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*Dedicated to Global
First Responders*

DIARY



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**Editorial**

Brig Gen (ret.) Ioannis Galatas, MD, MSc, MC (Army)

Editor-in-Chief
C²BRNE Diary

**C²BRNE
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Dear Colleagues,

Some say that the first month of the year is indicative of those to follow. I hope that this is a myth but the current situation with the Chinese (?) coronavirus spreading around and away might become a huge problem worldwide. Let's pray that a vaccine will be manufactured on time (Russians are working on that) before the epidemic/outbreak becomes a pandemic. **My special concern**, is the proximity of Japan hosting the 2020 Olympic Games with China – what if ...? (**Jan 24**: It seems I was damn right when writing about Japan – 2 cases already).

The **good news** for January is that genetic modification could protect soldiers and civilians from chemical weapons and that omadacyclin might be used for the treatment of people exposed to anthrax.

Be alert, First Responders, 2020 might be a difficult year and always keep in mind that knowledge and continuous training are the only antidotes to fear and ignorance – both contagious!

The Editor-in-Chief





AUSTRALIA



Australia will be killing as many as 10,000 camels because people have complained the camels are drinking too much water during the drought. They will be shot from helicopters. Welcome to 2020

Trends in Terrorism: What's on The Horizon In 2020 – Analysis

By Colin P. Clarke

Source: <https://www.eurasiareview.com/04012020-trends-in-terrorism-whats-on-the-horizon-in-2020-analysis/>

Jan 04 — As we usher in a [new year](#), what trends in terrorism are likely to dominate the global security landscape in 2020? Geopolitical realignments, emerging technologies, and demographic shifts will all contribute to different manifestations of ideologically and politically motivated violence. Much of this will continue to have a transnational dimension, with once seemingly parochial challenges made even more complex as a result of the globalization of violence. The threat posed by transnational terrorism in 2020 thus presents a complex mosaic.

The Islamic State enters 2020 as a [different group](#) than it has been since its rise to power six years ago. The physical caliphate has been demolished, and the organization seems to be at a nadir, especially when compared to its peak, when it controlled massive swaths of territory and maintained a proto-state in the heart of the Levant. The Islamic State will continue to atomize, making the group weaker in some regards, but also making its network more difficult to target since it will be more decentralized. In Iraq and Syria, there are already reports that the group is attempting to rebuild itself, relying on [guerrilla tactics](#) and [hit-and-run attacks](#) against Iraqi security forces and the Assad regime in Syria. Sleeper cells are reportedly [lying in wait](#) to launch attacks, including bombings and assassinations.

The threat posed by [returning foreign fighters](#) to their countries of origin has been lower than anticipated, but there is still a significant number of militants unaccounted for, some of whom may travel to other conflict zones and serve as force multipliers for jihadist groups fighting civil wars or insurgencies in weak and failed states. There is also the question of what will happen to Islamic State members being held in detention camps throughout northeast Syria and elsewhere. Many Islamic State family members are being held in deplorable conditions in camps like the infamous [al-Hol camp](#), which are growing into incubators of radicalization and extremism, as women and children are left [lingering](#) while nation-states [procrastinate](#) over developing responsible policies for dealing with their citizens. There will also be large numbers of terrorists [released from prison](#) over the coming year, with countries struggling to deal with how to reintegrate these individuals back into society.

Al-Qaeda and its affiliated organizations may see an opportunity in the coming year to capitalize on the October 2019 death of Islamic State leader [Abu Bakr al-Baghdadi](#). Even as it lost its heir apparent with the death of [Hamza bin Laden](#), al-Qaeda has gained ground in conflicts in Syria and Yemen, as well as throughout parts of Africa, including both

the [Sahel](#) and the Horn of Africa. If the United States withdraws thousands of troops from Afghanistan, as President Donald Trump has promised, al-Qaeda is well-positioned to take advantage of the resulting power vacuum and regenerate its network throughout South Asia. Al-Qaeda has survived for more than [three decades](#) due in large part to the group's ability to innovate by constantly refining tactics, techniques, and procedures that demonstrate a focus on [organizational learning](#). Al-Qaeda affiliates throughout the globe continue to demonstrate the ability to launch spectacular attacks, evidenced most recently by a truck bombing by [al-Shabab](#) in Mogadishu, killing 80 people.

The coming year may also signal an uptick in terrorism perpetrated by [Shia militants](#). Iran remains the primary state sponsor of terrorism in the world today. Tehran continues to fund, train, and equip an [array of proxy groups](#) with varying degrees of capabilities and objectives. Lebanese Hezbollah is as potent a force as ever, not only fighting in the Syrian civil war, but also maintaining a global footprint and remaining on the cutting edge in terms of its ability to harness emerging technologies like unmanned aerial systems, or drones. Iran has also transferred [advanced weaponry](#), including short-range ballistic missiles, to Shia groups in Iraq, including Kata'ib Hezbollah, the group responsible for a late December [rocket attack](#) that killed a U.S. contractor, wounded several U.S. troops, and triggered a retaliatory strike against targets in both Iraq and Syria. There are a number of potential conflicts percolating in the Middle East—Iran vs. the United States; Iran vs. Saudi Arabia and the United Arab Emirates; Iran vs. Israel—that could see Tehran use its growing networks of proxy fighters to launch sophisticated attacks.

One of the most concerning trends in global terrorism is the proliferation of [violent white supremacy extremist organizations](#) and other groups motivated by various forms of right-wing extremism. Ukraine has served as a [growing hub](#) for transnational white supremacy, with no signs that the threat posed by neo-Nazis and racially and ethnically motivated extremists will ebb anytime soon. On the contrary, these groups appear to be growing stronger and more popular in North America, Europe, Australia, and elsewhere, attempting to mainstream right-wing ideologies and exploiting social media to spread propaganda, recruit new members, and finance their organizations and operations. Shifting demographics in the West, increased migration flows, and



the toxic combination of populism and Islamophobia could all factor into more terrorism by right-wing extremists in 2020. The issue of domestic terrorism has been in the United States, with attacks over the past several years in Pittsburgh, PA; El Paso, TX; and Poway, CA, among others. Given the number of high-profile attacks in 2019, including the Christchurch massacre in New Zealand, violent white supremacy extremists and neo-Nazis may feel emboldened and attempt to use their perceived momentum to recruit more members and plot similarly devastating attacks in the year ahead. The use of social media and live-streaming has added a disturbing dimension to terrorism and increased its utility as “propaganda of the deed.”

Terrorists will continue to experiment with emerging technologies in an effort to gain an asymmetric advantage. Few would be surprised to see a terrorist attack incorporating a drone or swarm of drones in 2020, though the most likely culprit could be a group that receives external state sponsorship. The use of a 3-D printed gun in an anti-Semitic attack in Halle, Germany is also foreboding, signaling a growing sophistication or at least a continued fascination with emerging technologies. Although [artificial intelligence](#) and machine learning present higher barriers to entry for non-state actors, the use of disinformation and so-called “deep fakes” present counter-terrorism forces, including law enforcement and intelligence services, with new and complex challenges. And while social media companies struggle to counter terrorists’ use of social media, the most cutting-edge groups

will forge ahead with new methods of producing and spreading propaganda. There is also a major concern over motivators of political violence that have yet to fully manifest. Terrorism perpetrated by individuals influenced by a [neo-Luddite ideology](#) or perhaps emboldened to use violence to call attention to issues related to climate change and [the environment](#) remain a distinct possibility.

Finally, geopolitics will influence new trends in terrorism. A raft of protest movements swept the globe in the latter half of 2019, from Latin America to the Middle East to Asia. And even as these protests were perfectly legitimate expressions of political and economic grievances, there always exists the possibility for fringe elements to engage in politically or ideologically motivated violence. 2020 could also see an uptick in terrorism in countries like Northern Ireland and Colombia, two countries accustomed to political violence yet which now seem, perhaps mistakenly, relics of a bygone era of terrorism driven by separatism and ethno-nationalism. This seems particularly poignant given the two-decade focus on the Global War on Terrorism, waged almost exclusively against Salafi-jihadist groups and their affiliates. Another major factor will be the second-order effects associated with the United States’ transition away from counter terrorism and toward great power competition. Shifting attention and a reallocation of resources toward focusing on China and Russia, a move that makes sense strategically, will still have consequences.

Colin P. Clarke is a non-resident Senior Fellow in the National Security Program at the Foreign Policy Research Institute (FPRI), a Senior Research Fellow at The Soufan Center, and an adjunct senior political scientist at RAND.

The Army Is Building Avatars that Can Fight Infantry Soldiers

Source: <https://www.military.com/daily-news/2019/08/23/army-building-avatars-can-fight-infantry-soldiers.html>



[A Stryker vehicle commander interacts in real time with a soldier avatar that is operated remotely from a collective trainer. \(U.S. Army photo\)](#)

August 2019 – Infantry squads will soon experience combat training simulations that feature an enemy capable of learning soldiers’ tactics and habits, so the battle is never the same twice.

Army modernization officials are counting on this type of realism from the [Microsoft-built Integrated Visual Augmentation System \(IVAS\)](#), which is scheduled to be ready for fielding in the fourth quarter of fiscal 2021.

IVAS will equip infantry and other close-combat units with a sophisticated set of tactical glasses that will display a soldier’s weapon sight reticle

and other key tactical information they will take into battle.

But the advanced system will also offer a synthetic training environment that allows soldiers and small units to set up an augmented reality training scenario almost anywhere, Brig. Gen.



Anthony Potts, commander of Program Executive Office Soldier, told defense firms at [a recent Adaptive Squad Architecture industry day](#).

"I need an E-5 or an E-6 to be able to set up his own training. ... They can walk in, they can scan a room and they can download that scan. And he can go in there and put his avatars -- however big a force that they want to go against -- and they can populate that room and have a four-man stack go in and clear that room," Potts said.

Many younger soldiers are used to playing high-quality, first-person shooter games, but what's different about IVAS is that it will use machine learning and artificial intelligence to control the "behaviors of the avatars that our soldiers are going to go against," he said. "You know the way we have done things in the past -- you learn behaviors and finally you realize every time I go in to a room, the same avatar is in the same place ... and I finally realize I can just stick my weapon around the corner and shoot him, and now I am the hero of the day," Potts said.

"AI is also going to ensure that those avatars will begin to learn how you clear a room, so the second time you go in there and you think that avatar is going to be behind the door just like he was the first time, he's not," he said. "He is going to have moved himself and given himself a position of advantage."

The Army awarded a \$480 million contract to Microsoft in late 2018 to make this a reality for close-combat units.

Modernization officials have scheduled "Soldier Touchpoint 2" for late October so soldiers can do another hands-on evaluation of IVAS.

"I can tell you, we know we can do everything we need to do with IVAS," Potts said, expressing his confidence to defense reporters.

"I know I can technically meet all the requirements, but what we really care about after that, is do the soldiers love it? Do they want to wear it? Is it something they want to fight with? Because if they don't, we just wasted a lot of taxpayer dollars," he said. "So, our number-one criteria ... is do soldiers love it, and that is what we are driving toward."

Why veil restrictions increase the risk of terrorism in Europe

Source: <https://blogs.lse.ac.uk/europpblog/2019/12/17/why-veil-restrictions-increase-the-risk-of-terrorism-in-europe/>

*Several countries across Europe have put restrictions on wearing veils in public spaces. Drawing on a new study, **Stuti Manchanda and Nilay Saiya** write that far from helping to combat extremism, these restrictions are strongly and positively correlated with an increase in terrorist activity. They suggest this may be due to veil restrictions generating resentment among Muslim communities and causing Muslim women to become more isolated from the rest of society.*

In 2011, France became the first European country to pass a nation-wide ban on the wearing of the full-face Islamic veil in public spaces – a law that was passed nearly unanimously by the French parliament and upheld by the European Court of Human Rights in 2014. Since then, several other European states – Belgium, Bulgaria, Austria, the Netherlands and Denmark – have followed suit in banning or restricting the wearing of Islamic face veils. Other countries like Italy, Spain and Switzerland enforce partial veil prohibitions in certain cities or regions. While these laws do not mention Islam or Islamic headgear by name, instead referring generally to any garments covering the face in order to avoid violating anti-discrimination provisions, they are widely believed to be targeted at Muslims and, for this reason, are often referred to as “burqa bans.”

Proponents of restrictions on Muslim veils make three main arguments.

First, they claim that enveloping Islamic veils present a physical security threat, insofar as Muslim women might use these traditional Islamic garments to conceal weapons or explosives. “You could carry a rocket launcher under your veil”, as the former President of Latvia, Vaira Vike-Freiberga,

put it. Similarly, Paul Nuttall, former leader of the UK Independence Party, justified banning the burqa on similar physical security grounds: “Obviously we have a heightened security risk at the moment and for CCTV to be effective, in an age of heightened terror, you need to be able to see people’s faces.” Finally, British Prime Minister, Boris Johnson, [compared](#) Muslim women in veils to letter boxes and bank robbers.

A **second** claim made by proponents of veil restrictions is that the veil represents a lack of proper Muslim integration into mainstream European society, which, in turn, creates populations vulnerable to radicalization. In this view, the different Islamic headgears cover the face and prevent the participation of Muslim women in society. By banning outward symbols of Islam, so the argument goes, European Muslims will be better able to integrate into mainstream culture. As explained by Belgian politician Bart Somers, “All clothing which covers nearly the entire face dehumanizes the individual who wears it. It alters the capacities of the



human being as a social, communicative, and participatory individual, as a human being capable of recognizing others and able to be recognized in society.”

Finally, some see the veil as a powerful symbolic threat associated with terrorism. In this view, the veil and other traditional Muslim garb represents a symbol of Islamic extremism. Those who don it side with extremist Islam instead of the secular West and seek to promote a radical political ideology of Islamism throughout the continent.



Protest in Copenhagen against restrictions on the wearing of veils in public, Credit: Klaus Berdiin Jensen (CC BY-NC-SA 2.0)

All three of these arguments are grounded in what political scientist Jocelyn Cesari terms the “securitization of Islam.” The securitization of Islam constructs Islam as a direct security threat that needs to be addressed separately from normal legal and political processes, including restrictions on the dress of Muslim women. Some empirical studies have corroborated the securitization thesis by revealing the considerable rise of governmental and societal discrimination against Muslims in western democracies in the name of national security.

In a [new study](#), we sought to test these claims about the veil against the empirical record. Using a unique dataset of Islamist terrorist attacks in Europe from 2003-17, we examined whether restrictions on the veil corresponded to an increase or decrease in Islamist terrorism. Specifically, we examined four different constructs of terrorism—terrorist attacks, fatalities from terrorist attacks, injuries from terrorist attacks, and both fatalities and injuries from terrorist attacks. We examined the predictive power of veil restrictions on terrorist attacks and casualties compared to a number of political, economic and demographic correlates of terrorism as established in previous studies.

Our analysis revealed that the presence of veil restrictions as a result of laws or policies prohibiting face coverings is strongly and positively correlated with terrorist activities, irrespective of the measure of terrorism we use and the

inclusion of alternative explanations for terrorism. For example, **we found that countries with veil restrictions experienced almost 15 times more cases of Islamist terrorist attacks than countries without such bans and 17 times more fatalities from these attacks.**

Might it be that the positive relationship we find exists because terrorist attacks prompt countries to enforce veil restrictions? Our numerous statistical tests for this possibility revealed that terrorist strikes do not precede but rather follow veil restrictions. Moreover, we found that in countries that have enforced restrictions on the veil, only 8 terrorist attacks occurred before the restriction was put in place and 54 after.

What accounts for this relationship between the restriction on the veil and increased terrorism? We posit two explanations. **First**, instead of encouraging integration, veil restrictions result in greater isolation of Muslim women who feel as if they are not free to be themselves in public, owing to social stigmatization, scapegoating and even physical attacks. This reality may lead women to becoming more accepting of the idea that violence is an appropriate way to change the status quo and make them less likely to impede the process of radicalization. Sometimes, women themselves might even become involved in terrorism.

A **second** possibility is that veil restrictions, as a form of religious repression, lead to the generation of resentment among Muslim communities and heighten the likelihood that some within those communities will engage in violence against governments deemed to be acting unfairly towards them. Indeed, restrictions on veils have been used as a powerful recruitment tool by Islamist extremist groups who claim that such restrictions amount to an attack on Islam. Terrorists have cited limits on veiling as a key consideration in their decision to join militant organizations. In short, veil restrictions are dangerous because they engender grievances, facilitate collective action and, sometimes, provoke violent backlash.

Our analysis carries important policy ramifications as bans on Islamic headgear are currently being debated globally. Bans on Islamic face coverings can be critiqued from a human rights perspective, insofar as they violate rights to free religious expression and non-discrimination for Muslim women. But as our analysis shows, such bans also have dramatic security implications; countries imposing veil restrictions experience more terrorism events and casualties from those attacks. Our findings underscore the need for cultural and religious sensitivity towards immigrant groups as the foundation for effective national security policies.

Stuti Manchanda is a PhD Candidate in Public Policy and Global Affairs at Nanyang Technological University, Singapore.



Nilay Saiya is Assistant Professor of Public Policy and Global Affairs at Nanyang Technological University, Singapore. He is author of the book Weapon of Peace: How Religious Liberty Combats Terrorism (Cambridge University Press, 2018).

Sports Travel Security

Author: Peter Tarlow

Source: <https://www.elsevier.com/books/sports-travel-security/tarlow/978-0-12-805099-6>

Sports Team Security examines the security needs for sports teams and events of all sizes. This groundbreaking book provides a fundamental model for sports team security that can be applied almost universally, from youth sports to the Super Bowl and World Cup.

The book develops, compares, and contrasts current methodologies in sports security, for both amateur and professional athletes, examining which paradigms work best and under which circumstances. This valuable information is applicable to nearly anyone involved in the safety of athletes, including event managers, law enforcement, parents, school administrators and coaches, security practitioners, tourism industry professionals, and legal professionals. It explores areas rarely investigated, providing key advice for creating best practices and guidelines in sports team security.

Key Features

- Examines sports team security methodologies, helping to determine which paradigms work best and under which circumstances
- Provides a generic template for sports team security, with checklists and log sheets provided for each type of system
- Discusses sports team security in relation to large and small teams, and even in single-player sports, as well as unique requirements to accommodate differences in age, culture, climate, language, geography, religion, and gender
- Reviews security for special-needs athletes for events like the Special Olympics or Paralympic Games
- Applies academic and practical knowledge for both security students and practitioners



Readership

Physical and Information Corporate Security Managers, Supervisors, Executives, and other Practitioners. Security Management students.

