime, comprising Osama bin Laden and his trusted associates. The second is composed of al Qaeda franchise groups such as al Qaeda in Iraq, and the third comprises the grassroots jihadist movement inspired by al Qaeda prime and the franchise groups. As indicated by the title of this forecast, we believe that the trends we have discussed in previous years will continue, and that al Qaeda prime has become marginalized on the physical battlefield to the extent that we have not even mentioned their name in the title. The regional jihadist franchises and grassroots operatives pose a much more significant threat in terms of security concerns, though it is important to note that those concerns will remain tactical and not rise to the level of a strategic threat. In our view, the sort of strategic challenge that al Qaeda prime posed with the 9/11 attacks simply cannot be replicated without a major change in geopolitical alignments — a change we do not anticipate in 2009.

### 2008 in Review

Before diving into our forecast for the coming year, let's take a quick look back at what we said would happen in 2008 and see what we got right and what we did not.

 **What we got right:** Al Qaeda core focused on the ideological battle. Another year has passed without a physical attack by the al Qaeda core. As we noted last October, al Qaeda spent a tremendous amount of effort in 2008 fighting the ideological battle. The core leadership still appears to be very intent on countering the thoughts presented in a book written in 2007 by Sayyed Imam al-Sharif, also known as Dr. Fadl, an imprisoned Egyptian radical and a founder (with Ayman al-Zawahiri) of Egyptian Islamic Jihad. Al-Sharif's book is seen as such a threat because he provides theological arguments that counter many of the core teachings used by al Qaeda to justify jihadism. On Dec. 13, an 85-page treatise by one of al Qaeda's leading religious authorities, Abu-Yahya al-Libi, was released to jihadist Web sites in the latest of al Qaeda's many efforts to counter Dr. Fadl's arguments. Pakistan will be important as a potential flashpoint. Eight days after we wrote this, former Pakistani Prime Minister Benazir Bhutto was assassinated. Since then, Pakistan has become the focal point on

the physical battlefield. The November 2007 addition of the Libyan Islamic Fighting Group (LIFG) to the global jihadist network will not pose a serious threat to the Libyan regime. The Libyans have deftly used a combination of carrots and sticks to divide and control the LIFG. Jihadists will kill more people with explosives and firearms than with chemical, biological or radiological weapons. We saw no jihadist attacks using WMD in 2008.

**☞ What we got mostly right:** The Algerian jihadist franchise, al Qaeda in the Islamic Maghreb (AQIM), will be hard-pressed in 2008, but not eliminated. AQIM succeeded in launching a large number of attacks in the first eight months of 2008, killing as many people as it did in all of 2007. But since then, the Algerian government has been making progress, and the jihadist group has only conducted two attacks since August 2008. The Algerians also are working closely with neighboring countries to combat AQIM, and the group is definitely feeling the heat. On Dec. 23, 2008, the Algerian government reportedly rejected a truce offered by AQIM leader Yahia Djouadi. Djouadi offered that al Qaeda would cease attacks on foreigners operating in oil fields in Algeria and Mauritania if the Algerian security service would cease targeting al Qaeda members in the Sahel region. The group is still alive, and government pressure appears to have affected its operational ability in recent months, but it did take a bit longer than we anticipated for the pressure to make a difference. Syria will use Fatah al-Islam as a destabilizing force in Lebanon. We had intelligence last year suggesting that the Syrians were going to press the use of their jihadist proxies in Lebanon — specifically Fatah al-Islam. We saw a bit of this type of activity in late May, but not as much as anticipated. By November, Syria actually decided to cut ties with Fatah al-Islam. Jihadist operatives outside war zones will focus on soft targets. Major terrorist strikes in Islamabad and New Delhi were conducted against hotels, soft targets Stratfor has focused on as vulnerable for many years now. Other attacks in India focused on markets and other public places. While most of the attacks against hard targets came in war zones like Iraq and Afghanistan, there were a few attacks against hard targets in places like Pakistan, Yemen and Turkey. Granted, the Sanaa and Istanbul attacks were unsuccessful, but they were attacks against hard targets nonetheless.

**☞ What we missed:** The jihadist franchises in Yemen resurged, and the al-Shabab in Somalia found success. While we quickly picked up on these trends in April and May respectively (and beat most others to the punch with some very good analysis on these topics), we clearly did not predict them in December 2007. We knew that the influx of fighters from Iraq was going to impact countries in the region, but we didn't specifically focus on Yemen and Somalia.

**☞ The Year Ahead:** We anticipate that we will see the United States continue its campaign of decapitation strikes against al Qaeda leadership. While this campaign has not managed to get bin Laden or al-Zawahiri, it has proved quite successful at causing the al Qaeda apex leadership to lie low and become marginalized from the physical jihad. The campaign also has killed a long list of key al Qaeda operational commanders and trainers. As noted above, we believe the core leadership is very concerned about the ideological battle being waged against it — the only real way the theology of jihadism can be defeated — and will continue to focus their efforts on that battlespace. As long as the ideology of jihadism survives (it has been around since the late 1980s), the jihadists' war against the world will continue. It will continue to oscillate between periods of high and low intensity. In the coming year, we believe the bulk of physical attacks will continue to be conducted by regional jihadist franchise groups, and to a lesser extent by grassroots jihadists. With the lack of regional franchises in North America, we do not see a strategic threat to the United States. However, as seen by the recent convictions in the Fort Dix plot trial, or even in the late October case where a U.S. citizen apparently committed a suicide bombing on behalf of al-Shabab in

Somalia, the threat of simple attacks against soft targets in the United States remains. We were again surprised that no jihadist attacks occurred in the United States in 2008. Given the vulnerabilities that exist in an open society and the ease of attack, we cannot rule out an attack in 2009. In Europe, where AQIM and other jihadist franchises have a greater presence and infrastructure, there is a greater threat that these franchises will commit sophisticated attacks. It must be recognized, though, that they will have a far harder time acquiring weapons and explosives to conduct such attacks in the United Kingdom or France than they would in Algeria or Pakistan. Because of this, we anticipate that they will continue to focus on soft targets in Europe. Due to differences between the Muslim communities in the United States and Europe, the grassroots operatives have been more active in Europe than they are in the United States. The May 22, 2008, attempted bombing at the Giraffe Cafe by a Muslim convert in Exeter serves as a good reminder of this.

 **Jihadist Franchises:** After failing last year to predict the resurgence of the jihadist franchises in Yemen and Somalia, we will be keeping a sharp eye on both for 2009. Somalia continues to be a basket case of a country, and the instability there is providing an opportunity for al-Shabab to flourish. There is currently an attempt under way to bring stability to Somalia, but we anticipate that it will not succeed, due to the militant factionalism in the country. The only thing working against al-Shabab and their jihadist brethren is that the Somalian jihadists appear to be as fractious as the rest of the country; al-Shabab is itself a splinter of the Supreme Islamic Courts Council (SICC), which ruled Somalia briefly before the Ethiopian invasion in 2006. There are currently as many as four different jihadist factions fighting one another for control over various areas of Somalia — in addition to fighting foreign troops and the interim government. In Yemen, things have been eerily quiet since the Sept. 17 attack against the U.S. Embassy in Sanaa and the government campaign to go after the group behind that attack. Six gunmen were killed in the attack itself, and the Yemenis have arrested numerous others whom they claim were involved in planning the attack. The Yemenis also killed or captured several significant jihadists prior to the September attack. But given the large number of Yemenis involved in the fighting in Iraq, the number of Saudi militants who have traveled to Yemen due to pressure at home, and the Salafist-jihadist influence within Yemen's security and intelligence apparatus, it will be possible for the two jihadist franchises in Yemen to recover if the Yemenis give them breathing space. Meanwhile, though Iraq is far calmer than it was a few years back, a resurgence in jihadist activity is possible. One of the keys to calming down the many jihadist groups in Iraq was the formation of the Awakening Councils, which are made up of many Sunni former Baathist (and some jihadist) militants placed on the U.S. payroll. With the changes in Iraq, responsibility for these Awakening Councils has been passed to the Iraqi government. If the Shiite-dominated government decides not to pay the councils, many of the militants-turned-security officers might return to their old ways — especially if the pay from jihadist groups is right. Intelligence reports indicate that Baghdad plans to pay only a fraction of the approximately 100,000 men currently serving in the Awakening Councils. The Iraqi central government apparently plans to offer the bulk of them civilian jobs or job training, but we are skeptical that this will work. Elsewhere, Pakistan is once again the critical location for the jihadists. Not only is Pakistan the home of the al Qaeda core leadership as it pursues its ideological war, it also is home to a number of jihadist groups, from the Afghan Taliban and the Tehrik-i-Taliban Pakistan in the northwest to Lashkar-e-Taiba and Jaish-e-Mohammed in the northeast, among several others. The coming year might prove to be pivotal in global efforts against the jihadists in Pakistan. Pakistan already is a country in crisis, and in some ways it is hard to imagine it getting much worse. But if Pakistan continues to destabilize, it could very well turn into a failed country (albeit a failed country with a nuclear arsenal). Before Pakistan becomes a failed state, there are a number of precursor stages it probably will pass through. The most immediate stage would entail the fall of most of the North-West Frontier Province to the jihadists, something that could happen this year. This type of anarchy

in Pakistan could give the jihadists an opportunity to exert control in a way similar to what they have done in places like Afghanistan and Somalia (and already in the Pakistani badlands along the Afghan border.) If, on the other hand, Pakistan is somehow able to hold on, re-establish control over its territory and its rogue intelligence agency and begin to cooperate with the United States and other countries fighting the jihadists, such a development could deal a terrible blow to the aspirations of the jihadists on both the physical and ideological battlefields. Given the number of plots linked to Pakistan in recent years, including the Nov. 26 Mumbai attack and almost every significant plot since 9/11, all eyes will be watching Pakistan carefully.

### **Αφρική – το νέο μέτωπο της τρομοκρατίας**

Χιλιάδες χιλιόμετρα μακριά από τα πεδία των μαχών στο Ιράκ και το Αφγανιστάν, ένα άλλο μέτωπο στο πόλεμο κατά της τρομοκρατίας αρχίζει να ξεδιπλώνεται στη δυτική Αφρική – Αλγερία, Τσαντ, Μαυριτανία, Μαρόκο, Νίγηρας, Νιγηρία, Σενεγάλη και Τυνησία σε μια προσπάθεια να μην εξαπλωθεί η τρομοκρατία με τρόπο παρόμοιο με εκείνο της Σομαλίας. Βέβαια και στις χώρες αυτές, η διάκριση της τρομοκρατίας, των απελευθερωτικών κινημάτων και του οργανωμένου εγκλήματος δεν είναι εντελώς διακριτή και αποσαφηνισμένη αλλά είναι γεγονός ότι η διήθηση της al Qaeda στην αφρικανική ήπειρο είναι δεδομένη και ταχέως εξελισσόμενη.

### **Africa: Another anti-terrorism front**

Thousands of miles from the battlefields of Iraq and Afghanistan, another side of America 's fight against terrorism is unfolding in this remote corner of West Africa . Green Berets are training African armies to guard their borders and patrol vast desolate expanses against infiltration by Al Qaeda's militants so the United States does not have to. A recent exercise by the United States military here is part of a wide-ranging plan since the Sept. 11, 2001, attacks, to take counterterrorism training and assistance to places outside the Middle East, including the Philippines and Indonesia. The five-year, \$500 million partnership between the State and Defense Departments, aimed at Africa, also includes Algeria, Chad, Mauritania, Morocco, Niger, Nigeria, Senegal and Tunisia, and, possibly soon, Libya. American efforts to fight terrorism in the region also include non-military programs, like instruction for teachers and job training for young Muslim men who could be singled out by militant recruiting campaigns. One goal of the program is to act quickly in these countries before terrorism becomes as entrenched as it is in Somalia, an East African nation where there is a heightened militant threat. And unlike Somalia, Mali is willing and able to permit dozens of American and European military trainers to conduct exercises here, and its leaders are plainly worried about militants who have taken refuge in its vast Saharan north. " Mali does not have the means to control its borders without the cooperation of the United States," Ibrahim Boubacar Keita, a former Prime Minister of Mali, said in an interview. Mali, a landlocked former French colony nearly twice the size of Texas, has one of the more stable, but still fragile, democracies in West Africa . But it borders Algeria, whose well-equipped military has chased Qaeda militants into northern Mali, where they have adopted a nomadic lifestyle, making them even more difficult to track. With only 10,000 military and other security forces, and just two working helicopters and a few airplanes, Mali acknowledges how daunting a task it is to try to drive out the militants from their territory. The biggest potential threat comes from as many as 200 fighters from an offshoot of Al Qaeda called Al Qaeda in the Islamic Maghreb, which uses the northern Malian desert as a staging area and support base, American and Malian officials say. About three months ago, the Qaeda affiliate threatened to attack American forces that operated north of Timbuktu in Mali 's desert, three Defense Department officials said. One military official said this warning contributed to a decision to shift part of the recent training exercise out of that area. The government in

neighboring Mauritania said 12 of its troops were killed in a militant attack there in September. By some accounts, the soldiers were beheaded and their bodies were booby-trapped with explosives. Two Defense Department officials expressed fear that a main leader of the Qaeda affiliate in Mali, Mokhtar Belmokhtar is under growing pressure to carry out a large-scale attack, possibly in Algeria or Mauritania, to establish his leadership credentials within the organization. Members of the Qaeda affiliate have not attacked Malian forces, and American and Malian officials privately acknowledge that military officials here have adopted a live-and-let-live approach to the Qaeda threat, focusing instead on rebellious Tuareg tribesmen, who also live in the sparsely populated north. To finance their operations, the militants exact tolls from smugglers whose routes traverse the Qaeda sanctuary, and collect ransoms for kidnapping victims. Last month two Austrians were released after a ransom of more than \$2 million was reportedly paid. They had been held in northern Mali after being seized in southern Tunisia in February. For those reasons, American officials still eye the largely ungoverned spaces of Mali's northern desert with concern. This year, the United States Agency for International Development is spending about \$9 million on counterterrorism programs here. Some of the money will expand an existing job-training program for women to provide young Malian men in the north with the basic skills to set up businesses like tiny flour mills or cattle enterprises. The agency is also building 12 FM radio stations in the north to link far-flung villages to an early-warning network that sends bulletins on bandits and other threats. Financing from the Pentagon will produce radio soap operas in four national languages that will promote peace and tolerance. "Young men in the north are looking for jobs or something to do with their lives," said Alexander Newton, the development agency's mission director in Mali. "These are the same people who could be susceptible to other messages of economic security." Concern about Mali's vulnerability also brought a dozen Army Green Berets from the 10th Special Forces Group in Germany, and several more Dutch and German military instructors, to Mali for the two-week training exercise that ended last month. The mock skirmish lasted just a few minutes. The Malians, shouting to one another and firing at their attackers, retreated from the ambush rather than try to fight through it. "We're still learning," said Captain Yossouf Traore, a 28-year-old commander, speaking in English he learned in Texas and at Fort Benning, Georgia, as a visiting officer. "We're getting a lot of experience in leadership skills and making decisions on the spot." Still, some worrisome indicators are giving some Malian government and religious leaders, as well as American officials, pause about the country's ability to deal with security risks. Mali is the world's fifth-poorest country and, by some measures, getting poorer, according to United Nations and State Department statistics. One of every five Malian children dies before the age of 5. The average Malian does not live to celebrate a 50th birthday. The country's population, now at 12 million people, is doubling nearly every two decades. Literacy rates hover around 30 percent and are much lower in rural areas. There are also small signs that radical clerics are beginning to make inroads into the traditionally tolerant form of Islam practiced here for centuries by Sunni Muslims. The number of Malian women wearing all-enveloping burqas is still small, but the increase is noticeable from just a few years ago, religious leaders say. New mosques are springing up, financed by conservative religious organizations in Saudi Arabia, Libya and Iran, and scholarships offered to young Malian men to study in those countries are also on the rise, Malian officials say. American and African diplomats here said Mali was one of the few countries in the region that had good relations with most of its neighbors, making it a likely catalyst for the broader regional security cooperation the United States is trying to foster. American commanders expressed confidence that by training together, the African forces might work together against transnational threats like Al Qaeda. "If we don't help these countries work together, it becomes a much more difficult problem," said Lieutenant Colonel Jay Connors, the senior American Special Forces officer on the ground here during the exercise. American officials say their strategy is to contain the Qaeda threat and train the African armies, a process that will take years. The nonmilitary counterterrorism programs are just starting, and it is too early

to gauge results. "This is a long-term effort," said Connors, 45, an Africa specialist from Burlington, Vermont, who speaks French and Portuguese. "This is crawl, walk, run, and right now, we're still in the crawl phase."

