

## TACTICAL DECEPTION AND STRATEGIC SURPRISE IN AL-QAI'DA'S OPERATIONS

By Richard H. Shultz, Jr.\* and Ruth Margolies Beitler\*\*

How do Middle East terrorist organizations build deception tactics into their training to exploit the vulnerabilities of militarily superior opponents? This paper argues that al-Qa'ida has developed into the non-state equivalent of the counterintelligence (CI) state, using CI principles and practices in its strategy. The article examines how al-Qa'ida employs counterintelligence tools to organize, deploy, and fight.

In this era of asymmetric warfare, Middle East terrorist organizations have become increasingly adept manipulating information about their operational plans and actions to exploit the vulnerabilities of militarily superior opponents. The surprise attack by al-Qa'ida against the United States on September 11, 2001 is the quintessential case in point. By adopting counterintelligence methods, including denial and deception, al-Qa'ida was able to camouflage its operational units inside the United States.

To understand al-Qa'ida's ethos and operational profile, it is necessary to discern how it has built deception, denial, and other counterintelligence (CI) practices into the training of its operatives, and planning and execution of its operations. This has significant implications for the United States' war against al-Qa'ida.

### THE COUNTERINTELLIGENCE IMPERATIVE

Leading specialists of international terrorism consider al-Qa'ida markedly different from its counterparts in the 1980s.(1) What past experiences and new developments are central to grasping al-Qa'ida's operational distinctiveness?

In the 1980s, specialists in intelligence proposed a theory of counterintelligence

(CI) focused on regimes whose principal concern was an obsession "with enemies, internal and external . . that security and the extirpation of real or presumed threats." This perception generated the creation of unprecedented security and intelligence organizations to fight these foes.(2) A characteristic of these states included a millenarian ideology preaching fundamental change through the destruction of all existing evils and pursuing a totally new way of life.(3) The consummate example of the counterintelligence state was the Soviet Union.(4) Looking at the methods employed by al-Qa'ida over the past decade, it is clear that it has taken on most attributes of of the main such counterintelligence actors.

Of course, all terrorist groups have to pay considerable attention to security and counterintelligence matters in terms of defensive CI measures to protect it against penetration and its members from apprehension. Yet, al-Qa'ida also employs an array of offensive CI instruments as well, which makes it quite unique among terrorist organizations.

Fourth-Generation Warfare and al-Qa'ida In the 1990s, al-Qa'ida carried out an organizational and operational transformation in the way terrorist functioned. effect, movements In initiated a revolution in terrorist affairs (RTA).(5) Some military analysts suggest al-Qa'ida is a key this RTA by development in the transformation of warfare into its 4th generation.(6) Martin van Creveld, in his 1991 book, The Transformation of War, was among the first to propose that a new form of war was emerging. He argued. "The modern paradigm for warfare, in which nationstates wage war for reasons of state, using formal militaries. . .[is] being eclipsed by a approach . . National post-modern sovereignties are being undermined by organizations [terrorists and other non-state armed groups] that refuse to recognize the state's monopoly over armed violence."(7)

How were non-state armed groups, including terrorist groups, adapting to globalization, network-based organization, and information age technologies? How would these developments affect the terrorist's capacity to execute unconventional attacks? How would groups cooperate terrorist among themselves and with state sponsors in order to operate and fight globally?

The response can be defined as 4th Generation Warfare (4th GW), which al-Qa'ida appears to have emulated:

- 4th generation warfare is highly irregular, unconventional and decentralized in approach.
- Asymmetrical operations are employed to bypass the superior military power of nation-states to attack and exploit vulnerable political, economic, population, and symbolic targets, thus demoralizing both government and its populace.
- Both organization and operation are masked by deception, denial, stealth, and related techniques of intelligence and counterintelligence

- tradecraft. They wear no uniforms and infiltrate into the populations of the nation-states they seek to attack.
- technologies Information age profoundly influenced terrorist organizations and operations. The development of network-based terrorist organizations with transnational connections through cell phones, fax machines, e-mail, and websites provide these nonstate armed groups with global reach.
- Modern communications and transportation technologies greatly complicate this new battlefield. Not only are there no fronts, but also the old distinctions between civilian and military targets become generally irrelevant.
- Laws and conventions of war applied to nation-states do not constrain terrorists (and their state sponsors) as they seek new and innovative means, including the use of weapons of mass destruction, to attack civilians and nonmilitary targets and inflict terrible carnage.
- 4th generation warriors, frequently in the name of religious-based millenarian ideologies, are remorseless enemies. Their operations are marked by unlimited violence, unencumbered by compassion or constraints.

Since the September 11 attacks, much has been learned about al-Qa'ida regarding how it bears an unmistakable resemblance to this template of 4th Generation Warfare (4th GW). It adapted itself to globalization, network-based organization, and information age technologies while relying on deception, denial, stealth, and related techniques of counterintelligence tradecraft.

Indeed, in one piece that appeared in an al-Qa'ida internet magazine following September 11, one operative described how the organization had studied, learned from, and adapted 4th GW concepts to its war fighting doctrine.(8) The author, Abu Ubeid al-Quarashi, began by discussing the origins of those ideas as conceptualized in U.S. defense iournals. citing references. Next, he noted that since the late 1980s, "The Islamic nation has chalked up the most victories, in a short time, in a way [the world] has not known since the rise of the Ottoman Empire. These victories were achieved. . . against the best armed, best trained, and most experienced armies in the world (the USSR in Afghanistan, the United States in Somalia, Russia in Chechnya, and the Zionist entity in southern Lebanon)."

How did they do it? According to al-Quarashi, "The mujahideen proved their superiority in 4th Generation Warfare using only light weaponry. They are part of the people, and hide amongst the multitudes." These victories established "precedents for world powers and large countries being defeated by [small] units of mujahideen . . despite the great difference between the two sides." The ultimate example, he underscored, was on September 11, when al-Qa'ida 'dealt Americans the most severe blow ever to their morale." The key lesson learned was that "the time has come for the Islamic movements facing a general crusader offensive to internalize the rules of fourth-generation warfare. They must consolidate appropriate strategic thought, appropriate and make military preparations."(9)

### Counterintelligence Principles

How does al-Qa'ida employ counterintelligence tools in support of its terrorist operations? Intelligence analysts must be able to distinguish between real signals indicating an attack, and "noise" which refers to irrelevant messages or

those sent intentionally to deceive. True signals are "always embedded in the noise and irrelevance of false ones."(10) There was considerable "noise" prior to the September 11 attacks that allowed al-Qa'ida to achieve strategic surprise. Through increased communications among terrorist cells, the intelligence community knew that an attack was imminent, yet did not know where or how the terrorists would strike.(11)

Preconceptions can lead to selfdeception and also play a role in strategic surprise. Likewise, tactical or technological innovation may impede an accurate assessment of intelligence. Prior to September 11, the intelligence community was cognizant that an attack was imminent, yet few expected hijacked airliners to be used as weapons. For the most part, analysts defined and linked the concept of "hijacking" to the traditional understanding that protagonists seize planes and make demands in exchange for releasing the plane and hostages. Worse, the intelligence community did not understand the extent to which al-Oa'ida had deployed units to the United States to prepare for and carry out the strategic surprise of September 11.

### Islam and Denial and Deception

Al-Qa'ida's use of denial and deception operational techniques akin to those employed by intelligence services is also shaped by related concepts found in Islam. Two in particular are relevant here--taqiyya and kitman. Broadly speaking, taqiyya means precautionary dissimulation and keeping one's convictions secret, while kitman constitutes mental reservation or concealment of malevolent intentions. For the most part, the concepts refer to Shi'a practices that have become tenets of Shi'a theology.(12) Taqiyya, the practice of hiding one's true belief under duress, can be found in the Koran. For example:

Let not the believers take the disbelievers as guardians instead of the believers, and whoever does that will never be helped by Allah in any way, unless you indeed fear a danger from them (illa an tattaqu minhum tuqat). . Whoever disbelieved in Allah after his belief-except him who is forced thereto and whose heart is at rest with faith.(13)

These verses point to the permissibility of concealing one's ideology and opinion when in danger.(14) Other cultures have similar dissimulation concepts to protect themselves from harm.(15) Yet for al-Qa'ida members, the Koran provides examples to be emulated. One important illustration stems from Ammar ibn al-Yasir's experience in the seventh century. Persecuted by non-Muslims for his belief in Islam, he renounced his faith but then went to Muhammad to repent. Muhammad explained that as long as he renounced his faith with his lips and not with his heart, he would not be perceived as a traitor. Magnus Ranstorp argues that the concept of taqiyya is an important element of al-Qa'ida operations.(16)

Further, theological doctrines often turn operational and this can be seen in the interpretation and utilization of tagiyya and kitman. For example, during the Spanish inquisition, "[i]n operational terms, taqiyya and kitman allowed the 'mujahadeen' to assume whatever identity was necessary to fulfill their mission; they had doctrinal and and jurisprudential theological, later sanction to pretend to be Jews or Christians to gain access to Christian and Jewish targets: 'the mujahadeen can take the shape of the enemy." Moreover, since the 7th century, "deceptive triangulation" was a favored tactic used by Muslims to convince their enemies that jihad was not aimed at

them but at another enemy, or simply used to deny that there was jihad at all.(17)

In the context of modern terrorism, these concepts have been interpreted and used for operational purposes. Indeed, they are considered important tools for radical Islamic terrorists. As one study points out, for those faced with asymmetrical terrorism:

Al-Qaeda training manuals. . . carry detailed instructions on the use of deception by terrorists in Western target countries. . . The study of tagiyya crucial kitman is understanding of Islamic fundamentalism and terrorism ranging from the issuing of false terrorist operational and strategic disinformation issued by al-Qaeda in the form of 'intelligence chatter' to the use of taqiyya and kitman by terrorists during interrogation and the use of systematically misleading expressions concerning Islam and terrorism by Muslim spokesmen.(18)

The use of these traditional concepts by terrorist organizations like al-Qa'ida was confirmed by Shaykh Taj al-Din al-Hilaly, the grand mufti of Australia: "Al Taqiyya is with tongue only; not the heart. A believer can make any statement as long as the 'heart is comfortable.' The 9/11 terrorists lived and visited in the United States for two years before the 9/11 attacks. How did they acculturate? By the use of taqiyya. Meaning: I hate you but I smile at you in public."(19)

Evidence presented at the trial of men accused of bombing the American embassies in Kenya and Tanzania in 1998 revealed that "al-Qa'ida members were told to mingle with Westerners, and conceal their extremist beliefs... lead a double life-not atypical for members of [a]l Qaeda."(20)

### **AL-QA'IDA CASE STUDIES**

To what extent has al-Qa'ida trained for and employed denial, deception and related CI tools as part of how it organizes and deploys units globally to execute surprise attacks against the United States? This can be determined by: 1) examining the place of these CI tools in al-Qa'ida doctrine and training; 2) scrutinizing the trial testimony of al-Oa'ida operatives involved in the East embassy bombings; Africa and appraising the use of denial, deception, and other CI instruments by the September 11 cells.

### Doctrine and Training

Consider, for example, a manual entitled "Military Studies in the Jihad Against the Tyrants" (hereafter "Military Studies") designed for training al-Qa'ida members.(21) Comparing the operational principles laid out in the document against two terrorist operations--the 1998 East Africa embassy bombings and September 11--provides a useful framework for anticipating future operations by this terrorist network.

The authorship of "Military Studies" remains unclear. However. the investigation into the terrorist bombings in East Africa provided clues. The British police found the manual in the home of Anas al-Liby. He was an associate of Ali A. Muhammad, a former sergeant in the U.S. Army from 1986 to 1989.(22) Muhammad admitted that he trained Ladin's disciples Usama bin Afghanistan.(23) He also translated U.S. military manuals from English into Arabic. A raid on Muhammad's California home uncovered a computer file that contained terrorist training methods, including the use explosives. assassination. surveillance techniques. Muhammad subsequently pleaded guilty.(24)

"Military Studies" begins with a chilling declaration:

The confrontation that we are calling for does not know Socratic debates. . . Platonic ideals. . . nor Aristotelian diplomacy. But it knows the dialogue of assassination, bombing, and destruction . . Islamic governments have never and will never be established through peaceful solutions and cooperative councils. They are established as they [always] have been: by pen and gun, by word and bullet. . . [and] by tongue and teeth.

The document reads like a typical military field manual. It sets the stage with the rationale for action (the repression of the faithful by apostate regimes and strategic unbelievers). objectives overthrow godless regimes and replace them with Islamic ones), and operational requirements (membership qualifications). It then delves deeper into the tactical realm, carefully structured along functional tasks. The manual is primarily concerned with one main goal: "to avoid detection at all costs when infiltrating an enemy state." The manual contains an abundance of tactical lessons on how to use disguises, elude authorities, and execute a wide range of missions. Given the covert nature of the work involved, secrecy and trickery are core strategies.

The introductory section recites stories from the Koran and ancient proverbs that extol deception as a virtue. Lesson two of the manual, "Necessary Qualifications for the Organization's Members," discusses the importance of keeping secrets and concealing information.

According to the manual, Muhammad once advised, "Seek Allah's help in doing your affairs in secrecy." "Military Studies" also recounts old proverbs on secrecy: "The hearts of free men are tombs of secrets," and "Muslims' secrecy is faithfulness, and talking about it is faithlessness." This section also includes two tales of

Muhammad ordering his men to deceive and one story of how Muhammad himself kept secrets. The manual contains other historical lessons that the author draws from the Roman era, World War I, and the Israeli Mossad.

Lesson three examines the issue of counterfeit currency and forged documents. It states, "All falsification matters should be carried out through the command and not haphazardly" though it never states how these actions fit into operations.

Lesson four discusses the correct use of apartments and hiding places. It advises that the member must avoid being conspicuous and should blend into society by, for example, shaving beards. It recommends, for instance, that a physician working undercover should have proper documentation in his apartment to include an actual medical diploma or government permit. It cautions, "a common laborer should not enter a fancy hotel because that would be suspicious and draw attention."

Lesson five focuses on the importance of communications and transportation. The introduction notes: "It is well known that in undercover operations, communication is the mainstay of the movement for rapid accomplishment. However, it is a doubleedged sword: It can be to our advantage if we use it well and it can be a knife dug into our back if we do not consider and take the necessary security measures." The section details methods required to prevent discovery by the security apparatus of enemy states. One passage explicitly refers to deception as a counterstrategy: "When the command is certain that a particular telephone [line] is being monitored, it can exploit it by providing information that misleads the enemy and benefits the work plan." It then turns to tools of the information age such as wireless communications. The manual advises, "The device should be placed in a location with high wireless frequency, such as close to a

TV station, embassies, and consulates in order to prevent the enemy from identifying its location."

The ninth lesson-security plans--is particularly noteworthy. A security plan is defined as "a set of coordinated, cohesive, and integrated measures that are related to a certain activity and designed to confuse and surprise the enemy." For the plan to succeed, it must be 1) "realistic and based on fact so it would be credible to the enemy before and after the work," and, 2) "coordinated, integrated, cohesive, and accurate, without any gaps, to provide the enemy [the impression of] a continuous and linked chain of events." In case of capture and interrogation by the enemy, "each member should make up a fictitious commander as the mastermind conceived, planned, trained, and executed the operation," and claim he had been sent away to another country to confuse the investigative trail.

Lesson Ten is concerned with the operatives charged with executing assassination, assault, kidnapping, bombing. The members responsible for such missions should be trained to 1) cleverness, employ canniness, deception; 2) keep secrets; and, 3) remain unknown to the enemy. In terms of deception, "the members should be well disguised and placed in a location close to that of the operation." In terms of denial, not all members should know about the plan until shortly before executing it in order to avoid leaks. After the operation, all evidence must be eradicated.

Lessons eleven and twelve focus specifically on intelligence and espionage. "Military Studies" emphasizes the importance of knowing the enemy by again turning to the era of Muhammad. The manual notes that he used informants in most of his attacks. It reconciles Muslim principles and intelligence operations: "Spying on the enemy is permitted and it

may even be a duty in the case of war between Muslims and others. Winning the battle is dependent on knowing the enemy's secrets." The lessons then describe ways to disguise operations by studying enemy vulnerabilities. For example, the manual counsels that a search through open source materials could produce valuable results. In fact, bin Ladin's operatives had apparently relied on publicly available reports by the General Accounting Office to study the security weaknesses of sensitive U.S. facilities.(25) The rest of the manual gets down to specific tactics in great detail.(26)

Another training manual is one that has been dubbed in press reports as the 11-volume "Encyclopedia of Jihad." Comprising over 7,000 pages, subjects covered include: how to spy; kinds of security;

military intelligence; sabotage; secret observation; assassination; protection of leaders; laws of sabotage; and arms use.(27)

These manuals provide a glimpse into how al-Qa'ida trained its operatives in the tools and practices of offensive and defensive counterintelligence. Along with similar documents found in Afghanistan and elsewhere, they underscore immense challenges posed by al-Qa'ida. Its culture of secrecy, apparent proclivity for deception, diffuse organizational structure, and way of training operatives has no doubt enhanced its elusive nature as a terrorist group. These facts highlight the importance of the CI dimension in al-Qa'ida's doctrine and, as we shall see below, in its East Africa and September 11 operations.

### THE EAST AFRICA EMBASSY BOMBINGS(28)

On August 7, 1998, two bombs exploded about nine minutes apart at the United States embassies in Nairobi and Dar Es Salaam. These attacks killed 224 and wounded another 4,107 people. Twelve of the dead and twenty-four of the injured

were U.S. citizens, mainly Foreign Service officers. In each case, the explosive device was a truck bomb placed in close proximity to the embassy complexes.

The attacks occurred five months after Usama bin Ladin issued a fatwa announcing a "Jihad Against Jews and Crusaders" in February 1998; a fatwa he would repeat again in May 1998. Evidence from the transcript of the East Africa Embassy Bombing Trial reveals that planning for these two operations began in early 1998.(29)

The bombing of the embassy in Nairobi occurred when Muhammad Reshed Daoud al-'Awhali immobilized a Marine guard at his post at the embassy wall. Jihad Muhammad Ali (also known as Azzam) drove a truck into the embassy parking entrance. Al-'Awhali exited the truck and fled the premises seconds before the bomb exploded. A similar scenario took place in Dar es Salaam.

The base of operations for the two bombings was Kenya, where Muhammad Sadiq Odeh was the technical advisor and explosives consultant to al-Qa'ida cells located there. Both truck bombs were modified to carry a sufficient amount of TNT and mechanical detonators. Wadih al-Hajj, who had been granted U.S. citizenship in 1989, moved his family to Kenya in the late 1990s. He had previously served as an assistant to bin Ladin in Sudan and was also a veteran of the Afghan war against the Soviet Union. Al-Hajj was a key figure in the al-Qa'ida unit that carried out the bombings.

