

TERRORISM SCIENCE

Science and the 'The 9/11 Effect'

The Mutual Shaping of Terrorism, National Security, and Scientific Research During the Last Ten Years



SOURCE: **NYC Police** /Det. Greg Semendinger

Smoke fills the surrounding area as the South Tower collapses after the terrorist attack by Al Qaeda.

By **Mats Fridlund** and **Gustaf Nelhans** | Saturday, September 10th, 2011

Terrorism has not just shaped military and political strategies after 9/11, but also research agendas in science and technology. But the influence also goes in the other direction. Science is as critical in shaping the strategies and threat of terrorism today as it was ten years ago.

Let's look first at the ways in which science has shaped terrorism. Several of the September 11 attackers were students of applied sciences. The attacks' mastermind, Khalid Sheikh Mohammed, a.k.a. "The Brain", had an engineering degree from North Carolina Agricultural and Technical State University and three of the four pilots had studied at the Hamburg University of Technology and Hamburg University of Applied Sciences. Although engineers are overrepresented among Islamist terrorists, this is nothing new but goes back to the first modern terrorist group in the 19th century. For example the Russian *Narodnaya volia*, a 19th century Russian terrorist organization had several engineers, scientists and medical students among

its members. This was followed in the 20th century by the likes of Dora Brilliant, George Habash, Leonid Krasin, Ted Kaczynski and Ramzi Yousef. The list can be made much longer.

The possibility of terrorists using weapons of mass destruction, or WMDs, after 9/11 deepened the relationship between science and terrorism. The 2001 anthrax attacks accentuated the fear of bioterrorism, but despite attempts to link the attacks to al-Qaeda it was soon apparent that they lacked connections to political terrorism. Nevertheless, bioterrorism came to have a real effect on the Global War on Terrorism, which we'll abbreviate here as GWOT, in 2003 when Colin Powell used an alleged terrorist plot to manufacture the biotoxin ricin as justification for the invasion of Iraq. The British terrorists behind the alleged plot were said to have connections to an Iraqi terrorist network, until 2005 when, with the invasion accomplished, it was revealed that this evidence was flawed and that no ricin had been manufactured.

The overall track record of WMD terrorism is almost as minimal today as it was in the aftermath of 9/11. Except for several Iraqi bombings 2006-7 that rather unsuccessfully combined chlorine gas with conventional explosives, there have been no lethal terrorism attacks. Verified incidents primarily consist of speculative and aspirational plans and fantasies – often about using ricin for individual assassinations – rather than operational plans for mass-casualty attacks. There is furthermore no consensus among researchers whether any non state-supported organization would have both the motivations and capability to conduct such an attack. However small the risk, many governments have considered it too large to be ignored and **according to the Center for Arms Control and Non-Proliferation** the US government by 2008 had invested more than \$50 billion in defense research on WMD attack threats.