### Ο εκφυλισμός της al Qaeda

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### Τιμή και δόξα στην Ελληνική Πολεμική Αεροπορία

*ΣΣ: Αν και η είδηση δεν «ταιριάζει» με το περιεχόμενο του παρόντος ενημερωτικού Δελτίου η σημαντικότητα του γεγονότος και η σχεδόν πλήρης απόκρυψη του από τον ανούσιο ειδησεογραφικό χώρο που καλύπτει επί ώρες και ημέρες ασήμαντα γεγονότα καθιστούν επιβεβλημένη την παράθεση του για την ενημέρωσή σας..*

Το 2008 ήταν μια σημαδιακή χρονιά για την Ελληνική Πολεμική Αεροπορία (ΠΑ) καθώς ήταν η πρώτη χρονιά που έλαβε μέρος στην πλέον απαιτητική άσκηση σε παγκόσμιο επίπεδο



– την περιβόητη άσκηση Red Flag που διοργανώνει η αεροπορία των ΗΠΑ (USAF). Η ΠΑ συμμετείχε στην άσκηση (18 Οκτ έως 1 Νοε 2008), με την 343 Μοίρα. Τα αποτελέσματα ήταν άκρως οδυνηρά για τους Αμερικανούς καθώς η πρώτη ημέρα έληξε με το απίστευτο 11-0 υπέρ των ελληνικών μαχητικών απέναντι σε F-15, F-16 και αναβαθμισμένα F-15 με χειριστές τους πλέον ικανούς αμερικανούς χειριστές-δοκιμαστές της USAF (64<sup>th</sup> Aggressors' Squadron). Την τέταρτη ημέρα

(μεσολάβησαν δύο ημέρες μεικτών αποστολών), οι αμερικανοί χρησιμοποίησαν ότι είχαν και δεν είχαν, δηλαδή συνολικά 13 αεροσκάφη εναντίον 4 ελληνικών στην περιοχή επιχειρήσεων της ΠΑ. Το αποτέλεσμα, αναλογικά, ήταν ακόμη χειρότερο για την USAF: έξι καταρρίψεις αμερικανικών αεροσκαφών έναντι μόλις τριών ελληνικών που μάχονταν σε αναλογία 3.2 προς 1! Εάν επρόκειτο για πραγματικές πολεμικές συνθήκες και με πραγματικά πυρά, οι αμερικανοί θα θρηνούσαν 17 αεροσκάφη και χειριστές έναντι 3 ελληνικών!!! Ήταν η πρώτη φορά στην ιστορία της Red Flag που καταγράφηκε τέτοια ευρεία επικράτηση ξένης αεροπορίας έναντι της USAF ενώ γενικά είναι εξαιρετικά σπάνια η επικράτηση έστω και με μια κατάρριψη διαφορά. Η άσκηση που έλαβε χώρα στη αεροπορική βάση Nellis στη Νεβάδα, θεωρείται παγκοσμίως η πλέον ρεαλιστική και σκληρή και συμμετέχουν αεροπορικοί σχηματισμοί από διάφορες χώρες.

### Κατασκοπευτική κάμερα με laser στην καταπολέμηση της τρομοκρατίας

Μια νέα κάμερα με laser (Explosive Residue Detection system) που μπορεί να προσαρμοστεί στις υπάρχουσες κάμερες επιτήρησης (CCTV) μπορεί να σαρώνει το πλήθος και να αναγνωρίζει άτομα που έχουν έρθει σε επαφή με εκρηκτικά (Semtex, TNT). Η νέα κάμερα δοκιμάζεται σε βρετανικά αεροδρόμια και σιδηροδρομικούς σταθμούς και προορίζεται για χρήση κατά τη διάρκεια των Ολυμπιακών Αγώνων στο Λονδίνο (2012).

### Laser beam spy camera joins war on terrorism

A laser that can scan a crowd and identify people who have been handling explosives is being secretly tested at British airports and railway stations. The device - no bigger than a



shoe box - could also be used by police and MI5 surveillance teams to identify Islamic terrorists outside mosques or community centres. The laser can pick out suspects in large crowds and highlight explosive residue on their clothing and luggage. A laser that can identify people who have been handling explosives is being secretly tested at British airports and



railway stations. It could also be used to guard against terrorists targeting the 2012 Olympics in London. The Explosive Residue Detection system can be covertly attached to CCTV systems and automatically highlights people who may have been handling explosives or who recently fired a weapon. Professor John Tyrer, of Loughborough University, who helped to develop the equipment, said: 'When you handle an explosive, the

chemicals -such as Semtex and TNT - leave traces. With this technology we are able to see this telltale residue and identify possible suspects. 'Using laser technology we can see the explosives on people's clothes, on their hands or on items like backpacks such as those used by the July 7 London bombers.' He added: 'This equipment could be carried by surveillance teams or could be set up to monitor a street, a railway, airport terminal or national stadium.' When the equipment scans a crowd, it alerts an operator when explosive particles are detected. The system uses a combination of lasers and the latest camera technology to produce images showing the suspect and highlighting the explosive traces. Once explosive residue is detected, the system automatically alerts the operator. It does not need to be constantly monitored. Unlike sniffer dogs detecting particles in the air, the system can be operated just a few metres from a target without anyone knowing they are being monitored. Prof Tyrer said the laser system would also pick up people who had legitimate reasons for handling explosives, such as police officers and firearms experts. The team cannot say where their new equipment has been installed, revealing only that 'its operational uses have been recognised and would include airports, train stations, underground systems and ports, and would prove useful to police forces, forensic services and the military'.

#### **Ανάλυση τρομοκρατικής συμπεριφοράς – πως προετοιμάζονται, που κτυπούν**

Ο τρόπος δράσης των εγκληματικών ομάδων είναι εν πολλοίς γνωστός και σε ικανό ποσοστό προβλέψιμος. Ο τρόπος δράσης των τρομοκρατικών ομάδων εμφανίζει πολλές ιδιαιτερότητες που κάνουν την αντιμετώπιση τους εξαιρετικά δυσχερή. Ενδιαφέρουσα ανάλυση του modus operandi των τρομοκρατών και της επιλογής των στόχων τους.

#### **A Look at Terrorist Behavior: How They Prepare, Where They Strike**

Timothy McVeigh, the Sept. 11 hijackers and Eric Rudolph all had something in common — they selected targets hundreds of miles from where they lived. McVeigh wandered the Midwest living as a transient before making his bomb in Herington, Kan., and driving 250 miles south to blast the Alfred P. Murrah Federal Building in Oklahoma City. The Sept. 11 hijackers traveled hundreds of miles to their targets. And Rudolph drove nearly 300 miles from Murphy, N.C., to bomb an abortion clinic in Birmingham, Ala. For local police departments searching for ways to stop terrorist acts before they occur, this does not bring much comfort. When looking at these attacks, officers might get the impression that there is not much they can do about terrorism other than improving physical security at high-risk targets. But were these infamous terrorists typical? Although we know a great deal about the behavior of traditional criminals, little information has been available about terrorists. Are they much different from conventional criminals, who tend to commit their crimes close to home? Research has shown that traditional criminals are spontaneous, but terrorists seem to

go to great lengths preparing for their attacks — and may commit other crimes while doing so. How long does this planning take? And do different types of terrorist groups vary in preparation time? To help answer these questions, the National Institute of Justice (NIJ) launched a series of projects to explore patterns of terrorist behavior. In the first of these projects, a panel of experts was assembled to examine 60 case studies involving terrorist incidents in the U.S. during the past 25 years. These cases involved the four major types of U.S. terrorist groups: left wing, right wing, single issue and international. The panel — including this author — looked at the homes of the terrorists, the locations of planning and preparation, and the sites of the terrorist incidents to discover whether any patterns emerged. What we learned was intriguing: The cases of McVeigh, the Sept. 11 hijackers and Rudolph are actually unusual. In fact, we found that most terrorists live close to their selected targets, and they engage in a great deal of preparation — some over the course of months or even years — that has the potential of coming to the attention of local law enforcement. Terrorists Think Globally but Act Locally!

**We studied:** Ten attacks by international groups that involved 93 preparatory acts. Fourteen attacks by right-wing groups that involved 55 preparatory acts. Twenty-nine attacks by environmental groups that involved 80 preparatory acts. Six attacks by left-wing groups that involved eight preparatory acts. According to our analysis, almost half (44 percent) of all terrorists examined lived within 30 miles of their targets. When the types of terrorist groups are examined separately, however, the findings are much different. International terrorists lived relatively near their targets, whereas right-wing terrorists lived in rural areas but selected targets reflecting the "pollutants of urban life" in nearby cities. Terrorists most commonly prepared for their attacks with surveillance and intelligence gathering, robberies and thefts to raise funding for the group, weapons violations, and bomb manufacturing. Again, most of these behaviours took place relatively near their homes, which, in turn, were close to the targets. Terrorists may stay close to home because of new immigration status, lack of transportation, lack of knowledge of the urban landscape or a desire to avoid attention. Among single-issue terrorists in particular, 71 percent of the preparatory acts occurred within 12 miles and 92 percent within 28 miles of the target. This finding may also be attributed to the use of "uncoordinated violence" tactics by these environmental and anti-abortion extremists, which often results in local targeting by "lone wolves" sympathetic to the cause. A separate follow-up NIJ project that analysed the distance between more than 250 environmental and international terrorists' homes and their targets confirmed the earlier preliminary findings that their spatial patterns are fairly similar. The analysis found that about half of the environmental terrorists and nearly three-fifths of the international terrorists lived within 30 miles of their targets. Distance From International Terrorist Residence to Target.) Sixty-five percent of the environmental terrorists and 59 percent of the international terrorists prepared for their attacks within 30 miles of their target sites. Although the terrorists studied committed most of their preparatory offences near their homes, they conducted robberies, burglaries and thefts much farther away — an average of 429 miles from home. This suggests that most environmental and international terrorists live near the selected target and conduct surveillance and other general preparation near their homes and the eventual location of the attack. Major crimes to procure funding for the group — like thefts, robberies and burglaries — however, are intentionally committed many miles away to avoid drawing attention to the group's location and target choice.

### The Terrorist's Timepiece

Percentage of acts completed within a specified time range:

- 0-25%
- 26-50%

- 51-76%
- 77-100%

We found that preparations generally began less than six months before the attack and ended with a flurry of actions a day or so before. This pattern varied by group type. Single-issue and

Table 1. Cumulative Percentage of Preparatory Attacks Over Time

| Type of Terrorist Group | Incident Day | Day before | 2-3 days | 4-7 days | 8-14 days | 15-30 days | 1-3 mos | 4-6 mos | 7-12 mos | 1-3 yrs | 3+ yrs |
|-------------------------|--------------|------------|----------|----------|-----------|------------|---------|---------|----------|---------|--------|
| International           | 5%           | 9%         | 13%      | 21%      | 32%       | 55%        | 68%     | 84%     | 89%      | 97%     | 100%   |
| Right wing              | 15%          | 26%        | 31%      | 44%      | 49%       | 67%        | 94%     | 96%     | 96%      | 100%    |        |
| Environmental           | 20%          | 43%        | 72%      | 80%      | 91%       | 95%        | 98%     | 100%    |          |         |        |
| Left wing               | 50%          | 75%        | 88%      | 88%      | 88%       | 88%        | 100%    |         |          |         |        |
| All categories          | 13%          | 27%        | 40%      | 48%      | 57%       | 72%        | 85%     | 93%     | 95%      | 99%     | 100%   |

right wing terrorists engaged in substantially less preparatory crime over a shorter period — once again, most likely reflecting the use of "leaderless resistance" and lone-wolf strategies. The planning cycle of international terrorists tended to be longer. (See Table 1. Cumulative Percentage of Preparatory Acts Over Time.) In our follow-up study, we took a closer look at the specific patterns of international and environmental terrorists by placing the preparations for all incidents on a time line. For instance, we examined the 21 incidents attributed to the environmental terrorist group known as "The Family," which was responsible for the Vail, Colo., ski resort arson in 1998 and many attacks against Forest Service and Bureau of Land Management buildings from 1996 to 2000. The Family consisted of at least 16 people. Unlike most environmental terrorists who use uncoordinated violence and lone-wolf strategies, the group's actions were more spontaneous than other environmental cases, with a short preparation period and little extended planning. Eighty-five percent of their known preparation activities — typically, inspection of the target, purchase of bomb-making items from local stores and identification of a staging area a short distance from the target — occurred within six days of the planned attack. An explosive device was assembled at the staging area a day or so before the incident and then delivered to the target. Participants usually returned to the staging area to destroy any evidence. International terrorists, on the other hand, engaged in nearly three times as many preparatory acts per incident as their environmental counterparts. This may be due to the larger number of people usually involved in international incidents, the size and scope of the planned incident or simply a longer planning cycle. Comparing the 10 international terrorist incidents that occurred on American soil we found that the average planning cycle for international terrorists was 92 days, as opposed to 14 days for environmental terrorists. Averages can be misleading, however, because of significant outliers, such as the multiyear planning cycle of the Islamic extremists seeking to destroy New York City landmarks in the mid-1990s. Whereas environmental terrorists committed an overwhelming majority of their preparatory activities in the week before the incident, international terrorists took up to six months to prepare.

**Arming Police with Knowledge**

For law enforcement agencies, the implications of these patterns are significant. Committing an act of terrorism will usually involve local preparations. Although much of this conduct will not necessarily be criminal, early intelligence may give law enforcement the opportunity to stop the terrorists before an incident occurs. Knowledge of the threat — for example, understanding how long environmental or international terrorists prepare for their

attacks — will affect the manner in which local officials respond. Identifying preparatory actions by environmental extremists may signal that an attack is imminent, whereas similar behaviour by an international group might suggest that an attack is still several months away. Understanding that most terrorists "act locally" can be important to know as investigative agencies seek to prevent terrorism and arrest perpetrators. These local patterns may be used by agencies to more efficiently patrol known, high-risk target areas and gather intelligence on suspected actions within a specific distance from potential targets. As we continue to deepen our understanding of the relationship among the location of the terrorist's home, terrorist preparation activities and the target, this growing knowledge should help officers prevent and respond to attacks.

### Τι συμβαίνει με τα διαβατήρια στη Μ Βρετανία ;

Κάθε μέρα χάνονται πέντε διαβατήρια στα ταχυδρομεία της Μ Βρετανίας γεγονός που υποδηλώνει ότι μπορεί να καταλήγουν στα χέρια τρομοκρατών ή κοινών εγκληματιών. Μεταξύ των ετών 2001-07 χάθηκαν περίπου 12.200 διαβατήρια στα ταχυδρομεία της χώρας. Τα νούμερα αυτά μειώθηκαν ότι άλλαξε ο τρόπος παράδοσης των διαβατηρίων μέσω ειδικής εταιρείας (courier) – αλλά πάλι οι απώλειες πλησίασαν τις 3.000. Η μαύρη αγορά διαβατηρίων έχει κέρδη που πλησιάζουν τα 20 εκατομμύρια λίρες ετησίως.

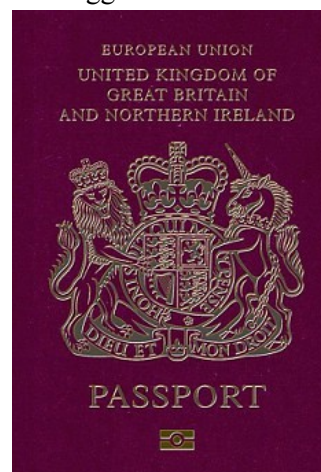
### FIVE passports are lost in the post every day by Home Office raising fears they're falling into criminal hands

Five passports are lost in the post on an average day, ministers have admitted. This has raised fears they may have fallen into the hands of terrorists or fraudsters. Identity thieves,



asylum seekers and illegal immigrants who want to pass as British citizens can use the stolen documents. Figures uncovered by the Liberal Democrats reveal that between 2001 and 2007, government officials lost 12,200 passports in the post. Since February 2004, when the Identity and Passport Service - a Home Office agency - ditched Royal Mail and awarded a multi-million-pound contract to a courier service to deliver the documents, 3,000 have gone missing. Experts estimate that the black market value of the passports, which can fetch £1,700 a time from criminals, is £20million. LibDem MP Chris Huhne said: 'We all know that things can go missing, but these figures again demonstrate an almost institutionalised carelessness. It beggars belief that a secure courier service can be losing passports in transit at the rate of two a day. 'People

will be rightly concerned that the Government cannot be trusted with something as personal as a passport.' Mr Huhne said the revelation gave fresh weight to calls to scrap the ID card scheme. He said: 'Does anyone believe that ministers will be any less sloppy in dishing out ID cards? They must be scrapped before they are allowed to treat our most sensitive data in the same slapdash manner.' A fake passport bearing a picture of Jacqui Smith: There are fears lost passports are ending up in the hands of criminals. Blank passports are particularly desirable to fraudsters as they can be used to create an entirely new identity, and used to open bank accounts, obtain thousands of pounds in



credit and access public services. But security experts have also warned that if the documents fell into the hands of terrorists and other criminals, they would yield a host of technological secrets and allow fraudsters to produce their own versions. Simon Davies, director of Privacy International and a senior visiting fellow on information systems at the LSE, said: 'Getting hold of a stolen passport is like an open feast for a criminal. I simply cannot understand how a courier system can be so astonishingly lax.' The new biometric passport is said to be more secure than existing ones but experts fear it could still be cloned. Phil Booth, national coordinator of the NO2ID campaign, said: 'People's lives risk being ruined. Once again the Home Office's boasts that it can be trusted with their personal information have been exposed as hollow. 'Fraudsters or terrorists could have a field day with what is a person's primary for of ID. It is frightening if a courier service cannot deliver passports securely.' The Home Office said that the vast majority of passports, some 6.3million a year, were delivered by Secure Mail Services, the firm which won the contract to deliver passports after it was taken off the Royal Mail four years ago. In areas with a low crime rate, people may not be asked to sign for their new passports. The ease with which Britain's porous passport system can be undermined by criminals have been exposed in recent years. Dhiren Barot, an al-Qaeda chief convicted of plotting to kill thousands of Londoners with a radioactive 'dirty bomb', was issued with nine British passports - two using false identities and seven in his own name before his arrest in August 2004. And in July, nearly 3,000 blank passports destined for British embassies abroad were stolen from a van after the driver stopped to buy a chocolate bar in Oldham, Greater Manchester. Home Office Minister Meg Hillier said: 'The introduction of Secure Delivery has seen losses reduce by over 80 per cent. 'Couriers are now equipped with hand-held GPS devices to improve on accuracy of delivery and losses are expected to reduce further. 'All lost passports are entered on to our database of lost and stolen passports which is available to the UK Border Agency and Interpol.' Meanwhile, passport interviews have been condemned as a 'total waste of money' after it emerged not a single bogus applicant had been exposed. The £115million scheme was introduced last year.