Dr. Peter E. Tarlow is a world-renowned speaker and expert specializing in the impact of crime and terrorism on the tourism industry, event and tourism risk management, and economic development. Since 1990, Tarlow has been teaching courses on tourism, crime, and terrorism to police forces and security and tourism professionals throughout the world. He is also a founder and president of Tourism & More Inc. (T&M).

Why has Italy avoided jihadist terrorist attacks? Our research helps explain.

By Stefano Bonino and Andrea Beccaro

Source: <https://www.washingtonpost.com/politics/2019/12/24/why-has-italy-avoided-jihadist-terrorist-attacks-our-research-helps-explain/>

Dec 24 – On Nov. 29, London Bridge was the site of another [terrorist attack](#). Usman Khan, a 28-year-old convicted on terrorism charges in 2012 and then released from jail last year, [stabbed two people](#) to death and injured three others. British police shot and killed Khan, and the Islamic State [claimed responsibility](#) for the attack the following day.

A week later, a Saudi trainee at a Navy base in Pensacola, Fla., killed three sailors before military security shot him dead. The Navy grounded nearly [300 Saudi trainees](#) while the FBI investigated the



incident as a [presumed terrorist attack](#).

These two acts jolted [Western governments](#) and security agencies to the risk of jihadist terrorism. In fact, disrupted terrorist attacks [increased](#) substantially in Europe last year — between 2015 and 2019, Belgium, Denmark, Finland, France, Spain, Sweden, the Netherlands and the United Kingdom all were targets of terrorist attacks.

So how is Italy the exception?

Italy [hasn't suffered](#) a successful large-scale jihadist attack — even though Italy is a member of the global coalition against the Islamic State, participates in the fight against the group and has been threatened with terrorist attacks.

The cradle of Western civilization, host of the Vatican City, and a powerful E.U. country and close ally of the United States surely would make Italy a target for al-Qaeda and the Islamic State's terrorism. Our [research](#), recently published in "Studies in Conflict and Terrorism," demonstrates several reasons behind this Italian exceptionalism. Here are four things to know:

1. Deportations have proved effective

A cornerstone in Italian counterterrorism — administrative deportations of foreign nationals suspected of being involved in terrorism — likely offers a partial explanation of why jihadists haven't been successful in targeting Italy.

Since 2015, [Italy has expelled](#) and returned about [400 people](#) to their country of origin. This approach is [controversial](#) for avoiding due process but seems to have been effective in preventing dangerous people from proselytizing and striking against Italy.

Unlike the scenario in France, Belgium and the United Kingdom, all of which have [homegrown jihadists](#), Italy's approach has proved especially effective, because most of the people whom security forces identify as possible threats are not Italian citizens.

2. Italy has established a highly centralized collaboration

In May, the Italian government [showcased](#) its Anti-terrorism Strategic Analysis Committee (CASA) to 30 different global security services. CASA was established within the Ministry of Interior in late 2003 and operates as a common platform where Italian security forces share information about terrorist groups, intelligence, people and threats. The goal is to centralize information and intelligence from different sources and security forces to improve anti-terrorism prevention activities, to coordinate operations against groups or people suspected to be related to jihadist movements, and to share intelligence.

3. Italian security forces have decades of experience

A third key element is Italy's deep experience fighting international and domestic terrorism for many decades. Italian security forces developed counterterrorism procedures during the [Anni di piombo](#) ("Years of Lead") — a period of social and political turmoil marked by a wave of both left-wing and right-wing terrorist attacks from the late 1960s through the 1980s. In this period, the [Brigate Rosse](#) (Red Brigades), a left-wing terrorist group, was responsible for numerous violent incidents, including assassinations, kidnappings and robberies.

The government managed to dismantle the Brigate Rosse in the 1980s. New cells reappeared a decade later, striking at the heart of Italian institutions. The resurgent group killed [Massimo D'Antona](#), labor law professor at Rome's Sapienza University and a government adviser, in 1999, then in 2002 killed professor [Marco Biagi](#), an economic adviser to then-Prime Minister Silvio Berlusconi. The joint work of intelligence and law enforcement agencies rounded up these terrorist cells. Italy's security forces since then have put their experience and resilience to good use in combating jihadist terrorism.

4. There have been jihadist terrorist activities — but no successful terrorist acts

It would be inaccurate to depict Italy as a land where jihadist terrorism does not take place. In fact, as we show in our study, in Italy there have been small-scale terrorist attacks, albeit not as successful, [bloody](#) or [well-organized](#) as those in other European countries. The country has also experienced terrorism activities, as some of the perpetrators of the attacks in Europe have family or criminal links with Italy.

There are two noteworthy cases. In 2009, a Libyan named [Mohammed Game](#) tried to drive into the Santa Barbara barracks near Milan. He loaded his car with four kilos of triacetone triperoxide but did not manage to explode it. In 2013, an Italian convert to Islam named [Giuliano Delnevo](#) allegedly died in Syria fighting for Jabhat al-Nusra, an al-Qaeda offshoot group.

But Italy is similar to countries such as [Scotland](#), where the Muslim community [has not radicalized](#) to the extent it has in other European countries. Indeed, just over 120 foreign fighters have left Italy to fight in conflict zones in Syria and Iraq — such numbers are [much lower](#) than in the United Kingdom or Germany.

Like Scotland, Italy has avoided the "ghettos" that have formed in [France's suburbs](#), or [Molenbeek](#) in Belgium. This has helped avoid clashes between Muslims and non-Muslims in Italy.

Italy also seems to lack a large second and third generation of Muslims, and there



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seems to be [little resentment](#) among immigrant communities for either Italian colonial history or foreign policy. No doubt these factors also play a role in the absence of a large jihadist foothold. While not all aspects of the Italian model are

applicable to other European countries, some elements, such as the CASA, could certainly be taken as an example of "intelligent" intelligence-sharing.

Stefano Bonino is an Italian scholar and a Fellow of the Royal Society of Arts. He is the author of "[Muslims in Scotland: The Making of Community in a Post-9/11 World](#)" (Edinburgh University Press 2016), which was shortlisted for the Saltire Society Research Book of the Year Award 2017.

Andrea Beccaro is adjunct professor in security studies at the University of Turin. He is the author of the article "[Modern Irregular Warfare: The ISIS Case Study](#)" (Small Wars & Insurgencies, 2018).

'Like al Qaeda on steroids': Intelligence officials warn that ISIS is again growing rapidly in Iraq

Source: <https://www.theblaze.com/news/isis-growing-again-in-iraq>

Dec 23 – Two years after losing its last territory in Iraq, the Islamic State is now rapidly growing a new and more sophisticated presence in the country, intelligence officials [told BBC News](#) Monday.

According to Lahur Talabany, a top Kurdish counterterrorism official, the ISIS militants have also now become more skilled and more dangerous than al Qaeda.

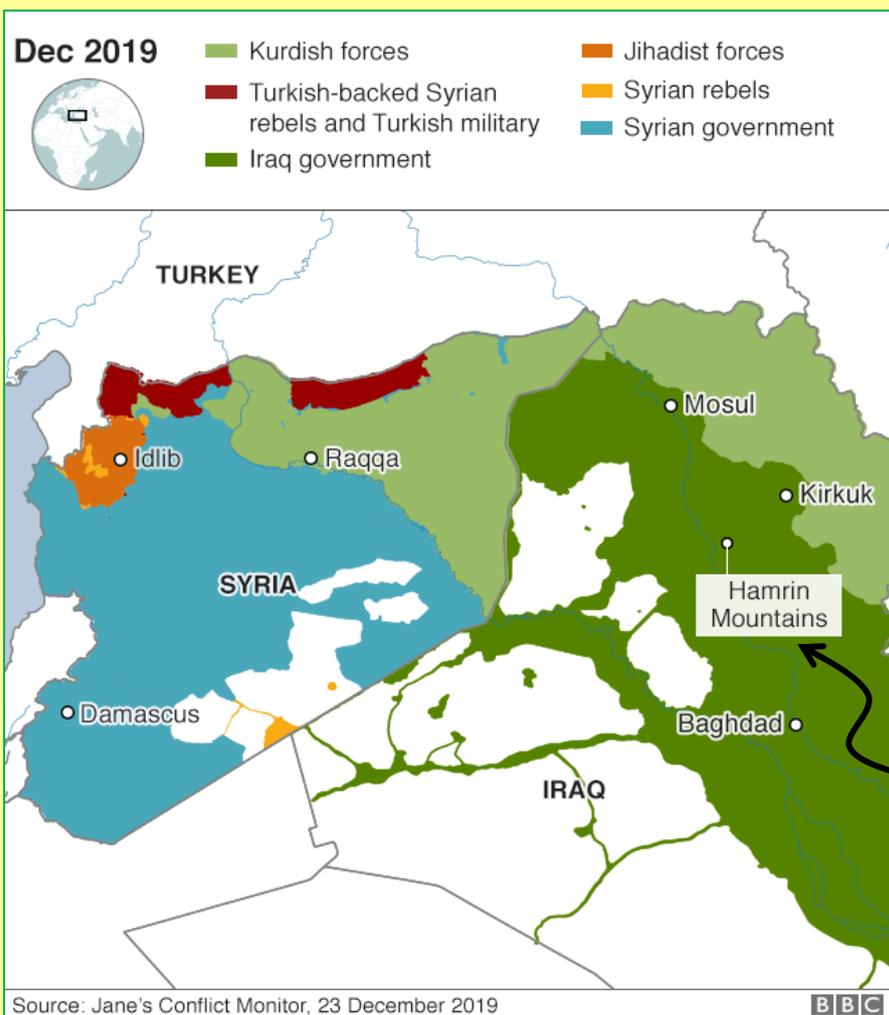
"They have better techniques, better tactics, and a lot more finances at their disposal," he said. "They are able to buy vehicles, weapons, food supplies and equipment ... technologically they're savvier. It's more difficult to flush them out. So, they are like al Qaeda on steroids."

Talabany, who is head of the Zanyari Agency, one of two intelligence agencies in Iraqi Kurdistan, said he is not sure where exactly the terrorist organization's treasure trove of money has come from but that ISIS seems to have "a lot more money than al Qaeda had in the old days."

ISIS has apparently taken advantage of the dispute between Baghdad and the Kurdistan Regional Government by taking control of large swathes of land that have been left unmanned during the conflict. **The huge territory, from Diyala to Mosul, which encompasses nearly all of northern Iraq, is now being patrolled by ISIS forces,** he said.

Learning from past mistakes, **ISIS has gone underground to avoid being targeted, preferring to conduct operations from Iraq's Hamrin Mountains.**

"This is the hub for ISIS right now," Talabany said, according to the BBC. "It's a long range of mountains, and very difficult for the Iraqi army to control. There are a lot of hide-outs and caves."



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What's the background?

At its height, ISIS controlled roughly a third of both Iraq and Syria. But in March, the terrorist group was driven from its [last territory](#) in either country when Syrian Democratic Forces in a U.S.-led coalition defeated ISIS at Al-Baghuz Fawqani. Later, in another major blow to the terrorist group, leader [Abu Bakr al-Baghdadi was killed](#) during a U.S. special forces raid in Syria.

ISIS had been defeated as both a standing army and a caliphate with their territory gone and leader dead, but many feared that the terrorist group would soon reorganize and grow again.

In an announcement regarding the news of ISIS' territorial defeat in March, Secretary of State Mike Pompeo announced that the mission "hasn't changed" and that "we still have work to do to make sure radical Islamic terrorism doesn't continue to grow."

If the recent intelligence is accurate, then it appears that ISIS has indeed changed tactics and rebuilt.

"We see now the activity increasing, and we think the reorganization stage is over now," Talabany said.

IMB Piracy & Armed Robbery Map 2019

Source: <https://www.icc-ccs.org/index.php/piracy-reporting-centre/live-piracy-map>

This live map shows all piracy and armed robbery incidents reported to IMB Piracy Reporting Centre during 2019. If exact coordinates are not provided, estimated positions are shown based on information provided. Zoom-in and click on the pointers to view more information of individual attacks. Pointers may be superimposed on each other.



📍 = Attempted Attack 📍 = Boarded 📍 = Fired upon 📍 = Hijacked 📍 = Suspicious vessel

Cabinet weighed 2000 Olympics terror risk

Source: <https://www.9news.com.au/national/cabinet-weighed-2000-olympics-terror-risk/4c9e0cad-e3c7-40a4-a5ec-f25c22d4ff74>

Jan 01 – With preparations for the Sydney 2000 Olympics well under way, there was growing concern of a terrorist attack using nuclear, chemical, biological or radiological weapons.

The Australian Security Intelligence Organization assessed the risk as medium, based on a low level of threat but very high level of harm if it actually happened.

That level was the same as for other potential threats such as bombings or violent protests.

Cabinet documents for 1998 and 1999 - released by the National Archives of Australia - show government officers involved in the Games' preparations were concerned that virtually no planning was being undertaken in NSW to counter the terrorism risk.

"This was primarily due to lack of expertise and knowledge of both the phenomenon and the appropriate counter-measures," according to a minute marked Secret Austeo, considered by the national security committee of cabinet on June 1, 1998.

The minute noted there was no information that anyone was actually plotting such an attack.



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"Nevertheless, the likelihood of a NBC (nuclear, biological or chemical) attack could change quickly depending on the international situation in the period leading up to the Games," it said.

The prospect of anyone importing or manufacturing an atomic bomb without detection was regarded as remote.

But materials were available in Australia to manufacture chemical, biological or radiological weapons which would be most effective in confined spaces and against large groups of people.

Targets could include major venues and transport nodes such as railway stations and also particular participants such as US or Israeli teams, their accommodation and training venues.

However, the most likely threat against the Games was assessed as being a hoax, which would need to be treated as a genuine threat until proven otherwise.

Significantly Defence was at that time looking to enhance its own NBC defensive capabilities, particular for possible operations in the Middle East.

A decision was made to fast-track Defence plans, noting other events such as the Centenary of Federation and CHOGM were coming up.

The federal government had another emerging Games problem - the money.

In February 1999, cabinet decided that "any further request from the NSW government or the Sydney Organizing Committee for the Olympic Games (SOCOG) for financial assistance for the staging of the Games be strongly resisted."

The Commonwealth later backed off a little, deciding at a cabinet meeting in October 1999 that future requests from SOCOG for assistance "be assessed within existing policy parameters and at no net additional cost to the budget".

By the end of 1999, direct Commonwealth support of the games exceeded \$500 million, not counting numerous other costs such as defence, federal police and customs.

This Was the Year That Was

Below we offer the *Homeland Security News Wire's* list of what we consider to be **the ten most important, or telling, security stories, developments, and trends of 2019**. The list is not exhaustive or comprehensive, but rather selective and suggestive. Others may compile different lists. The topics of the stories on the list represent what the U.S. intelligence and law enforcement communities consider to be the most pressing security threats to the United States, among them (not in order of importance): Terrorism, especially far-right and lone-wolf terrorism; cyberattacks on critical infrastructure and ransomware; the security and economic threats posed by climate change; China's drive to infiltrate Western countries' communication infrastructure; Russia's effective attacks on liberal democracies; Iran's march toward the bomb and toward achieving regional hegemony; and North Korea's uninterrupted production of weapon-grade fissile material and more advanced missiles.

[Read more](#)

The Birth of Tragedy

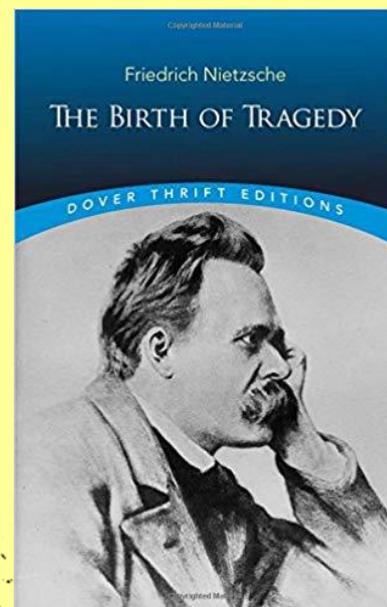
Author: Friedrich Nietzsche

Source: <http://www.russoeconomics.altvista.org/Nietzsche.pdf>

Chapter 15

(Why nobody can destroy Greeks!)

In the sense of this last ominous question we must now discuss how the influence of Socrates has spread out over later worlds, right up to the present and even into all future ages, like a constantly growing shadow in the evening sun, and how that influence always makes necessary the re-creation of art (I mean art in its most profound and widest metaphysical sense) and through its own immortality guarantees the immortality of art. For this fact to be acknowledged, before it was established that all art inherently depended on the Greeks, from Homer right up to Socrates, we had to deal with these Greeks as the Athenians dealt with Socrates. Almost every age and cultural stage has at some time or another sought in an ill-tempered frame of mind to free itself of the Greeks, because in comparison with the Greeks, all their achievements, apparently fully original and admired in all sincerity, suddenly appeared to lose their color and life and were reduced to unsuccessful copies, even caricatures.



And so a heartfelt inner anger constantly kept breaking out against that arrogant little nation which dared throughout time to define everything that was not produced in its own country as “barbaric.” Who were these Greeks, people asked themselves, who had achieved only an ephemeral historical glitter, only ridiculously restricted institutions, only an ambiguous competence in morality, who could even be identified with hateful vices, yet who had nevertheless taken a pre-eminent place among nations for their value and special importance, something fitted for a genius among the masses? Unfortunately, people were not lucky enough to find the cup of hemlock which can do away with such a being, for all the poisons they created—envy, slander, and inner anger—were insufficient to destroy that self-satisfied magnificence.

Hence, confronted by the Greeks, people have been ashamed and afraid. It seems that an individual who values the truth above everything else might dare to propose as true the notion that the Greeks drive the chariot of our culture and every other one, but that almost always the wagon and the horses are inferior material and cannot match the glory of their drivers, who then consider it funny to whip such a team into the abyss, over which they themselves jump with a leap worthy of Achilles.

►► Read the rest of this book at source’s URL.

2020 Conflicts: The Most Likely, and Most Damaging to U.S.

Source: <http://www.homelandsecuritynewswire.com/dr20200109-2020-conflicts-the-most-likely-and-most-damaging-to-u-s>

Jan 09 – Each year since 2008, the Council on Foreign Relations (CFR)’ [Center for Preventive Action](#) (CPA) asks foreign policy experts to rank thirty ongoing or potential conflicts based on how likely they are to occur or escalate in the next year, and their possible impact on U.S. interests.