Odeh, al-Hajj, and al-'Awhali, who were convicted on all counts on May 29, 2001 and sentenced to life in prison without the possibility of parole, were among the key figures in a unit that had established itself secretly in Kenya during the 1990s. The members of the cell lived what appeared to be perfectly normal lives, waiting for the signal to go operational.

The East Africa embassy bombings were precisely coordinated and executed due, in part, to the use of basic counterintelligence tactics. Considerable evidence of the inner workings of al-Qa'ida's Kenya unit is contained in the trial transcript.(30) The archive also includes the testimony of Ali Muhammad, the only one of the seventeen defendants to plead guilty.(31)

### The Kenya Cell: Key Personnel

Among the terrorists who executed the East Africa operations are Muhammad Reshed Daoud al-'Awhali, Muhammad Sadiq Odeh, Wadih al-Hajj, Khalfan Khamis Muhammad (KK Muhammad) and Ali A. Muhammad. A brief description of the background of each reveals their place in the al-Oa'ida network.

Muhammad Reshed Daoud al-'Awhali was born on January 18, 1977 in Liverpool, England but grew up in Saudi Arabia, home of his prominent family. After a rather normal upper-middle class Saudi childhood, as a teenager al-'Awhali began to read Islamist publications such as alal-Muiahideen. and Listening to recorded lectures by Shaykh Omar Abd al-Rahman-the blind Egyptian cleric convicted for his role in the 1993 World Trade Center bombing--furthered al-'Awhali's embrace of radical Islam and antipathy toward the United States and its presence on the Arabian Peninsula.(32)

After high school, al'Awhali attended Muhammad bin Saud. a religious university in Riyadh. Two years before the embassy bombings, he and a friend made their way to the Khaldan Camp in Afghanistan to join the al-Oa'ida jihad. He received basic instruction in light weapons, demolitions, artillery, communications, as well as in the religious ideology of al-Qa'ida. Subsequently, upon the advice of bin Ladin, al-'Awhali went to other al-Qa'ida camps for more advanced training in

intelligence, information security, and the conduct of hijackings and kidnappings. Together with Azzam, al-'Awhali received special operations and cell management training outside Kabul before proceeding to making Nairobi in 1998, lengthy preparatory stopovers in Yemen and Pakistan. On August 7, he was the passenger in the Nairobi bomb delivery truck driven by Azzam.

Muhammad Sadiq Odeh was born in Saudi Arabia to a Palestinian family. He went to high school in Jordan and enrolled in the Far Eastern University in the Philippines in 1986, where he was an architecture and engineering student. It was at that time that he became involved with a Kuwaiti Islamic center. Listening to recorded speeches by Shaykh Abdallah Azzam, bin Ladin's mentor during the Afghan war against the Soviets, Odeh became engrossed with jihad.(33)

In October 1990, instead of finishing his last year of studies in the Philippines, Odeh joined the jihad in Afghanistan. He arrived at a camp near Khost and received two months of basic training in the use of machine guns and more sophisticated weapons, such as anti-tank missiles, rocket launchers. anti-aircraft weapons, mortars. After recovering from a head wound from an air raid in Jalalabad. Odeh other training attended camps Afghanistan. It was at that time that he appears to have received more specialized instruction. Upon finishing a three-month religious studies course in Peshawar in 1992, Odeh, on orders from bin Ladin, spent approximately seven months in Somalia training Islamic tribesmen who opposed U.S. and UN involvement.(34)

In August 1994, Odeh left Somalia and moved to Mombassa, Kenya, where he set up a fishing business and married a Kenyan woman who was introduced to him by Mustafa Fadhl (another al-Qa'ida member). Later, he set up a furniture business with

his brother-in-law. This was clearly an effort to blend into Kenyan society, becoming part of what in intelligence terminology is called a "sleeper cell."

In March 1998, the Kenya cell received orders from bin Ladin in Afghanistan to prepare the operation. On August 6, the day before the attacks, Odeh fled Kenya on a flight to Karachi. However, the Pakistani authorities discovered his fake passport and detained him.

Wadih al-Hajj was born into a Catholic family in Lebanon in 1960. He grew up in Kuwait, where his father worked for an oil company. Al-Hajj converted to Islam as a teenager, after reading the Koran. He moved to Lafeyette, Louisiana in 1978 to study urban planning at the University of Southwestern Louisiana. Because his Catholic parents had disapproved of al-Hajj's conversion, a Muslim shaykh in Kuwait paid for his university education.

Like Odeh, al-Hajj became a follower of Shaykh Abdallah Azzam, and through him received mujahadeen training to fight against the Soviet Union. He returned from Afghanistan to Louisiana in the late 1980s and married. When he graduated in May 1986, he moved to Arizona to start a family. Between 1986 and 1989 he traveled to Pakistan and Afghanistan several times.

In 1989, al-Hajj was granted U.S. citizenship and moved to Arlington, Texas. Through contacts, he was called in 1991 to support veterans of the Afghan war in New York City. At the Brooklyn-based Alkifah Refugee Center, al-Hajj became associated with operatives later convicted in the 1993 World Trade Center attack. In early 1992, al-Hajj relocated to the Sudan, where he began working for Usama bin Ladin. Although his family claims he only worked for bin Ladin's legitimate businesses, it is evident that he was also involved in terrorist operations. In 1994, al-Hajj and his family left Sudan for Kenya.

While in Kenya, al-Hajj maintained contacts with other al-Qa'ida members

there, forming the clandestine sleeper cell that would be activated to carry out the Nairobi and Dar es Salaam operations. He was, in effect, the commander of the unit. In September 1997, al-Hajj and his wife and children left Kenya and returned to Texas after a Kenyan search of his house. In September 1998, one month after the bombings, he was arrested.(35)

Khalfan Khamis Muhammad was born on an island in the Zanzibar archipelago of Tanzania. From the time he was a child, he lived an unprivileged life growing up in the Kidimni area of Tanzania. Described as very religious, KK Muhammad spent more time at the madrasa than other students.(36) He did not finish secondary school, leaving during the second year of a three-year course of study.(37)

At seventeen he moved to Dar es Salaam to work for his brother in food sales. There he became more serious about Islamic studies while attending the Arusha Street mosque. Although he received al-Qa'ida military training in Afghanistan in 1995, KK Muhammad was not asked to fight with the Taliban against the Northern Alliance and returned to his brother's business in Dar es Salaam.

He was contacted by al-Qa'ida in 1998 and worked on the Tanzania bomb project without knowing the specific mission. For the operation, he rented the house in Dar es Salaam in which the bomb was constructed and the plans finalized for its delivery. He also rented the white Suzuki Samurai used to deliver the bomb to the embassy, mixed the TNT and helped load it, and rode a short distance with the driver. Just minutes after the explosion, he drove by the ruined embassy to take pictures. A few days after the bombing, KK Muhammad fled to South Africa under the alias Zahran Nasir Maulid. Once there, he worked at a fast food restaurant until his arrest.

After attending high school in his hometown of Alexandria, Egypt, Ali Abd al-Saud Muhammad received his first of two bachelor's degrees from the military academy in Cairo.(38) He served in the Egyptian army for thirteen years, from 1971 to 1984, rising to the rank of major. While in the army, he earned his second bachelor's degree in psychology and a master's degree in Islamic Studies from the University of Alexandria and later worked toward a PhD. in Islamic studies while in North Carolina.(39) Before his discharge from the Egyptian Army, he had already become a member of the Egyptian Islamic Jihad.

After leaving the Egyptian military, Ali Muhammad moved to the United States in 1985 and obtained a position as a security officer with American Protective Services in Sunnyvale, California.(40) While an employee there, he married Linda Sanchez, an American medical technician, became a naturalized U.S. citizen, and joined the U.S. Army. He served as a supply sergeant and later an Islamic politics and culture instructor for the Special Warfare Center at Fort Bragg, North Carolina. In 1988, he apparently used his leave to take an unauthorized trip to Afghanistan to fight against the Soviets. Upon achieving the rank of sergeant, he received an honorable discharge from the army three years after

Having been involved with the Egyptian Islamic Jihad since the 1980s, Ali Muhammad was introduced to al-Qa'ida in the early 1990s.(41) While living in New York, he ran a leather import-export business and frequently traveled to Afghanistan to give courses on intelligence, military tactics. and explosives training.(42) He advised those involved in the 1993 World Trade Center bombing.

From 1992 to 1997 Ali Muhammad and his wife lived in California, first in Santa Clara and then Sacramento. In late 1993, he photographed and conducted surveillance of American, British, French, and Israeli

targets in Nairobi, using his import-export business as a cover. It was from these photographs that bin Ladin determined where a truck bomb could best be placed in an attack on the U.S. embassy.(43) After the 1998 bombings, he was subpoenaed to appear before a grand jury where he lied under oath and was subsequently arrested. Eventually, he pleaded guilty.

Several other members of al-Qa'ida in the East Africa were involved operations. Perhaps the most important was Ali al-Rashidi, who became known as Abu Ubaidah al-Banshiri after fighting the Soviets in Afghanistan. A police officer in Egypt, he was a close associate of Ayman al-Zawahiri, the founder of Egyptian Islamic Jihad and bin Ladin's top assistant. As a member of al-Qa'ida, al-Banshiri, along with Muhammad Atef, served as the heads of al-Qa'ida's military committee. He was dispatched to Kenya in 1996 to establish the units that would eventually carry out the attacks. In Nairobi, al-Banshiri was the key military leader and the top-ranking commander until he drowned in a ferryboat accident on Lake Victoria on May 12, 1996.