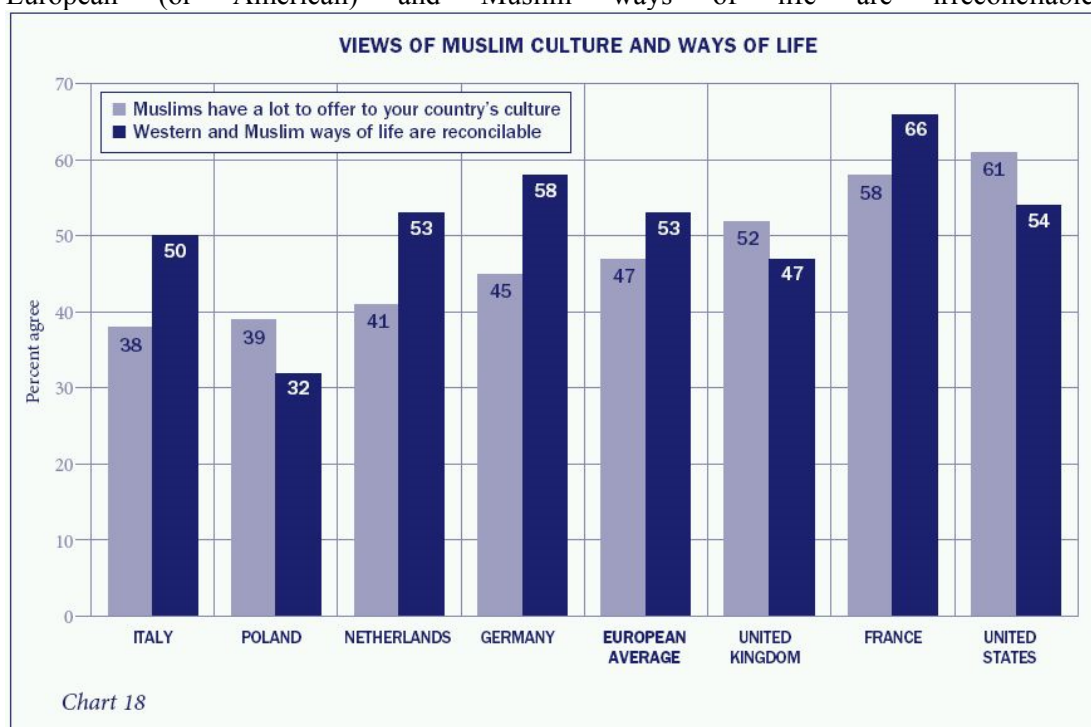


### Ποια είναι η στάση των Ευρωπαίων έναντι των Μουσουλμάνων ;

Το German Marshall Fund δημοσίευσε πρόσφατα μια κοινή αμερικανο-ευρωπαϊκή έρευνα με θέμα τη μετανάστευση και τη θεώρηση των κατοίκων της Ευρώπης απέναντι στους μετανάστες και την εθνικότητα. Τα ευρήματα της έρευνας παρουσιάζουν ιδιαίτερο ενδιαφέρον για πολλούς λόγους.

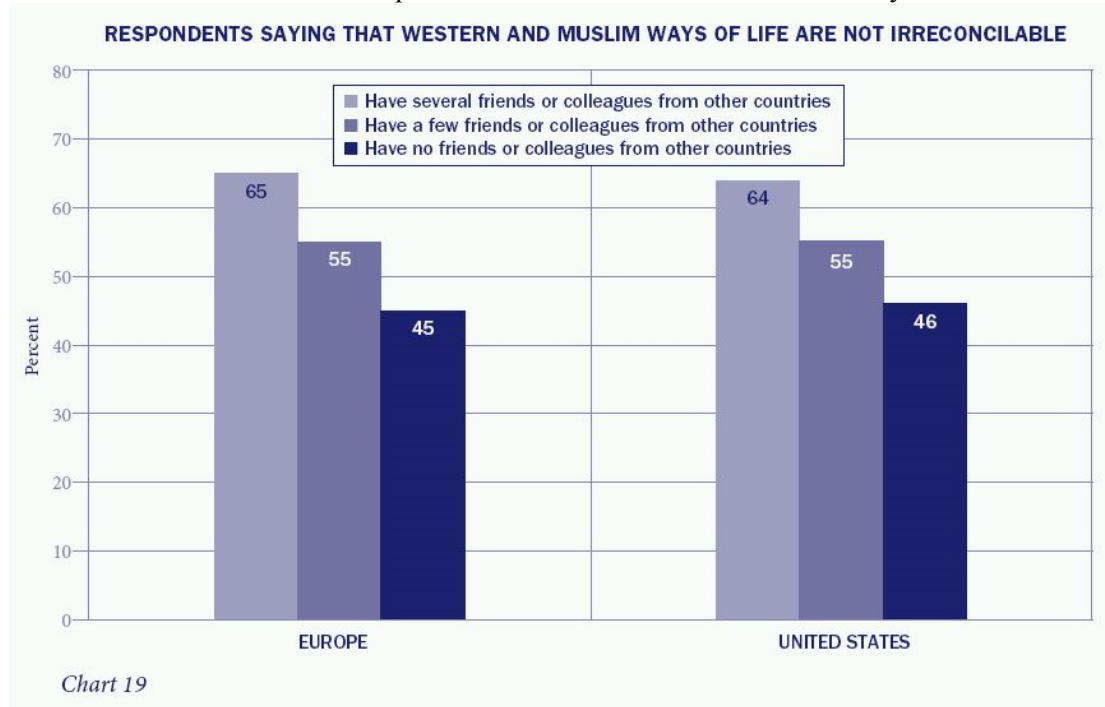
### Europe: Attitudes towards Muslims

The German Marshall Fund published a joint American-European survey on immigration. The survey checked how different nations view nationality and immigration. The study and all the data are available in various languages on the Transatlantic Trends site. The following are the study conclusions regarding Muslims. Views about Muslim culture are nuanced in all countries. Respondents were asked to agree or disagree with the following two statements: “Muslim immigrants have a lot to offer your country’s culture,” and “Western European (or American) and Muslim ways of life are irreconcilable.”



Examining the answers to both questions, a nuanced perception of Muslim immigrants emerges. Overall, majorities of American and French respondents were the most optimistic about the cultural influence of Muslim immigrants and the reconcilability of Western and Muslim ways of life. A majority (52%) in the United Kingdom also thought that Muslims have a lot to offer British culture. German, Dutch, and Italian responses were some of the most complex; in each of those countries, it was not uncommon for a respondent to a) agree that Muslims have a lot to offer their culture, but b) indicate that their ways of life are irreconcilable. Americans and Europeans agree that Muslim immigrants want to integrate. A strong majority of Americans (60%) and a plurality of Europeans (47%) agreed that Muslims coming to their countries want to integrate. However, Europeans were aware that integration has not been easy, especially for young, often second-generation Muslims. Forty-nine percent of Europeans thought that Muslim youth are frustrated by their economic situation. The strongest examples of this view were in France (64%) and Germany (60%). Social contact with immigrants affects attitudes towards Muslims. In all countries surveyed, except Poland (see Country Profile box), a majority of respondents had friends or colleagues who came from

other countries. Depending on the frequency of their social contacts with immigrants, people entertained different views regarding the compatibility of Muslim and Western cultures. On both sides of the Atlantic, those who have several friends who come from other countries tended to be more optimistic about the reconcilability of cultures.



#### **Οι κλοπές χαλκού απειλούν κρίσιμες υποδομές των ΗΠΑ**

Οι κλοπές χαλκού από διάφορες κρίσιμες υποδομές των Ηνωμένων Πολιτειών αποτελούν απειλή για την εύρυθμη λειτουργία της παραγωγής ηλεκτρισμού, των τηλεπικοινωνιών, των μεταφορών, της θέρμανσης, της συστημάτων ασφαλείας και των υπηρεσιών εκτάκτων αναγκών. Το φαινόμενο έχει εξαπλωθεί αρκετά καθώς τα κέρδη που αποκομίζουν οι εγκληματικές ομάδες είναι αρκούντως σημαντικά..

#### **Copper Thefts Threaten US Critical Infrastructure**

Copper thieves are threatening US critical infrastructure by targeting electrical sub-stations, cellular towers, telephone landlines, railroads, water wells, construction sites, and vacant homes for lucrative profits. The theft of copper from these targets disrupts the flow of electricity, telecommunications, transportation, water supply, heating, and security and emergency services and presents a risk to both public safety and national security. Copper thieves are typically individuals or organized groups who operate independently or in loose association with each other and commit thefts in conjunction with fencing activities and the sale of contraband. Organized groups of drug addicts, gang members, and metal thieves are conducting large-scale thefts from electric utilities, warehouses, foreclosed or vacant properties, and oil well sites for tens of thousands of dollars in illicit proceeds per month. The demand for copper from developing nations such as China and India is creating a robust international copper trade. Copper thieves are exploiting this demand and the resulting price surge by stealing and selling the metal for high profits to recyclers across the United States. As the global supply of copper continues to tighten, the market for illicit copper will likely increase. Copper Thefts Threaten US Critical Infrastructure Copper thieves are threatening US critical infrastructure by targeting electrical substations, cellular towers, telephone land lines, railroads, water wells, construction sites, and vacant homes for lucrative profits. Copper

thefts from these targets have increased since 2006; and they are currently disrupting the flow of electricity, telecommunications, transportation, water supply, heating, and security and emergency services, and present a risk to both public safety and national security. According to open-source reporting, on 4 April 2008, five tornado warning sirens in the Jackson, Mississippi, area did not warn residents of an approaching tornado because copper thieves had stripped the sirens of copper wiring, thus rendering them inoperable. According to open-source reporting, on 20 March 2008, nearly 4,000 residents in Polk County, Florida, were left without power after copper wire was stripped from an active transformer at a Tampa Electric Company (TECO) power facility. Monetary losses to TECO were approximately \$500,000. According to agricultural industry reporting, as of March 2007, farmers in Pinal County, Arizona, were experiencing a copper theft epidemic as perpetrators stripped copper from their water irrigation wells and pumps resulting in the loss of crops and high replacement costs. Pinal County's infrastructure loss due to copper theft was \$10 million.

### **Criminal Groups Involved in Copper Thefts**

Copper thieves are typically individuals or organized groups who operate independently or in

#### **Copper Wire**



Copper wire containing insulation is often transported to burn sites where the insulation is burned off in a steel drum leaving behind just the copper wire.

loose association with each other and commit thefts in conjunction with fencing activities and the sale of contraband. Organized groups of drug addicts, gang members, and metal thieves are conducting large scale thefts from electric utilities, warehouses, foreclosed and vacant properties, and oil well sites for tens of thousands of dollars in illicit proceeds per month. According to open sources, as recently as April 2008, highly organized theft rings specializing in copper theft from houses and warehouses were operating in Minneapolis, Minnesota. These rings or gangs hit several houses per day, yielding more than \$20,000 in profits per month. The targets were most often foreclosed homes. Open-source reporting from March 2008 indicates that an organized copper theft ring used the Cuyahoga County Sheriff's foreclosure lists to pinpoint targets in Cleveland, Ohio. Perpetrators had 200 pounds of stolen copper in their

van, road maps, and tools. Three additional perpetrators were found to be using the US Department of Housing and Urban Development's list of mortgage and bank foreclosures to target residences in Cleveland, South Euclid, Cleveland Heights, and other cities in Ohio.

### **Global Demand Increasing**

China, India, and other developing nations are driving the demand for raw materials such as copper and creating a robust international trade. Copper thieves are receiving cash from recyclers who often fill orders for commercial scrap dealers. Recycled copper flows from these dealers to smelters, mills, foundries, ingot makers, powder plants, and other industries to be re-used in the United States or for supplying the international raw materials demand. As the global supply of copper continues to tighten, the market for illicit copper will likely increase. Open-source reporting from February 2007 indicates that the global copper supply tightened due to a landslide at the Freeport-McMoran Copper and Gold mine in Grasberg, Indonesia in October 2003 and a worker's strike at the El Abra copper mine in Clama, Chile in November 2004. These events contributed to copper production shortfalls and led to an increase in recycling, which in turn created a market for copper. Open-source reporting from October 2006 indicated that the demand for copper from China increased substantially due to the construction of facilities for the 2008 Olympics. Open-source reporting indicated that from January 2001 to March 2008, the price of copper increased more than 500 percent.<sup>8</sup> This



has prompted unscrupulous and sometimes unwitting independent and commercial scrap metal dealers to pay record prices for copper, regardless of its origin, making the material a more attractive target for theft.

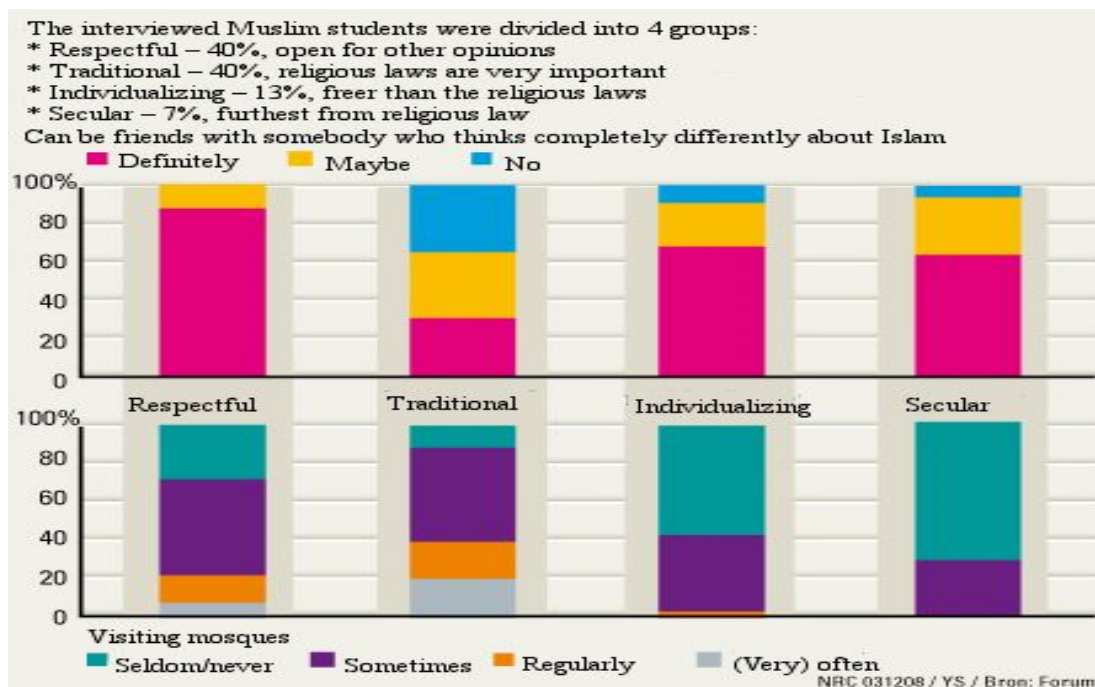
**Outlook**

The global demand for copper, combined with the economic and home foreclosure crisis, is creating numerous opportunities for copper-theft perpetrators to exploit copper-rich targets. Organized copper theft rings may increasingly target vacant or foreclosed homes as they are a lucrative source of unattended copper inventory. Current economic conditions, such as the rising cost of gasoline, food, and consumer goods, the declining housing market, the ease through which copper is exchanged for cash, and the lack of a significant deterrent effect, make it likely that copper thefts will remain a lucrative financial resource for criminals. Industry officials have taken some countermeasures to address the copper theft problem. These include the installment of physical and technological security measures, increased collaboration among the various industry sectors, and the development of law enforcement partnerships.<sup>9</sup> Many states are also taking countermeasures by enacting or enhancing legislation regulating the scrap industry—to include increased recordkeeping and penalties for copper theft and noncompliant scrap dealers. However, there are limited resources available to enforce these laws, and a very small percentage of perpetrators are arrested and convicted. Additionally, as copper thefts are typically addressed as misdemeanors, those individuals convicted pay relatively low fines and serve short prison terms.

**Ολλανδική μελέτη της Μουσουλμανικής νεολαίας**  
 Ενδιαφέρουσα μελέτη ανάλυσης της συμπεριφοράς της σύγχρονης Μουσουλμανικής νεολαίας στην Ολλανδία.

**Netherlands: Study of Muslim youth**

For many young Muslims religion is not something that seriously engages them in daily life. They feel Muslim, show themselves as such by wearing a headscarf for example and keeping Ramadan, and think the laws of Islam are important. But they don't observe them strictly, certainly not if they are yet young.