This year, “perhaps as an indication of rising concern about the state of the world, respondents rated more threats as likely to require a U.S. military response for 2020 than in any other Preventive Priorities Survey (PPS) from the last eleven years,” notes [Paul B. Stares](#), CPA director and General John W. Vessey senior fellow for conflict prevention. “Of the thirty conflicts in this year’s survey, only two were judged as having a low likelihood of occurring in 2020.”

Experts continue to rank threats to the U.S. homeland as top concerns. For the second year in a row, a highly disruptive cyberattack on critical infrastructure, including electoral systems, was the top-ranked homeland security-related concern. A mass-casualty terrorist attack was a close second. A confrontation between the United States and Iran, North Korea, or with China in the South China Sea remain the biggest concerns overseas.

Many of the conflicts identified in previous years have remained concerns for 2020. For the first time, however, four threats from the Western Hemisphere were considered, and three were ranked as top concerns: organized crime-related violence in Mexico, the risk of mass migration from the Northern Triangle (El Salvador, Guatemala, and Honduras), and an intensification of the economic crisis and political instability in Venezuela.

Similar to previous years, experts judged Africa and the Middle East as the most crisis-prone regions in 2020. However, only one conflict was ranked as having a high impact on the United States: an armed confrontation between Iran and the United States or one of its allies.

CFR experts [identified](#) thirteen conflicts as top priorities for the United States next year:

Impact: High

Likelihood: Moderate

- A highly disruptive cyberattack on U.S. critical infrastructure, including its electoral systems
- A mass-casualty terrorist attack on the United States or a treaty ally directed or inspired by a foreign terrorist organization
- An armed confrontation between Iran and the United States or one of its allies over Iran’s involvement in regional conflicts and support of militant proxy groups
- A severe crisis on the Korean Peninsula following the collapse of the denuclearization negotiations and renewed long-range missile testing
- An armed confrontation over disputed maritime areas in the South China Sea between China and one or more Southeast Asian claimants (Brunei, Indonesia, Malaysia, Philippines, Taiwan, and Vietnam)
- A severe crisis between Russia and Ukraine following increased fighting in eastern Ukraine and/or a major military clash in contested areas
- Deteriorating economic and security conditions in the Northern Triangle (El Salvador, Guatemala, and Honduras), resulting in increased migration outflows from the region



Impact: Moderate**Likelihood: High**

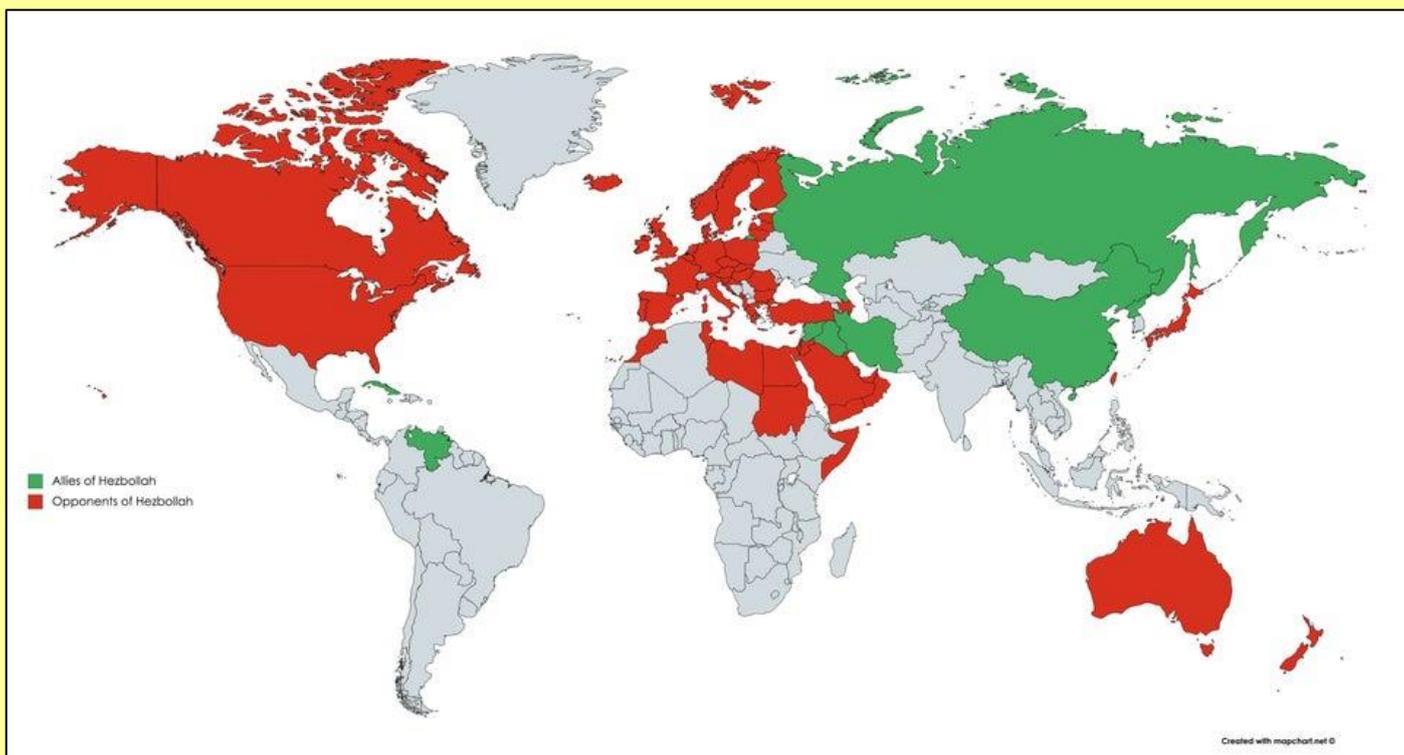
- Intensification of organized crime–related violence in Mexico
- Increasing political instability in Iraq exacerbated by underlying sectarian tensions and worsening economic conditions
- Escalation of violence between Turkey and various Kurdish armed groups within Turkey and/or in Syria
- Continued violent reimposition of government control in Syria leading to further civilian casualties and heightened tensions among external parties to the conflict
- Increased violence and political instability in Afghanistan resulting in further advances by the Taliban insurgency and potential government collapse
- Intensifying economic crisis and political instability in Venezuela leading to further violent unrest and increased refugee outflows

▶▶ CFR has been conducting these expert surveys since 2008, and the full results of prior surveys are available [here](#).

Iran and Hezbollah's Presence Around the World

Source: <http://www.homelandsecuritynewswire.com/dr20200110-iran-and-hezbollah-s-presence-around-the-world>

Jan 10 – In the days since the U.S. strike that killed Iranian Quds Force commander Major General Qassim Soleimani, Americans have heard dire warnings about potential [retaliation](#) by Iran. Eric Halliday writes in [Lawfare](#) that Soleimani's Quds Force, a unit of Iran's Islamic Revolutionary Guard Corps (IRGC) that specializes in unconventional warfare, would be a likely source for such retaliation—but Iran doesn't rely on the Quds Force alone. Instead, the government's ability is enhanced by Iran's extensive network of proxy forces, most notably Hezbollah in Lebanon.



He adds:

Many analysts have zeroed in on Iran's [ability](#) to [retaliate](#) in the Middle East. But Iran's area of influence is not limited to its region. Over the past decade, it has launched operations, either through Hezbollah or its own agents, around



the world—including in Latin America, Eastern Europe, East and South Asia, Western and Central Africa, and within the United States itself.

The U.S. government has repeatedly pursued Iran and Hezbollah's international presence, typically through Justice Department indictments and Treasury Department Office of Foreign Asset Control (OFAC) sanctions, and it has been joined in those efforts by foreign governments across several continents. Together these law enforcement activities paint a picture of Iran and Hezbollah flexing their financial and covert muscles far beyond their base in the Middle East, a pattern that presents ongoing implications for U.S. national security.

Halliday notes that Iran and Hezbollah are not consistently successful in their attempts at terror attacks in foreign countries, but they have spent the past several decades creating international bases of operation, especially in Latin America and Western Africa, which means they already have resources in place which would allow them to strike U.S. interests far outside of the Middle East. "Above all, the most concerning development in the past decade has been Hezbollah's activity inside the U.S.," Halliday writes. "The lethality of the bombings in Argentina and Bulgaria are stark reminders that Iran, either on its own or in tandem with Hezbollah, is capable of attacking its enemies in many parts of the world—and has historically been very willing to do so."

Here's Why Young People Are Attracted to Terrorism

Source: <http://www.homelandsecuritynewswire.com/dr20200113-here-s-why-young-people-are-attracted-to-terrorism>



Jan 13 – **So why do young people continue to be attracted to the ideas of both Islamist and far-right groups?**

Nikita Malik, the Director of the Centre on Radicalization and Terrorism (CRT) at the Henry Jackson Society, writes in [Forbes](#) that she has studied why young people voluntarily join terrorist organizations, or become committed to a violent extremist ideology. She writes that greater sense of agency and intent, as well forethought and research, goes into decisions made by teenagers who choose to commit crimes such as joining or assisting a terrorist group. As is the case with gangs, it is children themselves who operate in groups and encourage each other, often providing material support and logistical planning among themselves.

While no generalizations can be made, there are a few 'push' and 'pull' factors common to the cases. The first is group mentality, as outlined by the cases of Islamist-related terrorism above. The second is escape from violent home conditions, racism, or lack of opportunities at home. A key pull factor is marriage, and 'fame'. Many of these cases, particularly those who managed to successfully join terrorist organizations abroad, have become household names. Moreover, once abroad, foreign youth continued to enable to propaganda arm of terrorist groups such as Islamic State, reaching out to friends at home encouraging them to join the organization.

Age is critical to radicalization, as young people tend to be drawn to extreme ideas to help them make sense of the world. While long-term 'deradicalization' programs can be effective, longitudinal studies should also focus on how terrorist offenders, like other criminals, tend to grow out of extremely violent ideas with time and experience.

She concludes:

As well as on focus on 'why' when understanding preventative approaches, we must also push towards constructive measures to rehabilitate. Due to similar motivating factors regarding recruitment and retention of members, gangs offer an appropriate framework to youth in terrorist groups. Therefore, there is no need to re-invent the wheel, so to speak. Instead, a study of best practices in helping children vulnerable to gangs can inform rehabilitation policy towards youth convicted of terrorism.

Europe under Siege from People-Smuggling Gangs

By Soeren Kern (Gatestone Institute)

Border authorities in countries across the European Union are struggling to stanch renewed flows of illegal migration. More than 126,500 migrants from Africa, Asia and the Middle East illegally entered the EU during 2019, [according](#) to the International Organization for Migration.

Illegal immigration throughout Europe continues unabated. In France, for instance, nearly 20,000 migrants were [arrested](#) in 2019, according to the police website *France Bleu*, which also [reported](#) that 189 people smugglers were arrested.



In Britain, *The Telegraph* newspaper [reported](#) that Albanian people smugglers were posting advertisements on social media platforms, including Facebook, promoting their ability to get people into Europe. The ads are accompanied by TripAdvisor-style feedback comments from “satisfied” customers.

The Telegraph, citing police sources, also [reported](#) that people smuggling gangs generate profits of up to £6 billion (€7 billion; \$8 billion) a year, with migrants often paying more than £10,000 (€12,000; \$13,000) to secure illegal entry into the U.K.

Researcher Tests “Vaccine” Against Hate

By Masood Farivar

Source: <http://www.homelandsecuritynewswire.com/dr20200121-researcher-tests-vaccine-against-hate>

Jan 21 – Amid a spike in violent extremism around the world, a communications researcher is experimenting with a novel idea: whether people can be “inoculated” against hate with a little exposure to extremist propaganda, in the same manner vaccines enable human bodies to fight disease.

The idea is based on something called attitudinal inoculation, a technique that aims to build people’s resistance to negative influences by exposing them to weaker forms of those influences. Developed in the 1960s, the method has been used to help teenagers resist peer pressure to start smoking.

In 2018, Kurt Braddock, a communications professor at Penn State University, conducted a study to see whether attitudinal inoculation could be used against extremism. [The results](#), published in the journal *Terrorism and Political Violence* in November, look promising.

Data Showed a “Very Cool Story”

The data came back showing a very, very cool story about how inoculation works in this context,” Braddock said in an interview. “I found that if you inoculate people against extreme right-wing propaganda or extreme left-wing propaganda, they tend to argue against that propaganda more than if you don’t inoculate them,” Braddock said. “They tend to feel more anger towards the source of the propaganda than those you don’t inoculate. And they tend to think that the extremist groups that produce the propaganda are less credible than if you didn’t inoculate them.”

Two-Step Method

As with other attitudinal inoculation studies, Braddock’s **experiment on 357 participants** — randomly selected from a survey website — entailed two steps.

The first involved warning them that the propaganda material they were about to encounter had been very effective in changing the views of people such as the participants. “

That makes them think that maybe their beliefs and attitudes aren’t as secure as they think they are and if they encounter this propaganda it might change their minds,” Braddock said.

Counter Arguments

Then they were given counter arguments. For example, they were told that exhortations to violence could be refuted by arguing that “protest is fine but violence doesn’t solve the issue,” Braddock said.

Once “inoculated,” the participants (except for a small control group) were invited to read propaganda material produced by two extremist groups — the now-defunct left-wing Weather Underground and the neo-Nazi group National Alliance — and asked to register their reaction.

The response exceeded Braddock’s expectations: those who had been inoculated were more likely than the control group to reject both groups. “The differences were significant,” Braddock said.

Caveats to Findings

As significant as they were, the findings came with caveats. One reviewer noted that the study used propaganda from a group that is no longer around. Another questioned the reliability of such experiments, noting that exposure to propaganda is just one risk factor for radicalization. A more important question is whether the lab-tested method has real-world application.



Braddock acknowledges the limitations. To test out his idea in the real world, he said he plans to conduct follow-up studies on young people who are actively targeted by extremist propaganda.

“Real-World Testing”

That’s the next step,” he said. “I’m really curious to see what shakes out in real world samples.”

Jesse Morton, an-ex jihadi who runs a support organization for former extremists, said the study has some potential use.

Social media companies and educational institutions could potentially use it to develop preventive tools, Morton said.”

There’s a lot of push on [social media companies] to do something about the right-wing extremist threat in general, but I think schools and universities are those that are most set up for benefiting from it,” Morton said.

Google Pilot Program

Under pressure to clamp down on violent content, social media companies have rolled out a variety of anti-extremism tools in recent years. **In 2017, Google launched the “ReDirect Method,” a pilot program that prompted viewers searching for extremist videos on YouTube to watch more positive content.** In some ways, Morton said, the Redirect Method is similar to the anti-hate vaccine Braddock is testing. “We can’t just think about prevention and isolation,” Morton said. “We have to think about the realm of prevention in countering violent extremism, as if it is directly connected to every facet of the radicalization process.”

Masood Farivar covers the Justice Department and the FBI for Voice of America.

The Middle East, Einstein and the Definition of Insanity

By Ed Orazem

Source: <https://citizentruth.org/the-middle-east-einstein-and-the-definition-of-insanity/>

Jan 20 – President Trump recently ordered 3,800 troops back to Iraq, bringing the total in Iraq, Afghanistan, and Syria to over 27,000. What if one of them were your child, your sibling, or your friend? Perhaps one is. How would you justify it? Is the mission clear? Is there an end in sight?

On 9/11, 19 radical Islamists executed a terrorist strike of incredible proportions, killing nearly 3,000 Americans. In response, the US invaded Afghanistan, home of the Taliban, who at the time controlled approximately 75% of the country and provided a safe haven for al-Qaeda and Osama bin Laden. Within five weeks, and with virtually no casualties, the Taliban and bin Laden were banished to the caves of east Afghanistan or Pakistan. Mission accomplished, right? Wrong. For some inexplicable reason we stayed. Now, after 18 years of war and 2,400 American casualties, the resilient Taliban once again control significant parts of the country, providing the leverage to enter peace negotiations with the president. It seems fair to conclude that nothing has been accomplished.

In 2003, President Bush invaded Iraq based on the belief that the country had weapons of mass destruction and was a supporter of global terrorism. As we now know, neither was true. Nonetheless, we toppled the government and, in the process, destroyed the military. The result was a vacuum filled by radical Sunnis (ISIS) intent on creating an Islamic State. Their rise provided a reason to continue our presence. Like in Afghanistan, after 16 years and nearly 5,000 American casualties, Iraq is incapable of defending itself. Its government is a chaotic mélange of dueling Sunnis, Shiites, and Iranian-

supported militias. Based on recent Washington Post reporting, we also now know that our government repeatedly misled the public about the absence of progress on the battlefield. In other words, we were lied to by the administrations of both parties.

So, given all this, why are we still there? In the absence of any reasonable explanation from the administration, we are left to speculate.

Is it still about the oil? Although oil was a compelling motive during the liberation of Kuwait in 1991, surely it no longer suffices in a world where the US is the largest producer, oil companies are selling rather than buying oil reserves, and surviving climate change requires the abandonment of fossil fuels sooner or later.

Is it about deterring Russia? In the context of our Commentary of 1/17, this is not compelling. Recall that Russia spent nine years trying to subdue Afghanistan without success. American assistance to the resistance enabled the rise of Osama bin Laden in the first place. Clearly that didn’t work out.

The most recent motive appears to be deterring Iran. Despite the urging of his administration and the entire global community, President Trump concluded that a 15-year deal with Iran was not enough. By unilaterally withdrawing, he has in effect shortened the deal to a five-year term. By imposing renewed sanctions on Iran, he has created a



situation in which the regime has terrorized its own people to stay in power and begun to fight back through asymmetrical attacks on US and allied assets. Initially patient, the president recently committed what some consider an act of political assassination. Having “made the world safer” through this act, he has recalled Americans from Iraq, introduced more troops, and threatened greater reprisals. Somehow, this doesn’t feel safer.

We can only imagine that Presidents Bush and Obama hoped for the creation of stable, peaceful, democratically elected governments with thriving economies in Iraq, Afghanistan, and Iran. Today, however, embracing this same ambition surely invokes Einstein’s famous definition of insanity:

continuing with the same behavior hoping for a different outcome.

To his credit, President Trump was against endless wars, apparently until now. So, who is left to make the argument for peace? Even Senator Sanders has not provided an unequivocal answer, hedging his calls to withdraw with the caveat “It must be done right.” When asked, he defines “right” as the cessation of terrorist acts in the region, aka more of the same, more insanity.