Al-Banshiri appears to have been replaced by Abdallah Ahmed Abdallah (also known as Saleh, Abu Miriam, Abu Muhammad), also a member of the Egyptian Islamic Jihad and a professional soccer player. He became bin Ladin's local coordinator in Kenya for the Nairobi and Dar es Salaam bombings. On August 4. 1998, he conducted a final reconnaissance of the Nairobi embassy. Saleh assigned Hamden Khalif Allah Awad to drive the bomb truck in Dar es Salaam. He was the only one in the Kenya cell allowed, "to make overseas phone calls on behalf of al-Qa'ida." He instructed all members of his group except the bomb drivers and the locals to go to Afghanistan before August 6.(44)

Denial and Deception in the East Africa Operations

There are several examples of al-Qa'ida's use of denial, deception and other CI tactics in the events surrounding the East Africa Embassy bombings. Its operatives employed codes, false names, cover identities, disguises, sleeper cells, business fronts, and other CI tactics such as information and personnel compartmentalization.

The cells that conducted the East Africa bombings made significant use of false identities and documentation. For example, Odeh used four completely different aliases while Ali Muhammad utilized five separate identities and had appropriate documentation for each. According to trial testimony, one of the first steps in training an al-Qa'ida operative is the assignment of a new identity.(45) This was the first rule an al-Qa'ida trainee learned. When he entered the guesthouse where he would be processed, he had to put all his personal documents into an envelope to be returned to him later. In exchange, he would receive his al-Oa'ida name.(46)

Once the operative was trained and ready to deploy outside Afghanistan, his new identity or identities were appropriately documented. According to trial testimony, within al-Qa'ida there were specific sections that "specialized in obtaining travel documents for members. . . who were to deploy to foreign Furthermore. countries."(47) Afghanistan they taught classes to operatives about how to obtain false passports and documentation when in a foreign country.(48)

Al-Qa'ida also trained operatives how to use various covers that allowed them to blend into the location to which they were deployed. In Kenya, the cell used business fronts. Ali Muhammad helped al-Hajj with a charity organization that he created to provide al-Qa'ida members with identification documents and cover.(49)

Operatives went so far as to acquire extended families. For example, al-Banshiri, the top al-Qa'ida commander in East Africa until he drowned, was known to his wife and her family only as Jalal and 'Adel Habib. They never had any idea he was a member of al-Qa'ida, believing "he an Egyptian, holding Dutch citizenship " because of his forged papers.(50)

Sleeper cells were also used extensively in Kenya to establish the operational infrastructure necessary for future surprise attacks. They created business and other fronts that made it possible to raise funds to cover the terrorists' living expenses and for the purchase of weapons and bomb-making materials needed for a future operation. Ali Muhammad admitted that he taught al-Qa'ida trainees how to create covert cells and overt fronts for operations.(51) In Nairobi, these included a car business and aiding al-Hajj in creating a charity organization.

Ali Muhammad himself is a remarkable example of the ability of an agent to penetrate the U.S. military establishment and at the same time serve as an al-Qa'ida operative. He was already associated with the Egyptian Islamic Jihad organization before he worked at the Special Warfare Center at Ft. Bragg and continued to work for al-Qa'ida while he lived in the United States.

Al-Qa'ida cells in East Africa were quite adept at creating several different business fronts. For example, al-Banshiri maintained both a business for importing gymnasium equipment and a mining business in Tanzania that he started with his brotherin-law. It was supposed to produce diamonds and gold, but never actually operated.(52) Another business venture which al-Banshiri entered into in Tanzania with his brother-in-law was a transportation using minibus. company a businesses permitted him, as the top al-Qa'ida official in East Africa, to be seen as

living a normal life and the companies gave him cover for when he traveled.

Another al-Qa'ida front was Odeh's fish business, operating out of Kilifi, Kenya. He went to Lama and Kiunga, Kenya and Kismayo, Somalia, to pick up the fish that he would offload in Kilifi. However, Odeh frequently offloaded his fish at night with his own crew (other members of the al-Qa'ida cells in Kenya) instead of during the day with Kenyan workers. This enabled him to smuggle goods from Somalia, where al-Qa'ida had an ongoing presence, to Kenya. Further, Odeh used a trucking company not associated with the Kenyan Fisheries Department to transport his cargo away from the port. In late 1997, an official of the Fisheries Department told Odeh to stop offloading his fish at night and inquired about missing statistics for his boat. He stopped offloading at night and then closed his business.(53) Until then, though, Odeh had used his fishing business as a front for several purposes: to legitimate his and other cell members' presence in Kenya, to make money selling fish, and to transport various other goods related to terrorist operations.

Of all of al-Qa'ida's business fronts, the most interesting was Help Africa People. Al-Hajj started this non-governmental charity in Nairobi in 1994. It forged identity cards for terrorists, including al-Hajj and Odeh. It was also a cover for travel to Somalia. In fact, Help Africa People even worked on a legitimate project with bona fide commercial transactions, providing aid to people with malaria in Sudan. Funded by Usama bin Ladin, it provided a legitimate reason for al-Hajj to live in Nairobi. Help Africa People worked with another NGO, the Mercy International Relief Agency (MIRA). MIRA, which worked with the UNHCR in other countries including Afghanistan, had ties to al-Qa'ida members involved in the bombing.(54) In fact, it was from the MIRA office in

Nairobi that coded reports were sent to al-Qa'ida's leadership in Afghanistan detailing the activities of the Kenya cells.(55)

Members of al-Qa'ida were also obligated to perform duties they knew to be haram, forbidden by the laws and customs of Islam.(56) Such haram actions included missing prayer or only praying once a day, and drinking alcohol.

Odeh also provided a description of how al-Qa'ida cells are compartmentalized in his interrogations with the FBI. Odeh said that an operation is broken into two separate cells. the first performing infrastructure development, logistics, and operational planning. This cell conducts surveillance, tests target security, gathers intelligence, acquires the explosives, and constructs the bombs. Ideally, much of this transpires before the second cell is completely organized. The second cell carries out the act itself.(57) A letter found on al-Hajj's computer in Nairobi described how Kenya cells stressed the compartmentalization: "We. the East Africa cell members, do not want to know about the operational plans since we are just implementers. We trust our command and appreciate their work and know that they have a lot of problems."(58)

Finally, al-Qa'ida operatives encrypted files on computer systems not only in Kenya, (59) but also on computers seized at the homes of Anas al-Liby in England,(60) Ali Muhammad California.(61) and Khalid al-Fawwaz in London.(62) Ramzi Yousef, mastermind of the February 1993 World Trade Center bombing, left his laptop containing many al-Qa'ida documents in his apartment in Manila on January 7, 1995, after a chemical-induced explosion forced him and associates to flee. One of the associates was captured in a direct attempt to retrieve the laptop.(63) Files decrypted showed a plot to simultaneously bomb multiple U.S. Had aircraft. the terrorists used

unbreakable encryption readily available on today's public market, stopping the plot and arresting those involved might not have succeeded.(64)

Based on the above, it is clear that denial, deception, and other counterintelligence tools were ingrained into the training and doctrine of al-Qa'ida cells deployed to Kenya for the East Africa bombings. The CI operational concepts laid out in "Military Studies" and other al-Qa'ida training manuals were employed by the Kenya cells to mask their activities in the period leading up to the strikes against the two embassies. A second case study of the September 11 cells provides a further look into that world.

#### THE SEPTEMBER 11 SURPRISE

Denial and deception were also used in each phase of the September 11 operation. In those attacks, nineteen men hijacked four commercial airliners and flew them into the World Trade Center Twin Towers, Pentagon, and into a field in Pennsylvania en route to Washington.(65) How did they elude authorities and execute these attacks? An assessment of the September 11 cell, the operation's planning and prepositioning phase, and its implementation provides the answers.

### The September 11 Cell: Key Personnel

The commander of the operation was Muhammad Atta, the pilot of American Airlines Flight 11 that flew into the North Tower of the World Trade Center. Born and raised in Cairo, Atta left Egypt in 1992 to study architecture at Hamburg University. (66) He later transferred to the Technical University of Hamburg-Harburg.

During a visit home in 1995, Atta was recruited by al-Qa'ida and by 1996 his militant views became more obvious to his acquaintances in Germany. Atta became involved in the Islamist- oriented al-Quds mosque in Hamburg.(67) During 1998, he organized elements of the cell that would

later execute the September 11 attacks. One of his roommates in Germany was Ramzi bin al-Shibh who, according to reports, was to be one of the pilots on September 11. He was unable to participate in the hijackings because he was repeatedly denied visas to enter the United States.

During Atta's employment in Germany at the Hayes Computing Service, he met Marwan al- Shehhi from the United Arab Emirates and recruited him into the cell.(68) Al-Shehhi would pilot the plane that struck the South Tower. He was reportedly close to his father, a Muslim cleric, and was described as someone easily manipulated.(69)

Lebanese-born Ziad Jarrah joined Atta's cell in Hamburg, trained in Afghanistan with al-Qa'ida, and on September 11 crashed United Airlines Flight 93 into a field in Pennsylvania.(70) At the time of the attacks, he was engaged to Aysel Senguen, a German woman of Turkish origin. Jarrah had a secular Muslim upbringing in an affluent family, and attended a private Christian school.(71) In 1996, he went to Germany to study.

