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Aviation Security and Nonverbal Behavior

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It is important to look at a little background history of aviation security before we discuss the value of what some call “behavior detection.” The traditional approach in aviation has always been to detect the threat item, i.e., the gun, knife, or bomb. This mind-set came out of the late 1960s and 1970s when there was a proliferation of hijackings in aviation by various groups for the purpose of political asylum, release of political prisoners, or other political demands. Therefore, the method of threat detection primarily included metal detectors, x-ray machines, and explosives detection machines.

However, over the last three decades—culminating with the attacks of 9/11—we have seen terrorist activity shift toward using the aircraft itself as a bomb or a method of destruction. To accomplish this, terrorists adjusted their methods of defeating the traditional security by using items that cannot be so easily detected by the traditional technology. Richard Reid, known as the “shoe bomber,” successfully passed through security and tried to ignite his explosive-laden shoe in an attempt to blow up a plane shortly after 9/11. Yet the fact that he had poor hygiene, no baggage, showed subtle signs of nervousness on his face, and had exceptional concern for security procedures

was inconsistent with the normal baseline of passenger behavior. This caused so much concern among Israeli security that they denied him boarding on one of his flights on El Al. He later flew without incident to Paris but still received extra scrutiny, including an extended interview. His shoes, however, were never checked for explosives.

Since that time, US airports require passengers' shoes to pass through the x-ray machines. Then on December, 25, 2010, we witnessed a young Nigerian, Umar Farouk Abdul Mutallab, successfully smuggle an explosive device, not in his shoes but in his underwear, in an attempt to blow up an aircraft. The device malfunctioned.

These two events highlight the fact that the threat to aviation is constantly evolving and that terrorists in particular are constantly adapting methods and weapons to defeat current available technology and procedures. In response, aviation security professionals called for a better balance between detecting the behavior of individuals with nefarious intentions and detecting the dangerous weapons or explosives through technological means. The underwear bomber clearly underscored the need for security to pay attention to individuals' behavior as they transit security as much as we pay attention to the items they are carrying. Video and eyewitness accounts of the underwear bomber's behavior and demeanor before he passed through security clearly showed that he was acting extremely nervous, showing an unusual amount of stress (such as sweating), closely watching the security procedures, and had almost a "tunnel vision" as to what was being checked and not checked; yet no one engaged him or questioned him. It is the belief among many of us who work in the field of behavior detection that Abdul Mutallab would have "folded" under questioning or if subjected to more individual scrutiny based on his nervous demeanor and other behavioral indicators of fear. Some of the many cases of drug smugglers caught at Transportation Security Administration (TSA, the agency charged with airport and other transportation security in the United States) checkpoints by TSA behavior detection officers often involve passengers who have a keen interest in security procedures, scanning the checkpoint before entering, rigid posture, minimal body movements, and a tense facial expression, almost one of fear and apprehension (see Chapter 2), unlike the other passengers who do not show those signs and go about their business of clearing security. These are often tip-offs that something is wrong. As behavior detection officers, we become concerned when we see behavioral signals that deviate from a known environment, behaviors that demonstrate extreme concern about security procedures, excessive touching of the face and head, and constantly looking around as if to see who is watching. These nonverbal indicators cause the

security official to give that person more scrutiny because that person's body is giving off behavior alarms—and I call this scrutiny *human alarm resolution*.

There are many people in the field of aviation security who feel that the problem with US aviation security is that we are too focused on the item and not the person. We keep retreating back to technology to solve every threat issue, although through the failure of the shoe and underwear explosive devices, luckily we have not experienced another successful attack since 9/11.