That is one of the trends among young Moroccans, Turks and Muslim Surinamese, described in *Geloof en Geluk* (Faith and Happiness), a study about tradition and renewal among young Muslims by the Institute for Multicultural Development FORUM. Researchers of the University of Amsterdam (UvA) interviewed 32 'key figures' from Amsterdam (students, middle school students and working youth, educators, social workers, neighborhood agents and volunteers in the mosque). Through their network they got insight into the world of about 900 young Muslims 15-29 years old. The youth emphasized more and more strongly that they, besides being Muslims, are Dutch citizens. They talked easily about mutual differences in religious notions, although it isn't appreciated if other Muslims openly talk against Islam. Young Muslims could appreciate fellow youth who took religion seriously, provided that they also followed the religious laws strictly. Korf: "The feeling that you have with a nun; you respect them, but you shouldn't think of it yourself." The orthodox colleagues shouldn't be intrusive. Dirk Korf: "Most young Muslims really like Western freedoms." They must not radicalize or preach violence. Support for such youth has dropped in recent years, the researchers observe. Particularly because radical fanatics stand in the way of faith and happiness for young Muslims. 'Faith and happiness' is a follow up study to 'Van Vasten tot Feesten' (From fasts to holidays, 2007), that studied particularly trends among highly educated Muslim youth in the Netherlands and 'Van Allah tot Prada' (From Allah to Prada, 2006), which studied the life of all Muslim youth. 'Faith and happiness' concentrated on the lower educated Muslim youth (MBO, vocational education). Besides the study of key figures, 347 Muslim students (from ROCs in Amsterdam and The Hague) answered a questionnaire. The age of ROC students is 16-20 [ROC gives adult vocational training]. These youth adhere more to the laws of religion than students and adolescents. Of the ROC students, 85% agreed with the following statement: "Muslim means for me particularly that I keep the laws of the faith." 12.5% of ROC students visits mosques often, 15% regularly and most (67%) goes now and then to rarely, a small group never. Less than half (42%) prays often, 17% regularly, 33% now and then to rarely and 9% never. In comparison with ROC students, twice as many students never go to a mosque, and twice as many never pray. At the same time, almost half of ROC students think it's more important to be a good man than to precisely follow the religious laws. Dirk Korf, UvA researcher: "Saying that you think the religious laws are important is yet somewhat different than also actually following them. Praying five times a day is one law. But also doing it is a second. If they're in the tram or apprenticing, prayer loses. They do say often that later, when they're older, they will keep the laws." A process of renewals and individualizing is visible particularly among highly educated adolescents: they more often live independently and less often leave home only when they get married. Notions of marriage are changing, youth more often think they should be able to choose their own partner. They also think differently about emancipation: many youth think that married women should be able to continue working. Girls lead, particularly Turks. Boys don't escape growing as well, though they stay more traditional in their attitudes, particularly Turkish boys. "The Turkish boys and Turkish girls will yet have trouble when they'll marry," says UvA researcher Dirk Korf. Because Muslim youth prefer marrying somebody from their own group. 67% of ROC students think it's more important that their future partner have the same ethnicity as their own, almost 25% say it doesn't matter so much and 10% think it's not important at all. For most ROC students it's important that their future partner be Muslim (91%). Barely 3% think it's not important. 80% of ROC students think their children shouldn't decide on their own whether to be Muslim or not, 10% think the children should decide and 10% are in between. Resarcher Marije Wouters, who administered the ROC questionnaire, thought the youth were markedly decent youth. Also the Moroccan youth, who think they appear too often negatively in the news due to a group of trouble makers. Wouters: ""They all have black jackets with colored collars, shaved necks and black cap on their heads, they look a bit like loitering youth. but they fill in the questionnaire seriously and say 'please ma'am'. And most are (very) optimistic (73%) about their future, which they see in the Netherlands. On average the ROC students estimate their chances of living in the Netherlands in five years

at 82%. Wouters: "After the MBO they want to go further with an HBO education, have great expectations of life and they will go do it."

#### **Σομαλοί εγκαταλείπουν τη Δανία για να πολεμήσουν στη Σομαλία**

Όλο και περισσότεροι Σομαλοί με άδεια παραμονής στη Δανία επιστρέφουν στην πατρίδα τους για περάσουν στρατιωτική και θρησκευτική εκπαίδευση παρεχόμενη από την τρομοκρατική οργάνωση al Shabab που διατηρεί στενούς δεσμούς με την al Qaeda. Το φαινόμενο έχει καταγραφεί και σε άλλες σκανδιναβικές χώρες και έχει ήδη προκαλέσει ανησυχία στις αρχές ασφαλείας της Δανίας στην οποία εκτιμάται ότι ζουν περίπου 16.000 Σομαλοί.

#### **Denmark: Somalis leaving to fight in Somalia**

More and more Somalis with a residence permit in Denmark are going to back their former homeland to get military training and religious school at the al-Qaeda related terror group al-Shabab. This has gotten the Danish intelligence service to pay more attention to Somalis living in Denmark, reports Politiken. The head of the Somali Society in Aarhus, Abdirashid Sheikh Mohamud, is concerned about the development and calls it a "very sensitive area." "The government in Somalia has complained in the past about people from Scandinavia who support al-shabab either militarily or financially. I believe that about 15 people from Jutland traveled to Somalia to train with the group. In Zealand there are certainly several," he says to Politiken. He has unsuccessfully tried to warn against an extremist group among a small, non-integrated part of the 16,000 Somalis in Denmark. "But we can't make contact with this group of Somalis, because they often act threateningly," he explains. PET, the police intelligence service, has no comment, but points to information in its latest yearly report that "several people with a residence permit in Denmark are involved in or in different ways contribute support to terror related activities in several countries." PET names here Somalia among others. "PET is paying more attention to this tendency, because people who participated in fighting and gotten operative experience from conflict zones abroad, can constitute a security risk in Denmark," writes PET.

#### **Τα πολεμικά παίγνια προσφέρουν μεθοδολογία εκτίμησης κινδύνων**

Οι αστικές υπηρεσίες πρέπει να διδάσκονται από την στρατιωτική μεθοδολογία και να χρησιμοποιούν τακτικές πολεμικών παιγνίων προκειμένου να είναι σε θέση να αναγνωρίσουν τους κινδύνους και να καταστρώσουν σχέδια αντιμετώπισης και ανάκαμψης σε περίπτωση επειγόντων περιστατικών. Παράδειγμα τέτοιων εφαρμογών είναι η άσκηση Cyber Storm που προσομοιώνει μια ευρείας κλίμακας συντονισμένη κυβερνο-επίθεση κατά των υποδομών των ΗΠΑ με ιδιαίτερη στόχευση τα δίκτυα.

#### **War gaming offers agencies methodology for assessing risk**

Civilian agencies should take cues from the military and use war game tactics to identify risks and assess recovery plans in case of emergency, whether a cyberattack or environmental disaster, said an author who specializes in the market. War gaming methodologies that test an organization's ability to react to unforeseen threats traditionally have been reserved for military operations as a means for preparing for combat. The Army plans a particular invasion, for example, and a war game stages the possible responses to identify weaknesses in strategy and to help ensure troops are prepared. The Homeland Security Department also has relied on war gaming tactics, most notably with Cyber Storm, that simulate a large-scale coordinated cyberattack on the nation's infrastructure. In that example, the war game effort tests government's ability to protect its networks. But war gaming, which looks at the what-ifs in assessing threats, is sometimes overlooked by smaller

agencies that might not recognize the potential benefits, particularly in strengthening IT security, said Mark Herman, vice president at Booz Allen Hamilton. Herman leads the consulting firm's modeling, simulation, war gaming and analysis work, and recently wrote *Wargaming for Leaders: Strategic Decision Making From the Battlefield to the Boardroom* (McGraw-Hill, 2008). "In IT -- cyber in particular -- there has always been a reliance on trend analysis," for identifying potential risk, Herman said. "There's a presumption that everything will work, and if someone does do something nasty to the network, we'll just figure out how to fix it and keep going. But that's not always going to work. Put multiple levels of stress on anything, and sooner or later it's just going to break." As standard practice, agencies essentially should imagine the worst, and then put in place the necessary parameters to ensure they're well-protected, he said. Too often when deploying IT, according to Herman, agencies focus more on mission requirements -- ensuring processes can get done -- and less on the operational side of the deployment. "That's what has me worried, because typically we don't have a clue," he said. "Can someone fly under the radar? What will [the agency] do if this particular event happens to cause the system to go down? Who has jurisdiction? The challenge is actually the antithesis of technology -- it's about humans." War gaming forces individuals to look at the whole picture, Herman said, by bringing together all the stakeholders in a room and outlining the potential scenarios. The methodology is by no means specific to technology, he said, but can be used by any organization to assess risk and ensure proper contingency plans are in place. The Treasury Department could participate in a war game to define response to a theoretical global financial crisis, for example, or the Agriculture Department could participate in a war game to ensure a bad crop season doesn't cause a food supply shortage. "As the situation unfolds, [participants] start to respond with questions and maybe realize that they're not very pleased with the outcome," Herman said. "Now, there's awareness, and everyone is in the same room to come up with solutions."

#### **Λαθρεμπόριο ναρκωτικών και χρηματοδότηση του ΡΚΚ**

Η διασύνδεση τρομοκρατικών οργανώσεων και διεθνικού οργανωμένου εγκλήματος αποτελεί πλέον πραγματικότητα με απτά παραδείγματα παγκοσμίως. Στην ανάλυση που ακολουθεί περιγράφεται η μεθοδολογία που χρησιμοποιεί το ΡΚΚ στην Τουρκία προκειμένου να χρηματοδοτείται μέσω της παράνομης διακίνησης ναρκωτικών από χώρες της κεντρικής Ασίας και ιδιαίτερα το Αφγανιστάν μέσω Πακιστάν και Ιράν αλλά και από το «χρυσό τρίγωνο» της ινδοκινεζικής χερσονήσου. Εκτιμάται, ότι το ΡΚΚ ελέγχει το 80% της διακίνησης των ναρκωτικών που προορίζονται για τις ευρωπαϊκές αγορές.

#### **Drug smuggling as the main financial source of PKK terrorism**

Some claim that Turkey is one of the transit countries of drug trafficking and therefore she is not a consumer country; so the fight against narcotics should not be one of the main concerns of Turkey. Even, within some conversations, it is possible to encounter certain arguments claiming that narcotic money has an additional value for Turkey. Data on drug usage verifies the fact that Turkey is not a crucial drug consumption market; it is mostly a transit country. Due to drug smuggling, billions of dollars have entered the country. However, this is not the entire picture. To categorize Turkey solely as a "transit country" is not sufficient. It must be noted that in the mean time, Turkey has emerged to become one of the crucial narcotic centers of the world. As each drug bag passes through Istanbul or other Turkish cities to reach Western Europe it turns back as terror, organized crime, street violence and loss of government authority in Turkey. Besides, this process has been continuing on for decades; the drug-violence-degeneration triangle has insidiously raised the prejudice against Turkey internally. It is important that drug trucks that pass from Turkey should be stopped so as to re-construct order in Turkey and more importantly to re-gain government authority. In this study we will focus on the connection between PKK terrorism and drug smuggling.

Although certain renowned sources of Turkish, European and American descent and other media reports reveal that PKK members control the European drug cartel and that they even used children to sell drugs, the connection is not a well-studied one.

### **The Economic Basis of Terrorism**

Terrorist organizations are based on two main columns: The first one is an ideological/political base. Terrorist organizations are renowned for exploiting the mistakes of states and areas where state authority is deficient; it can be observed that as these organizations increase their exploitation facilities, they tend to grow faster. The second important column that terrorist organizations are based on is the economic infrastructure. Money is recruited for weapons, explosive materials, daily needs of terrorists etc. Contrary to the common perception, countries do not pay in cash to terrorist organizations. When other countries want to assist the PKK, they prefer to use other “natural ways”. There are four fundamental principles, which help to maintain the economic infrastructure of terrorism:

1. tribute \ blackmailing \ donation
2. robbery
3. narcotic money
4. other illegal revenue

If we move from the presumption that the world drug market is approximately worth 400-500 billion dollars, we can see that this amount is enough not only to sustain terrorist organizations but also individual countries. The money which circulates in the drug market is almost equivalent to US annual defense expenditure. It is argued that PKK has at certain points in time controlled 80 % of the European market which constitutes one of the main segments of the huge world market. This helps to clarify how the PKK has been able to sustain itself for more than two decades. Michael Radu asserts that "Considering the range of PKK drug trafficking in Europe (Germany, France, Denmark, Romania, Switzerland, Belgium and Netherlands), the group is wealthy indeed". Radu further argues that the PKK's annual income from drug trafficking, robberies, extortion, emigrant and arms smuggling reached ten millions of dollars in the 1990s CNN International further confirms Mr. Radu's claim by drawing attention to the organized crime and drug smuggling affairs of the PKK with the following statement: "By many accounts from inside and outside Turkey, Ocalan is a dogmatic and tyrannical leader whose organization is involved in drug trafficking, robbery, extortion, arson, blackmail and money laundering." It has been noted that in 2008 alone, the drug income of the PKK had reached more than 500 million euros. According to Soner Cagaptay, the figure is actually much higher than 500 million euros. Cagaptay claims that approximately 2.5 billion narcotic dollars go to the PKK. Through these facts, it becomes obvious that the PKK has been financing its activities through illegal means and drug trafficking has had a great share in this budget.

### **PKK Discovers Narcotic Money**

When the PKK emerged as a terrorist organization, it did not take it very long to discover the benefits of drug smuggling. From the beginning of the 1980s, it has become active in both production and transportation sectors of illegal drug business. In the year 1982, the PKK began to produce hemp and opium poppy in Lebanese camps (Baelbek and Hermen) that were under Syrian control. Ports of Beirut, Sayda, Sur, Miryan, Abdeh and Tripoli were the main transit points of this transaction. Drugs were sent to the ports of Greek Cyprus, Greece and Italy; and through this venue the terrorist organization has been able to sustain a significant amount of revenue for many years. It is unfortunate that Syria, Greek Cyprus and Greece ignored (or supported) the PKK drug business in order to support the terrorist organization

against Turkey. In the beginning of the 1980s, PKK became active in the line extending from Afghanistan-Pakistan-Iran line and then which crosses Turkey and reaches to Europe. These three countries are commonly known as the “golden crescent” for drug smuggling. In addition to the ‘Golden Crescent’, Laos – Thailand - Birmania countries are ‘Golden Triangle’ and these three are also known as the centers of drug production and smuggling in the continent



Asia. In other words, it should be noted that the main producer countries are located in the east of Turkey. Thus, Turkey is one of the main routes for the European drug market. It can be observed that it certainly did not take too long for the PKK militants to realize the importance of their ‘lucky position’ in terms of controlling drug trafficking between the East and the West. Terrorists became aware of the huge wealth involved in this business and began their interactions by allowing transition and sustaining “security services” for ordinary smugglers. In this context, PKK terrorist organization is not an exception and it “taxed” those who smuggled drugs, arms, and other valuable goods in the 1980s and 1990s. During the 1980s, it was certainly not difficult for the PKK to conduct international drug transportation in the region as it was organized almost in every district and village of eastern Turkey. When its infrastructure and organizational schema became sophisticated in Istanbul, drug dispatching and distribution has become easier for the PKK in European market. Especially, on the Afghanistan-Iran-Turkey-Eastern Europe-Southern Europe-West Europe route, tons of morphine, heroin, liquid hashish and other drug materials were transferred under PKK control. Moreover, increasing instability in Iraq, the Iran-Iraq-Turkey-Western Europe route has become more popular for drug smuggling. As Michael Rubin pointed out that different from the KDP and the KPU, the PKK still facilitates drug smuggling from Iran through Iraq and Turkey and into Europe. The PKK has not only played a significant role in drug transportation in the East-West route, but also in the West-East route for the transportation of chemical goods used for processing of raw drug materials in the East. At the end of the 1980s,

the organization came to realize that the real money was in the drug processing business. When raw drug materials are processed, their prices increase geometrically. At that point the PKK began to construct processing drug laboratories initially in East and Southeast Anatolia and later in different regions of Turkey and in some Eastern European countries.

### **PKK Drug Smuggling and the Kurdish Diaspora**

In the words of David Romano "once the PKK matured into a larger, more established movement, it could finance itself via contributions from Kurds in the region and abroad as well as with support from foreign state powers and involvement in the narcotics trade and smuggling". When the PKK reached one of its main political aims by constructing a Kurdish Diaspora composed of PKK sympathizers in Western European countries. It became one of the real bosses in the drug business between the Golden Crescent and Western Europe without any serious rivals. In a considerable number of European cities, the PKK had thousands of members and huge sympathizer networks which helped it in the drug business. The terrorist organization helped many Kurdish people to immigrate illegally to Western Europe, and all these people were forced to donate significant parts of their incomes to the organization. Apart from these so-called donations, Kurdish immigrants were also forced to help the PKK's drug business operating in Western European cities. As it had no comparable rival in the East and in the West, the PKK within a short period of time, managed to strengthen its power in the European drug market in terms of production, transportation, distribution and marketing. Kurdish children including 10-15 years old ones became drug sellers in front of pubs, pavilions, and even around certain schools in many European capitals. Four Kurds were arrested in Milan (Italy) on a TIR truck carrying 100 kg of hidden heroin in 1989. The driver, Nazim Kelo told Italian investigators that the heroin had come from the PKK, for whom he had worked for years. In 1991, a PKK confessor said that between 1988 and 1990, he carried more than 300 kg heroin to Europe only on his own. According to Interpol, in 1992, the PKK was orchestrating approximately 80 % of the European drug market. PKK is an active organization not only drug smuggling, but also in processing, transportation, securing transportation, distribution, and marketing. With reference to 1992 Interpol data, the number of Kurdish organizations related with the drug business was 178 and most of them were under the control of the PKK or they at least gave tribute to the PKK. İkbâl Huseyin Rivzi, Interpol's chief narcotics officer, explained that the PKK was heavily involved in drug trafficking as a means to support its terrorist activities in Turkey. During the same year, the reports of Italian police clearly showed that the PKK set up special teams for international drug business. The US Department of State Bureau of International Narcotics Matters has published "International Narcotics Control Strategy Report" in 1992, in which it stipulates that the European drug cartel is controlled by PKK members. Haluk Bahçekapalı, a senior Turkish narcotics agent, argued that "the PKK members were the brains behind the trafficking between Turkey and Western European countries". Some of the money acquired from drug trafficking and extortion, goes to the purchase of firearms and other equipment. According to a report published by the British National Service of Criminal intelligence, in 1993 the PKK acquired about \$75 million from drug smuggling in Europe. Later on, in 1994 PKK members were arrested by Turkish authorities while attempting to smuggle 1.5 tons of hashish to Turkey from one of Turkey's neighboring countries. German high rank officials also stated that 75% of the heroin caught in this country that year belonged to the Kurdish origin Turkish citizens. Moreover, in Germany, 70 % of the total drug sale was made by the PKK. Other sources similarly indicate that in 1994 the PKK controlled 60% to 70% of the illegal European drug market. In 1994 in Germany, 30 of the imprisoned PKK members were affiliated with drug crimes. In the same year, the amount of the captured PKK drug was nearly 1.6 tons. An article in a German newspaper (Kölnische Rundschau), dated February 2, 1995 also reported that a drug trafficking cartel which operates in South America called "Medellin" had close links with PKK drug dealers who work in Europe. In this connection, 25 PKK

sympathizers were apprehended in Cologne, with 143 kg of heroin. A 1995 report prepared by the Drug Enforcement Agency of the US Department of Justice also emphasized that the PKK is engaged in drug trafficking and money laundering activities and is well-established in the production of almost all kinds of opium products and their smuggling. Turkish Interior Minister Nahit Mentese reported in 1993 that security forces had scored major successes against Kurdish rebel drug-smuggling operations. Over the year, he said, the police had seized 1,054 kilograms of heroin, 2,884 kg of morphine base, and 23,679 kg of hashish from PKK traffickers. The Turkish Minister added "This terrorist organization gets financial revenues from smuggling drugs abroad, as it does in Turkey." Columnist Enis Berberoğlu, who has written several books on the subject similarly, underlines the connection between the PKK and drug smuggling during the early 1990s: "Turkey was deeply involved in drug smuggling in the mid 1990s. There was a very strong mafia at that time and the PKK (the Kurdish rebel group, the Kurdistan Workers Party) used to take protection money in return for letting them operate in the east".