During his first semester, he began to read radical Islamist publications. Jarrah moved to Hamburg in 1997 to study and became involved with a radical group at the al-Ouds mosque.(72) He met Ramzi bin al-Shibh who introduced him to Muhammad Atta, with whom he later traveled to Afghanistan. Jarrah's relationship with Senguen was an unstable one and between 1997 and 2000 they broke up numerous times. In February 2000, he returned to her "clean shaven and neatly dressed."(73) By that time, Jarrah had been integrated into the Atta-led cell and planned to train as a pilot in the United States. He left Germany during the summer of 2000 for Florida.

The fourth pilot, Hani Hanjour from Saudi Arabia, was not part of the Hamburg cell. He flew American Airlines Flight 77 into the Pentagon.(74) He enrolled in the University of Arizona to study English in

1991 and when he returned to Saudi Arabia the next year, his brother was surprised at his radical Islamist views. Hanjour had grown a beard, spent long hours in prayer, and rejected music and television.(75) It is not clear how Hanjour joined the Atta cell, but most likely he was recruited in a mosque in Tucson.

According to Valdis Krebs, who mapped the September 11 cell network, connections between the nineteen hijackers were kept to a minimum. Aside from Atta, who interacted with the greatest number of hijackers, even those on the same flight had little, if any, prior contact with each other in the United States.(76) Undoubtedly, the need for compartmentalization to maintain security in order to achieve surprise was seen as essential to carry out the mission.(77) To plan the operation, distant parts of the network met only when necessary to coordinate details so that intelligence organizations would have difficulty linking them together. The hijackers used internet chat rooms and email to communicate. Their most sensitive communications were in person.(78) Ties among cell members remained inactive until absolutely necessary.(79)

Still, the hijackers' prior associations kept the cells interconnected even when ties were kept dormant. According to Rohan Gunaratna, al-Qa'ida is organized vertically with a loose horizontal structure compartmentalized cells.(80) structure has served well by allowing al-Qa'ida to accomplish missions under varying types of conditions as cells can regenerate and relocate quickly.(81) Gunaratna has characterized alalso Oa'ida's organization as "fluid dynamic." This fact was obvious during the September 11 mission. A case in point was Ramzi bin al-Shibh. He was tasked to be the twentieth hijacker on September 11, but repeatedly failed to get a U.S. visa.(82) Al-Shibh was reassigned and became an

important financial link for al-Qa'ida operatives in the United States.

Two other hijackers were principal players in the September 11 plot. Khalid al-Mihdhar and Nawaf al-Hazmi entered the United States from Bangkok on January 15, 2000. Both had trained in Afghanistan and fought in Bosnia. In January 2000, al-Mihdhar traveled from Yemen to Malaysia, where he joined al-Hazmi, who arrived from Pakistan. They met with al-Qa'ida operative Khalid bin Attash, the principal planner of the attack on the U.S.S. Cole. A week after their meeting, the two arrived in San Diego where they took flight lessons. In June 2000, al-Mihdhar left the United States while al-Hazmi remained and eventually joined Hani Haniour Arizona.(83)

It is now assumed that the hijackers carried out the September 11 attacks without a U.S.-based network in order to avoid a repetition of past mistakes that had occurred during other operations. Although it is clear that the hijackers had help from several contacts in the United States, it is doubtful that they knew about the plot. After the East Africa attacks, individuals who assisted the bombers and were cognizant of the operation remained in East Africa. Subsequently, they were arrested provided security officials valuable information. For this reason it appears that the September 11 attacks were planned overseas.(84) Nevertheless, the Senate and House Joint Inquiry found evidence that the hijackers received "substantial assistance" from individuals in the United States, some of whom were known to the FBI.(85)

Denial And Deception in the September 11 Operation

In February 1993, a huge truck bomb exploded in the underground parking garage of the WTC. However, American intelligence organizations did not link al-

Qa'ida to the operation at the time, though we now know they overlooked vital evidence to the contrary. The mastermind of that first attack, Ramzi Ahmed Yusef, was part of al Qa'ida's network.(86)

In hindsight, officials now believe that the scheme to create al-Qa'ida cells in the United States began in the early 1990s. One important actor in the creation of that militant network in the United States was the previously mentioned Ali Muhammad, an Egyptian, who, while serving in the Egyptian Army, joined the Egyptian Islamic Jihad and became a militant Islamist.(87)

As for the direct planning of the September 11 plot, initial preparations can be traced back to 1999,(88) a fact corroborated by Ramzi bin al-Shibh.(89) Some claim that the plan for September 11 vacillated between spreading chemical weapons using crop dusters and commandeering jets to attack the World Trade Center and the Pentagon.(90)

A key element of deception is how the hijackers entered the United States. Although some held legitimate passports and visas, their intentions were obviously concealed. For example, prior to traveling to the United States, Atta and others claimed that their passports had been stolen and so received new ones. They lied in to conceal their travels Afghanistan, which might have aroused suspicion.(91) Supposedly, Al-Shehhi obtained a new passport in Pakistan before he went to the UAE where he received a multiple-entry visa that was valid for ten years. Likewise, Jarrah had received a new Lebanese passport and eventually obtained a five-vear entry visa to the United States.(92) For the September 11 attack, the operatives used Germany, Malaysia, and the United Arab Emirates to enter the United States.(93) The cells in each of these countries were established independently and kept separate from each

other, although key players met occasionally to coordinate the mission.(94)

In March 2000, Atta sent emails from Germany to two flight schools, one in and another Florida in Oklahoma. preparing for both his mission and cover in the United States. Atta entered the United States on June 3, 2000, on a tourist visa. By July 6, he had enrolled in flight school at Huffman Aviation in Venice, Florida, with fellow hijacker al-Shehhi. That fall, Atta and al-Shehhi received their commercial pilot licenses. Eventually, Atta left the country and re-entered on January 10, 2001, on another tourist visa, again declaring to agents that he was pursuing flying lessons. Technically, Atta required a student visa to enter the United States to attend flight school. However. convinced the inspectors to admit him after explaining that he had applied for a student visa and was awaiting approval.(95) Ironically, the authorization arrived six months after the attacks. Hanjour had been denied a visa on his initial request, but received one after he altered information on his original application.(96) He entered the United States on a student visa on December 8, 2000, claiming that he was going to study English in California. However, he never matriculated at that school.(97)

A significant problem with many of the visas stemmed not only from the hijackers' deception on the applications--including false or missing information-but also the negligence of the officials approving the visas. According to one report, fifteen of the nineteen hijackers should have been denied visas to the United States.(98) In many cases, their applications were missing information or they showed insufficient funds to support themselves for the length of time they had indicated that remaining would be in country.(99) Additionally, the hijackers must have known, and counted on the fact, that the United States had no specific policy to vigorously screen visa applicants from Saudi Arabia since the Kingdom is a U.S. ally. A Congressional Report confirmed, "a relatively low standard was applied in scrutinizing visa applications for accuracy and completeness in Saudi Arabia." (100)

Adding to the deception, the hijackers did not "look like" quintessential Islamic radicals. Following guidance from the al-Oa'ida training manuals, they were wellclean-shaven, lived dressed. routine American lives and even flew first class.(101) According to Ramzi Ahmed Yusef, the architect of the first World Trade Center bombing, flying first class was crucial since first class passengers are subject to less scrutiny. (102) Although many accounts paint Atta as an angry and disgruntled individual, he managed to conceal those aspects of his personality. He was known to appear polite and welldressed. Jarrah, as mentioned previously, had a fiancée in Germany who, despite cursory glimpses of Jarrah's journey into radical Islam, assumed they would eventually live a normal, married life.(103) These measures all provided cover for the al-Qa'ida operatives.

After being taken into custody in Pakistan, Ramzi bin al-Shibh, who had roomed with Atta in Germany, discussed some of the tactics that Atta and the other hijackers used to integrate into American society.(104) When the hijackers arrived, they were required to find an appropriate "cover" to mislead and "mystify" the security services.(105) In many cases, the hijackers participated in seemingly "normal" activity, while clandestinely preparing for September 11. Ziad Jarrah took self-defense classes in which he learned to escape attacks and to counter attack.(106) Many of the terrorists joined gyms most likely to prepare for physically countering resistance on the planes. Al-Shibh also confirmed that the four

hijacking crews operated as distinct units to mislead authorities and to avoid linking the hijackers together.

As dictated in the al-Qa'ida training manuals, some of the terrorists tried to avoid contact with outsiders and only interacted when necessary so as not to draw undue attention to themselves. The hijackers were described as regular neighbors who did not appear suspicious, let alone threatening.(107) They concealed their malevolent intentions and lived among Americans for extended periods of time. For example, Hanjour, who piloted the plane that rammed the Pentagon, is reported to have been in the United States, on and off, since 1991.(108)

The guidance in their training manuals also gave permission to the operatives to indulge in activities prohibited by Islam. There are several accounts of the hijackers drinking alcohol and pursuing prostitutes. Furthermore, the terrorists also misled authorities by minimizing their associations with mosques known for their radical tendencies, though there are accounts of several hijackers visiting mosques during their U.S. stav.(109) Al-Oa'ida was aware that the FBI was monitoring various Muslim communities so they deliberately relocated the September 11 cells to less conspicuous areas.(110) Several however, join or visit mosques in violation of al-Qa'ida instructions for operating undercover.(111) For example, Nawaf Alhazmi and Khalid al-Midhar who lived in California starting in January 2000 became members of the Islamic Center of San Diego.(112) Supposedly, Hanjour also attended a religious center in Arizona.(113) Perhaps they ignored the training manual's tenet to avoid mosques because they believed that houses of worship were off limits to FBI agents. As such, they used them as places to communicate with other al-Qa'ida members and to exchange information.(114)

Several hijackers applied to flight schools and for the most part, did not behave in ways that attracted attention. After completing flight training, the al-Qa'ida operatives also trained on simulators of jumbo jets including the Boeing 747 and 767.(115) No activity, viewed in isolation, aroused any suspicions. However, an FBI report from Phoenix alerting government that several Middle Eastern men, possibly associated with Islamic militants, were enrolling in a flight school in Arizona, and specifically raised the question as to whether this might be occurring elsewhere(116) went unheeded.