The idea of a behavior-based security system is not a new concept to the world of aviation. However, watching people to detect suspicious behavior—behavior such as that we saw from Richard Reid and Abdul Mutallab, sweating, closely watching security, fidgeting, constantly looking around, avoiding eye contact with security officials, all before they entered security—was never a staple of airport security screening for most of the world's airports. When I worked as a behavior detection officer for a private aviation security company, we identified a money smuggler because he kept protecting the briefcase he was carrying by placing it between his feet, nervously shifting it side to side and then back and forth every time a security person walked by. He would also continually rub his head the closer he got to the security interview station. At the interview station, he could not maintain general eye contact with me as I went through the security questions; all the while continually shifting his feet and the bag. His shoulders elevated every time he answered a question almost like he was struggling for air. In the briefcase was \$100,000 that he was trying to take out of the country without declaring it to US Customs, as required by law when one is carrying more than \$10,000 out of the country.

The idea for behavior detection to be used in security screening situations originated with the Israeli airport security community, which implemented a number of techniques that focused on passengers' demeanor and subsequent answers to simple questions about their trip. The logic of this approach is that the passenger's nonverbal behavior and verbal responses may reveal deception and maybe even hostile intentions. This is now commonly referred to in the security world as *behavior recognition* or, as the Israelis call it, *pattern recognition*. Behavior recognition is not new to the US or international law enforcement/security community. US Customs and Border Protection and the Drug Enforcement Administration have been using nonverbal behavior indicators to decide who to search or subject to additional inquiry for several decades. The behaviors they have used were based on decades of anecdotal law enforcement experience.

There are a lot of erroneous beliefs about behavior recognition in the public and popular press. First, many civil libertarians have argued that behavior recognition is the same as racial profiling. The reality is that racial profiling is absolutely useless and ineffective as a security tool because terrorism has no stereotypical face, gender, or ethnicity. In the past 30 years there have been documented instances of Arabian terrorists, African terrorists, British terrorists, Irish terrorists, American terrorists, Japanese terrorists, Chechen terrorists, Sri Lankan terrorists, and so forth. In the United States alone, we've seen terrorist acts attempted or committed by Richard Reid, a biracial man; Farouk Abdul Mutallab, a Nigerian; and Caucasians John Walker Lindh, an American fighting with the Taliban in Afghanistan, Ted Kaczynski, the Unibomber, and Timothy McVeigh, who used a truck bomb against a US federal building in Oklahoma City. When we speak of behavior recognition as a security tool, ethnicity, race, and religion are not components of these techniques. If police officers or security officials look only for one "stereotypical terrorist" type, the real terror threat is going to walk right past them. As we've seen earlier, terrorists are always adapting their techniques to defeat the latest security innovations—and nothing would be easier to defeat than racial profiling.

Second, some people have complained about the fact that behavior detection involves people getting arrested because they happened to show signs of nervousness or some other behavioral clue that catches the eye of the security officer. This too is not true. Behavior recognition does not trigger arrest—it triggers additional observation and possibly a brief conversation with a security officer. It is the outcome of that conversation that dictates what happens next. Much of the time nothing happens next, but sometimes the individual is passed on to secondary screening. If the security officer notices something clearly illegal—illicit drugs, false travel documents, and so forth—only then is a law enforcement officer called.

Behavior recognition or suspicious behavior detection is about how a person is acting or behaving within his or her environment. The theory behind behavior recognition is that when someone is in the process of carrying out a criminal or terrorist act, that person will exhibit behavior that is out of the norm. This behavior may be a manifestation of the act or operation that the person is planning, or it could be an attempt to conceal these behaviors.

The reader will note that many times throughout this material I stress the importance of recognizing behavior indicators that may indicate possible terrorist or criminal activity. I say *may* because sometimes what you identify is indeed criminal activity, which certainly encompasses terrorist activity as well, but sometimes these behaviors may indicate simply a hypernervous

person, a confused person, or some other issue that is not at all related to criminal or terrorist activities.