We should ask our leaders to engage in a fact-based rational discussion of Middle East policy as if the lives of their children depend on it – because the life of someone’s child does.

Ed Orazem is an author for Citizen Truth. He is the founder of OurFutureAmerica.org, a nonprofit dedicated to the promotion of a higher level of fact-based rational discussion and compromise in important areas of public policy.

Norway Government Collapses over Repatriation of IS Terrorist’s Spouse, Kids

Source: <http://www.homelandsecuritynewswire.com/dr20200120-norway-government-collapses-over-repatriation-of-is-terrorist-s-spouse-kids>

Jan 20 – **The Norwegian populist, right-wing Progress Party on Monday pulled out of the coalition after the government agreed to repatriate a woman charged with supporting terrorist groups while living in Syria.**

Finance Minister Siv Jensen, the leader of the Progress Party, announced the move at a press conference, saying that it had become increasingly difficult to get enough of her populist party’s policies through government.

“I brought us into government, and I’m now taking the party out,” Jensen told a news conference.

The *Nordic Page* [reports](#) that the move means that the government of Conservative Prime Minister Erna Solberg has lost its parliamentary majority.

Solberg said, however, that she would stay in office as the head of a minority government, although the loss of a parliamentary majority would make it difficult for her to govern.

Norway’s constitution does not allow for early elections even in the event of a loss of a majority, and the next parliamentary election scheduled for September 2021.

Last week Norway’s cabinet voted to allow the woman to return to Norway with her two children so that her 5-year-old son could receive medical treatment. The three had been living in the Kurdish-controlled al-Hol refugee camp in Syria. The woman, who left Norway in 2013, was arrested upon her return on suspicion of being a member of Islamic State. The woman’s lawyer says she denies the charges against her and will cooperate fully with police.

The Progress Party offered to help the woman’s children, but sought to block the government from providing assistance to adults seeking to return to Norway after marrying foreign terrorists or joining Islamist groups abroad.

The dilemma with which Norway has been grappling is reflected in other countries across Europe, who must decide whether or not to allow their citizens who left to join the fight in Syria or marry IS terrorists to return home. In November, **Germany repatriated a woman suspected of being an IS member along with her three children. Finland’s government recently reached a compromise on the issue, deciding to look at each case individually.**

Inside America’s First All-Biometric Airline Terminal

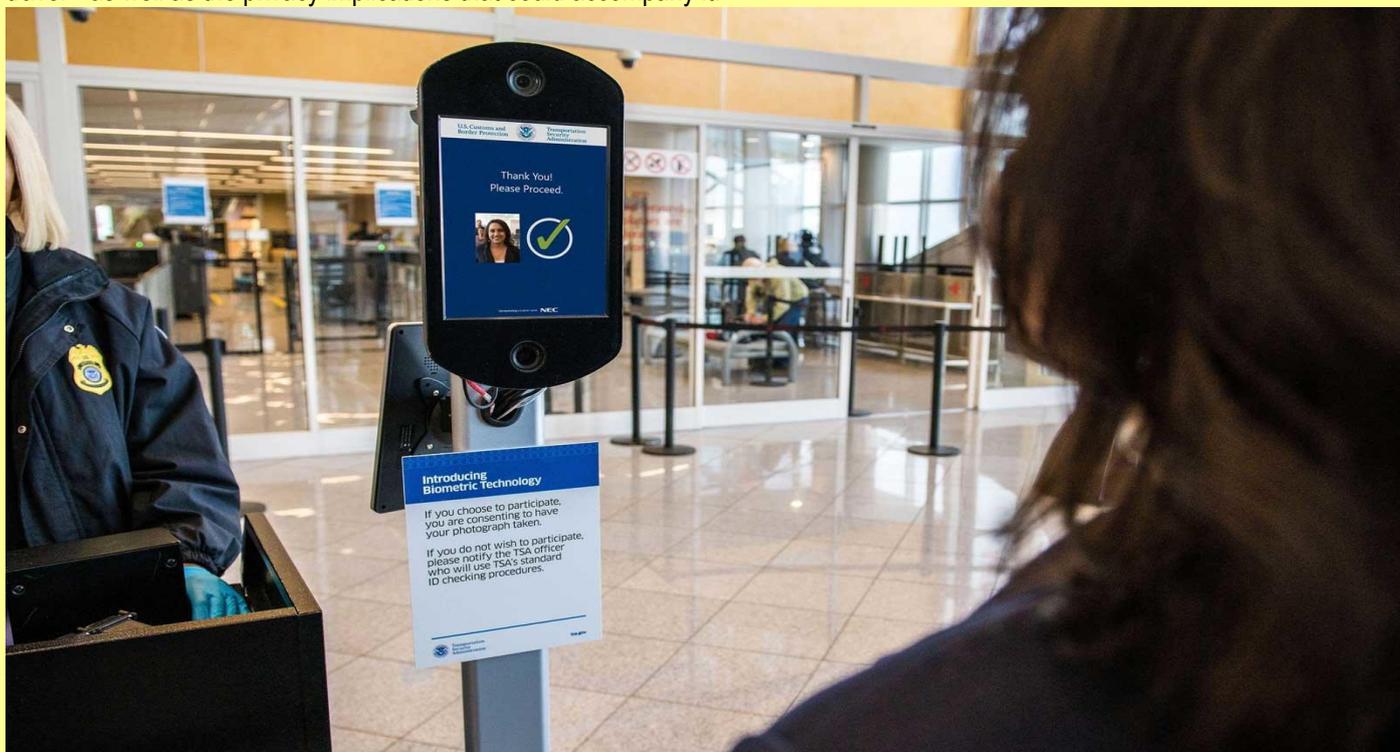
Source: <http://www.homelandsecuritynewswire.com/dr20200122-inside-america-s-first-allbiometric-airline-terminal>

Jan 22 – People still need more than their faces to enter and exit America on international flights, but Brandi Vincent writes in [Defense One](#) that a growing number of early-stage facial recognition [deployments](#) that aim to screen passengers with little human intervention are rolling out at airports across the country.



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At Hartsfield-Jackson Airport in Atlanta, she writes, a multifaceted facial recognition system and process that [scans](#) passengers' biometrics to verify their identities at various points throughout the airport offers a glimpse into document-free but face-scan-enabled travel—as well as the privacy implications that could accompany it.



Late last year the independent executive branch agency [shared its observations](#) of a biometric pilot at McCarran International Airport, which were captured as part of the [ongoing examination](#) of how biometrics are used to validate passenger identities at each phase of travel. Last week, Klein detailed members' recent visit to Atlanta's airport, where they assessed CBP's [biometric exit](#) program and Delta's fully [biometric terminal](#)—the [first](#) of any American airline.



Following a 9/11 Commission-led [investigation](#), in 2004 Congress required CBP to build a biometric system to validate that visitors to the U.S. depart in accordance with the terms of their entry. To do so, the agency produced the [Traveler Verification Service](#), or TVS. Klein said the system is already used beyond Atlanta, at some gates at the Dallas/Fort Worth International, Los Angeles International, Dulles International, and John F. Kennedy International Airports, with more to be added to the list this year. Essentially, TVS [uses](#) existing photos of foreign visitors to the country and of travelers booked on international flights—such as their passport or visa photos—to enable CBP officials to conduct facial recognition checks as people leave, Klein said. Though the agency owns the backend of TVS, the Homeland Security Department is responsible for storing biometric information, the State Department maintains the passport photos and visa photos, and a commercial contractor provides the technical implementations.



Evacuation in the United Kingdom: Reshaping Policy

By Andy Oppenheimer

July 2010 – In December 2009, more than 2,000 people were evacuated from four Eurostar trains that, after breaking down during Britain's worst winter in over 30 years, were trapped in the Channel Tunnel between England and France. Some passengers were



evacuated to shuttle trains that were carrying vehicles, but others were trapped inside overnight without food, water, light, air conditioning, or electricity. Others chose to open the emergency doors and risk walking through the tunnels to find refuge on another train.

An independent study published two months later demanded an "urgent review" of evacuation procedures. It also criticized the "insufficient" contingency plans, the lack of replacement buses, and unsatisfactory attempts to inform passengers of the disruption. The incident highlighted shortcomings in a private U.K. transportation company's evacuation procedure in what was a relatively self-limiting situation. Over the years, there have been a number of incidents that were far more serious, requiring sudden and mass evacuations directed both by local authorities and by the national government. For example, the "7/7" (7 July 2005) bombings on the London transit system claimed 52 lives, injured over 700 others, and brought the capital to a standstill. Although enormous acts of bravery were performed by first responders, underground staff, and the public, much of the passenger evacuation from the tube network was haphazard.

Probably the most valid criticism, though, was that most if not quite all government agencies were ill prepared for the nature of the incident – London's first ever suicide bombings; the lack of preparation was caused principally, it seems, by the poor to non-existent communications between emergency service personnel at the affected stations.

Acts of Government vs. Acts of Nature

Although London remains the United Kingdom's prime terrorist target, other British cities have had unsettling far-reaching experiences with terrorism. In addition, some areas of Britain are more prone than others to industrial and/or nuclear disasters, and/or to weather-related events that necessitate improved response planning. However, the increased terrorist threat did lead to the passing of the Civil

Contingencies Act in 2004 (*before* the 2005 bombings, it is worth pointing out). That Act remains the major legislative plank establishing a framework for multi-agency planning at the local and regional levels to prepare emergency services for flooding and other natural



disasters, terrorism, and major transport and power failures in general.

The 2004 Civil Contingencies Act requires Category 1 responders to maintain and practice plans – usually if not always through tabletop exercises – while taking into account the many organizations that would be involved in an incident. For example, the limited radiological release caused by the poisoning of Alexander Litvinenko in London in late 2006 brought in three government departments, one local council, the Metropolitan Police, the Heathrow Airport Authority, the Health Protection Agency, and the Government Decontamination Service, as well as representatives from overseas authorities. No evacuation was needed, but the operation served as an unintentional “dry run” for responding to an explosive radiological attack in the heart of London.

By 2006, non-statutory government guidance allowed local services to develop their own response plans – and to use more flexible evacuation and shelter measures, based primarily on local needs and the nature and potential spread of an incident – rather than planning for the largest conceivable number of evacuees. The public may be advised, under the revised guidance, to stay put and seek shelter in the nearest suitable building, for example, particularly in the case of a chemical, biological, or radiological (CBR) release.

Large-Scale Evacuations; Varying Lengths of Time

A risk-based approach provides emergency evacuation plans as well as shelter plans for people remaining in their homes or workplaces during an incident. The police decide whether to evacuate civilians but, together with the Fire and Rescue Service (FRS), they receive advice from other emergency services, government departments, and agencies through a “Joint Health Advisory Cell” at the GOLD level, or through Health Advisory Teams (HATs) via central-government crisis-management arrangements.

One of the biggest peacetime evacuations in Britain occurred after the tidal floods of 1953, which displaced over 32,000 from the nation's east coast. More recently – in November 2009, the wettest on record – hundreds of villagers in Cumbria in northern England were evacuated. Because of the unpredictability of floods, citizens usually are advised to stay indoors – on upper floors when and where possible – rather than risk being caught in fast-moving waters. For planning purposes, it is generally agreed that, for evacuation warnings to be effective, U.K. authorities need up to one hour for a breach in flood defenses, up to eight hours when a surge is forecast, and up to 48 hours for river flooding. Inundation maps from flood models have been used to create flood-specific evacuation plans for certain urban areas, primarily because of the highly complex patterns of rising waters blocking normal evacuation routes.

Multiple terrorist attacks or industrial disasters might well necessitate moving thousands of citizens from a relatively large unsafe area. In London and other major cities, a high dependency on public transport requires that temporary shelters and/or alternative means of transport be available for stranded citizens. The planner's nightmare is a major traffic gridlock on Britain's narrow roads and/or the simultaneous stranding of motorists during severe weather conditions. The planners' aim is to stagger the movement of people over longer time frames to help prevent both gridlock and accidents.

Local authorities are tasked with overseeing response, cleanup, and shelter provisions involving schools and other “special-purpose” facilities. Under the Civil Contingencies Act, the authorities also must provide information to businesses on how to secure and protect their assets if their factories and other working premises have to be evacuated. The same authorities, and organizations such as City Security and Resilience Networks (CSARNs), advise on business-continuity plans, and join forces to help train businesses and voluntary organizations involved in response and recovery operations.

For industrial accidents, each site must have a specific plan. Where there has been an accidental or deliberate release of hazardous materials (HazMat), those in the area would be dissuaded from spontaneously evacuating – thereby possibly spreading contamination to other people and locations, especially transit systems. In a radiation event, those in the immediate vicinity are advised to stay inside, with their doors and windows closed, until the threat has passed or they are ordered to evacuate. In the United Kingdom, an accident would be most likely to occur around the world's biggest reprocessing plant at Sellafield, in Cumbria. No matter where the location, though, those needing decontamination prior to evacuation, especially those with additional welfare needs, would require support to obviate their immediate panic and distress. To prevent evacuations prior to decontamination, the police may have to stop people from breaking through cordons.

Training and Exercises in a 24/7 Milieu

The U.K. government program aims to test every aspect of operations from the coordinated central response: (a) through the range of “Lead Government Department” responsibilities; and (b) the involvement of the Devolved Administrations in Scotland and Wales; to (c) the regional tier and local responders. The Civil Contingencies Act also requires Category 1 responders to conduct exercises and enhance the training of staff and



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incident commanders in emergency plans, procedures, and the correct use of equipment. Emergency services agencies develop their own exercise programs to test their own capabilities.

In June 2004, exercise “Triton” tested the evacuation for large-scale flooding in England and Wales. Triton – which was jointly sponsored by the Department for the Environment, Food and Rural Affairs (Defra), and the Welsh Assembly Government (WAG), and involved more than 60 national, local, and regional organizations – was credited with exposing a number of capability shortcomings.

Exercises also must not only test coordination between organizations but also their ability to ensure business continuity as far as possible – with information provided to the public both quickly and without panic. This is a tall order in an era of 24-hour television news broadcasting and the immediacy of the Internet. In addition, though, a report indicating progress of recommendation implementation must be produced within 12 months of the post-exercise report.

Improving Communications: A 24/7 Approach Is Mandatory

Even in a digital era – or possibly even more so – communications are often the Achilles' heel of response during and after incidents. Communicating the implications of a combined response to the public pose huge challenges. Some citizens would be offered *in situ* sheltering in areas where contamination is likely, while others would be evacuated from areas when there is sufficient time to get them out before the most harmful effects – flooding, for example – of the incident kick in.

A Category 1 responder has specific responsibility for warning and informing the public about evacuations. Local authorities already are implementing systems – e.g., text messaging, email, and the Internet – to alert businesses and the public to incidents. However, because no one system suits all evacuation situations, planners must develop a flexible range

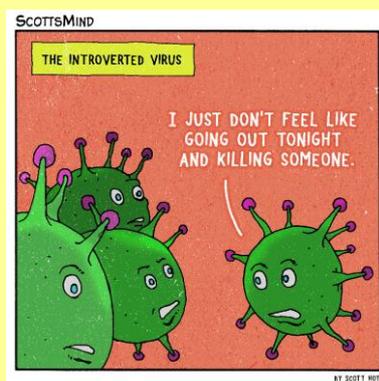
of methods to communicate during evacuations – at different times of the day or night, as well as from a broad spectrum of locations: homes or offices, industrial complexes, shopping malls, ports, and airports.

Of vital importance is the effective use of the media – but many news outlets, unfortunately, tend to provide knee-jerk reactions during the early stages of an incident. An appointed representative of the police or other appropriate responder service, or press office, would almost always, though, feed information to the media constantly. In addition, public-address announcements, through systems such as Sky Shout, would be used as well as face-to-face contact and Tannoy announcements in public areas such as railway stations.

Managing the movement of people would be aided through the use of urban CCTV (closed circuit television) traffic management and control systems, especially in city centers, and would be all-important in providing real-time information on traffic and people flows. Many local U.K. authorities, working in conjunction with local police, have already adopted the priority “Alert” telephonic system to send emergency messages to registered citizens and businesses via SMS text messaging to mobile phones, emails, or pagers.

Two political/technological milestones will help considerably in this area: (1) Approximately £12 million will be spent by Eurostar on a new communications system inside the Channel tunnel. (2) To address the shortcomings exposed during the 7/7 attacks, a new £100 million “Airwave” Tetra-based radio system, overseen by the National Policing Improvement Agency, became fully operational in early 2009 for use both above and below ground. The biggest test for the new system, and for London’s preparedness across the board, will arguably come during the London Olympics in 2012, which is confidently expected to be the United Kingdom’s most costly and extensive security operation in the nation’s history.

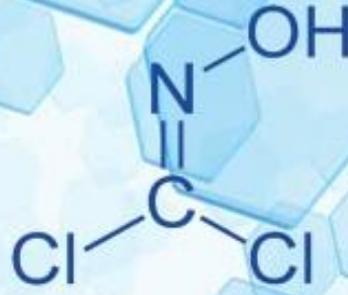
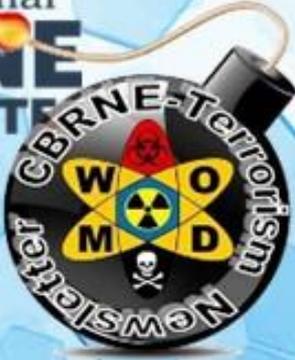
Andy Oppenheimer is an independent UK-based CBRNE (chemical, biological, radiological, nuclear, explosives) consultant and former editor of Jane’s Nuclear, Biological and Chemical Defence. His book (IRA: The Bombs and the Bullets – A History of Deadly Ingenuity) was published in November 2008 by the Irish Academic Press.