### **The Sputnik Operation**

During the 1990s drug business has become the most important revenue of the PKK terrorist organization. The 1996 UN Narcotic Audit Committee's Report indicated the reason why the PKK still stands, as narcotic money. Belgium newspapers in 1996 reported that the police there believe that the PKK was engaged in drug and arms smuggling, extortion and other crimes in Europe. During the 1990s the PKK established the so-called NGOs and companies in Western European countries, notably in the UK, Germany, France and Belgium, to launder and transfer the smuggling and extortion money. The 1997 Sputnik Operation (Belgium) showed how the PKK launders narcotic and other illegal money. The British and Belgium police acted simultaneously together on 18 September 1996, and started a large scale operation called 'Sputnik'. The operation targeted the PKK linked organizations and members of the terrorist organization under civilian names in the United Kingdom and Belgium (Like London-based Med-TV, so-called Kurdistan Parliament in exile). In Germany and Luxembourg the police also made similar operations against the PKK in their countries. The main juridical foundation of all these operations was money laundering. The narcotic and other illegal money was being laundered by the PKK's TV channel and so-called civilian organizations. The operation revealed that the PKK's TV channel, namely the Med-TV had a 350 millions of Belgium Francs bank account in Luxembourg. The police reported that the money came from drugs, arms and human trafficking. In February 1996, a Canadian citizen who had acted on Med-TV was jailed in Luxembourg. According to the Luxembourg police, he tried to launder a big amount of money for the PKK organizations for the commission. The terrorist organization in these years laundered money under the name of donations or aids to so-called cultural, children, and women etc. associations in London, Paris, Brussels and other European cities. This money has been collected in certain accounts; later, laundered money has been spent for MED TV (now Roj TV), weapons, explosives, militia training and for other PKK businesses. Another laundering method was buying-selling jewelry and using some other legal investments. In 1997, the relationship between the terror organization and drug smuggling began to disturb the Western European countries even more, and explained above with Sputnik and some other operations; the terror organization was forced to take more drastic measures to hide its illegal activities. When risks increased in the drug business, the PKK started a propaganda campaign claiming that it was not in any illegal drug business. The organization claimed later on that these accusations were part of the Turkish Republic's 'propaganda game' against the PKK. According to the PKK propaganda, those people who were caught by the police did not have any relations with the PKK. In this regard, the PKK, thanks to its social and so-called cultural organizations, in 1998 started a great "No to Drug" campaign in many European countries., as expected, with these kind of campaigns, it was not possible for the PKK to clear itself in the eyes of European police and other security forces.



However, it should not be forgotten that the English - French police and judiciary are working within a political system, and public opinion naturally influences their operations against criminals. This may be the point that Turkey cannot intercept fully, but on the other hand the PKK utilizes perfectly. While Turkey generally perceives all of Europe (even the West in general) as a single body, the terror organization successfully abuses the Western democracies' weaknesses and the Western pluralist political and legal structures.

### **PKK-Linked Drug Smuggling in France, Italy and the UK**

Similar to the operations in UK, Belgium, Luxembourg and Germany several people mostly of Turkish nationality were arrested on October 29, 1996 in Parisian suburbs. That was the end of 40 millions of francs-fraud, linked with Belgium, concerning about 150 relevant victims, completed by weapons and narcotics trafficking. The French police in this operation seized 6 kg of heroin, which worth 20 millions of francs. According to the French investigators who worked on that case for 18 months, the benefits of all these operations were assigned to the PKK. Early 1997, the presumed fund-raiser of the PKK in the south of France was arrested by the French police for sending money to Turkey, allegedly proceeding from drug trafficking. François Haut, director of the Department for the Study of the Contemporary Criminal Menace in Paris, argues that the PKK is still responsible for up to 80 percent of narcotics trafficked into Parisian suburbs. A report published in 1998 by the Italian Finance Police, SCICO, determined that the PKK is 'directly involved' in 'international drug-trafficking,' while also earning illicit proceeds from the 'immigrant trade' and the 'systematic levying of 'protection' payments from Turkish businessmen and workers abroad.' In 1998 the British security service sources estimated that the PKK was responsible for at least 40 percent of the heroin sold in the European Union.

### **PKK Controls 80 % of the European Drug Market**

After the capture of Abdullah Öcalan, head of the PKK, and with the dramatic decrease of clashes in the Anatolian mountains, the organization began to give more importance to drug business. Between 2004 and 2005, the amount of drug caught only in the Netherlands was more than 400 kg. According to 2005 European data, the PKK is the primary actor of the illegal European drug trade. BBC stated that, 80 % of the European drug market was Turkish origin (it means Kurdish origin), and that the PKK manages it. The BBC also reports that there are more than 1000 PKK members in British prisons. According to Turkish authorities, between 1984 and 2000, the number of PKK members caught with drugs is around 700. These numbers clearly state that the PKK has worked with hundreds of people in each country on the transition route. Rand Beers, Assistant Secretary for International Narcotics and Law Enforcement Affairs, and Francis X. Taylor, Ambassador-At-Large For Counter-terrorism, in their joint testimony before the U.S. Senate Committee on the Judiciary Subcommittee on Technology, Terrorism and Government Information (13 March 2002) named the PKK the most important terrorist organization in Europe which makes drug business and said "The PKK "taxes" ethnic Kurdish drug traffickers and individual cells traffic heroin to support their operations."

### **German Police: The PKK is Involved in Drug Trafficking**

Germany banned the PKK in 1993 after it carried out a campaign of fire-bombings on Turkish and German institutions in Berlin. However, the German intelligence services estimate that the PKK network in Germany has thousands of members. For the PKK, Germany is comparatively more important than any other European country in financing its terrorist activities and Turkey makes pressure on Germany to actively combat terrorism's financial sources. As a result of these efforts, in recent years, a number of PKK members have

been arrested in Germany for securing financing of the terrorist organization. According to German police sources, the PKK is also involved in drug trafficking in Germany. "Police have confirmed that several investigations have revealed a link between the PKK and drug dealers." In 2007 many PKK members who were involved in drug dealing were arrested in European countries, especially in the transit countries for drugs coming from the east. For instance, on 19 December 2007, three fundraisers for the PKK who were involved in drug dealing were arrested in Bucharest, the capital of Romania. The Romanian public prosecutor declared that the PKK members organized the transportation of 58 kg of heroin, destined for the Netherlands. The suspects - two from Turkey and one from Syria- were all Romanian residents. They belonged to a trafficking ring which extended to Ukraine. As a matter of fact, Romania (with Bulgaria) has always been a vital transit route for PKK drug smuggling from Turkey to Europe. The country has always been important for arms transfers from Western Europe to Turkey. . Marko Hajdinjak claims that Kurdish smugglers along with the Arabs have controlled the heroin trade in the Balkans and they have dominated the Romanian route. Hajdinjak says "Indications exist that the profits from Kurdish-run heroin trade are used for financing the Kurdistan Workers' Party (PKK)".

### **US Labels PKK Drug Smuggling Kingpin**

The PKK, as well as a Turkish national and other foreign organizations and individuals, were put on a US list of suspected drug traffickers in June 2008. The US Foreign Narcotics Kingpin Designation Act, which became law in December 1999, targets major foreign narcotics traffickers, their organizations and operatives worldwide. The terrorist organization will be denied access to the US financial system and all trade transactions involving US companies and individuals under the Foreign Narcotics Kingpin Designation Act, according to a statement released by the White House. Gordon Johndroe, a spokesman for the National Security Council said "Now that the PKK has been designated under the kingpin act, the penalties for doing business with them are much higher... We also now have the authority to target and designate other PKK entities and associates for narcotics activity. Before, we were limited to this group's terror activities." President George W. Bush described the group as a "common enemy" during the November Summit with Prime Minister Recep Tayyip Erdoğan. US experts and administration officials believe that the PKK has taken advantage of Turkey's strategic location between the poppy fields of Central Asia and the vast market of Europe and has used drug smuggling to finance its activities since as early as the 1980s. According to the American narcotics specialists, the terrorist group not only "taxed" the drug traffickers but also was directly engaged in trafficking. Parallel to these arguments Jane Intelligence Review in 2008 argued that the share of drug money with Diaspora funding increased in the PKK financial sources. "PKK financing has shifted from state support to self-financing through Diaspora funding and drug trafficking". According to the Jane Intelligence Review, the war in Iraq has further facilitated the narcotic source of income for the terrorist organization as substantial amounts of heroin formerly transiting Iran are now re-routed through Iraq. The journal says "While the PKK's involvement in drug trafficking is clear, its exact extent and nature is not". Similarly Prof. Dr. Norman Stone confirms in his article in the Spectator that the PKK is in the drug smuggling business: "it kills innocents, it deals in drugs".

### **The PKK Mafia Network and Narcotic Money**

When all these data is considered, it will not be so extreme to say that the PKK has created a symbiotic relation with its existence and drug business. Lieutenant General Ergin Saygun, deputy chief of the Turkish General Staff, recently estimated that 50 to 60 percent of the PKK's annual revenues are derived from drug trafficking. As The Spectator, British weekly magazine, puts it "the PKK has financed its war against Turkey by extortion and the

sale of heroin" (The Spectator", 28 November-5 December 1998). In the mean time, a new kind of mafia emerged in drug, smuggling, and tribute \ robbery areas. This formation, can be called 'PKK mafia', and has developed its own mentality beyond the terrorist organization's classic mentality. In the course of time, participations to the network from outside have begun and a network stretched to three continents (Europe, Asia and Africa), has been created. Surprisingly, some organizations defining themselves on the contrary to the PKK have also begun participating in this PKK mafia network. Thus, the drug money-undermining public order and state authority in the country, Turkish or Kurdist ideologies curtailed the real intentions. So to secure processing, transportation, distribution and market drug production; this network has reflected itself differently and has even spread inside the state body. The critics made by European countries in the mid-1990s, concerned the fact that drug bosses had acquaintances in the Turkish cabinets. Although these claims seem to be exaggerated, it is remarkable that organizations reflecting themselves to the public under a different ideology and utilizing state power in some cases have been cooperating with the PKK. It can be argued that the Deep State problem, extreme nationalisms and terrorism in Turkey have been financed by the drug smuggling money for the years.

### **Children As Drug Sellers in the PKK Narcotic Network**

Apart from taxing narcotics traffickers, direct production, refining and transportation, the PKK became a significant seller in Euro drug business in 1990s. In order to escape strict European laws, the terrorist organization has used children and teenagers. Children and teenagers moving drugs for the Kurdish terrorists have been caught throughout Europe on numerous occasions in the 1990s and as recently as the year 2000. For example in Hamburg, the German police arrested a group of 11 year-old Kurdish children who had been smuggled into Germany from Turkey in order to sell drugs for the PKK.

### **Conclusion**

In brief, illegal drug trade is the most crucial financial source of terror and a major precursor of the collapse of the legal state in Turkey. If Turkey succeeds in ending drug smuggling, in order to end terror, it will reach more effective solutions rather than bombing the Kandil Mountain. Turkey on the one hand, must eliminate the areas that are exploited by terrorists and extremists, and at the same time it must destroy the financial infrastructure of terrorism and other crimes by curbing drug smuggling. Otherwise, the Turks will continue to live with problems like robbery in the streets of Istanbul, terror in the mountains of southeast Anatolia and political assassinations at most sensitive times. We should also note that Turkey desperately needs the immediate help of European countries in its combat against terrorism. The 'monster' is too big for Turkey, and the Turks can not overcome the problem without the EU's help. At the same time, the drug smuggling mainly targets the youth in Western European countries, and the EU cannot stop the illegal drug problem without a real co-operation with Turkey.

#### **Οι jihadis του Βελγίου**

Η εβδομαδιαία εφημερίδα Knack του Βελγίου, σε σειρά άρθρων της αναφέρεται στο ριζοσπαστικό Ισλάμ στην περιοχή της Antwerp και στη δράση τοπικών τρομοκρατικών πυρήνων. Φαίνεται ότι η κατάσταση είναι πλέον πολύπλοκη από τη δημοσιότητα που έχει τύχει μέχρι σήμερα. Το εξτρεμιστικό Μουσουλμανικό στοιχείο στις ευρωπαϊκές χώρες είναι σε εγρήγορση και ίσως σύντομα η κατάσταση ελέγχου του να απασχολήσει σημαντικά τις αρχές ασφαλείας της ΕΕ που προς το παρόν απλά φροντίζουν να κάνουν αισθητή την παρουσία τους. *Τι θα γίνει όμως εάν κάποια στιγμή, οι επί κεφαλής της al Qaeda συνθηματολογήσουν*

*υπέρ της ανάληψης δράσης για παράδειγμα από τους Πακιστανούς που διαβιώνουν στην Ευρώπη; Είμαστε προετοιμασμένοι για τέτοια ενδεχόμενα ή πάλι θα λάβουμε μέτρα μόνον όταν η δράση τους θα είναι εμφανής ή εκρηκτική;*

### **Antwerp: The Jihadis of Antwerp North**

Belgian weekly Knack is coming out with a series of articles about the radical Islam in Antwerp. The first article is titled "The Jihadis of Antwerp-North" (De jihadi's van Antwerpen-Noord). A few days after this article appeared, the Belgian federal police moved to act against a suspected local terrorist cell. Abdessatar Dahmane's widow (the imam marrying them is mentioned in the article) was arrested this week. The 'Gazet van Antwerpen' published two weeks ago in its regional edition a photo of several member of the Rissala non-profit organization. That youth center with premises in the area of the Omar mosque on Tulpstraat, had a booth in the neighborhood party at the nearby Van Kerckhovestraat. Chairman Jemal Fellous, a notorious member of the Moroccan branch of Jamaat Tabligh, sees in that the opportunity to represent his association as clean. "We organize various internal and external activities for the youth. Last week we had even gone orienteering in the Ardennes." That is true, only the nightly journey in the woods of Agimont next to Dinant wasn't specifically proposed to the members of Rissala as an orienteering trip, which youth movements organize by the hundreds every weekend. On Friday, October 24, P. got notice that he was 'invited for the day afterward to go to Jihad training with the Rissala youth to the woods of Agimont'. He decided not to go, but promised that before the departure on 6pm he'll pass by the mosque. At 5:40pm he walked in from the Stuivenbergplein into the mosque. The faithful trickled in. Not only youth who were going to Agimont, but also many older people who came to pray for a good outcome. We were parked a few streets further up, in the Viséstraat, several dozen meters from a bus which we suspected was waiting for the young Muslims. This turned out to be right. Our informant kept us informed from the mosque via SMS. At the moment that they were to depart, we got a notice that it would still take a while. Afterward they must still pray. The youth were apparently waiting for the falling darkness in order to leave the mosque. An hour later than planned we finally saw the driver appear. He stepped in, shortly followed by two young men who each stepped onto the bus with large backpacks. Twenty minutes later the rest of the group also came around the corner. Within a minute fifteen youth in thick clothing sat with their backpacks and other materials in the bus. P. waved them goodbye. An hour and a half later he would yet get a telephone call from Fellous. He asks P. if he hadn't seen anything suspicious. He suspects that the bus was followed after departure. At that moment the youth of Rissala are almost in Agimont. "Those men were already indeed here various times," says Jan Cuylits of Agimont strategy. "They were guided but from a distance." Cuylits, originally from Antwerp, has no problems that some of those youth roam the Ardennes woods in mujaheddin clothing. "If they walk with their beards and djellaba through the streets of Antwerp, I also have no problems with it. Those men do nothing wrong here. If I refuse them, then I would just have problems. Because then there would be immediately talk of discrimination." Most residents of Agimont, a village of 400 people, clearly have a different opinion about it. When the youth of Rissala, during another adventure night in 2007, made too much racket in the parking lot where their minibuses stood, several neighbors called the police. "According to them they were on a warpath," says inspector Thierry Meinguet of the Haute-Meuse police. "But besides one of those fellows in camouflage clothing, we saw nothing special then." "We drove there that evening with rented minibuses" says P., who was then there. "Those men incited themselves with anti-Jewish slogans. From that also the residents of Agimont were seized by fear. In the woods we had to lay a difficult course. We were with our group underway for six hours in total. Halfway through our journey we were suddenly stopped by the police. We had to show our identity cards. There was clearly a communication error between the security services and the local police. While we waited for our buses, [our] pictures were taken out of