Much of previous practice in identifying individuals as threats was based upon informal training, that is, relying upon gut instincts or unscientifically tested ideas. Formally training personnel in behavior recognition, with an eye to the solid science, is our new approach to security. Although there is no better tool in detecting suspicious behavior than another human being, if that human being is untrained, he or she may be familiar with some indicators of potential malfeasance but will likely not be “tuned” in to recognizing them when they are anomalous. In this instance, it is important to distinguish “looking” from “seeing” and “listening” from “hearing.” Therefore, formal training is essential, and luckily there are many successful models for training.

The most successful model is that of the Israelis. The Israelis are renowned for their security procedures when it comes to safeguarding their aviation industry as well as their critical infrastructure and citizens. Many countries have sought out the methods employed by the Israelis, especially after the most recent underwear bomber incident that defeated current technological screening. The Israelis have been using these methods in aviation security for 4 decades with perfect success: that is, they have had no hijackings or airport-based attacks. However, Israeli airport personnel are typically responsible for roughly 30 flights—or around 900 passengers—a day out of Ben Gurion airport, and thus they can engage every passenger with an interview and even a detailed hand search of the passenger’s luggage. In contrast, the US aviation system features over 2 million passengers traveling on any given day. This type of volume restricts us from using all of the Israeli type methods, and so we needed to adapt elements of that system to our laws and logistics.

The TSA did exactly that and has been running airport checkpoints now for over 10 years. In 2006, TSA began a program called Screening Passengers by Observation Technique (SPOT), deploying formally trained behavior detection officers in a system based on the Israeli model but informed by current science (like that found in Chapter 6 of this book) along with the realities of TSA’s 10 years of experience working checkpoints since 9/11. In the larger picture, the TSA behavior detection program is designed to complement the current technology-based screening for prohibited items. Behavior detection officers are trained to observe all passengers and to primarily look for behavior that is anomalous to passengers transiting through that particular checkpoint. Observing at a distance requires that these officers be skilled in the science of nonverbal behavior. According to former TSA head Kip Hawley, this TSA behavior detection program has been extremely

successful in detecting both criminal activity—resulting in thousands of arrests for illegal items and fraudulent documents—and also identifying individuals who have been forwarded for further investigation due to possible terrorists ties. For example, in April 2007, CNN reported that TSA behavior detection officers identified an individual trying to carry bomb-making materials onto an aircraft at Orlando International Airport. In that particular case, the individual's behavior and appearance were contrary to the normal demeanor of the usual passenger flow. This person stood out from the rest, showing very tense body posture, minimal gross body movements, etc. He also had what you would consider an almost “pained smile” on his face, his lower mouth looked like it was smiling, but the rest of his face was tense, with the muscles around his eyes not moving at all. This arrest was one of many such successes of the program.

As mentioned previously, the logic behind the behavior recognition model is that someone trying to carry out a criminal or terrorist act will exhibit behavior that is out of the norm or inconsistent with the environment. The main way in which these inconsistent behaviors are shown is through the passenger's nonverbal behavior; that is, nonverbal behavior that deviates from normal nonverbal behavior. The norm is developed over countless hours of observation in a particular space. As an example, no one knows your workplace better than you because you are there virtually every day. No one knows your neighborhood better than you because you live there; you know what is routine and what the norm is. A passenger's behavior may be suspicious if he or she deviates from normal routines or the routines of the day-to-day activities of that environment. This deviation is driven by what I call the fear of discovery. This fear of discovery occurs even if someone feels that his or her terrorist act is proper, good, or is justified to further the individual's beliefs. In each instance, the terrorist still must defeat the security system and not be discovered. The fear of discovery manifests itself in many ways, both verbal and nonverbal, and many are discussed in Chapter 6. Many of these nonverbal indicators are behaviors people may be aware of but may not have realized that they could potentially indicate possible hostile intent or terrorism. There is nothing mystical about these behavior indicators. Security officers and police have told us time and time again that they have encountered them but could never put a face or name to that “gut” feeling or explain why “the hair on the back of their neck stood up.” We do know from personal discussions with former airline employees who now work for the TSA that the demeanor of the 9/11 hijackers who transited through Newark airport was so anomalous and worrisome that these airline employees did not discard the terrorists' boarding passes as usual.