On many occasions, the hijackers presented themselves as pilots commercial airlines. In August 2001, Abdulazziz Alomari attempted to enter the cockpit of a flight from Las Vegas to New York. He claimed to be employed by Egypt Air and asked to ride in the jump seat as an observer. Although the pilots admitted him to the cockpit prior to the flight, he was denied access after the plane airborne.(117) Investigators believe that Alomari was testing the security of the airlines and the ability of passengers to access the cockpit. A few days prior to the attacks, Atta and several other hijackers went to a bar in Florida. When a question was raised about the bill, Atta paid and explained that he was an American Airlines pilot.(118)

As part of the planning, several of the hijackers made "dry runs" and carried out surveillance of particular flights and safety procedures to learn more about the security loopholes on transcontinental flights.(119) Although the reasons are still unknown, each of the pilots stopped over in Las Vegas during one of their surveillance flights.(120) On May 24, al-Shehhi flew from New York to San Francisco and then immediately boarded a flight to Las Vegas where he remained until May 27 when he took a flight back to San Francisco and then to New York. Jarrah flew to Los

Angeles from Baltimore and then to Las Vegas on June 7. Atta flew from Boston to San Francisco to Las Vegas on June 28 returning to Boston via Denver on July 1. He then traveled again on August 13 from Washington, D.C. to Las Vegas. On the same day, Hanjour and al-Hazmi went to Los Angeles from Washington's Dulles Airport for a final destination in Las Vegas. They returned to Baltimore the next day, stopping in Minneapolis.(121) Hanjour also conducted surveillance flights several weeks prior to the attacks by renting small planes to scout out targets or routes in the vicinity of both the Pentagon and the World Trade Center.(122)

Consistent with the instructions in their training manuals, while in the United States, several hijackers acquired fake documents, including international driver's licenses and identification cards.(123) Hanjour obtained an identification card using a fake Virginia address. Two other hijackers, Khalid al-Mihdhar and Majid Muqid also used that same address to obtain their documents.

In addition, the terrorists created a complex network of financial transactions by which they moved hundreds of thousands of dollars through U.S. accounts. The hijackers opened twenty-four bank accounts in four different banks(124) apparently with fabricated social security numbers.(125)

Outside the United States, al-Qa'ida members transferred money to the hijackers' accounts. Munir al-Mutassadiq, suspected of aiding the September 11 terrorists, admitted that he had been given a power of attorney over Marwan al-Shehhi's bank account and paid the bills when al-Shehhi was training in Afghanistan. Mutassadiq also explained that Rami bin al-Shibh contacted him from overseas to send him money from al-Shehhi's account so that he could pass the money on to al-Shehhi.(126) Al-Qa'ida operatives wanted to make tracing finances as difficult as

possible and to provide cover for al-Shehhi by making it appear as if al-Shehhi had remained in Hamburg. As the judge in Mutassadiq's case noted, "This looks like you wanted to show the man is still in the country."(127) Additionally, many of the financial transactions originated from the United Arab Emirates.(128)

During the months preceding the attacks, activity accelerated to coordinate the near simultaneous hijackings on September 11. In July 2001, Atta and al-Shehhi met with Ramzi bin al-Shibh and several other Arab men in Spain. presumably to elude and confound authorities while planning the final phase of the operation.(129) During the summer of 2001, Atta also met on a monthly basis with al-Hazmi who has been described as Atta's "right hand."(130) As mentioned above, from May until a few weeks before the attacks, the hijackers took several cross-country trips, and then flew to Las Vegas. On most of the trips, the terrorists had purchased round-trip, first class tickets, but on their last trip, they purchased oneway, coach tickets.(131) Most likely, the discrepancy was an attempt to test whether or not one-way tickets--the kind the perpetrators would purchase for September 11--would arouse suspicion.

In the days preceding the September 11 attacks, the hijackers continued to deceive those around them. According to several reports, Atta visited New York, most likely to calibrate the location of the WTC into his global positioning system (GPS), which each of the pilots had acquired.(132) Atta's car was also caught by surveillance cameras moving through Boston's Logan Airport, most likely gathering last minute intelligence.(133) Although their reasons are not yet clear to analysts, Atta and Alomari drove to Portland, Maine, and flew to Boston on September 11 to connect with the plane they crashed into the North Tower. There is speculation that, based on

al-Qa'ida training manuals, operatives were instructed not to travel in groups and to use "secondary stations" to avoid detection.(134)

Most of the hijackers began to buy their tickets beginning on August 26, although al-Mihdhar and Majid Muqid attempted to buy theirs on August 24. When they were unsuccessful because their address could not be verified, they went to the American Airlines counter at the Baltimore airport on September 5 and paid cash.(135) Allegedly, the terrorists bought extra seats on the aircrafts so as to lessen resistance they might encounter from passengers during the hijacking.

On the day of the attack, the hijackings were coordinated so that they would be simultaneous. Supposedly, hijackers also selected transcontinental flights with large fuel loads so as to inflict maximum damage and casualties.(136) To execute this type of coordinated attack required extensive planning, patience, and extreme secrecy. According to a cell phone call made from a passenger on one of the planes, the hijackers engaged in one last act of deception. They forced the pilots from the cockpit while ushering the passengers to the back of the plane telling them that if their demands were met, the passengers would be released without harm.(137)

In sum, as in the case of the Embassy al-Qa'ida incorporated bombings, counterintelligence tools, especially denial and deception, to execute the deadly attacks on September 11. By examining the planning, prepositioning, and execution of the September 11 attacks, it is clear that al-Qa'ida operatives internalized implemented the tools discussed in their training manuals. Their "cover," blending in with the population, their utilization of decentralized means of communication and sophisticated system of financial transactions all deceived U.S. intelligence authorities.

which A crucial problem, aided successes such as the East Africa Embassy bombings and September 11, was selfdeception. Although officials knew that the U.S. homeland could be targeted, they were concerned with other types of attacks including truck bombs or strikes using weapons of mass destruction.(138) In 2001, the United States received information from an al-Qa'ida informant in Malaysia that the group wanted to hijack a plane and use hostages to force the release of Shaykh Omar Abd al-Rahman.(139) Perhaps the informant's admission was part of a larger scheme of disinformation to prevent U.S. security services from deciphering the plan to use planes as bombs. The CIA obviously found the information of a plane hijacking credible. On August 6, President Bush was briefed on this particular scenario.(140) Although analysts must be diligent in studying terrorist training documents, they must also be wary of self-deception if they assume that the next attack will be similar to its predecessor.

# LESSONS LEARNED AND IMPLICATIONS FOR U.S. POLICYMAKERS

Understanding the philosophical underpinnings of al-Qa'ida operations, as well as its methods for training operatives critical to U.S. national security. Misinterpreting an enemy's intentions and the manner in which they wage war is dangerous, leaving open the opportunity for disasters like that which happened on September 11. Therefore, policymakers and analysts need to become more adept at understanding al-Qa'ida's counterintelligence mindset and how it employs CI tools to include denial and deception to conduct 4th generation warfare. It is essential to comprehend both the ethos of al-Qa'ida and how it has developed as a new model for terrorist operations.

\*Professor Richard H. Shultz is a professor of International Politics at the Fletcher School of Law and Diplomacy, Tufts University, and is director of the school's International Security Studies Program. His recent publications include The Secret War Against Hanoi: Kennedy Johnson's Use of Spies, Saboteurs, and Covert Warriors in North Vietnam (1999); Security Studies for the 21st Century (coeditor and author) (1997); and War in the Information Age: New Challenges for U.S. Security Policy (co-editor and author) (1997). He is currently writing a book on Ethnic, Tribal and Religious Warriors: How Non-State Armed Groups Fight (Columbia University Press).

\*\*Professor Ruth Margolies Beitler is an Associate Professor of International Relations and Comparative Politics at the U.S. Military Academy. Her books include The Path to Mass Rebellion: An Analysis of Two Intifadas (Lexington Press, 2004) and a monograph (co-authored with Cindy Jebb), Egypt as a Failing State: Implications for U.S. National Security, (Institute for National Security Studies, July 2003).