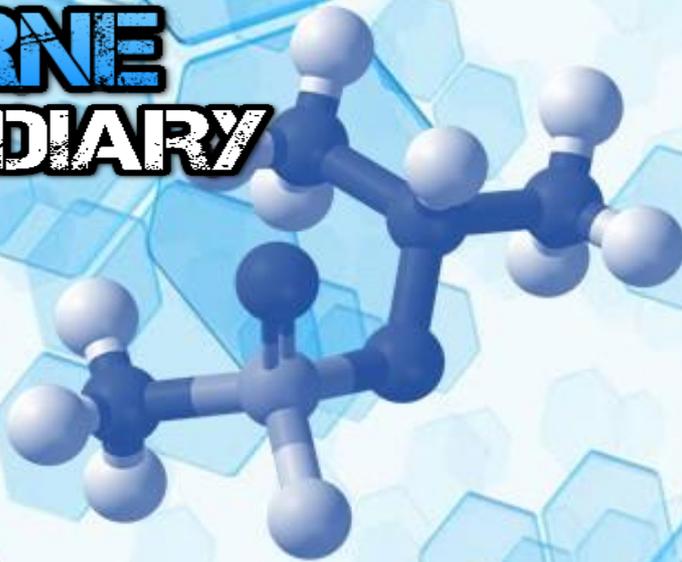
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CHEM NEWS



Boko Haram may adopt chemical, nuclear weapons – NSA warns

Source: <https://www.thenewsnigeria.com.ng/2019/12/boko-haram-may-adopt-chemical-nuclear-weapons-nsa-warns/>

Dec 22 – The office of Babagana Monguno, National Security Adviser (NSA), has released a 60-page document, entitled “National Security Strategy”, through which it warned of the possibility of Boko Haram using chemical, radiological, nuclear and explosive (CBRNE) attacks in the future.

The document, according to a story published by informationng.com, reveals that the Islamic State of Iraq and Syria (ISIS), a terrorist group, which Boko Haram has pledged allegiance, is seeking to possess CBRNE weapons. “This means Boko Haram may use them in its attacks if ISIS obtains the weapons.”



The document has it further: “Transnational organized crime such as illicit financial flow and money laundering, drug and human trafficking, proliferation of Small Arms and Light Weapons as well as proliferation of Chemical, Biological, Radiological, Nuclear and Explosive weapons have a direct impact on our national security,” it said.

“The proliferation of CBRNE weapons and their means of delivery,

the spreading of technological skills required for their production and the possibility of their use constitute a threat to our security.

“Although the implementation of international agreements hinders the proliferation of CBRNE and their means of delivery, the risk of such weapons and materials being acquired by terrorist groups and reaching states providing support for terrorist groups cannot be overstated.

“Terrorist groups, such as ISIS, are believed to have sought to possess CBRNE weapons. Boko Haram terrorists’ affiliation to ISIS and their willingness to use any deadly weapon at their disposal increases the possibility of a CBRNE attack in the future, thereby underscoring the need for a counter-strategy.”

“In furtherance of our national security objectives, we will sustain a whole-of-government approach through strong inter-agency platforms and mechanisms at strategic and operational levels to ensure the realization of counter-terrorism mandates. Under these special platforms, we will conduct timely threat analyses and share information at home and with our partners,” it read.

“In more specific terms, we will strengthen national financial systems in collaboration with international finance systems to prevent and disrupt terrorist financing. We will also deploy strategic communication in aid of security operatives.

“We will partner with domestic and international Information Technology companies to counter violent extremism narratives online. We will upgrade border, maritime, aviation and cybersecurity measures.”

FLIR Fido® X4

Source: <https://www.flir.com/products/fido-x4>

The Fido X4 is a premium handheld explosives trace detector (ETD) that delivers unmatched sensitivity for a broad range of explosives, so you can easily detect threats at levels others can’t. Next generation FLIR TrueTrace® detection technology features a new five-channel sensor array that delivers expanded threat coverage, enhanced sensitivity, and identification in a wide range of environmental conditions. The simplified user interface features onboard video tutorials, user prompts, and color-coded alarms with strength indicators so you can operate quickly and



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decisively. Analysis and reporting of results are made simple through multiple modern connectivity options, allowing critical data to be shared quickly. From high-volume checkpoint and randomized screenings to foot patrol and standoff operations, Fido X4 is ready to go when and where you need it.

Next Level Detection

Next generation FLIR TrueTrace® detection technology features a new five-channel sensor array that delivers expanded threat coverage, enhanced sensitivity, and specific threat identification

Operationally Available

Intuitive interface dramatically reduces training burden and increases end-user adoption and retention; onboard video tutorials, user prompts, and color-coded alarms with strength indicators help operators act quickly and decisively



Designed for The Mission at Hand

Light weight 3.2 lbs, up to 16-hour continuous operation with two hot-swappable batteries, IP54-rated, and MIL-STD-810G compliant so operators can confidently complete their mission in a wide range of environmental conditions



System Overview

Technology: FLIR TrueTrace®; five-channel fluorescence technology;

no radioactive source

Threats: Detects military, conventional, homemade, and liquid explosives

Weight: 3.2 lbs (1.5 kg)

Enclosure & Protection: IP54-rated, molded magnesium and polymer composite casing with anti-corrosive coating

Battery Specification: Up to 16-hour mission time; two rechargeable and hot-swappable Li-ion batteries, each lasting up to 8 hours

AP4C is a portable chemical contamination control device used to detect directly chemical agents in the form of vapor, aerosols, dust and with the S4PE in the form of liquid.

Proengin AP4C

Source: <https://www.proengin.com/chemical-detection/ap4c/>

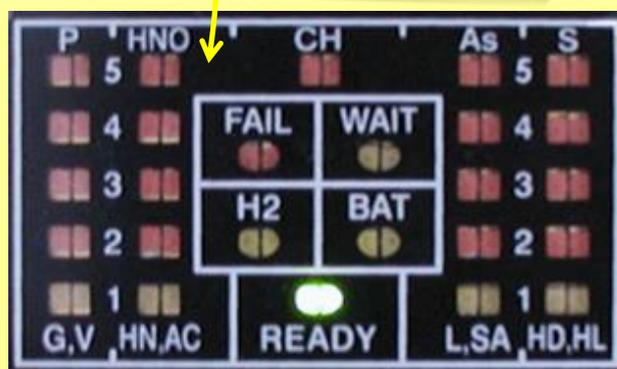
AP4C is the hand held detector with the largest range of detectable products.

AP4C detects compounds of phosphorus (such as all G, V agents: GA, GB, GD, GE, GF, VE, VX), compounds of sulfur (such as H, HD, HL agents, Arsenic compounds (contained in L, SA, DM) and other gases such as Ammonia, Cyanogen chloride, Cyahydric Acid, etc. AP4C detects also all the precursors of the above chemicals.

The high sensitivity and fast response time make the AP4C especially suitable to check up contamination.

It also fits check up after decontamination.

- Detects simultaneously agents on the 4 channels.
- Very sensitive to detect all G agents (GA, GB, GD, GE, GF, VE, VX, etc...) even if the agent is not pure or manufactured in poor conditions.
- Detects agents in all forms: vapor – aerosols – droplets – dust agents and frozen agents.



- Detects liquid agents spread on most surfaces (VX, thickened SOMAN, HD at low temperatures.
- Detects agents in water, on the skin (medical use).
- Capability to detect TIC's: PH₃, PARATHION on P channel – PCI₃, NH₃, NO_x on HNO channel – SO₂, SF₆, CS₂, H₂S, H₂SO₄ on S channel – AsH₃ on As channel. And hundred of others gases.

Forgotten History: In 1943, America Gassed Its Own Troops with Deadly Results

By Michael Peck

Source: <https://nationalinterest.org/blog/buzz/forgotten-history-1943-america-gassed-its-own-troops-deadly-results-109271>

Dec 28 – What a perfect night for a weapon of mass destruction.

It was December 2, 1943. And the Nazi bomber crews flying over the Italian port of Bari might have wondered whether they were actually in a war zone.

Gleaming below, despite the wartime blackout, was a harbor so brightly lit that it illuminated more than thirty ships supplying the Allied armies advancing up the Italian peninsula. Aboard those transports were the usual necessities of modern warfare: ammunition, fuel, food, spare parts.

Except one ship was different: the **American Liberty ship John Harvey**. That blandly named vessel carried **one hundred tons of mustard gas**, contained in hundred-pound bombs, which the United States had sent to the

Mediterranean in case Hitler unleashed chemical weapons in a last desperate bid to stave off the invasion of Fortress Europe.

Surely a ship packed with poison gas would have bristled with defenses against air attack? Yet by



the end of 1943, the Allies had grown complacent: Hitler's Luftwaffe was on the defensive, the wings of its once-vaunted bomber force clipped and its fighters withdrawn back to Germany to battle Allied strategic bombing offensive.

Yet underestimating the Germans was always a mistake. The Luftwaffe was actually far from finished. It had been conducting sporadic bomber raids since the Allies landed in Italy in September 1943, enough that any prudent planner would have ensured ample fighters and flak defended a vital supply port like Bari. Yet on that December night, Bari had neither. The countdown to disaster began on the afternoon of December 2, when a German reconnaissance plane noticed the ships crowding the harbor. Unable to pass up such a juicy target, the Luftwaffe quickly mustered 105 Ju-88 twin-engine bombers capable of dropping up to three tons of explosives apiece.

At 7:25 p.m. that night, a few German aircraft dropped chaff (metal foil) to fool defensive radar, and flares to illuminate the target. Neither was needed.

"Although the raid only lasted 20 minutes, the results were spectacularly successful for the Germans," wrote U.S. Navy Captain D.M. Saunders in a 1967 article in *Proceedings* magazine. "Not since Pearl Harbor had the Allies lost so many ships at one time. Hits on two ammunition ships resulted in explosions of major proportions which shattered windows seven miles away. An oil pipe line on a quay was severed and the gushing fuel soon ignited. Oil and gasoline from burning tankers contributed to this tremendous sheet of waterborne flame which spread over much of the harbor. Ships otherwise unscathed were now enveloped in



fire. All told, 16 ships carrying 38,000 tons of cargo were totally destroyed and eight others damaged that night.”

If only that had been the worst of the horror. The *John Harvey*'s cargo had not yet been unloaded when German bombs destroyed the ship. The mustard-gas bombs had not been armed, so they didn't explode. Nor did they need to, because the ruptured bomb casings allowed liquid mustard to leak into harbor waters shimmering with spilled oil and teeming sailors abandoning their burning ships. Still more mustard drifted through the air as vapors.

As chemical weapons go, mustard gas wasn't the worst, especially compared to ultra-deadly Nazi nerve gases like sarin. But mixed with spilled oil and gasoline, it clung to survivors as well as the rescuers pulling them out of the water.

Even then, the victors could have been properly treated. [Mustard gas](#) (named for its odor, which has been compared to the smell of garlic) had been used extensively in World War I, so doctors knew that victims should be washed off and given uncontaminated clothes. The problem was that the *John Harvey*'s cargo was so secret that most people at Bari didn't know there was mustard present. “Many of the survivors who had been in the water, and those who had had oil splashed on them, appeared in good condition and were sent to an Auxiliary Seamen's Home still clothed in their contaminated garments,” Saunders writes. “Others who appeared to be suffering from shock were merely wrapped in blankets, given warm tea and left alone for 12 to 24 hours— still covered with ‘oil.’” Within a day, medical personnel were puzzled by strange symptoms appearing among sailors, rescuers and Italian civilians. Blast injuries and shock were to be expected from a bombing raid, but not burning eyes and skin blisters. Some 628 victims were afflicted, with eighty-three dead within a month. The Allied high command eventually sent a doctor familiar with chemical warfare to Bari. Though even he wasn't informed of the *John Harvey*'s deadly cargo, he deduced that mustard gas had caused the symptoms, and was able to advise medical personnel (for which he was honored by the U.S. Congress in 1988).

To be fair, Allied leaders worried that publicly disclosing that mustard gas had been sent to Italy would invite Nazi retaliation. But such a disaster could not be hidden for long. In February 1944, the Allies had to admit the incident, accompanied by an assurance that they were not contemplating first use of chemical warfare.

In the end, the mustard gas shipped to Bari proved unnecessary. The Nazis did not employ chemical weapons on the battlefield (though contrary to what President Trump's [press secretary](#) suggested, they did use poison gas to murder millions of Jews and other victims in the death camps). There was no need for the Allies to resort to them, because they were able to defeat the Third Reich with their armies—though they did need two atomic weapons to bring about Japan's surrender.

By the end of World War II, Europe had been devastated by bullet and bomb. Yet at least it had been spared the horror of chemical warfare. Unfortunately, since 1945, the peoples of Syria, Iraq, Kurdistan and Yemen cannot say the same. Bari is a reminder of how tragic their fate is.

Manchester street sealed off after man swallows ‘unknown substance’ thought to be ricin

Source: <https://www.independent.co.uk/news/uk/home-news/manchester-ricin-poison-wythenshawe-police-castor-seeds-swallow-a9270471.html>



Jan 04 – Police sealed off a street in [Manchester](#) after a man ingested an “unknown substance” believed to be [ricin](#).

Emergency responders were seen by a witness arriving at a house in Wythenshawe wearing hazmat suits on Saturday morning.

[Greater Manchester Police](#) (GMP) said officers were called to the house just before 9am following concerns about a man's welfare.

“It was established that the man had consumed an at-this-time unknown substance,” said a GMP spokesman.



“A scene is in place on Moor Lane, which is currently closed to traffic. There is no wider threat to the community.



It is understood the unnamed man, who is in his 20s, consumed poisonous seeds.



He was initially treated at the scene and then taken to Wythenshawe hospital, where he was said to be in stable condition.

Before emergency services arrived, a witness said the man's mother came out of the house in her pyjamas, shouting: "Where are they? My f***ing son is dying in there. Where the f*** is the ambulance."

Neighbors on the street [told Manchester Evening News](#) that paramedics were not allowed into the house until they had suited up.

The man was then carried out in a stretcher in a hazmat suit. He was accompanied by two family members.

EDITOR'S COMMENT: Are castor beans airborne? Is ricin poisoning contagious? Read the following and then answer the questions:

- [A Case of Castor Bean Poisoning](#)
- [Intoxication by ingestion of castor beans](#)
- [Castor beans intoxication \(adults & children\)](#)
- [Accidental Castor Oil Seed Poisoning in Saudi Children](#)
- [Castor bean self-poisoning: Report of a case with blood and urine ricinine measurements](#)
- [Ricinus communis Intoxications in Human and Veterinary Medicine—A Summary of Real Cases](#)



Ha Noi kicks off another regional EU engagement in export control of dual-use items

Source: https://eeas.europa.eu/sites/eeas/files/eu_p2p_cbrn_en.pdf

August 14, 2019 – Dual-use goods (including software and technology) are intended for good purposes but could potentially be misused to harm humans, animals or the environment. Hence, Export Control or Strategic Trade Management aims at allowing exports and imports to be carried out freely, but in critical cases only under a valid license. It is a major contribution to international peace and security. Strategic Trade Management creates trust, a clear conscience, and can even create more business opportunities – in trade and in foreign direct investment. Therefore, it is key for high tech industries and international technology transfer.



The 28 member countries of the European Union (EU) have a system of export control in place. After already more than 5 years of EU engagement in the area of export control of dual-use items in South East Asia, the EU is pleased to be able to continue to share its rich experience in this area with interested partner countries. In this spirit, **the "Kick-off meeting of the EU Partner-to-Partner (P2P) Export Control Programme for Dual-Use Goods in South East Asia 2019 – 2021" took place in Ha Noi on August 14 and 15, 2019.**

The kick-off meeting was facilitated by European and South East Asian experts and brought some 25 participants from the government administrations of 8 ASEAN countries together to set the tone for the continued EU engagement over the next 2 years. Future activities will be based on the achievements already attained by the participating countries during the last years. The kick-off meeting was opened by Prof. Dr. Tuan Khai Nguyen, Director General, Vietnam Agency for Radiation and Nuclear Safety (VARANS), Ministry of Science and Technology, who is the National CBRN Focal Point of Viet Nam, and by Mr. Juan Zaratiegui, Political Officer at the Delegation of the European Union to Viet Nam. Both speakers highlighted the benefits of the ongoing cooperation in the area of export control of dual-use items. The kick-off meeting is an activity under the "EU Partner-to-Partner (P2P) Programme on Export Control of Dual-Use Goods" and at the same time delivered in



the context of the Project 64 of the "European Union (EU) Chemical, Biological, Radiological and Nuclear (CBRN) Risk Mitigation Centres of Excellence (CoE) Initiative". **The EU CBRN CoE covers 61 participating countries in 8 regions of the world.** Its Regional Secretariat for South East Asia is hosted by the Government of the Republic of the Philippines and has the 10 ASEAN countries as members on a bilateral cooperation basis, contributing to a strong international network.

Genetic modification could protect soldiers from chemical weapons

By Jocelyn Kaiser

Source: <https://www.sciencemag.org/news/2020/01/genetic-modification-could-protect-soldiers-chemical-weapons>



Jan 22 – Despite international bans, some countries, such as [Syria](#), use deadly nerve agents against enemy soldiers and civilians. Existing treatments for these chemical weapon attacks must be given quickly and don't always prevent convulsions or brain damage. Now, U.S. Army researchers have created a gene therapy that allows mice to make their own nerve agent–busting proteins, providing protection against the toxicants for months.

The strategy could theoretically be adopted for human soldiers, but it would have risks. A person could develop a harmful immune response to the introduced protein, for example. "There are a number of pros and cons," says biochemist Moshe Goldsmith of the Weizmann Institute of Science, who was not involved with the research.

Nerve agents are chemicals known as organophosphates. The most commonly used type includes sarin, soman, cyclosarin, and tabun. All block an enzyme that regulates levels of the neurotransmitter acetylcholine in muscles, causing muscle spasms, difficulty breathing, and sometimes death. Current treatments, such as atropine and diazepam, work by blocking acetylcholine receptors, but they must be administered right away and can't always prevent permanent neurological damage.

Seeking a better solution, some researchers have injected lab animals with sped-up versions of human enzymes that spur organophosphates to break down before they can cause damage. For example, Goldsmith and collaborators have tweaked an enzyme called **paraoxonase 1 (PON1)** so that it can help the body defang nerve agents faster. But doctors would need to inject a massive quantity of such "bioscavengers" into the bloodstream or [find a way to shield the proteins from the immune system](#) for them to be effective.

So, scientists at the U.S. Army Medical Research Institute of Chemical Defense took a different approach: Turn the liver into a factory for making a bioscavenger enzyme. Led by biochemist Nageswararao Chilukuri, they used a harmless virus called an adeno-associated virus to ferry DNA instructions into the liver cells of mice. The result was the mice's liver cells cranking out a potent version of PON1.

Mice injected with the DNA-ferrying virus soon had high blood levels of the synthetic PON1 enzyme, which remained stable for the 5-month study. The rodents [survived nine normally lethal injections of nerve agents over 6 weeks](#), the Army team reports today in *Science Translational Medicine*.