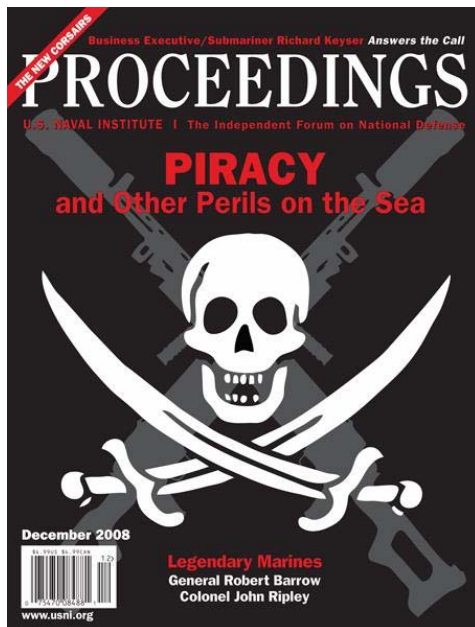
a car. I suspect that that was the federal police. In any case I had to keep the State Security Service informed by SMS of what took place in the woods." Whoever went on a weekend to the Ardennes was written down in the notebook of Jemal Fellous, whose brothers Achmed and Nordine were also active by Rissala. The Fellous family had already gotten in trouble with the law several times and were already sentenced for illegal trade and possession of weapons. In the notebooks which were found in Oma mosque you can see who of Jamaat Tabligh's members attended training in recent years outside Antwerp. Countless weekends in sites both local and abroad are reported there, but also surprisingly many trip of forty days to Pakistan, the aspiration of every radical Muslim who grows up in the West. The weekends begin mostly with a lecture at the Tulpstraat. The youth mostly don't know then yet where they are going. Often it's mosques in the Netherlands or the suburbs of Paris. But just as well the trip can lead to Liege or Brussels. For tourism there is no time. The youth stay the whole weekend inside the mosque. At night they sleep on the ground in the house of prayer, by the example of the prophet Muhammad. During the day they can expand their network through contact with like-minded people. The rest of the time is spent by praying and listening to the message of the local imam. The discourse is invariably anti-Western, for strengthening their own faith community and against any form of integration. Two weeks ago the men of Jamaat Tabligh left Tulpstraat to Anderlecht, for a weekend in the mosque where the Centre Islamique Belge is set up. They got lessons from the followers of the famous French imam of Syrian origin, Bassam Ayachi. Ayachi, beter known as "Sheik Bassam" has been one of the most important radical preachers in Brussels for years. Two years ago his son Abdel Rahman Ayachi and webmaster Raphaël Gendron were sentenced to 10 months in prison, half deferred. Additionally both had to pay a fine of 15,000 euro each and 2,5000 euro to the Center for Equal Opportunities and Opposition to Racism that had lodged a complaint. They were found guilty of historical revisionism, minimalism of the Holocaust and inciting to racial hatred, in particular against Jews. Meanwhile it isn't going well for the sheik too. He was arrested on November 11th in the Italian port city of Bari. He must answer for being an accomplice to illegal immigration. Five non-EU citizens were found in a hidden compartment of his camper, he had wanted to bring them from the Middle East through Greece into Western Europe. Bassam is known by the French security services as the man who conducted the marriage of Tunesian Abdessatar Dahmane in Brussels, the fake journalist who together with a companion murdered Afghan rebel leader Ahmed Shah Massoud on the eve of September 11. P. didn't take up the invitation of Fellous to go together to Anderlecht. "The atmosphere was completely different than that time when they went to Agimont. They asked me then also several times to get on the bus, but they didn't make a point of it that in the end I didn't join. Now it was much more forceful. I didn't trust the issue at all. The possibility existed that they wanted to test me or physically attack me. Some radical Muslims in Antwerp know that I was yet an informant. For that last weekend in Anderlecht I really had to think up an excuse in order to keep them off me." That Muslims that after a certain time wanted to leave the radical group to which they had belonged were made very uncomfortable. "The pressure is very great," says Dutch journalist Patrick Pouw, who for 13 months learned by Suhayb Salaam and wrote a book about it. Suhayb Salaam is the son of the imam who refused to shake hands with Rita Verdonk when she was a minister. He is manager of the Islamic Institute for Upbringing and Education (Islamitische Instituut voor Opvoeding & Educatie), a school which educates young men and women to be preachers of Islam. "By me it was than just a regular course by Salafists (radical, anti-Western Muslims). Students who wanted to debate with the teacher or didn't want to come to the lessons any more were told that they didn't fulfill the obligations of Allah. While they just learned that there is no greater crime than that." Those who dropped out didn't need to fear physical consequences. "But I can imagine, and that also appears in the crime files, that by groups who commit attacks, such as the Hofstad group here in the Netherlands, such reprisals could well follow." That it doesn't always need to keep to a fistfight or kicking can be seen by the ease with which extremists can get weapons. "At the end of October I myself yet witnessed a

weapons deal in which we were collected by two Algerians and a Moroccan contact person in the area of the Brussels Zuid (South) station," says P. "The merchandise which was put out for us in a garage box contained Kalashnikovs, magnums, and bulletproof vests among other things." Why did P. get it into his head to appear in Knack with his photo and initials? "I was anyway discovered. A couple of years ago I had anonymous contact with several other media. The stories then didn't change anything in the radicalization of the Antwerp Muslim youth. By stepping forward, I hope that other moderate Muslims will speak aloud against radicalizing." "Some of my brothers who are now leaving for Pakistan, will be chosen after intensive education to travel to military training camps. Till they are ready for the war in Afghanistan or an attack elsewhere in the world. I want that those recruiters will no longer have free reign. As for me: everyone from the radical community knows that I'm that, with or without a photo. The State Security Service dropped me a while back because I communicated with the media. I therefore don't need to expect much protection any more. If I maintain my anonymity and something happens to me in the coming weeks nobody will be the wiser. Above all, for me it's a way to definitely stop in one stroke. I'm exhausted, emotionally and psychologically. I've provided good work for years for the federal police and the State Security Service. I can look at myself in the mirror."

### Τι συντηρεί την πειρατεία ;

Η πειρατεία στα ανοιχτά της Σομαλίας και στον Κόλπο του Αδεν αποτελεί φαινόμενο που έγινε αντιληπτό κυρίως εντός του 2008 και συνεχίζεται και μέχρις των ημερών μας καθώς τα κέρδη που αποκομίζουν οι σύγχρονοι πειρατές πλησιάζουν τα 200 εκατομμύρια δολάρια (2008) σε μια χώρα που μαστίζεται από πολιτική αστάθεια από δεκαετιών. Η παρουσία πολυεθνικών ναυτικών δυνάμεων στην περιοχή μπορεί να περιορίσει (προσωρινά) το φαινόμενο αλλά δεν έδωσε τη λύση που όλοι ανέμεναν και επιζητούσαν. Τι είναι λοιπόν αυτό που συντηρεί την πειρατεία ;

### What Makes Piracy Work?



An expert in the field graphically identifies five fundamental factors that have long kept pirates afloat. The Golden Age of Piracy—from approximately 1570 to around 1730—was an era when robbery on the high seas was widespread, lucrative, and threatening. Although nowadays it has been romanticized in such films as Disney's Pirates of the Caribbean trilogy, piracy back then was actually violent, frightening, destabilizing, and thoroughly illegitimate, at least from the point of view of governing authorities. Its history provides a variety of case studies and models that illustrate how these groups operated and to what degree their activities continued, despite opposition and military confrontation. In turn, these models offer ways to analyze the pirates of the contemporary world—including those now operating off the coasts of Africa—so we can ascertain their viability and learn how to combat them. Ultimately, case studies reveal that long-term, intractable, flourishing piracy

is a complex activity that relies on five integral factors: an available population of potential recruits, a secure base of operations, a sophisticated organization, some degree of outside

support, and cultural bonds that engender vibrant group solidarity. Activities that interfere with the smooth workings of any of these factors weaken piracy's sustainability.

### **The North Africa Coast**

From about 1500 to 1832, the Barbary corsairs of North Africa made the Mediterranean a highly dangerous place, regularly attacking and plundering Western trading vessels. Their ineradicable presence, frightening success, and savage violence over three long centuries stemmed directly from their exploitation of the aforementioned five fundamental qualities. Europeans were terrified of these marauders, for the North Africans zealously pursued and looted any and all Western ships, no matter their nationality. Religious ideology characterized and permeated this conflict, with each side—the North Africans and the Europeans (and later Americans), respectively—citing their Muslim and Christian identities as the primary reason they were locked in a state of opposition. While the loss of trade goods was bad enough, what most terrified the Europeans was that the corsairs routinely seized sailors and passengers from Western ships, using them as slave labor on board corsair ships or in their sponsoring cities, collecting ransoms from their faraway kinsmen and countrymen, or selling them in the slave markets of North Africa and Turkey. People were the corsairs' primary targets. Ships and property were beneficial, but they were secondary objectives. The corsairs were based in several large North African port cities, including Algiers, Tunis, Tripoli, and Sal and Mamora (later Morocco). While nominally controlled by the Ottoman Empire, the denizens of these settlements were actually granted wide latitude from the Sultan to behave as they wished. The corsairs' origins lay in the Spanish Catholic evictions of Muslims from the Iberian Peninsula (circa 1300-1500), which had created a population of embittered refugees in the North African cities and instigated the early 16th-century Spanish invasions of North Africa. Lacking a naval response to repel the Spanish aggressors, each of the port cities adopted Ottoman naval technology, combat techniques, shipboard operations, and raiding strategies, and accepted Ottoman financial support, all in exchange for a loose allegiance to the empire. The resulting arrangement was a win-win situation for both the Turks and the North Africans. The port cities now had the means to combat the aggressive Spanish, and the Ottomans were happy to have a naval bulwark along the southern Mediterranean coast, thereby impeding European endeavors to control the sea.

### **Muslims versus Christians**

Since these events followed closely on the heels of and indeed were inextricably entwined with the tensions stemming from the Crusades and European Reconquest of the Iberian Peninsula, the confrontations that ensued were articulated in the ideological idiom of religious conflict: Muslims versus Christians. At the same time, however, a less obvious but no less important reason for the clash stemmed from the shift in trade patterns from the Mediterranean to the Atlantic and Indian oceans, a change that deprived North African port economies of commercial activity. Each port city sponsored and sheltered its own fleet of corsairs, pledging financial support and rewards, political protection, and physical refuge. Accordingly, corsairs brought their captured goods, ships, and prisoners to their respective sponsoring city. It was a symbiotic relationship that worked well for the duration of the phenomenon, ensuring the corsairs protection and their city's economic survival. Over the course of the 16th century, following the Ottoman naval model they had adopted, the corsairs used galleys commanded by local North Africans and rowed by slaves. As the 17th century unfolded, however, they also acquired European sailing ships and began to include an increasing number of dispossessed European sailors in their crews. Many of these so-called renegade Westerners ended up occupying the highest positions in the chain of command and had extremely successful careers as North African raiders. In keeping with their ideological perspective of victims of religious persecution and attempted invasion, the corsairs did not see their actions as piratical in the least. On the contrary, they believed themselves to be revered warriors whose raiding activities defended their people and their faith and the economic

sustenance and military security of their home ports. The West, however, condemned the corsairs as pirates, for their marauding did not at all conform to European rules of engagement or stipulations for legal commerce raiding.

### **Corsairs Extend Their Reach**

As the raiding intensified over the years, the corsairs' hunting grounds expanded. While they always represented a grave threat to Mediterranean shipping, their attacks were by no means confined there, especially after they acquired the means and equipment to operate European-style sailing ships. Rather, in their quest for Christian quarry, the corsairs regularly prowled the Canary Islands and the African coast, even going as far as the Red Sea region. They also ventured into European waters, cruising along the coasts of Portugal, Spain, and France, and into the northern seas as well, making their way into the waters surrounding the Netherlands, England, and even around Iceland, which they raided spectacularly on at least one occasion. After the mid-17th century, the corsairs increasingly took to the seas in large, powerful fleets, each including at least 20 vessels. They attacked ships and coastal settlements, and everywhere they went, the goal was still the same: hunt down Western goods and kidnap Western people. The Barbary corsairs became infamous for their reputed violence. Regardless of how savage they really were, the perception among early-modern Europeans was that the North Africans were uncivilized and ruthless. Some modern scholars argue that accusations made against the corsairs were borne more out of fear and prejudice than actual circumstances. Moreover, it is important to remember that many practices, which in our eyes are shocking examples of cruel and unusual punishment, were by early modern standards quite normal; all early-modern states—including those of Europe—employed harsh means of corporal and capital punishment. But the stories are still sobering. Allegedly first-hand accounts written by witnesses and survivors of Barbary captivity describe dreadful places where thousands of pitiful Christian slaves (in 1621, supposedly more than 32,000 in Algiers alone) were, among other things, tortured, worked harshly and ceaselessly; and housed in dark, hot, vermin-infested prisons, where lice and fleas ate at their skin. North African youths jeered and threw stones, urine, and feces at them and burned them alive. Methods of torture included bludgeonings, setting feet and hair afire, public whippings, impaling on pikes and giant hooks, genital mutilation, burial alive, and even crucifixion. Over the course of their existence, the corsairs captured and enslaved tens of thousands of Christian men, women, and children. Those who were not ransomed successfully could be worked to death and then denied the decency of a proper burial. Instead, early modern sources decried, their corpses were left to rot and be eaten by dogs. Together these texts provide vivid anecdotes testifying to the corsairs' cruelty and rapaciousness.

### **How Europe Coped**

How did Europeans deal with the scourge of the Barbary corsairs? First, enormous effort went into liberating European captives through the payment of ransoms. To this end, liberation societies were born, associations whose sole purpose was to collect funds for the deliverance of Western slaves. In addition, many states and communities imposed a "Turk's rate" tax as a means to amass money for slaves' emancipation. Finally, Western governments sometimes presented the North Africans with gifts and/or monetary remuneration to expedite the process. Officially designated agents drawn from an extensive network of Catholic orders and Jewish merchants acted as middlemen and took the collected funds to North Africa to purchase slaves' freedom. Second, European governments negotiated diplomatic agreements with the various North African city-states, and even the Ottoman Sultan himself. These treaties were typically uncoordinated efforts, meaning that they represented an agreement solely between one Western nation and one North African settlement. They often involved the payment of special sums of protection money to the sponsoring North African cities, thus avoiding Barbary harassment. (This was a technique employed especially by Western nations that lacked a strong naval presence in the Mediterranean.) Frequent expirations and



changeable terms necessitated a constant revisiting of these diplomatic accords. Overall, the efficacy of the treaties ebbed and flowed over the years. Third, Western navies also patrolled the waters to stamp out the corsair nuisance. Sometimes, these naval forays resulted in concentrated attacks against a particular North African port city, or demonstrations of naval might in a city's harbor to intimidate the city leadership and encourage the release of slaves. Naval missions departed regularly and enjoyed some success, capturing Barbary raiders and either executing them or selling them into slavery. Such fleets typically cruised the Spanish and Portuguese coasts and Mediterranean Sea. If they apprehended a corsair vessel, they liberated any captive Christians, confiscated the weapons, auctioned the goods at the nearest friendly port, and took the enemy crew prisoner for later strategic disposal. Western governments also pledged handsome rewards to any of their ships that seized a Barbary vessel. Special incentives included bonus wages, equal access to profits earned from the sale of the ship's goods, and for the captain of each conquering naval vessel the right to take the ship's provisions and small weaponry. Fourth, European trading nations enacted protocols to



protect their shipping against Barbary harassment. Directives from the 17th-century Netherlands, for example, included instructions to ship owners regarding the minimum size of vessels, type and quantity of weapons, and size of crews. Dutch ships were also required to convoy with at least one other similar vessel and were forbidden to transport any ordnance or naval

stores to North African cities. Guilty parties were punished with severe fines and even execution. To detect any recalcitrant ship owners, the government developed an inspection system using the local magistrates of the relevant ports. It also created incentives for these local authorities (as well as for fellow mariners) to report ships not in compliance with the rules.

### **The Secret to the Corsairs' Success**

To a degree, these solutions saved Western lives. Still, though, they did not directly undermine any of the five fundamental factors accounting for corsair potency and durability. Consequently, the Barbary menace was impossible to eradicate for some 300 years. Why? The North African corsairs were effectively organized following Ottoman naval tradition. They were sheltered by secure bases of operations in the form of the North African ports and economically and politically supported by both their sponsoring cities and ultimately, the Ottoman Sultan. And among themselves they were animated by sturdy bonds of ideological solidarity. Even the European renegades converted to Islam. The West finally suppressed the corsairs, but not until the early decades of the 1800s when they were in a less vigorous state. In a series of confrontations, Western navies were able to forge (sometimes coerce) diplomatic treaties (e.g., the 1796 agreement with the independent Morocco). They also fought the corsairs and their North African sponsors in wars (e.g., the 1801-05 war between Tripoli and the fledgling United States, whence comes the reference to the "shores of Tripoli" in The Marines' Hymn). And finally, they were able to vanquish sponsoring cities (e.g., the

1830 French invasion of Algiers, which signaled the definitive end of the Barbary corsairs). All of these Western triumphs were predicated on the use of sufficiently strong navies. But naval power alone did not do the trick. In addition to navies, other forces were at work and created favorable conditions for Western success. Compared to the glory days of the 17th century, the Ottoman Empire was weaker economically and politically and thus less interested in corsair activities. Its bonds with the North African ports were even more tenuous, if they existed at all. For their part, the North African city-states were less supportive of corsair activities and less impervious to attack than they had been. Furthermore, with refugees from the Iberian Peninsula long since absorbed and the absence of a steady pool of Western renegades, it was no longer as easy demographically to outfit a fleet of corsair ships. Among the corsairs themselves, ideological motivations still had their power, but less so. Therefore, the corsairs were less passionate about their enterprise and less willing to risk all. By the 19th century, then, superior Western navies were dealing with a weaker phenomenon, and so strong naval action could result in decisive victory.