#### NOTES

- 1. For recent articles by Hoffman, Gunarata, and other leading specialists see Russell Howard and Reid Sawyer, (eds.), Terrorism and Counterterrorism Revised (New York: McGraw-Hill/Duskin, 2004).
- 2. John Dziak, "The Study of the Soviet Intelligence and Security System," in Roy Godson (ed.), <u>Comparing Foreign Intelligence</u> (Washington, DC: Pergamon-Brassey's, 1988), p. 65.
- 3. <u>American Encyclopedia of Religion</u> (NY: Macmillan, 1986).
- 4. The historical roots of such political systems were traced back to the Oriental/Asiatic despotisms of ancient times. However, those systems were said to lack certain attributes--"key ingredients"--

- of their modern 20<sup>th</sup> century descendants. These missing features include a millenarian ideology and highly institutionalized security and intelligence services. The earlier despotisms, written about by Karl Witfogel and others, "were lacking in those... both in scope and intensity." It was only in the twentieth century that the counterintelligence state reached fruition. Ibid.
- 5. Theodor W. Galdi, <u>Revolution in Military Affairs: Competing Concepts</u>, <u>Organizational Responses</u>, <u>Outstanding Issues</u> (Washington, DC: Congressional Research Service, 1995), p. 4. For an online gateway to online full-text resources about the Revolution in Military Affairs, information war, and asymmetrical warfare go to The RMA Debate at <www.comw.org/rma/index.html>.
- 6. The 1<sup>st</sup> generation-the classical war between nation-states--was perfected by Napoleon. This was followed by the industrial age 2nd generation war of attrition based on massive firepower. It reached its apogee in WWI. Maneuver warfare, introduced by the Germans in WWII and refined by the United States in the 1980s, marked the 3rd generation.
- 7. Martin van Creveld, <u>The Transformation of War</u> (New York: Free Press, 1991), p. 224. See his retrospective in Martin van Creveld "The Transformation of War Revisited," <u>Small Wars and Insurgency</u> (Summer 2002), pp. 3-15.
- 8. For a translation, see "Bin Laden Lieutenant Admits to September 11 and Explains Al Qaeda's Combat Doctrine," The Middle East Media Research Institute (No. 344) at <www.memri.org/jihad.html>. 9. Ibid.
- 10. Roberta Wohlstetter, "Cuba and Pearl Harbor: Hindsight and Foresight," <u>Foreign</u> Affairs, Vol. 43 (July 1965), p. 707.
- 11. There is a debate about whether or not the intelligence community knew that terrorists would use hijackings and target

- the World Trade Center. See James Risen, "U.S. Failed to Act on Warnings in '98 of a Plane Attack," New York Times, September 19, 2002, p. 1. According to the article, the CIA and FBI received warnings that al-Qa'ida wanted to attack New York or Washington using airplanes.
- 12. The extent to which *Taqiyya* is actually accepted by many Shi'a is debatable, but the concept exists and is accepted as a legitimate tenet of Islam.
- 13. Koran, verses 3:28 and 16:106, as cited in Sayyid Moustafa Qazwini, "Dissimulation (taqiyyah)," in Inquiries about Shi'a Islam (The Islamic Educational Center of Orange County), Chapter 10. Available from <a href="http://www.alislam.org/shiism/10.htm">http://www.alislam.org/shiism/10.htm</a>.
- Intelligence-Counter Counter Espionage-Counter Terrorism (CI-CE-CT), "Taqiyya and kitman: The Role of Deception in Islamic Terrorism." CI-CE-CT is an Australian non-profit, educational site, dedicated to understanding and increasing capabilities to counter traditional, contemporary and emerging terrorist threats. Available <a href="http://www.ci-ce-ct.com/main.asp">http://www.ci-ce-ct.com/main.asp</a>.
- 15. Cyrus H. Gordon, "The Substraum of *Taqiyya* in Iran," <u>Journal of the American Oriental Society</u>, Vol. 97 (1977), p. 192. Gordon writes, "while Bahais, Christians, Jews and Sunnites in Iran may not foster *taqiyya* as a tenet of their faith, they resort to it as a pattern of behavior permitted by Iranian mores." He argues that it is not only a religious principle, but a social institution. Additionally, Gordon points out that in the Book of Esther, the practice of *taqiyya* was implemented, implying that the concept had pre-Islamic roots.
- 16. Charles Sennott, "Fighting Terror: The Investigation," <u>Boston Globe</u>, August 4, 2002.
- 17. Ibid.

- 18. Counter Intelligence-Counter Espionage-Counter Terrorism (CI-CE-CT), "*Taqiyya* and *Kitman*"
- 19. Ibid.
- 20. Elizabeth Neuffer, "Hijack Suspect Lived a Life, or a Lie," <u>Boston Globe</u>, September 25, 2001. Available from
- <a href="http://web.archive.org/web/20010925123">http://web.archive.org/web/20010925123</a> 748/boston.com/dailyglobe2/268/nation/Hijack\_suspect\_lived\_a\_
- life\_or\_a\_lie%2B.shtml>.
- 21. United States v. Usama bin Laden, et al., S (10) 98 Cr. 1023 (LBS), Southern District of New York, 2001, government exhibit 1677-T.
- 22. See Judy Aita, "Ali Mohamed: The Defendant Who Did Not Go to Trial," U.S. Department of State, International Information Programs, May 16, 2001. Text online at
- <a href="http://usinfo.state.gov/regionaliaf/security/a1051502.htm">http://usinfo.state.gov/regionaliaf/security/a1051502.htm</a>.
- 23. Alan Feuer and Benjamin Weiser, "Translation: The How-to Book of Terrorism," New York Times, April 5, 2001, p. A1.
- 24. David A. Wise, "Ex-Soldier Admits Role in Embassy Blasts," Washington Post, October 21, 2000, p. A18.
- 25. Eric Lichtblau, "Terrorists Noted Flaws In Security, Report Says," <u>Los Angeles Times</u>, February 1, 2002, p. Al.
- 26. United States v. Usama bin Laden, et al., S (10) 98 Cr. 1023 (LBS), Southern District of New York, 2001, government exhibit 1677-T.
- 27. Kathy Gannon, "Jihad Manual a Testament of Death," <u>Associated Press/Tulsa World</u>, October 2, 2001, p. A4. 28. The primary research and initial analysis of the data for this section was undertaken by Kendall Wolf, a research assistant at the Fletcher School during the
- 29. See <a href="http://www.cryptome.org">http://www.cryptome.org</a> and http://www.cryptome2.org</a>.

2002-2003 academic year.

30. See <a href="http://www.cryptome.org">htttp://www.cryptome.org</a> and <a href="http://www.cryptome2.org">htttp://www.cryptome2.org</a>.

- 31. See < < http://cryptome.org/usa-v-mohamed.htm>;
- <a href="http://www.legalservicesindia.com/Usama/bombings\_trial.htm">http://www.legalservicesindia.com/Usama/bombings\_trial.htm</a>;
- http://www.legalservicesindia.com/Usama/fbi.htm and
- <a href="http://www.legalservicesindia.com/Usama/suspect.htm">http://www.legalservicesindia.com/Usama/suspect.htm</a>.
- 32. United States of America v. Usama Bin Ladin, et al., S(7) 98 Cr. 1023 1884, Southern District Court of New York, January 8, 2001, p. 1994.
- 33. United States of America v. Usama Bin Ladin, et al., S(7) 98 Cr. 1023 1505, Southern District Court of New York, February 27, 2001, p. 1624.
- 34. United States of America v. Usama Bin Ladin, et al., S(7) 98 Cr. 1023 1635, Southern District Court of New York, February 28, 2001, p. 1645.
- 35. Oriana Zill, "A Portrait of Wadih El Hage, Accused Terrorist," <u>PBS/Frontline</u>, <a href="http://www.pbs.org/wgbh/pages/frontline/shows/binladen/upclose/elhage.html">http://www.pbs.org/wgbh/pages/frontline/shows/binladen/upclose/elhage.html</a>.
- 36. United States of America v. Usama Bin Ladin, et al., S(7) 98 Cr. 1023 8369, Southern District Court of New York, February 27, 2001, p. 8395.
- 37. Ibid., pp. 8396-8397. Defendant Khalfan Khamis Mohamed evidence # MMK28T.
- 38. Peter Bergen, "The Deep Sleeper," (extract from <u>Holy War Inc.</u>) <u>The Weekend Australian</u>, November 17, 2001.
- 39. United States of America v. Ali Mohamed, S(7) 98 Cr. 1023 1, Southern District Court of New York, October 20, 2000, pp. 11, 12.
- 40. Bergen, "The Deep Sleeper."
- 41. United States of America v. Ali Mohamed, S(7) 98 Cr. 1023 1, Southern District Court of New York, October 20, 2000, pp. 25, 26.
- 42. Bergen, "The Deep Sleeper."
- 43. United States of America v. Ali Mohamed, S(7) 98 Cr. 1023 1, Southern District Court of New York, October 20, 2000, p. 27.

- 44. United States of America v. Usama Bin Ladin, et al., S(7) 98 Cr. 1023 1635, Southern District Court of New York, February 28, 2001, p. 1676.
- 45. United States of America v. Usama Bin Ladin, et al., S(7) 98 Cr. 1023 158, Southern District Court of New York, February 6, 2001, p. 170.

46. Ibid.

47. United States of America v. Usama Bin Ladin, et al., S(7) 98 Cr. 1023 411, Southern District Court of New York, February 13, 2001, p. 439.

48. Ibid.

- 49. United States of America v. Ali Mohamed, S(7) 98 Cr. 1023 1, Southern District Court of New York, October 20, 2000, p. 26.
- 50. United States of America v. Usama Bin Ladin, et al., S(7) 98 Cr. 1023 536, Southern District Court of New York, February 14, 2001, p. 628.
- 51. United States of America v. Ali Mohamed, S(7) 98 Cr. 1023 1, Southern District Court of New York, October 20, 2000, p. 26.
- 52. United States of America v. Usama Bin Ladin, et al., S(7) 98 Cr. 1023 536, Southern District Court of New York, February 14, 2001, pp. 630-631.
- 53. United States of America v. Usama Bin Ladin, et al., S(7) 98 Cr. 1023 1505, Southern District Court of New York, February 27, 2001, pp. 1594-1615.
- 54. United States of America v. Usama Bin Ladin, et al., S(7) 98 Cr. 1023 1635, Southern District Court of New York, February 28, 2001, p. 1661.
- 55. Ibid., pp. 1662.
- 56. United States of America v. Usama Bin Ladin, et al., S(7) 98 Cr. 1023 158, Southern District Court of New York, February 6, 2001, p. 201.
- 57. United States of America v. Usama Bin Ladin, et al., S(7) 98 Cr. 1023 1635, Southern District Court of New York, February 28, 2001, p. 1687.