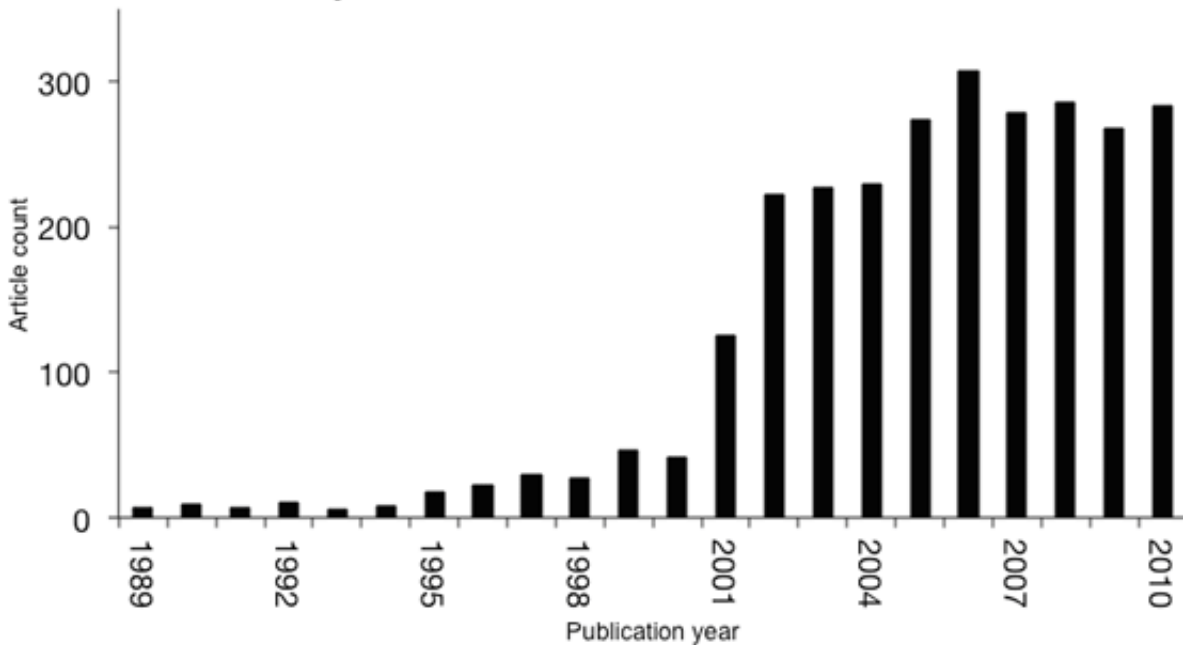
Science is not just seen as supplying critical knowledge and tools for terrorists but also for those protecting against it. In December 2001 the new Presidential Science Advisor **John Marburger when speaking at the AAAS** foresaw that “a great windfall for science is at hand, at least for some of us, because of the need for new research bent to the exigencies of new forms of warfare.” In no research area is this clearer than in research and development connected to bioterrorism.

The US government has, through its BioShield initiatives allocated more than \$5 billion to life sciences research and development connected to bioterrorism. Just after 9/11 the social commentator **Mike Davis warned** that the earlier nuclear focused military-industrial complex had started to transform into a “Homeland Security-Industrial Complex.”

Although there does not exist any detailed investigation of the impact of the new focus on terrorism on science research trends, it is possible to show, however roughly and on an aggregated level, that such a '9/11-effect' does exist. This can be seen when looking at the growth of research and review articles published in science and technology research journals listed in the Web of Science database that includes terms related to terrorism. As shown in the graph there is a clear trend starting in 2001 of increased interest in terrorism within published research results in science and technology:

“A great windfall for science is at hand, at least for some of us, because of the need for new research bent to the exigencies of new forms of warfare.”— John Marburger

Figure 1. Science and technology research journal articles related to terrorism



Articles with “terrorism” in title, abstract or keywords as indexed by Web of Science, Science Citation Index Expanded (article, review, letter) 1989-2010 (Alltogether 2.738 articles)*

Besides bioterrorism, geography has been another field of science to be enlisted after 9/11 to aid in shaping US national security policy. Its sub-discipline Geographic Information Science, or GIScience is focused on research underlying geospatial information technologies, which have played an increasing role in U.S. military operations since the first Gulf War. The intermingling of government security agendas and science research priorities in the field is evident in the report “**Priorities for GEOINT Research at the National Geospatial-Intelligence Agency**” (2006). The report, which was prepared by leading GIScience scholars and echoes the priorities of leading US GIScience research organizations, defines the research agenda for National Geospatial-Intelligence Agency (NGA), a government intelligence agency with some 16,000 employees and a budget of at least \$5 billion. Geographic sciences are also applied in a multitude of military systems, like the navigation systems and topographical models used by drones and other unmanned arial vehicles.

After 9/11 geographers tried to identify the location of bin Ladin’s caves using geomorphological data from video recordings and following his death in 2011 it was noted that UCLA geographers had used “island biogeography” models to prognosticate his location as a building with high walls in a populated area in Pakistan near Tora Bora. Furthermore **NGA supplied data for the Abbottabad operation** that ruled out tunneling as a viable approach.

These examples suggests the emergence of a new security-academic nexus where academic research not only benefits from directed government support but is also involved in framing specific government agendas. It is clear that the US military agenda has benefited from these efforts to direct science toward security goals. What is less clear is if this has also been of benefit to the US scientific agenda or if the pursuit of enhanced security has directed research away from other, more-deserving areas of scientific inquiry. Whether this is as good science policy as it is security policy is still in question.

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