### What About Today's Pirates?

As the rest of the world considers what to do about the increasingly problematic modern Somali pirates, it would behoove us to think beyond superficial and simple naval solutions on the high seas and consider the five factors underlying the long and productive careers of the Mediterranean corsairs. To analyze Somali piracy more deeply and ultimately suppress it, we must ask ourselves these vital questions:

- Who are these Somali pirates?
- Where do they find recruits, and how many of them are available?
- Why do they take up piratical activities?
- Do we know the exact number, character, and location of all of their havens?
- Are these pirates organized, and if so, how are they organized, and is this organization strong and effective?
- Do the Somali pirates enjoy any outside sources of support? states or groups (including terrorist groups) that are providing money, goods, weapons, intelligence, or other help to their cause?
- Do these pirates maintain close bonds between one another with a keen sense of solidarity and cohesion, and if so what is the nature of this solidarity, from where does it come, and is it powerful and abiding?



We know some of the preliminary answers to these questions from intelligence gathered by American agencies. Today's Somali pirates are, in general, trained militia fighters based in the semi-autonomous regions of Puntland and Somaliland. They do not call themselves pirates. Organizationally, the piracy is based on the clan system so influential in Somalia. But it is allegedly controlled by elements within the Somali government as well as businessmen in Puntland. The pirates are based in camps located adjacent to coastal port villages, and they also deploy previously captured ships as sea-going bases, or mother-ships. We do not know how intense the bonds of solidarity are among these raiders, but one would guess that relations are strong since the piracy overlays the indigenous clan system. At this time, analysts discern few clear links to terrorism, but this possible development is of ongoing concern. The key to eradicating Somali piracy lies in interrupting the

larger, complex system that supports it. It is essential that the pirates be intercepted in action on the high seas, and the United States and its allies should continue to meet this objective. However, the situation is more complicated than that, and the longer the system is permitted to stay in place and grow, the more intractable the piracy problem will become. Possible courses of action include somehow interrupting the flow of recruits (by introducing alternative economic possibilities, for instance), establishing some sort of compelling alternative to the clan system (an action that would weaken the pirates' organizational structure and feeling of solidarity), and eradicating the base camps. Diligent efforts must also be made to prevent the Somali pirates from acquiring outside sources of sponsorship and support. The danger is that al Qaeda (or some other terrorist group) will seek involvement in the enterprise, especially since Somalia is an Islamic country. Al Qaeda has experience both in international shipping and allegedly the piracy affecting Southeast Asia. Above all, we must not ignore this contemporary African piracy or underestimate its potential severity simply because we arrogantly assume that pirates in small speedboats (the Somalis' raiding craft of choice) can do little harm. Indeed, one of the vital lessons the history of the golden age of piracy imparts is that pirates can do serious damage with what seem to be unformidable naval assets. As in the case study of the Barbary corsairs, it is ultimately the support system—based on the previously mentioned five fundamental factors—that determines the success of piracy.

### **The Overstated Threat**

It is too easy to confuse piracy with water-borne terrorist acts. Don't believe the hype and consider the source. Modern pirates bear little resemblance to popular romantic Hollywood characters. Increasingly violent and greedy, their actions seem an affront to the very ideals of Western civilization. Armchair admirals and politicians are quick to shake their fists, avowing, "Something must be done." Maritime industry is quick to follow, with unsettling incident accounts and dire financial projections. Yet, more informed analysis of piracy reveals that the impact in blood and treasure is altogether minimal. Indeed, common misperceptions abound. While maritime piracy incidents capture media attention and generate international calls for action, the piracy threat is in fact overstated. It is nothing more than high-seas criminal activity, better addressed by law enforcement agencies than warships. As a localized nuisance, it should not serve to shape maritime force structure or strategy. The distinction between piracy and terrorism is neither semantic nor academic. If piracy, the responsibility lies with local law enforcement officials, not the military. But maritime terrorism means scrambling the Navy.

### **No Link, No Evidence**

A critical contemporary myth to debunk is the alleged nexus between piracy and international terrorism. Serious scholars and analysts view with circumspection any assertions of this linkage. For instance, a recent International Institute of Strategic Studies (IISS) forum revealed that there is "no evidence terrorists are gaining any benefit from piracy"—the real threat being organized criminal activity, not terrorism. The institute cites a study emphasizing the importance of not exaggerating the extent of either threat. Piracy, it maintains, is essentially a localized problem: "It is a nasty headache where it occurs, but its real effects on world trade and the movement of people are negligible." The study concludes there is no great risk of terrorists posing as pirates or adopting their methods either to seize a ship for hostages or to use the vessel itself as a weapon by igniting volatile cargo. To be sure, maritime terrorism is clearly a proven method of al Qaeda and other terrorist groups, but piracy cannot be plausibly conflated with it. A 2008 RAND study reached similar conclusions. It detailed the causes for piracy in the last decade: local corruption, increased maritime traffic, small arms proliferation, lax coastal/port security, increasingly difficult maritime surveillance, lingering effects of the Asian financial crisis, and the denser traffic through congested choke points. RAND did not list terrorism, because "the presumed convergence between maritime

terrorism and piracy remains highly questionable. . . . To date, there has been no credible evidence to support speculation about such a nexus emerging." RAND further assessed that the objectives of the two actors remained entirely distinct. A recent piracy incident seems to support this: during the September 2008 hijacking of a Ukrainian freighter—the Faina—off Somalia, the pirate leader admitted via phone to a New York Times reporter that the group wanted "just money."

### **Marginal Impact**

Piracy of course has costs, both human and economic. Crews are kidnapped, injured, and occasionally murdered. Time is money in international shipping; delayed or stolen cargoes, waylaid vessels, and idle crews all mean lost profits and possible liabilities. Second-order effects in markets affected by piracy also have uncounted costs. Similarly, the potential consequences of an environmental disaster from mishandled or abandoned vessels with hazardous cargo could be severe. While impossible to quantify, the positive reinforcement that highly visible piracy successes have on would-be criminals is also a factor. Yet, the most significant systemic costs come from increases in vessel and cargo insurance premiums—especially for marine business in high-risk regions. Overall, however, the consequences to maritime commerce are surprisingly minimal, though precise figures on the losses in commercial shipping are not available. The Center for Strategic and International Studies estimated that in 2001, piracy cost the industry \$16 billion, but some analysts dispute this figure and it pales beside larger estimates of total global maritime trade, regardless. A 2006 assessment of the risks of piracy indicated shipping industry losses were relatively small in relation to the total volume of ocean transports. The study IISS cites above asserted "truth be told, losses are so low that there is little incentive for the shipping industries even to make a serious collective effort to tackle it." So why all the hand wringing over piracy?

### **Widely Held Misperceptions**

Even as the facts fail to support allegations of terrorist linkages or dire economic consequences, governments, pundits, and the media continue to hype the "threat." For instance, the U.S. National Strategy for Maritime Security relates that pirate groups could employ capabilities to board and commandeer large underway vessels to facilitate terrorist acts. This seems a poor basis for guiding decisions on how America is to address piracy. Regrettably, many apply similar logic to organized drug smugglers, with the apparent intent of exaggerating the threat. The U.S. Coast Guard's recent adoption of a risk-based threat assessment process that includes analyzing the likelihood of specific terrorist methods, targets, and attack consequences appears to be a sounder decision-support model, easily applied to piracy. Notwithstanding the lack of any clear evidence, government officials and respected journals continue to make spurious claims. British maritime authorities in 2006 dismissed allegations of a piracy-terrorism nexus in a House of Commons report, responding that the report's conclusions were "not based on informed and corroborated intelligence." A recent Foreign Affairs article claimed "the scourges of piracy and terrorism are increasingly intertwined: piracy on the high seas is becoming a key tactic of terrorists." Office of Naval Intelligence (ONI) piracy expert Charles Dragonette roundly disputed the article as "uncritically repeating myths, half truths, and unsupportable assertions of an alleged nexus of piracy and terrorism." The result, however, is a persistent blurring of the line between piracy and terrorism. Another factor contributing to the confusion and ignorance surrounding piracy is the lack of a standard and comprehensive piracy definition, especially as it applies to high seas and territorial waters. Any act of maritime crime occurring within a sovereign state's 12-nautical-mile limit (the vast majority of reported incidents) simply is not piracy. As such, no state except the sovereign has any legal authority to address criminal acts against shipping in its waters. The resultant muddying of piracy and maritime crime reduces the accuracy of available piracy statistics. The International Chamber of Commerce's non-profit International Maritime Bureau (IMB) Piracy Reporting Center also has a relatively loose definition that

allows incidents both within and outside 12 nautical miles to qualify as piracy. For instance, the IMB records reports of perceived small boat shadowing in high-threat areas as attempted pirate attacks, even though incident specifics are almost never confirmed. Similarly, an attempt by Greenpeace to board or thwart legal maritime activity also falls under the IMB piracy definition. Piracy data over different periods can also appear to support differing conclusions. Statistics for the past decade show a relatively consistent number of incidents per year, suggesting no increase, but a regional spike in one area can be hidden by a drop in another—Somalia versus the Strait of Malacca, for example. Prudent maritime analysts should scrutinize piracy reporting, data, and statistics; claims that piracy is "spiraling" are usually unsubstantiated. A second concern with IMB reporting is possible bias. Its Piracy Reporting Center seeks to raise awareness of hotspots, detail specific attacks and consequences, and investigate piracy incidents and armed robbery at sea and in port. While a noble cause endorsed by the United Nations, the center's *raison d'être* is trumpeting the "piracy threat." Just as well-intentioned humanitarian aid groups occasionally exaggerate the scope or intensity of a crisis for effect—to draw more international attention and resources—so, too, is the IMB vulnerable to bias. Further, the bureau is almost exclusively funded by maritime shipping companies and insurers, with vested interests in keeping piracy in the headlines. Profit-oriented businesses loathe implementing costly preventive measures, naturally preferring that international organizations, national law enforcement agencies, and armed forces take care of the problem instead. The international shipping industry thus has a specific interest in exaggerating the global threat of piracy. Apparently capitalizing on the heightened 2008 media attention on Somali piracy, shipping organizations from all sides of the industry issued in September what they described as "a crisis call" to the International Maritime Organization and the UN to take "real and immediate action" to tackle piracy in Somalia, urging more nations to commit naval vessels to the area to deal with the threat.

### **Only the Symptoms**

Gray hulls bristling with weapons and sensors designed for conventional war are simply ill equipped to handle piracy—and are better assigned elsewhere. The recent situation off Somalia is a telling example. By late October 2008, the month-long saga of the pirated Belize-flagged motor vessel *Faina*, loaded with T-72 tanks, showed no signs of resolution, though six warships monitored the situation from the horizon. Astoundingly, this equates to roughly one destroyer or cruiser per pirate, but no appreciable ability to resolve the crisis. The presence of Russian crewmembers on the *Faina* prompted Moscow to send the frigate *Neustrashimy* with marine commandos at best speed from the distant Baltic Sea. NATO, the European Union, and India all promised to also send warships to help U.S. Navy ships patrolling the Horn of Africa region—potentially the largest anti-piracy flotilla in recent history. On 12 November, British and Russian naval forces halted a pirate attack in the Gulf of Aden. British sailors killed two pirates in a firefight before the pirates on board a dhow surrendered. Five-inch guns and Harpoon missiles, however, are simply not the right weapons to confront pirates holding dangerous cargo or hostages. Even with an exceedingly rare UN ruling to allow foreign warships to take actions within a sovereign's territorial waters, the group of powerful warships near the *Faina* could do little to influence events. In the few instances when maritime force has been effectively applied, such as the 2008 commando operation rescuing French citizens or the 2007 U.S. Navy destruction of pirate skiffs, these strictly military actions rarely address the cause of piracy itself. A notable exception was the 2006 U.S. Navy operation involving American and Kenyan law enforcement officers, including a detailed forensic investigation resulting in the detention and subsequent sentencing of Somali pirates in a Kenyan court. In recent months, the disadvantages of keeping expensive warships occupied with marginal-gain low-end missions such as piracy became apparent. The U.S. commander of Naval Forces Central Command (NAVCENT) stated in September that the international shipping industry must take on more responsibility to protect vessels against pirate attacks rather than rely on the U.S. Navy. This likely reflects

the appreciation that maritime powers do not have the resources to handle both conventional naval requirements and what is essentially a law enforcement mission. NAVCENT also seemed to signal its limitations, admitting that despite the presence of Coalition warships, "criminals still successfully targeted several vessels in the region." Notably, the Middle East Royal Navy commander commenting on the September NAVCENT statement emphasized, "we do what we can, but the solution to this problem is clearly not at sea, but ashore in Somalia."

### **Source of Piracy is Ashore**

Pirate cells, especially more organized groups, require a network of support on land. Logistics, communications, weapons, money exchange, and marketing of stolen goods are all requirements managed ashore. Pirate groups usually exploit local villages or communities, but sometimes—as in Somalia—these provide the support network itself, or at least benefit significantly. Yet, targeting pirate infrastructure inland is no easy task: sovereignty, laws of armed conflict, and rules of engagement typically prevent unilateral actions. This is especially frustrating off Somalia, as no national police or armed forces exist. Some argue the piracy-terrorism nexus justifies more liberal military action in Somalia, but as noted earlier, such logic is both faulty and dangerous. Informed analyses all similarly conclude that a holistic strategy to address piracy requires both sea- and land-based measures. Studies consistently show that the combined effects of regional economic crises and inadequate legal and security systems cause regional growth trends in piracy. A natural corollary is that law enforcement and intelligence services operating on land can more effectively identify and target piracy infrastructure ashore. Yet, these studies conclude that because of the inherent tension between securing shipping lanes and respecting state sovereignty, most anti-piracy initiatives are ad hoc. The Somalia example again illustrates the inefficacy of solely sea-based anti-piracy efforts. The Officer of Naval Intelligence reported in 2006 that Somalia's Union of Islamic Courts (UIC) seized control of Harardhere, the coastal village at the center of piracy. The courts' spokesmen asserted they were in full control of the village, the era of banditry and piracy was over, and the actions of pirates were unlawful, unacceptable, and un-Islamic. After locals were threatened with swift administration of Sharia law, piracy abruptly ceased off Harardhere—until Ethiopian forces pushed UIC elements from the region. It is ironic that Ethiopian military operations designed to oust the radical Islamist threat reintroduced an era of significant Somali piracy.

### **A Recognized Structure**

The International Maritime Organization (IMO) remains the recognized international body with the mandate to establish a global anti-piracy plan. The organization provides an accepted, common framework for action and represents the best hope for establishing and sustaining an international regime to eliminate piracy. Existing international conventions that support anti-piracy measures, such as the Law of the Seas, Safety of Maritime Navigation, International Ship and Port Facility Security Code, and the Safety of Life at Sea Convention are initiatives born out of the organization's forum. Regional initiatives, such as the ASEAN Regional Forum, can work through the IMO to ensure localized multinational efforts contribute to a global anti-piracy effort. Benefits include increased capacity building, law enforcement interoperability, standard reporting procedures, global maritime information center support, and improved cooperation among coast guards. Since these efforts inherently involve law enforcement and regulatory agencies, however, they are usually inappropriate for armed forces. In fact, the Coast Guard (with its law enforcement responsibilities unique to the armed forces) is the lead maritime agency in the U.S. delegation to the IMO. While law enforcement agencies are inherently more prepared to deal with maritime crime, naval forces still have a role in supporting them. Most states simply do not have the wherewithal to provide for persistent territorial or exclusive economic zone (EEZ) patrols. Regional

multination initiatives, such as Coalition Task Force 150, bolster nearby state efforts in piracy hotspots with presence and response forces. Such multinational maritime forces also reinforce international regimes, especially when participating navies enter into local agreements with law enforcement to eliminate the perceived sanctuary of territorial waters. One method periodically used is to embark law enforcement detachments (LEDETs) from both flag and host nations to support local law enforcement operations (including forensics, detainee handling, evidence chain of custody, etc.). U.S. Navy warships periodically host U.S. Coast Guard LEDETs during counterdrug and embargo enforcement operations. The importance of the onboard capability to conduct the full scale of law enforcement operations—that ultimately address the source of piracy ashore—cannot be overstated.

### **Commercial Sector Has a Role**

Multinational shipping corporations, insurers, and vessel masters must all bear some of the burden of responsibility to deter and hinder pirates. Indeed, the commercial sector enjoys huge profits facilitated by maritime security; it also has the means to act against piracy. The IMO promulgates standard, proven anti-piracy practices. Yet vessels and shippers routinely ignore them. For example, ONI makes periodic unclassified threat assessments that the State Department and IMB incorporate into special warnings to mariners. In the Somali case, ONI urged mariners to avoid the piracy-prone areas by at least 200 nautical miles as early as 2005. Considering that numerous pirated vessels were well within the 200 miles when seized, it seems clear some masters chose to ignore the warnings at their peril (presumably to avoid excess fuel costs of indirect routes). Evidence indicates ship owners are clearly not doing enough to protect their vessels and crew and must invest in anti-piracy systems, such as ship-wide alarm and surveillance systems, anti-boarding devices (electric fences, interior-locking armored doors, long-range acoustic devices, water cannons, etc.), and even armed guards in high risk areas. Recent press reports indicates that private security contractor Blackwater USA is offering services to protect shipping off of Somalia. Of course, these measures are expensive, thus often not implemented. Somalia again offers a patent lesson, as ONI reports that foreign-controlled (usually Asian) fishing vessels continue to operate freely in Somalia's unregulated EEZ, taking advantage of the failed state's lack of regulation. These vessels are easy targets; Somali pirates, as well as quasi-official regional authorities, occasionally seize them. ONI reports that in several cases, hijacked fishing vessels served as pirate mother ships to conduct additional attacks. Rigorous flag-state enforcement of maritime security regulations is one method to compel commercial anti-piracy measure compliance. Companies often choose flags of convenience, however, for low cost and lax enforcement. Still, the 2005 piracy attempt against U.S.-flagged Seabourn Spirit serves as a testament to anti-piracy best practices. The cruise liner, carrying several hundred vacationers, escaped hijacking by Somali pirates. The attack failed because the captain reacted to the approaching vessels immediately, heading out to open sea at full speed, and conducting evasive maneuvers to prevent a boarding. The pirates gave chase, fired rocket-propelled grenades and automatic weapons at the liner, and did not break off until the Seabourn Spirit employed a long-range acoustic device, which generates focused, painful noise. In theory, if mariners heed warnings and regulations and implement prudent anti-piracy measures, this could eliminate the market for Somali pirates, making the practice unprofitable.