- 58. See letter by Haroun Fazul, PBS/Frontline, online at
- <a href="http://www.pbs.org/wgbh/pages/frontline/shows/binladen/upclose/computer.html">http://www.pbs.org/wgbh/pages/frontline/shows/binladen/upclose/computer.html</a>.
- 59. United States of America v. Usama Bin Ladin, et al., S(7) 98 Cr. 1023 1635, Southern District Court of New York, April 18, 2001, p. 1761.
- 60. United States of America v. Usama Bin Ladin, et al., S(7) 98 Cr. 1023 5212, Southern District Court of New York, April 18, 2001, p. 5239.
- 61. Ibid., p. 5248.
- 62. Ibid., p. 5284.
- 63. Statement for the Record of Dale Watson, Chief International Terrorism Section, National Security Division Federal Bureau of Investigation. Terrorists in America: Five Years after the World Trade Center." before the Senate Judiciary Committee, Subcommittee on Technology, Terrorism, and Government Information. United States Senate. Washington, D.C., February 24, 1998; available on-line <a href="http://www.fbi.gov/congress/congress98/">http://www.fbi.gov/congress/congress98/</a> wtc.htm>.
- 64. Ibid.
- 65. Some accounts mention that the target of that flight was the White House. In any case, the passengers, who were informed about the other hijackings and their outcomes via cell phones, opted to fight the hijackers, presumably forcing the plane to crash before it could reach its target.
- 66. John Miller and Michael Stone, <u>The Cell</u> (New York: Hyperion, 2002), p. 248.
- 67. Ibid., p. 257.
- 68. Ibid., p. 263.
- 69. Ibid., p. 264
- 70. Rohan Gunaratna, <u>Inside Al Qaeda:</u> <u>Global Network of Terror</u> (New York: Columbia University Press, 2002), p. 105.
- 71. Dirk Laabs and Terry McDermott, "A Hijacker's Love, Lies," Los Angeles Times, January 27, 2003, p. 1.
- 72. Ibid.

73. Ibid.

74. Investigators are still uncertain about how Hanjour was brought into the September 11 plot. See Steve Fainaru and Alia Ibrahim, "Mysterious Trip to Flight 77 Cockpit: Suicide Pilot's Conversion to Radical Islam," <u>Washington Post</u>, September 10, 2002, p. 1.

75. Ibid.

76. Valdis E. Krebs, "Mapping Networks of Terrorist Cells," <u>Connections</u>, Vol. 24, No. 3 (2002), p. 46, available from <a href="http://www.orgnet.com/mappingterroristnetworks.pdf">http://www.orgnet.com/mappingterroristnetworks.pdf</a>>.

77. Ibid., p. 46. See also J. Bowyer Bell, 'Conditions Making for Success and Failure of Denial and Deception: Nonstate and Illicit Actors," in Roy Godson and James J. Wirtz (eds.), <u>Strategic Denial and Deception:</u> The Twenty-First Century <u>Challenge</u> (New Brunswick: Transaction Publishers, 2002), p. 159.

78. Kate Zernike and Don Van Natta Jr., "Hijacker's Meticulous Strategy of Brains, Muscle and Practice," <u>New York Times</u>, November 4, 2001, p. A1.

79. Krebs, p. 49.

80. For a detailed account of Al-Qa'ida's organization and structure see Gunaratna, pp. 54-94.

81. Ibid., p. 55.

82. Joel Mowbray, "How They Did It," National Review, December 23, 2002. Available from <a href="http://proquest.umi.com">http://proquest.umi.com</a>. 83. Much of the information on these two hijackers comes from the U.S. Senate and House Committee on Intelligence, "Joint Inquiry into Intelligence Community Activities Before and After the Terrorist Attacks of September 11, 2001" (S. Rept. No. 107-351, H. Rept. No. 107-792).

84. "Joint Inquiry," p. 161.

85. Ibid., pp. 169-182.

86. Judith Miller and Don Van Natta Jr., "In Years of Plots and Clues, Scope of al-Qaeda Eluded U.S.," New York Times, June 9, 2002, p. A1.

87. Daniel Benjamin and Steven Simon, The Age of Sacred Terror (New York: Random House, 2002), p. 123.

88. Paul Wilkinson, "The War Without Frontiers," <u>Scotland on Sunday</u>, September 8, 2002.

89. Dafna Linzer, "September 11 Hijackers Remain a Mystery," <u>St. John's Telegram</u>, September 9, 2002.

90. See Miller and Stone, <u>The Cell</u>, pp. 268-281.

91. See Gunaratna, Inside al Qaeda, p. 105.

92. "Joint Inquiry," p. 136.

93. Gunaratna, p. 104.

94. Ibid.

95. Federal News Service, March 12, 2003. 96. Steve Barrett, "Are We Serious About Whom We Let In?" <u>Chatanooga Times</u>, November 14, 2002, p. B7.

97. "Data on Foreign Students Required," <u>The Miami Herald</u>, January 6, 2003, p. B4. 98. Joel Mowbray, "Visas that Should Have Been Denied," <u>National Review Online</u>, October 9, 2002.

99. Ibid.

100. "Joint Inquiry," p. 188.

101. Bruce Hoffman, "Rethinking Terrorism and Counterterrorism Since 9/11," Studies in Conflict and Terrorism, Vol. 25 (2002), p. 307.

102. Miller and Van Natta Jr., "In Years of Plots and Clues, Scope of al-Qaeda Eluded U.S."

103. Laabs and McDermott, "A Hijacker's Love, Lies."

104. Mowbray, "How They Did It."

105. Ibid.

106. Dania Beach, "The Terrorists Next Door," <u>St. Petersburg Times</u>, October 2, 2001, p. D1.

107. Nocolass van Rijn, "Hijackers Set Down Roots, Blended in, Then Attacked," Toronto Star, September 15, 2001.

108. Mowbray, "How They Did It."

109. Toni Locy, Kevin Johnson and Richard Willing, "Al-Qaeda Records Solve Many 9/11 Puzzles, But Others Linger," <u>USA Today</u>. Available from

- <a href="http:///www.usatoday.com/news/nation/2">http:///www.usatoday.com/news/nation/2</a> 002-08-29-al-qaeda-clues\_x.htm>.
- 110. Gunaratna, Inside al Qaeda, p. 103.
- 111. Locy, Johnson and Willing, "Al-Qaeda Records Solve Many 9/11 Puzzles, But Others Linger."
- 112. Ibid.
- 113. James Risen, "F.B.I. Agent Was Tracking Radical Linked to Hijacker," New York Times, September 25, 2002, p. A14.
- 114. Locy, Johnson and Willing, "Al-Qaeda Records Solve Many 9/11 Puzzles, But Others Linger."
- 115. Mowbray, "How They Did It."
- 116. Risen, "FBI Agent Was Tracking Radical Linked to Hijacker."
- 117. Miller and Stone, The Cell, p. 295.
- 118. Ibid., p. 309.
- 119. Mowbray, "How They Did It."
- 120. "Joint Inquiry," p. 139.
- 121. Ibid.
- 122. CBS Evening News, October 9, 2002.
- 123. Robert Hanley, "Traces of Terror: The Fugitive" New York Times, August 1, 2002, p. A20.
- 124. See Congressional Statement, Federal Bureau of Investigation available from <a href="http://www.fbi.gov/">http://www.fbi.gov/</a>
- congress/congress02/lormel021202.htm>.
- 125. James Risen, "Hijackers Said to Fake Data on Bank Accounts," New York Times, July 10, 2002, p. A1.
- 126. Desmond Butler, "Terror Suspect Tells of His Links to 9/11 Hijackers," New York Times, October 24, 2002, p. A15.
- 127. "September 11 Suspect is Said to Be Central to Terrorist Cell," Los Angeles Times, October 24, 2002, p. 1.
- 128. See United States Department of Justice.
- <a href="http://www.usdoj.gov/ag/moussaouiindictment.htm">http://www.usdoj.gov/ag/moussaouiindictment.htm</a>>.
- 129. Charles Sennott, "Exposing Al Qaeda's European Network," <u>Boston</u> Globe, August 4, 2002.
- 130. "Joint Inquiry," p. 140.

- 131. Kate Zernike and Don Van Natta Jr., "Hijackers' Meticulous Strategy of Brains, Muscle and Practice," <u>New York Times</u>, November 4, 2001, p. A1.
- 132. Frank J. Murray, "Killers in the Cockpit, Who and Why?" <u>Washington</u> Times, September 10, 2002.
- 133. Miller and Stone, The Cell, p. 309.
- 134. Kate Zernike and Don Van Natta Jr., "Hijackers' Meticulous Strategy."
- 135. "Joint Inquiry," p. 140.
- 136. Hoffman, "Rethinking Terrorism and Counterterrorism since 9/11," p. 304.
- 137. Zernike and Van Natta Jr., "Hijackers' Meticulous Strategy."
- 138. Hoffman, "Rethinking Terrorism and Counterterrorism Since 9/11," p. 306.
- 139. Miller and Stone, The Cell, p. 281.
- 140. Ibid., p. 296.