"We were surprised by how well this protein is expressed and how long it lasted," Chilukuri says. The team also showed the PON1 levels were just as high when the treatment was injected into muscles, a more practical delivery method on the battlefield.

The gene therapy seemed to cause no harm to the mice. And although the animals made antibodies against the foreign PON1 protein, indicating an immune response, the antibody levels were too low to mute the protein's activity against nerve agents. Chilukuri's team suggests the therapy could protect soldiers, first responder medical staff, and military dogs, and could also protect farm workers at risk of being exposed to organophosphate pesticides. These are less toxic than nerve agents but can cause similar health effects at high doses.

"It's a very nice paper, a nice advance in the field," says biochemist Oksana Lockridge of the University of Nebraska, Lincoln. But she and others caution that the revved-up PON1—which contains parts of the rabbit, rodent, and human versions of PON1—is likely to provoke a stronger immune response in people, which could dull its effectiveness or cause severe health effects. **People receiving the therapy might even make antibodies against standard human PON1, which the body uses to process harmful cholesterol, and could end up with an elevated risk of heart disease,** Goldsmith says.

Chilukuri acknowledges the caveats but notes his team didn't set out to solve all possible problems with the therapy. "It's kind of a proof of principle study," he says. "This is one way to keep the bioscavenger working for weeks and months in an animal."

Jocelyn Kaiser has been a staff writer for Science magazine since 1995. She started out covering environmental science, from deformed frogs to melting Antarctic ice shelves. More recently, she took on biomedical research policy and the National Institutes of Health. Her stories have included the buildup of biodefense labs,



financial conflicts of interest, and the graying of biomedical scientists. She also writes about research on gene therapy and cancer. Jocelyn has degrees from Princeton University in chemical engineering and from Indiana University in journalism. She spent 2 years working at GE's corporate research lab in upstate New York before becoming a science writer, initially as an intern at Science and Science News.

CBRN Terrorism: Need for More Deterrence? – Analysis

By Kyler Ong

Source: <https://www.eurasiareview.com/11012020-cbrn-terrorism-need-for-more-deterrence-analysis/>

Jan 11 – The foiled bio-terror attack in October 2019 in Indonesia has refocused attention on the prospects of Chemical, Biological, Radiological or Nuclear (CBRN) terrorism. Following its territorial and leadership setbacks, the likelihood of IS-inspired CBRN terrorist attacks remains low, but may manifest given the right conditions.

According to the Global Terrorism Database (GTD) and IHS Markit, IS orchestrated between 41-76 alleged chemical attacks, mostly involving chlorine and sulphur mustard, in Iraq and Syria between 2014-2017 at the height of its operations. Unprecedented in scale then, it was also likely the first time an Islamist terrorist group had successfully assembled and deployed chemical payloads on projectiles.

CBRN attacks still constitute a terrorism risk in Southeast Asia and beyond. In 2017, Indonesian authorities foiled a plan by a pro-IS Jamaat Ansharud Daulah (JAD) cell to build a radiological dispersal device with uranium-233. In the same year, two IS-linked brothers attempted to use hydrogen sulphide in a foiled attack in Australia. A year later, European authorities disrupted three bio-terror plots by alleged IS-linked elements involving the use of ricin and anthrax. And this October, Indonesian authorities again foiled a suicide attack plot by IS elements using abrin-filled explosives.

Intent, Capability and Opportunity

In counter-terrorism, threat calculations are usually based on the traditional Intent, Capability and Opportunity triad framework. Notwithstanding the absence of any chemical attack claims, IS has justified the use of CBRN weapons in its propaganda materials. The launch of a bio-terror campaign by a pro-IS media outlet, al-Abd al-Faqir Media, in July and August 2018 respectively, is one of the more recent expressions of this continued intent.

Terrorists' capacity to develop CBRN weapons is dictated by factors such as access to expertise, materials, funding and infrastructure. According to EUROPOL reports, returning IS-linked foreign terrorist fighters (FTFs) from Iraq and Syria, who have developed capabilities in handling explosives, including chemical weapons, may seek to export their expertise to other conflict theatres as IS adopts a decentralised, *global insurgency model*.

Likewise, the increased exploitation of social media by the group has also facilitated the cross-border diffusion of CBRN know-how. Advances in new technologies, including in genetic engineering, could also make it easier for terrorists to develop homemade biological weapons.

The relative ease of access to dual-use agents (e.g., chlorine) that can be weaponised also poses a security challenge. The same holds true for some bio-toxins that could be harvested from commercially available plants. For example, castor beans found to be used to produce ricin in a 2018 bomb plot in Cologne, Germany, had been purchased online.

Further, although there are questions about IS' financial resources to fund potential CBRN programmes globally, the group has proved resilient and adaptive and may seek alternate means to raise funds, including through cyber-financing.

Pockets of the world inundated with chaos also metastasise the risk of terrorist access to existing stockpiles, CBRN sites, and safe havens to construct makeshift laboratories. IS, for instance, installed primitive CBRN programmes in their strongholds during their brief territorial reign.

In Southeast Asia, groups like Abu Sayyaf could similarly circumvent detection in territories where it has some quasi-governmental control. Besides these factors, the opportunity to strike also hinges on IS' 'objectives and trade-offs' and the 'contagion effect'.

Objectives and Trade-offs

Attack modes adopted by terrorists are usually aligned with their strategic and tactical objectives. Territorial sovereignty is an example of a long-term strategic objective. Similarly, garnering media attention, stoking fear, inflicting mass casualties, inducing coercion, earning prestige, or deterring adversarial advances are tactical aims.

During the height of its caliphate operations between 2014-2017, IS' use of chlorine and sulphur mustard as chemical warfare agents was an intimidation tactic intended to disrupt government offensives, according to Suleiman al-Afari, a captured Iraqi scientist who had



helped manage the IS supply chain for sulphur mustard production.

Yet the absence of any after-attack claims by IS illustrates the trade-offs inherent in CBRN use for terror networks. The risk of alienating a community of followers, given the widespread opprobrium of chemical attacks in recent years, appears to have acted as a potential deterrence for IS.

Fulfilling its overarching territorial ambition remains IS' *raison d'être*. However, a lone-wolf operating autonomously is less likely to be restrained by such collective ambition.

Contagion Effect

Observations on terrorists' prior activities demonstrate a contagion effect on subsequent attacks. The discernible clusters of hijackings by terrorist groups in the 1960s, embassy takeovers in the 1970s, gruesome beheadings post-9/11, as well as the recent trend of knife stabbings and vehicle rammings, have inspired copycat attacks elsewhere.

In contrast, CBRN use in the form of chlorine and sulphur mustard attacks by terrorists/militant groups appears impervious to copycat attacks. GTD datasets illustrate that the peak uses of chlorine as a warfare agent in 2014-2017 (by IS and other terrorist/militant groups) were contained within the Iraq-Syria conflict theatre.

Outside of these areas, only one attempted IS chlorine attack in Indonesia in 2015 was reported. This could be attributed to

existing capabilities, opportunities, objectives and trade-offs not meeting the criteria to culminate in CBRN use.

Implications

Terrorists are largely opportunistic. Whilst conventional attack modes may be the preferred *modus operandi*, a gravitation towards CBRN attacks by IS when opportunity arises should not be disregarded.

Although the relative ease of developing crude chemical and biological weapons make such attacks a likelier prospect, terrorists also persist in seeking to develop radiological and nuclear capabilities.

IS' current degradation may also propel a rejuvenation of Al Qaeda (AQ) in various parts of the world as it exploits vulnerable political pockets to embed itself and thrive. The November 2019 release from prison of bio-chemist, Yazid Sufaat, the Malaysian who helped AQ develop anthrax for use as a biological weapon, has prompted security concerns that he (and other similar individuals elsewhere) may foray back into weaponising sophisticated bio-agents.

The shifting terrorism environment which impacts terrorists' propensity to orchestrate CBRN attacks must therefore be proactively factored in counter-terrorism deterrence measures.

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Extremists and unconventional weapons: examining the pursuit of chemical and biological agents

By Thomas R. Guarrieri & Collin J. Meisel

Journal of Behavioral Sciences of Terrorism and Political Aggression

Source: <https://www.tandfonline.com/doi/abs/10.1080/19434472.2019.1698633>

Dec 2019 – In this study, we examine the individual-level characteristics of extremists' pursuit of chemical/biological (CB) agents. Using three different maximum likelihood estimation techniques, we identify three key findings. First, older extremists are more likely to pursue CB than younger extremists. Second, extremists who are jobless or students are more likely to pursue CB than employed extremists. Third, Islamist, far right, and far left extremists are less likely to pursue CB than single issue extremists. We do not find any evidence that gender or education have an effect on whether an extremist will pursue CB agents. Since there has been little quantitative examination of unconventional weapon choices among violent extremists, this study makes an important contribution to the literature on CB adversaries.



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BIO NEWS



HHS Supports Advanced Development for Treatment of Anthrax Lung Infections

Source: https://www.einnews.com/pr_news/505243374/hhs-supports-advanced-development-for-treatment-of-anthrax-lung-infections

Dec 19 – Today, the U.S. Department of Health and Human Services (HHS) issued the first Project BioShield contract to fund the advanced development needed to support the expanded use of an existing antibiotic to treat exposure to inhalational anthrax.

Under the contract, the Biomedical Advanced Research and Development Authority (BARDA), part of the HHS Office of the Assistant Secretary for Preparedness and Response (ASPR), will provide technical expertise and up to \$169 million over 5 years to Paratek Pharmaceuticals, Inc., of Boston, Massachusetts, to complete the studies and manufacturing activities necessary for the U.S. Food and Drug Administration (FDA) to consider **emergency use authorization (EUA) of NUZYRA® (omadacycline) to treat people exposed to anthrax.**

“BARDA is committed to ensuring that Americans have access to effective antibiotics in the event of an emergency involving anthrax and during other public health emergencies in which drug-resistant bacterial infections complicate doctors’ ability to treat patients,” said Rick Bright, Ph.D., director BARDA and HHS deputy assistant secretary for preparedness and response. “Saving lives after an anthrax attack on our nation means not only having FDA-approved antibiotics

readily available to treat anthrax infections but also having products available to combat the drug-resistant infections that can develop during treatment.”

NUZYRA already is approved in intravenous (IV) and oral (tablet) forms for community-acquired bacterial pneumonia and acute skin infections in adults. These infections can complicate responses to public health emergencies, such as natural disasters and influenza pandemics.

If the FDA authorizes NUZYRA for emergency use for anthrax lung infections, BARDA will work with Paratek Pharmaceuticals to purchase an initial supply of the drug to further enhance HHS’ efforts to prepare for potential bioterrorism threats.

If the additional development work is successful, the antibiotic could become the first antibiotic developed and procured through Project BioShield to treat potentially drug-resistant bioterrorism agents.

The Project BioShield Act of 2004 provides HHS with unique legal authorities and dedicated funding to accelerate the late-stage development and purchase of effective medical products to protect Americans against chemical, biological, radiological, and nuclear threats.

Chinese researcher accused of trying to smuggle vials of ‘biological material’ out of US hidden in a sock

Source: <https://www.scmp.com/news/china/diplomacy/article/3043167/chinese-researcher-accused-trying-smuggle-vials-biological>

Dec 22 – A Chinese medical researcher was arrested in Boston earlier this month on suspicion of trying to take stolen biological samples back to China, according to an affidavit by an FBI agent.

According to the agent’s testimony, published with redactions on Universal Hub, a community news and information site for the Boston area, Zheng Zaosong, 29, was questioned at Logan International Airport on December 9.

FBI Special Agent Kara Spice said 21 wrapped vials containing a “brown liquid” that appeared to be “biological material” were found in a sock during an inspection of his checked baggage.

He is now under investigation for attempting to bring undeclared biological samples back to China and making “false, fictitious and fraudulent statements” to US customs.

Zheng, a doctoral student at Sun Yat-sen University in Guangzhou, had been doing research at the Boston-based Beth Israel Hospital and was due to catch a flight to Beijing.

According to the affidavit, Zheng had been asked multiple times whether he had been travelling with any biological items or research material in his baggage and denied it each time.

He was then escorted to a baggage room, where customs officers showed him the vials found in his checked luggage.

He was asked why he did not declare the vials and replied that they were not important and had been given to him by a friend named Zhang Tao. The affidavit said Zheng had failed to explain why he had concealed these vials in a sock in his baggage. The document says Zheng was later taken to an interview room and confessed that he had stolen eight vials from the research lab at Beth Israel Hospital and he had replicated 11 vials from Zhang Tao’s research. The affidavit added that Zheng said he had planned to take these vials to Sun Yat-Sen Memorial

Hospital for further analysis and hoped to publish a paper



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under his own name if the research proved successful.

The biological samples are currently being examined and their contents remain unknown.

A laptop owned by another Chinese national was also found in Zheng's baggage and the FBI concluded it contained research material after an initial inspection.

Zheng explained that he was taking it to China for his friend who "could not fit it in his luggage".

The Universal Hub reported that a federal judge had set bail at US\$100,000 at a hearing on Wednesday but revoked it later.

A spokesperson for Sun Yat-sen University did not respond to requests for comment on Sunday.

According to the official website of Sun Yat-sen Memorial Hospital, an affiliate of the university, a student named Zheng Zaosong was among the winners of the "excellent student scholarship" awarded in 2018.

The case took place at a time when tensions and mistrust are building up between China and the US over scientific exchanges.

The US has already enhanced scrutiny and tightened visas for Chinese researchers and doctoral students in certain fields due to concerns about intellectual property theft.

The New York Times reported last month that the National Institutes of Health and the FBI had started a major effort to root out scientists who are stealing biomedical research for other countries from institutions across the US.

Almost all of the incidents they uncovered and that are under investigation involve scientists of Chinese descent, including naturalised American citizens, acting on behalf of China, the report said.

It cited government officials and university administrators who said that some of those under investigation were suspected of setting up labs in China that secretly duplicated American research.

China has been asking the US to treat Chinese scientists and researchers in a fair manner.

A translated report about Zhang's case was published on the Chinese social media outlet WeChat, prompting questions about his behaviour from web users.

"Even if the samples can be smuggled outside the US border, it will be illegal to take undeclared biological materials into China," one commented.

"You are making life very difficult for every future Chinese student [in the US]," another commented.

Looking Ahead – Future of the Strategic National Stockpile

By Greg Burel

December 2019, DomPrep Journal

Source: [https://www.domesticpreparedness.com/journals/december-2019/?utm_source=DomesticPreparedness&utm_campaign=8bf0fc6165-DomPrep Journal December 2019 12 25 2019&utm_medium=email&utm_term=0_9a091366ad-8bf0fc6165-196484369](https://www.domesticpreparedness.com/journals/december-2019/?utm_source=DomesticPreparedness&utm_campaign=8bf0fc6165-DomPrep%20Journal%20December%202019%2012%2025%202019&utm_medium=email&utm_term=0_9a091366ad-8bf0fc6165-196484369)



This year marks 20 years since Congress established the Strategic National Stockpile (SNS), originally named the National Pharmaceutical Stockpile, in preparation for the year 2000. The intent was to arm the country against possible terrorist threats that could disrupt the U.S. medical supply chain. With a \$51 million appropriation and a handful of public health staff based at the Centers for Disease Control and Prevention, the stockpile began in 1999 with a sole focus to protect the American people from biological and chemical attacks.

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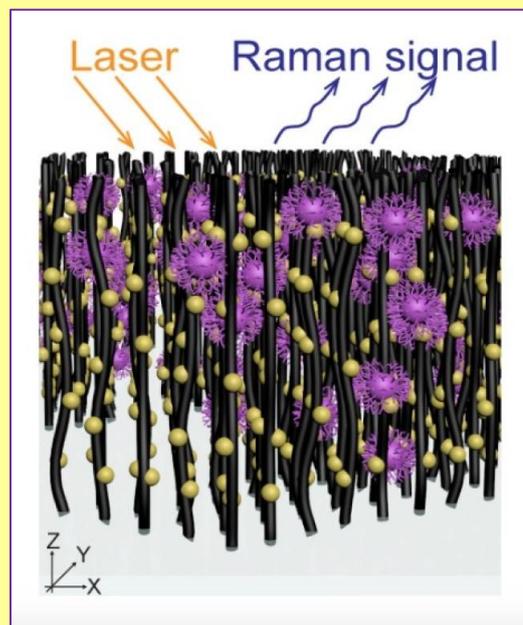
Greg Burel is director of the Strategic National Stockpile, managed by the Department of Health and Human Services' Assistant Secretary for Preparedness and Response. As head of the nation's largest stockpile of medicines and supplies available for emergency use, he is a leading expert on medical supply chain management in the United States. With more than 35 years of civil service, he has risen through the ranks of the federal government, beginning his career at the Internal Revenue Service and serving in leadership roles in both the General Services Administration and the Federal Emergency Management Agency. In 2006, he assumed the helm of Strategic National Stockpile operations. He was awarded the Samuel J. Heyman Service to America Medal for Management Excellence and selected as a National Academy of Public Administration fellow in 2016.

Portable device quickly and cheaply identifies viruses

Source: <https://newatlas.com/science/virion-traps-identifies-viruses/>

Dec 27 – Ordinarily, when biological samples are being tested to see which (if any) viruses are present, it can take up to several days to get results. An inexpensive new tool, however, is claimed to capture and identify viruses within minutes.

Developed by scientists at Pennsylvania State University and New York University, the handheld VIRRION device is just a few centimeters in width. By contrast, traditional virus-identification equipment is large, costly, and lab-based.



The prototype tool incorporates a vertically-aligned "forest" of carbon nanotubes, to which gold nanoparticles have been added. The diameter of those tubes, and thus the size of the spaces between them, can be tweaked in the manufacturing process. Doing so allows the nanotube forests to trap individual virus molecules of specific sizes, when liquid biological samples are passed through different versions of the device.

Once the viruses are captured, a technique known as [Raman spectroscopy](#) is used to identify them. Putting it very basically, this process involves subjecting a sample to laser light in order to excite its molecules, and then monitoring the manner in which those vibrating molecules scatter the light.

The gold nanoparticles enhance the Raman signal, which is analyzed via machine-learning algorithms that were "trained" on the signals of known virus molecules. This essentially means that VIRRION simply matches up the received signal to one that it's got on file.

It is hoped that once the technology is developed further, it could be utilized onsite in doctors' offices and remotely-located healthcare facilities, or by farmers checking crops and livestock for disease.