### **Piracy Threat in Context**

In its current form and scope, piracy threatens no vital U.S. national security interests. It is in no way comparable to legacy threats that shape national strategy, such as terrorism or weapons of mass destruction proliferation. Hence, it is inherently disingenuous to inflate the piracy "threat" to justify either force structure or maritime strategic underpinnings. As such, maritime policy and strategy deliberations and crisis course of action planning efforts should consider this reality. In this context, more U.S. anti-piracy options emerge—including no military response at all. America has long championed freedom of the seas, but it is perchance

time that the many flag states and private companies enjoying the benefits of the global maritime commons contribute to the costs of keeping it secure. Because the U.S. Navy lacks the resources to effectively accomplish even a fraction of its assigned missions, treating piracy for what it is—criminal activity—should lessen the demands on an already overtaxed American Fleet.

#### Ζώνη αυτοματοποιημένου θανάτου

Στα σύνορα Μεξικού-ΗΠΑ υπάρχουν πύργοι με ανιχνευτές που εντοπίζουν του παράνομους λαθρομετανάστες. Όμως στο τοίχος που περιβάλλει τη Δυτική Οχθη, οι ανάλογοι πύργοι Sentry Tech (Sabra) διαθέτουν και οπλισμό που ενεργοποιείται με τηλεχειρισμό. Στόχος είναι η δημιουργία μια ζώνης 1.500μ «αυτοματοποιημένου θανάτου» για όσους επιχειρούν να εισέλθουν παράνομα ή κακόβουλα στην περιοχή.

#### Israeli "Auto Kill Zone" Towers Locked and Loaded



On the U.S.-Mexico border, the American government has been trying, with limited success, to set up a string of sensor-laden sentry towers, which would watch out for illicit incursions. In Israel, they've got their own set of border towers. But the Sabras' model comes with automatic guns, operated from afar. The Sentry Tech towers are basically remote weapons stations, stuck on stop of silos. "As suspected hostile targets are detected and within range of Sentry-Tech positions, the weapons are slewing toward the designated target," David Eshel describes over at Ares. "As multiple stations can be operated by a single operator, one or more units can be used to engage the target, following identification and verification by the commander." We flagged the towers last year, as the Israeli Defense Forces were setting up the systems, designed to create 1500-meter deep "automated kill zones" along the Gaza border. "Each unit mounts a 7.62 or 0.5" machine gun, shielded from enemy fire and the elements by an environmentally protective bulletproof canopy," Eshel explains. "In addition to the use of direct fire machine guns, observers can also employ precision guided missiles, such as Spike LR optically guided missiles and Lahat laser guided weapons."



#### Έτοιμοι ή όχι ;

Τα πιο σημαντικά αποτελέσματα σχετικά με την ΧΒΡΠ άμυνα των Ηνωμένων Πολιτειών σε επίπεδο αστικής υποδομής. Διαπιστώνεται βελτίωση ; Ασφαλώς ναι ! Όμως τα κενά είναι ακόμη σημαντικά και πολλά πράγματα απομένουν να γίνουν. Όμως η παγκόσμια οικονομική ύφεση σε συνδυασμό με ήδη δρομολογημένες περικοπές αναμένεται να δράσουν ανασταλτικά στη θωράκιση των ΗΠΑ έναντι της τρομοκρατίας με όπλα μαζικής καταστροφής.



Πιθανόν να προχωρήσετε να συγκρίσεις ή να θέσετε ερωτήματα και προβληματισμούς σχετικά με την εγχώρια κατάσταση. Εδώ κυριαρχεί η σχολή της «μη τρωτότητας» η συλλογιστική της οποίας παραπέμπει σε θεία προστασία και στην πεποίθηση ότι όλα τα δεινά συμβαίνουν πάντα στους άλλους. Θα είχε ενδιαφέρον να ενημερωθεί ο αστικός

| <b>Ready or Not? 2008: Key Findings</b>                                  |   |
|--|---|
| <b>Indicator</b>   | <b>Finding</b>  |
| <b>1. Mass Distribution -- Strategic National Stockpile</b>              | All 50 states and D.C. have an adequate plan to distribute emergency vaccines, antidotes, and medical supplies from the Strategic National Stockpile (SNS).     |
| <b>2. Mass Distribution -- Antiviral Stockpiling</b>                     | Sixteen states have purchased less than 50 percent of their share of federally-subsidized antivirals.   |
| <b>3. Public Health Laboratories -- Lab Pickup and Delivery Services</b> | Twenty-four states and D.C. lack the capacity to deliver and receive lab specimens on a 24/7 basis.   |
| <b>4. Public Health Laboratories -- Pandemic Influenza Planning</b>      | Three state public health laboratories are not able to meet the expectations of their state's pandemic influenza plans.   |
| <b>5. Biosurveillance</b>  | Six states do not have a disease surveillance system that is compatible with CDC's National Electronic Disease Surveillance System (NEDSS).                     |
| <b>6. Health Care Volunteer Emergency Liability Protection</b>           | Eight states have limited protection for health care volunteers during times of emergency.  |
| <b>7. Entity Emergency Liability Protection</b>                          | Twenty-six states lack statutes that extend some level of immunity to groups and/or organizations providing charitable, emergency, or disaster relief services. |
| <b>8. Medical Reserve Corps Readiness</b>                                | Seventeen states do not have State Medical Reserve Corps Coordinators.  |
| <b>9. Food Safety -- Detection and Diagnosis</b>                         | Twenty states and D.C. identified the pathogen responsible for reported foodborne disease outbreaks at a rate lower than the national average of 44 percent.    |
| <b>10. Funding Commitment</b>  | Eleven states and D.C. cut funding for public health from FY 2006-07 to FY 2007-08.   |

πληθυσμός για το τι έχει απομείνει από τις ένδοξες περιόδους των Ολυμπιακών Αγώνων και τον υφιστάμενο σχεδιασμό για αντιμετώπιση τρομοκρατικής επίθεσης σε μεγάλες πόλεις με βάση τις σύγχρονες απειλές. Αλλά μάταια...

### EXAMPLES OF MAJOR EMERGENCY PUBLIC HEALTH THREATS

**Agroterrorism:** The "...deliberate introduction of an animal or plant disease with the goal of generating fear, causing economic losses, and/or undermining stability."<sup>4</sup> Agroterrorism can be considered a subcategory of "bioterrorism" and foodborne diseases.

**Bioterrorism:** The intentional or deliberate use of germs, biotoxins, or other biological agents that cause disease or death in people, animals, or plants. Examples include anthrax, smallpox, botulism, *Salmonella*, and *E. coli*.

**Blast Injuries:** Explosions, whether deliberate or accidental, can cause multi-system, life threatening injuries among individuals and within crowds. Blunt and penetrating injuries to multiple organ systems are likely when an explosion occurs. Also, unique injuries to the lungs and central nervous system occur during explosions.

**Chemical terrorism:** The deliberate use of chemical agents, such as poisonous gases, arsenic, or pesticides that have toxic effects on people, animals, or plants in order to cause illness or death. Examples include ricin, sarin, and mustard gas.

**Chemical incidents and accidents:** The non-deliberate exposure of humans to harmful chemical agents, with similar outcomes to chemical terrorism.

**Foodborne diseases:** Foodborne illness is caused by harmful bacteria, viruses, parasites or chemicals that are found in food and beverages and enter the body through the gastrointestinal tract. The Centers for Disease Control and Prevention (CDC) estimates there are approximately 75 million pathogen-induced cases of foodborne diseases each year in the United States, causing approximately 325,000 hospitalizations and 5,000 deaths. Examples include botulism, *Salmonella*, *E.coli* O157:H7, shigella, and norovirus.

**Natural disasters:** Harm can be inflicted during and after natural disasters, which can lead to contaminated water, shortages of food and water, loss of shelter, and the disruption of regular health care. Examples include hurricanes, earthquakes, tornados, mudslides, fires, and tsunamis.

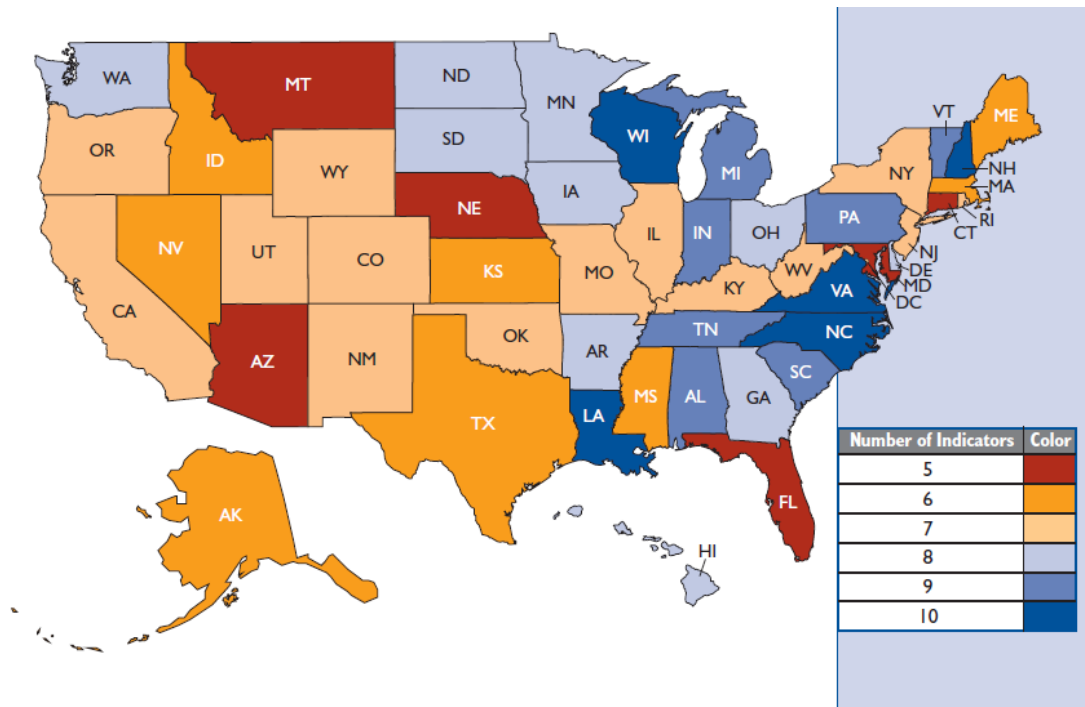
**Pandemic flu:** A novel, potentially lethal strain of the influenza against which humans have no natural immunity. According to estimates from the U.S. Department of Health and Human Services (HHS), a severe pandemic could result in 1.9 million deaths and 9.9 million hospitalizations in the United States.<sup>5</sup>

**Radiological threats:** Intentional or accidentally-caused exposure to radiological material. A terrorist attack could involve the scattering of radioactive materials through the use of explosives ("dirty bomb"), the destruction of a nuclear facility, the introduction of radioactive material into a food or water supply, or the explosion of a nuclear device near a population center.

**Vector-borne diseases:** Diseases spread by vectors, such as insects. Examples include the West Nile virus, Rocky Mountain spotted fever, and malaria.

**Waterborne diseases:** Diseases spread by contaminated drinking water or recreational water, such as typhoid fever and cholera. According to CDC, over 1,000 persons become ill from contaminated drinking water and over 2,500 persons become ill from recreational water disease outbreaks annually in the United States.<sup>6</sup>

**Zoonotic/Animal-borne diseases:** Animal diseases that can spread to humans and in some cases, become contagious from human to human. Examples include Avian flu, West Nile virus, and SARS. In 2000, the World Health Organization (WHO) identified more than 200 diseases occurring in humans that were known to be transmitted through animals.<sup>7</sup> Experts believe that the increased emergence of zoonotic diseases worldwide can be attributed to population displacement, urbanization and crowding, deforestation, and globalization of the food supply.



| SCORES BY STATE   |  |  |  |   |  |
|---|--|--|--|---|--|
| 10<br>(5 states)  | 9<br>(7 states)  | 8<br>(10 states)   | 7<br>(14 states & D.C.)  | 6<br>(8 states)   | 5<br>(6 states)  |
| Louisiana<br>New Hampshire<br>North Carolina<br>Virginia<br>Wisconsin | Alabama<br>Indiana<br>Michigan<br>Pennsylvania<br>South Carolina<br>Tennessee<br>Vermont | Arkansas<br>Delaware<br>Georgia<br>Hawaii<br>Iowa<br>Minnesota<br>North Dakota<br>Ohio<br>South Dakota<br>Washington | California<br>Colorado<br>D.C.<br>Illinois<br>Kentucky<br>Missouri<br>New Jersey<br>New Mexico<br>New York<br>Oklahoma<br>Oregon<br>Rhode Island<br>Utah<br>West Virginia<br>Wyoming | Alaska<br>Idaho<br>Kansas<br>Maine<br>Massachusetts<br>Mississippi<br>Nevada<br>Texas | Arizona<br>Connecticut<br>Florida<br>Maryland<br>Montana<br>Nebraska |

| CATASTROPHIC BIOTERRORISM -- ANTHRAX ATTACKS                  |              |  |                   |
|---|--------------|--|-------------------|
| October 2001 Attacks: 1 gram of anthrax mailed out via letter |              | Future Attack: 1-2 kilograms sprayed by a crop duster over a major U.S. city |                   |
| Antibiotic Treatment  | 30,000       | Antibiotic Treatment   | 1.9 - 3.4 million |
| Illnesses   | 22           | Illnesses  | ~450,000          |
| Deaths  | 5            | Deaths   | ~380,000          |
| Decontamination   | 3 buildings  | Decontamination  | City-wide         |
| Projected economic cost (direct costs)                        | >\$1 billion | Projected economic cost (direct costs)                                       | >\$1.8 trillion   |

Source: White House Homeland Security Council<sup>28</sup>

| Indicators   | What the Indicators Measure   |
|--|---|
| <p><b>1. Mass Distribution -- Strategic National Stockpile</b> - Did the state test its plan to distribute emergency vaccines, antidotes, pharmaceuticals, and medical supplies from the SNS, and receive a passing grade from CDC?</p>                            | <p>This indicator assesses a state's emergency response plan to quickly provide medications to communities during emergencies.</p>  |
| <p><b>2. Mass Distribution -- Antiviral Stockpiling</b> -- Did the state purchase 50 percent or more of its federally-subsidized antiviral drugs to stockpile for use during an influenza pandemic?</p>  | <p>The federal government has declared stockpiling antivirals to be a shared responsibility between the federal government and the states. This indicator assesses the state's ability to provide antivirals to high-risk populations during an influenza pandemic.</p>   |
| <p><b>3. Public Health Laboratories -- Lab Pickup and Delivery Services</b> -- Does the state public health lab currently have an intra-state courier system (non-mail) that operates 24 hours per day for specimen pickup and delivery?</p>                       | <p>This indicator reflects whether states have the capacity to deliver and receive laboratory specimens on a 24/7/365 basis.</p>  |
| <p><b>4. Public Health Laboratories -- Pandemic Influenza Planning</b> -- Does the state public health laboratory meet the expectations of the state's pandemic influenza plan?</p>  | <p>This indicator demonstrates the ability of the states to ensure surveillance and laboratory capability during each phase of a pandemic.</p>  |
| <p><b>5. Biosurveillance</b> -- Does the state use a disease surveillance system that is compatible with CDC's national system, including integrating data from multiple sources, using electronic lab results (ELR) reporting, and using an Internet browser?</p> | <p>This indicator demonstrates information about which states track health threats in a manner compatible with the standards of CDC's National Electronic Disease Surveillance System (NEDSS). This system makes it possible to quickly identify and track outbreaks and share the information in a consistent way across health agencies and states.</p> |
| <p><b>6. Health Care Volunteer Emergency Liability Protection</b> -- Does the state have laws that reduce or limit the liability exposure for health care volunteers who serve in a public health emergency?</p>   | <p>This indicator helps evaluate states' abilities to call up a health care volunteer workforce in the event of a public health emergency. The lack of liability protection is a serious deterrent to many volunteers who may want to offer their health care services but are fearful of doing so without clear liability laws.</p>                      |
| <p><b>7. Entity Emergency Liability Protection</b> -- Does the state have laws that reduce or limit the liability for businesses and non-profit organizations that serve in a public health emergency?</p>   | <p>This indicator helps evaluate states' abilities to work with the private sector in the event of a public health emergency. The lack of liability protection is a serious deterrent to many businesses and non-profits that may want to offer their services but are fearful of doing so without clear liability laws.</p>                              |
| <p><b>8. Medical Reserve Corps Readiness</b> -- Does the state have a Medical Reserve Corps (MRC) Coordinator?</p>   | <p>This indicator assesses the state MRC program on the presence of a State MRC Coordinator, who is responsible for working with all MRC units in the jurisdiction.</p>   |
| <p><b>9. Food Safety -- Detection and Diagnosis</b> -- Did the state identify the pathogen responsible for reported foodborne disease outbreaks at a rate that met or exceeded the national average of 44 percent (combined data 2004-2006)?</p>                   | <p>This indicator reflects the ability of states to identify the pathogen responsible for foodborne disease outbreaks.</p>  |
| <p><b>10. Funding Commitment</b> -- Did the state maintain or increase funding for public health programs from FY 2006-07 to FY 2007-08?</p>   | <p>This indicator, adjusted for inflation, demonstrates states' commitment to funding public health programs, which support the infrastructure needed to adequately respond to emergencies.</p>   |

**"It is foolish and wrong to mourn the men who died. Rather we should thank God that such men lived."  
- General George S. Patton, Jr**