The reason humans have these reactions when they fear discovery is that this fear triggers many behavioral processes that can be detected through many nonverbal channels and outlets (see Chapters 2 and 3 in this volume for more detail on the science of this reaction). In summary, body movements involving the head, arms, legs, face, and hands all send messages that can express emotions, including anxiety, fear, nervousness, contempt, discomfort, and deceit. The body can also send messages that express our inner, unspoken feelings or thoughts, such as when we are thinking hard, searching our memories, or thinking on our feet. These behaviors, when interpreted properly and in context, can indicate potential suspicious activity or hostile intent. Of course, I won't go into all the behaviors or how they are specifically applied in security settings, but various behaviors triggered by fear include throat clearing; facial flushing; sweating; voice and body trembling; changes in voice pitch, volume, and rate of speech; choice of words, or even drying of the mouth, all basic human reactions to stress and fear. Other body behaviors include rigid body posture, minimal body movements, increased breathing rate, panting, exaggerated or repetitive grooming gestures, and exaggerated or inappropriate emotions. Other behaviors related to defeating security involve the terrorist scanning an area for the presence of police or security and showing an unusual interest in security procedures. The potential terrorist will also try to evade detection by attempting to hide his or her face by turning away when someone approaches; trying to stay out of sight, behind obstructions, or in "the shadows" in order to avoid being seen; wearing disguises or anomalous clothing; avoiding eye contact; or leaving an area when the terrorist believes he or she has been detected. Dr. David Givens, at the Center for Nonverbal Studies, Spokane, Washington, talks of how close observation of individuals and their body movements can often determine whether or not they are holding something back or hiding something they don't want you to know.

These indicators may seem somewhat obvious to some of you reading this. However, many people look but do not see. They listen but do not hear. They do not possess the knowledge on the potential value that these indicators may hold. There have been many studies done that have shown that human beings are poor observers when it comes to being aware of their surroundings and what's happening in them. It is very disheartening when you hear stories of a tragic attack or incident where the eyewitnesses are on the news describing the perpetrators' behavior and activities that "looked weird" or "definitely not normal." What were all the others looking at? I have flown through Logan Airport, where I am based for the TSA, in a suit and have been recognized by many non-TSA airport employees. Yet when I am in street clothes, it is amazing how I have walked right by those same

people without being recognized! Dismissing activity as “probably nothing” or “looking” but not “seeing” is going to allow possible criminal, including terrorist, activity to go on undetected.

This new behavioral approach better balances the use of technology to meet the goal of the TSA and law enforcement to ensure a safe aviation experience. Many security officials and agencies are increasingly realizing the value of the human interaction when engaging potentially suspect activity because the only thing all terrorist attacks have in common is the presence of a human being. Not just any human being, but one who has gathered weaponry or explosives and planned and is now attempting to carry out the attack to deliver maximum casualties—all while avoiding discovery. The key is training those officials in decoding and deciphering these nonverbal indicators, with the appropriate caveats so that a credible assessment can occur. But the costs of this assessment are minor—a brief conversation. This small time cost to the traveler is balanced by the potential costs in lives and dollars caused by a successful terrorist attack. The damage to the US economy after 9/11 was measured in thousands of lives and in billions of dollars. In order to protect our way of life from terrorism, we as citizens, security, and police must seek out and engage suspicious behavior before it is too late. We cannot, post 9/11, afford to dismiss any suspicious behavior or activity when it could very well be the beginnings of terrorist preattack planning or operation. We need to find out who these people are and why they are exhibiting suspicious behavior and activity within the environment that the security officer knows intimately. Many times these situations will be resolved as being caused by some innocent reason. But sometimes they are not. It is for these cases that we must be forever vigilant.