"We synthesized a gradient of aligned carbon nanotube forest arrays to capture different viruses according to their size and detect them in-situ using Raman spectroscopy," says Asst. Prof. Ying-Ting Yeh. "We designed and assembled a portable platform that enriches virus particles from several milliliters of clinical samples in a couple of minutes."

A paper on the research, which was led by Prof. Mauricio Terrones, was published this week in the journal [Proceedings of the National Academy of Science](#).

Chinese Scientist Who Genetically Edited Babies Gets 3 Years in Prison

Source: <https://www.nytimes.com/2019/12/30/business/china-scientist-genetic-baby-prison.html>

Dec 30 — A court in China on Monday sentenced He Jiankui, the researcher who shocked the global scientific community when he [claimed that he had created](#) the world's first genetically edited babies, to three years in prison for carrying out "illegal medical practices."

In a surprise announcement from a trial that was closed to the public, the court in the southern city of Shenzhen found Dr. He

guilty of forging approval documents from ethics review boards to recruit couples in which the man had H.I.V. and the woman did not, Xinhua, China's official news agency, reported. Dr. He had said he was trying to



prevent H.I.V. infections in newborns, but the state media on Monday said he deceived the subjects and the medical authorities alike.

Dr. He, 35, sent the scientific world into an uproar last year when he announced at a conference in Hong Kong that he had created the world's first genetically edited babies — twin girls. On Monday, China's state media said his work had resulted in a third genetically edited baby, who had been previously undisclosed.

Dr. He pleaded guilty and was also fined \$430,000, according to Xinhua. In a brief trial, the court also handed down prison sentences to two other scientists who it said had "conspired" with him: Zhang Renli, who was sentenced to two years in prison, and Qin Jinzhou, who got a suspended sentence of one and a half years.

The court held that the defendants, "in the pursuit of fame and profit, deliberately violated the relevant national regulations on scientific and medical research and crossed the bottom line on scientific and medical ethics," Xinhua said.

Dr. He's declaration made him a pariah among scientists, [cast a harsh light on China's scientific ambitions](#) and embroiled other scientists in the United States who were connected to Dr. He. Though Dr. He offered no proof and did not share any evidence or data that definitively proved he had done it, his colleagues had said it was possible that he had succeeded. American scientists who knew of Dr. He's plans are now under scrutiny. Dr. He's former academic adviser, Stephen Quake, a star Stanford bioengineer and inventor, is [facing a Stanford investigation into his interaction with his former student](#). Rice University has been investigating Michael Deem, Dr. He's Ph.D. adviser, because of allegations that he was actively involved in the project.

Dr. Quake has said he had nothing to do with Dr. He's work. Mr. Deem has said he was present for parts of Dr. He's research but his lawyers have denied that he was actively involved.

During the Hong Kong conference, Dr. He said he used in vitro fertilization to create human embryos that were resistant to H.I.V., the virus that causes AIDS. He said he did it by using the [Crispr-Cas9 editing technique](#) to deliberately disable a gene, known as CCR₅, that is used to make a protein H.I.V. needs to enter cells.

The international condemnation from the scientific community that followed Dr. He's announcement came because many nations, including the United States, had banned such work, fearing it could be misused to create "designer babies" and alter everything from eye color to I.Q.



Although China lacks laws governing gene editing, the practice is opposed by many researchers there. Dr. He's work prompted soul-searching among the country's scientists, who wondered whether many of their peers had overlooked ethical issues in the pursuit of scientific achievement.

Many of them said it was long overdue for China to enact tough laws on gene editing. China's vice minister of science and technology said last year that Dr. He's scientific activities would be suspended, calling his conduct "[shocking and unacceptable](#)." A group of 122 Chinese scientists called Dr. He's actions "crazy" and his claims "a huge blow to the global reputation and development of Chinese science."

"I think a jail sentence is the proper punishment for him," said Wang Yuedan, a professor of immunology at Peking University. "It makes clear our stance on the gene editing of humans — that we are opposed to it."

"This is a warning effect, signaling that there is a bottom line that cannot be

broken."

Despite the outcry, Dr. He was unrepentant. A day after he made his announcement on the genetically edited babies, he [defended his actions](#), saying they were safe and ethical, and he was proud of what he had done.

Dr. He faced a maximum penalty of more than 10 years in prison if his work had resulted in death. In cases that have caused "serious damage to the health of the victims," the punishment is three to 10 years in prison.

The court said the trial had to be closed to the public to guard the privacy of the people involved.

Dr. He's whereabouts had been something of a mystery for the past year. After his announcement, he was placed [under guard in a small university guesthouse](#) in Shenzhen and he has made no statements since. But his conviction was a foregone conclusion after the government said its initial investigation had found that Dr. He had "[seriously violated](#)" [state regulations](#).

After Dr. He's announcement, Bai Hua, the head of Baihualin, an AIDS advocacy group that helped Dr. He recruiting the couples, said that he regretted doing so and was deeply worried about the families. In a statement posted on his organization's official WeChat account, Mr. Bai, who uses a pseudonym, said he felt "deceived."

When reached by phone, Mr. Bai said he had no idea where the babies were now and declined to say whether he was assisting the government with its investigation.

One H.I.V.-infected man Dr. He's team



tried to recruit said he [was not told of the ethical concerns](#) about editing human embryos, according to Sanlian Weekly, a Chinese newsmagazine. The man said a researcher had told him that the probability of his having an unhealthy baby was low and that the team had achieved a high success rate in testing with animals.

The announcement captured the attention of many Chinese people who had not seen or heard from Dr. He in the past

year. The hashtag “Sentencing in the Genetically Edited Babies Case” was trending on Weibo, China’s version of Twitter.

“He violated medical ethics, disrespected life and let three poor children bear the consequences, all for his fame and fortune,” one user wrote. “I think this punishment is too light.”

Stay Away: Priyanka Chopra Gets a 'Legal Notice' for Planning a Biopic on Bioterror Attack Convict

Source: <https://sputniknews.com/viral/201912221077716912-stay-away-priyanka-chopra-gets-a-legal-notice-for-planning-a-biopic-on-bioterror-attack-convict/>



Dec 22 – **Sheela Birnstiel**, better known as Ma Anand Sheela, is an Indian-born American–Swiss convicted criminal and former spokeswoman of the Rajneesh Movement. In 1986 she pleaded guilty to attempted murder and assault for her role in the 1984 Rajneesh bio-terror attack.

In an interview with the Hindustan Times, Ma Anand Sheela revealed that she had sent a [legal notice to renowned Bollywood-turned-Hollywood actress Priyanka Chopra](#) who announced she was starring in a biopic based on the former's life.



“Not even a courtesy had the opportunity has the time to meet

On “The Ellen DeGeneres Show”, [Priyanka Chopra](#) said that she is working on a biopic which is based on Ma Anand Sheela’s life. She also revealed that the film will be directed by Barry Levinson.

However, Anand Sheela says that if ever a film will be made on her, she wants [young actress Alia Bhatt](#) to play her role on big screen.

“I saw bits of a film that my sister was watching, and I thought, I looked like her (Alia) when I was young. I asked my sister, ‘Did I look like her when I was young? Do you remember?’ And she said, ‘Yes, you do’. I feel she has the spunk in her that I had. Spunk is very necessary and it is very natural, it is not artificial, not cosmetic, it is genuine,” said the 69-year-old.

She was sentenced to 20 years in federal prison and paroled after 39 months in 1984 for the Rajneesh bio-terror attack that involved the food poisoning of 751 individuals in The Dalles, Oregon, through the deliberate contamination of salad bars at ten local restaurants with Salmonella.

A group of followers of Bhagwan Shree Rajneesh (later known as Osho) led by Ma Anand Sheela had hoped to incapacitate the voting population of the city so that their own candidates would win the 1984 Wasco County elections.

The incident was the first and is the single largest bioterrorist attack in United States history.

Questions Swirl over China's Unexplained Pneumonia Outbreak

Source: <http://www.homelandsecuritynewswire.com/dr20200108-questions-swirl-over-chinas-unexplained-pneumonia-outbreak>

Jan 08 – Investigations are still under way to identify the pathogen involved in an unexplained pneumonia outbreak in Wuhan, China, as local health officials announced Sunday fifteen



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more cases and said tests have ruled out severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome coronavirus (MERS-CoV).

In other developments, the World Health Organization (WHO) [weighed in](#) on the outbreak with a few more details and a risk assessment based on limited preliminary information, and U.S. officials posted a travel watch.

Meanwhile, administrative regions and other countries in Asia continue to flag sick travelers coming from Wuhan, a city of 19 million inhabitants, but so far none appear to be linked to Wuhan's pneumonia cluster, which is centered around a seafood market that also sold birds, other animals, and organs from wildlife.

Wuhan Cluster Grows to 59

Wuhan health officials said 7 of the 59 patients are critically ill, a decline from 11 reported Jan 3, and they added that illness onsets range from 12-29 December, according to a statement translated and posted by [FluTrackers](#), an infectious disease news message board. The patients are being treated in isolation, and no deaths have been reported.

So far 163 contacts are under monitoring, an increase of 42. No clear evidence of human-to-human transmission has been found and no illnesses have been reported in healthcare workers. The epidemiologic investigation shows that some patients were vendors at the South China Seafood Wholesale Market.

Earlier in the investigation, Wuhan officials said tests had already ruled out respiratory pathogens including influenza, avian influenza, and adenovirus.

WHO Offers Risk Assessment

In a statement yesterday, the WHO said China notified it about the outbreak on 31 December and added that WHO officials are seeking more information to help with their risk assessment. The main clinical signs are fever and pneumonia, with some patients experiencing breathing problems. Chest radiographs show invasive lesions of both lungs.

Chinese authorities told the WHO that some patients were dealers or vendors at the seafood market and that the preliminary investigation by Chinese investigators has found no evidence of significant human-to-human transmission and no sign that sick patients have passed the infection to medical workers.

The WHO said there is limited information to form a risk assessment. The link to the wholesale fish and animal market could signal a link to an animal source. It added that the patients' symptoms are common to several respiratory diseases, and that pneumonia is common in the winter. "However, the occurrence of 44 cases of pneumonia requiring hospitalization clustered in space and time should be handled prudently," the agency said.

Wuhan is the capital of Hubei province, which is home to 58 million people, the WHO said, adding that it has requested more information on lab tests performed and the differential diagnoses that clinicians considered.

The WHO said it doesn't recommend any specific measures for travelers and urged travelers who experience respiratory symptoms during or after travel to seek medical attention and share their travel history with health providers.

CDC Issues Travel Watch

In a related development, the U.S. Centers for Disease Control and Prevention (CDC) on Monday [issued](#) a level 1 travel watch—the lowest of its three levels—for China's outbreak. It said the cause and the transmission mode aren't yet known, and it advised travelers to Wuhan to avoid living or dead animals, animal markets, and contact with sick people. The CDC said the market connected to the mystery outbreak sells chickens, bats, marmots, and other wild animals and has been closed since Jan 1 for cleaning and disinfection.

"The situation is evolving. This notice will be updated as more information becomes available," it said. The CDC also urged clinicians to take a cautious approach to sick patients who have a history of travel to Wuhan.

Regional governments flag sick travelers

As a precaution, some administrative regions and countries near China have stepped up screening in people who traveled to Wuhan, but so far, there's no indication that any of them are part of the Wuhan cluster.

As of today, Hong Kong [has identified](#) 21 sick travelers arriving from Wuhan, and most have tested positive for different respiratory viruses, according to an enhanced surveillance list from the Centre for Health Protection (CHP). They include seasonal influenza (2009 H1N1 and H3N2), human rhinovirus, enterovirus, parainfluenza type 1, respiratory syncytial virus (RSV), coronavirus 229E, coronavirus OC43, and metapneumovirus.

In a separate statement Monday, the CHP [said](#) that over the past 24 hours six patients who had been to Wuhan in the past 14 days presented for medical care. None had visited live-animal markets in Wuhan before their symptom onsets, and all are in stable condition. Of 21 sick travelers identified so far, 7 have been discharged.

According to media reports over the weekend, Singapore identified a sick Wuhan traveler, a child who tested positive for RSV, and Taiwan identified



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eight passengers with mild symptoms, with tests results for four of them revealing common viruses such as seasonal flu.

No Sign of a Rapidly Escalating Situation

Michael T. Osterholm, PhD, MPH, said it would be useful to know more details about testing, including more details on results that were negative. For now, the key message is that the outbreak isn't rapidly escalating, he added.

Osterholm is director of the University of Minnesota's [Center for Infectious Disease Research and Policy](#), which publishes [CIDRAP News](#).

Experts in and outside of China have raised the possibility that a new type of coronavirus may be responsible, and since the SARS outbreak in 2003, scientists have been looking for clues about how that virus emerged and for warning signs of any newly emerging similar viruses.

Earlier Coronavirus Investigations

In April 2018, Chinese researchers and their collaborators in the United States identified a novel coronavirus that triggered

die-offs in piglets at four farms in Guangdong province in 2016 and 2017. The new coronavirus, called swine acute diarrhea syndrome coronavirus (SADS-CoV) in the piglets matched genetic sequences found in Chinese horseshoe bats, which are known to harbor SARS-like viruses.

Blood tests on farm workers were negative for exposure to SADS-CoV (see "New SARS-like Virus from Bats Implicated in China Pig Die-Off," [CIDRAP](#), 5 April 2018).

In a 2017 study, Chinese researchers who spent 5 years analyzing SARS-related viruses in horseshoe bats in a cave in Yunnan province found 11 that had all the genetic building blocks of the strain that infected humans, including 3 that use the same receptor to enter human cells (see "Bat Cave Study Finds New Clues about SARS Virus Origin," [CIDRAP](#), 1 December 2017).

Osterholm said if the pathogen implicated in the Wuhan cluster is a coronavirus, he worries about possible hospital outbreaks and a "superspreader" event. "But without evidence that a coronavirus is involved, we just don't know," he added.

UPDATE (Jan 23): The city of Wuhan (11 mil inhabitants) is now under a lockdown status – nobody goes out; nobody goes in. But the virus is already outside China. Cities of Huanggang (6 mil inhabitants) and Chibi (~400,000 inhabitants) followed.

UPDATE 2 (Jan 24): Lockdown in 5 cities (~20 mil inhabitants)

Biological Terrorism in Indonesia

By V. Arianti

Source: <https://thediplomat.com/2019/11/biological-terrorism-in-indonesia/>

Nov 2019 – In mid-October 2019, the Indonesian police [discovered](#) that a cell of Jamaah Ansharud Daulah (JAD) – the largest pro-Islamic State (IS) network in Indonesia – had plotted a suicide attack using a bomb that contained the [abrin poison](#) in Cirebon, West Java. The cell had targeted a local police station and a place of worship in Cirebon. Police seized [310 grams](#) of rosary pea seeds, which is the main ingredient of abrin. The police's forensic test revealed that around 0.7 micrograms of abrin could kill 100 people. This was the first assembled bomb in Indonesia that used a biological substance as one of its ingredients. However, this was the second terror plot in eight years that used biological agents. The first plot was in 2011, when a militant group in Jakarta attempted to kill policemen by poisoning the latter's food using ricin, another biological agent.

What does this latest plot imply regarding the current state of the threat of [bioterrorism](#) – "the intentional release of viruses, bacteria, or other germs that can sicken or kill people, livestock, or crops" – in Indonesia? The article will assess the threat from the perspectives of biological agents used in attack plots and methods of dissemination in past incidents as well as the intentions and capability of Indonesian terror groups in using biological agents as a mode of terror.

Agents in Bioterrorism

The Center for Disease Control and Prevention (CDC), the United States' lead agency for overall public health planning that is also in charge of responding to acts of biological terrorism, has categorized ricin and abrin as potent biological toxins derived from plant sources – castor beans and rosary peas, respectively. Based on [initial public health preparedness](#) efforts, the CDC categorized plant toxins under category B, one category lower than category A, the first category. Biological agents in the latter category have the greatest potential for harmful public health impact. They may inflict mass casualties, along with a moderate to high potential for large-scale dissemination and a heightened general public awareness that could cause mass public fear and civil disruption. As such, the threat of bioterrorism requires broad-based public health preparedness efforts.

How have those agents been used by Indonesian militant groups?



“Category A” Agents

Indonesian terrorist groups currently do not seem to have the intention or capability of using a category A biological agent such as anthrax to launch an attack. The last known effort to develop anthrax was in mid-2000, when Hambali, the Indonesian group Jemaah Islamiyah’s liaison officer to al-Qaeda (AQ) and head of JI’s Mantiqi I (the regional area of JI covering mainland Malaysia and Singapore), introduced Malaysian JI member Yazid Sufaat to al-Qaeda. According to the 9/11 Commission Report, Yazid – a member with a degree in medical technology and biochemistry from a U.S. university – led AQ’s biological weapons program. Yazid helped set up the AQ laboratory in Kandahar, Afghanistan, and would spend several months cultivating anthrax for the terror outfit. Despite AQ’s generally unsophisticated laboratory, Yazid [claimed](#) that he had been successful in developing some pathogens. He asserted that anthrax was not his “favorite” as it was good for sabotage but not enough to kill people. The laboratory was eventually destroyed when NATO bombed Kandahar in 2001. Yazid returned to Malaysia and was arrested in the same year. He was released in 2008 and rearrested in 2013. He will be released in [November 2019](#).

Since then, security agencies have not uncovered any other efforts by Indonesian groups to weaponize a “category A” biological agent. This could be partially attributed to the absence of serious intention by Indonesian terrorist groups or inadequate resources available – i.e. bio-scientists and laboratories – to weaponize a biological agent. Bioterrorism researcher Gregory D. Koblenz has argued that while the acquisition of many agents is simple and relatively inexpensive, weaponizing them to inflict mass casualties is indeed the most significant challenge to a potential bioterrorist. In the 1990s, the Aum Shinrikyo cult in Japan failed to effectively aerosolize “category A” virulent strains of anthrax and botulinum toxin in seven separate incidents. According to terrorism expert Adam Dolnik, this is despite the group having an estimated \$1 billion in assets and some 26 university-trained chemists and microbiologists working in top-notch research facilities, virtually without constraints in conducting experiments. Based on available information, the capability of Indonesian militant groups and radicalized individuals of using category A as a weapon of terror does not match that of Aum Shinrikyo or even Yazid Sufaat.

Category B Agents

In June 2011, a militant cell consisting of seven persons, led by [Santhanam](#), attempted to kill policemen by poisoning food at a canteen the latter frequently visited using ricin. Santhanam was a student of extremist preacher Halawi Makmun, who was the administrator of JI offshoot Majelis Mujahidin Indonesia (MMI) and subsequently Jamaah Ansharut Tauhid (JAT). Makmun left JAT in 2010 and pledged allegiance to IS in 2014 before dying in the same year. The 2011 incident was the first terror plot in Indonesia that employed a biological toxic agent. Santhanam’s cell was arrested when they were about to head to the canteen to poison the food. Previously, they had “tested” the ricin in a porridge food stall in a Chinese housing complex in Jakarta and claimed that it had worked. However, it is unknown whether the “test” resulted in fatalities.

The usage of category B agents – plant toxins – in 2011 and 2019 can be partially attributed to, first, the agents’ availability and low-cost procurement. Both castor beans and rosary peas grow in tropical countries like Indonesia and, with the advent of e-commerce, they can be bought online at a relatively low price. The Santhanam cell had extracted ricin directly from castor bean plants they found in Jakarta. Poisoning was chosen as a method partly due to the cell [lacking](#) in funds.

Second, there was possible inspiration from overseas militants; Santhanam’s cell had claimed they were inspired by a similar attack in the Middle East, but there were no details regarding that specific incident. However, a few months after the Indonesian ricin plot was discovered, [The New York Times](#) reported that the U.S. counterterrorism officials were concerned that al-Qaeda in the Arabian Peninsula (AQAP) in Yemen had tried to produce ricin, which was to be packed around small explosives for attacks against the United States. The Cirebon cell plot to build a bomb with abrin mixture resembled an attack plan in [Germany](#) by a pro-IS individual who planned to build an explosive device containing ricin in 2018. Indeed, tradecraft manuals on how to extract ricin from castor beans have been circulating among the militant community in Indonesia from 2012 until today. Unlike ricin, manuals on abrin have been absent in the Indonesian militant community’s cyberspace. This is probably because abrin has not been previously used in past terror attacks, according to the CDC.

Dissemination of Biological Agents

Indonesian terrorist cells have attempted two out of three ways that Koblenz listed as main methods to disseminate a biological toxic agent. First, to disseminate biological agents using explosive energy; this was the method planned by the Cirebon cell. Indonesian militant groups have traditionally used either low or high explosive materials, with added nails or nuts and bolts to enhance the bomb’s deadly effect. The Cirebon cell had assembled a high explosive bomb and added abrin to make it even more lethal. This suggested that the Cirebon cell’s use of abrin was not intended as a biological attack per se but rather to give the conventional bomb a more lethal effect.



Second, contamination of food, which according to Koblenz is easier to achieve as a sophisticated aerosolization device to spread the biological agents would not be required. This method was planned to be employed by the Santhanam cell.

The third method would be to place the agent into an aerosol-like device that could be triggered by pressure. While this is the most efficient method to create aerial dispersal of properly sized biological agent particles, Indonesian militant groups have never attempted this tactic because it requires a high-quality agent, which the Indonesia groups — and even IS central in Syria — are unable to produce.

Future Trajectory

There is the possibility that the Indonesian militant groups may still harbor an intention to use plant-based toxins for attacks. This is due to these agents' availability and relatively simple production process for use in a small-scale attack with limited impact, that is, an attack unlikely to result in mass casualties. Manufacturing of category B agents in past attack plots did not require a laboratory and trained bio-scientists like Yazid. Paimin, a member of the Santhanam cell who manufactured ricin, did not even complete his primary school education. He worked under Santhanam's production instructions, which had been based on internet research.

A black swan circumstance could occur if Indonesian militant groups manage to recruit trained biochemical scientists with access to the equivalent of a state-run laboratory. However, there is little to suggest that they currently have the intention or capability to weaponize biological agents as a mass casualty tool. The use of biological agents may thus be limited to poisoning or being used as a mixture in other conventional attack tools (bombs or sharp weapons), rather than aerosolizing the agent with a sophisticated device, the deadliest procedure in bioterrorism.

The key to disrupting such attacks in the future will heavily rely on the Indonesian security apparatus' surveillance and disruption of militant cells, as successfully done so far today.

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The World's Greatest Threat

By David Hulme (Vision publisher)

Source (+video): <https://www.vision.org/insight-video-worlds-greatest-threat-9053>

Weapons of mass destruction. Global warming. Bioterrorism. Food insecurities. Our challenges are many, and they're complex. But what is the *greatest* threat facing the world today?

Humanity has come face-to-face with life-altering challenges. Existential risk comes in many forms and threatens our very survival as a species. When it comes to solutions, lots of ideas are put forward by brilliant and deeply concerned minds. We're told it's not too late to avoid the worst-case scenario—if we act now.

Progress has been achieved, but we're far from overcoming the problem, because the real issue that drives all others is our unrestrained human nature; and we cannot change that without help of a different kind.

Consider the process of food production and what it's doing to our soil. Careless practices are causing soil erosion and soil degradation—problems that can be linked to the desire for profit at all costs. I asked scientist and agricultural researcher Achim Dobermann what can be done.

Dobermann: "This is for me actually the biggest question, and I don't have an answer for you, because it goes to questioning the fundamentals of capitalism as a form of economy which is based on profit. . . . It is not easy to change this. This constant drive for economic growth is what is creating [for] us the biggest problems. . . . That's the biggest challenge that I can see."

When I pressed him a little more, he said, "We [humans] are greedy." This is an aspect of uncontrolled human nature, and notoriously difficult to change.

In the wake of the atomic bombing of Hiroshima and Nagasaki, Albert Einstein talked about the perils of the new nuclear age.

"Science has brought forth this danger, but the real problem is in the minds and hearts of men."

Albert Einstein, quoted in "Atomic Education Urged by Einstein," New York Times (May 25, 1946)



In the same *New York Times* article, Einstein also remarked that “it is easier to denature plutonium than it is to denature the evil spirit of man.” He also wrote that “a new type of thinking is essential if mankind is to survive and move toward higher levels.”

It’s sobering to recognize that the negative side of human nature is the fly in the ointment that prevents us from resolving our problems. It underscores that we are at the root of our impasses with each other and with other nations.

Victor Davis Hanson is a historian of war. Does he hold out hope for a peaceful world? Sadly, no. He also recognizes the true cause. He wrote: “Conflict will remain the familiar father of us all—as long as human nature stays constant and unchanging over time and across space and cultures.”

Following an arduous wartime career, US general Douglas MacArthur concluded this about humanity’s violent heart: “The problem basically is theological and involves a spiritual recrudescence and improvement of human character that will synchronize with our almost matchless advances in science, art, literature, and all material and cultural developments of the past two thousand years. It must be of the spirit if we are to save the flesh.”

Interestingly, a similar answer was given two thousand years ago. Paul, a follower of Christ, struggled to overcome his own nature at times. But encouragingly, he wrote about those “who do not walk according to the flesh but according to the Spirit.” He had identified the problem and knew the solution lay outside his ability to effect it without spiritual help. That help is still available; human nature can be tamed so that its downside is reined in.

▶▶ This video is based on our [article](#) by the same title.

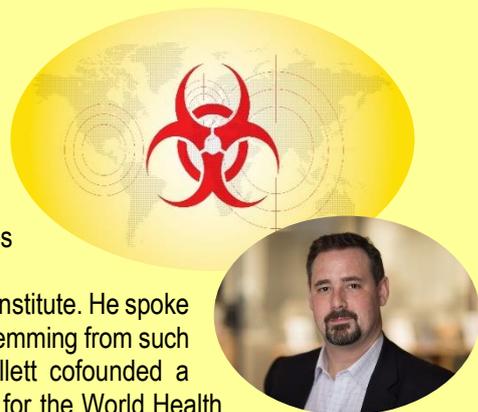
Defusing Biological Bombs – interview

By David Hulme (*Vision* publisher)

Source: <https://www.vision.org/interview-piers-millett-defusing-biological-bombs-8918>

Spring 2019 – Global threats to humanity’s future are termed “existential” because they put all of us in danger. The list is long and often includes disease agents, whether occurring naturally or manufactured, with the capacity to spread rapidly and sometimes widely.

Piers Millett is a senior research fellow at the University of Oxford’s Future of Humanity Institute. He spoke with *Vision* publisher David Hulme regarding potential global biological catastrophes stemming from such risks as bioterrorism, pandemic disease and even genetic manipulation. Piers Millett cofounded a consulting firm that works with government, industry and academia. He also consults for the World Health Organization and spent more than a decade working on the United Nations international treaty banning biological weapons.



DH: We’ve had pandemics before, with catastrophic effects: black death, smallpox, Spanish flu. What’s the likelihood of a similar global catastrophic biological risk (GCBR) today?

PM: The likelihood is very small. They happen very infrequently naturally; they could happen more often if humanity becomes involved.

DH: If these kinds of threats are few and far between, why spend time and effort on them when there are many more important things to do?

PM: When we think about risk, we think about both likelihood and consequences. Where I focus my research is not on the most likely events but those with the highest consequence. It’s those two factors when put together—likelihood and consequence—that give us some estimation of risk. Existential and catastrophic risks may be unlikely, but they have incredibly high consequences. So it’s wise to invest some of our time and resources thinking about events where the consequences could be very high even if the events themselves are very unlikely.

DH: Pandemics are, perhaps, an example of risks we tend to downplay. We tend to think that once a pandemic runs its course, it’s over and done with. What about the intergenerational aspects of an outbreak?

PM: It’s an interesting question. Perhaps flu is the best example here. A flu pandemic happens roughly every 50 years. In fact, flu scientists suggest that we’re long overdue. We’re beginning to understand some of the science behind that, which suggests that the immunity we get as a disease spreads around the world stays with us for life—that certain subtypes of pathogens don’t bother us for the rest of our lives. We’re beginning to see how we might unlock the power of that to prevent and treat natural disease. It hopefully means we’ll be able to deal with pandemics more effectively in the future.

DH: Are we, though, in a unique time when it comes to the potential for pandemics?



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PM: We're certainly in a very special time. We have only been aware for just over a century that pathogens cause disease. We're in a time where we are unlocking the power of biology to make things and solve problems. And that means that we have a great deal of power to use biology. We have a great deal of power to apply it to the questions around disease. But at the moment we don't necessarily know how to use that

power, that technology, responsibly or safely. We won't know what the long-term consequences are. As I say, the time frame in which we've had this understanding is comparatively short.

"I believe in the power of that technology. I want to live in a future where we use biology to solve problems."

Piers Millett

I want to live in a future where many people use those technologies to make the world a better place. So, the question for me is how do we get from where we are now to that future in a way where we unlock those benefits?

DH: What's optimal virulence theory, and what does it contribute to the study of GCBRs?

PM: The idea here is that when a pathogen causes disease, two characteristics are important. First of all, what's its ability to cause disease? How sick is it going to make you? What's the likelihood that you're going to die from it? We call that *pathogenicity* or *virulence*. The second characteristic is transmissibility—how easily can it spread? This theory states that those two things are mutually exclusive, so that if a pathogen becomes more pathogenic (in other words, more dangerous), it's less likely to spread. Equally, if it increases its ability to spread, then it probably is going to be less pathogenic.

The question here is whether we as humans—as scientists, as engineers—could work our way around this and, as we understand the science behind it more, whether we could then build pathogens that *would* have these qualities that would be worse than anything we've seen in nature. There is an ongoing academic stream of research focused on producing potentially pandemic pathogens that explores this space.

DH: What's the likelihood of a bioterror attack?

PM: I think the likelihood is very small. Terrorist attacks in general are fairly infrequent. Those involving biological weapons are even less frequent. It is a real threat. There is a real risk. But we do need to think in a broader way about who would use this, why they would use it, and what the likely consequences of that event would be.

DH: So, you distinguish between biocrime, bioterror and biological warfare.

PM: Absolutely. As I said, the use of biological weapons can vary vastly on different types of consequence—and the

motivation behind it. So traditionally we've used three spaces to define different types of weapons use.

Firstly, there's crimes. This would be an individual largely using biological agents or toxins to harm or poison somebody else. You might think about a husband killing a wife or a wife killing a husband, or indeed an academic getting revenge on colleagues for being passed over for promotion. In many cases this is when biology is the easiest or most accessible or most comfortable tool or weapon that could be used.

In the case of terrorism, we need to think about a larger level of impact—maybe tens or hundreds of people, normally with some sort of political motivation, probably with a few more resources, and with the intent to deliberately create chaos.

And then moving up a step, states have definitely had offensive weapons programs in the past. They've deliberately made and used biological weapons. The use has differed from assassinating individuals to wide-area dispersal, where the intent is to cause thousands or tens of thousands of casualties.

DH: What are the dangers of dual-use technologies in the biological field?

PM: It's pretty well established by the scientific community itself that virtually *all* knowledge and technology is dual-use. By that I mean that they can be used to do great things; they're going to be important for solving problems in agriculture, in food, in power; we're going to use them to make our life better. But at the same time, it's possible that others might use them to cause deliberate harm. That's what we call the dual-use dilemma.

"A lot of the knowledge and technologies can be used for both good and bad, depending on the intent of the user."

Piers Millett

DH: You've written, "We should expect that in the next hundred years there will be dangerous biotechnological breakthroughs that we can hardly imagine now." What's the basis for that warning?

PM: A good example is something we might talk about as a gene drive.



Traditionally we've thought about biological risks in terms of a pathogen causing disease. We're now beginning to understand a little bit more that, really, diseases are about the disruption of the healthy functioning of a biological system. And there are many ways in which that can be changed into an unhealthy state.

We're beginning to see the development of technologies that are able to change biological systems in ways that we can't necessarily think about but that fall outside the traditional pathogen-disease scope. A gene drive is an excellent example of this. It's a powerful technology that could be used to solve many questions around disease or invasive species. But it's also a powerful technology that could be misused—potentially to cause harm.

That is a good example of something that's cropped up over the last five years, which we hadn't previously thought about, and that has led us to think in different ways about the things we worry about.

DH: What do you see as next steps in mitigating the dangers posed by GCBRs?

PM: In particular I want to see a change from framing the scientists and engineers—those who develop and use advanced biotechnology—as being part of the problem

(somebody to be regulated, to be kept at arm's length) to seeing them as part of the solution. They're uniquely placed to understand, to some extent, what the impacts of those technologies will be. They're uniquely placed to be able to spot behavioral attitudes among their own community that they're uncomfortable with or that don't meet with societal norms about how we unlock the power of technology. And so I really want to see us change the nature of our relationship with scientists and engineers in the biological space and empower them to help us make sure that we reach that very positive future where these technologies are used to solve world problems and not to cause harm.

The interesting thing to think about in *biological* global catastrophic risks is the way in which they may interact with *other* catastrophic risks. A body of literature is being built around cascading effects—where we could see risks combining. If anything genuinely caused societal disruption on a global scale, I would be really surprised if disease wasn't a component.

I would encourage you and your readers and viewers to think about how different types of risks can fit together and how that might escalate and combine in a way that's very difficult to foresee.

Global security leaders gather for bioterrorism simulation exercise

Source: <https://kirby.unsw.edu.au/news/global-security-leaders-gather-bioterrorism-simulation-exercise>

Jan 21 – If smallpox reappeared, would we be equipped to manage it, or would it spell disaster for the global population? Despite being eradicated 40 years ago, smallpox can be synthetically reproduced in a lab with new technology. This scenario unfolded in "Pacific Eclipse", an immersive tabletop exercise and simulation of a multi-threat bioterrorism disaster. The exercise was held in the USA on 9 December, the 40-year anniversary of smallpox eradication. It was led and designed by the Kirby Institute's [Professor Raina MacIntyre](#) and Associate Professor David Heslop from the School of Public Health and Community Medicine, both at UNSW Sydney, along with PLuS Alliance partner Associate Professor Brian Gerber from Arizona State University, and assistance from the US Indo-Pacific Command in Hawaii. The meeting was attended by over 200 invited key government and non-government stakeholders across different sectors from the USA, UK, Canada, Australia, New Zealand the Indo-Pacific region.

The exercise took place across three sites in the USA: Washington, DC; Phoenix, AZ; and Honolulu, HI. It was an immersive experience designed to allow participants to move through an unfolding bioterrorism scenario, to make decisions using live polling, and consider choices in difficult situations.

"This exercise was designed to test the response of local and global systems, at all levels of government and non-government sectors," explains Professor MacIntyre. "In a crisis such as this, it is important to be aware of preparedness within a range of sectors, and to navigate local and global priorities in order to avoid disaster."

Today, the risk of bioterrorism is increasing due to advances in synthetic biology and genetic engineering. Technological capability for serial attacks and multi-threat environments is also on the rise, with formerly siloed areas of security, such as biosecurity and cybersecurity, converging over time.

Pacific Eclipse was underpinned by mathematical modelling research, to provide realistic epidemic outcomes under different scenarios and resulting from different decisions and resource allocation. The exercise was attended by representatives across defence, health, law enforcement and other government and non-government agencies including the WHO, US CDC, US military, FBI, London Metropolitan Police, Defence Science Technology Laboratories UK, and several state and international agencies.

Associate Professor Heslop said that this was a terrific



opportunity for international security leaders to converge on an issue of increasing importance. “The fact that this meeting was attended by delegates from a range of sectors and nations, who navigated the exercise simultaneously, meant that we were able to deliver a multi-disciplinary simulation of such an event,” he said. “It provides a good insight into how well our collective systems are prepared, and importantly, where we can do better in working across different sectors such as health, defence and police.”

The exercise was hosted via the PLuS Alliance, a global alliance between three leading universities – Arizona State University, King’s College London, and UNSW Sydney – to solve global challenges around health, social justice, sustainability, technology and innovation. Associate Professor Brian Gerber at Arizona State noted the faculty partnerships created through the PLuS Alliance in part made this exercise possible. “An enormously complex problem like a global

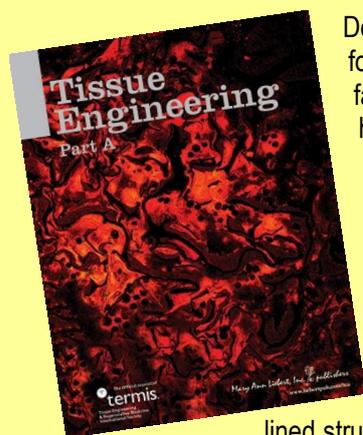
disease outbreak requires a coordinated global response. The diversity of disciplinary expertise among PLuS faculty who work together on projects related to global security helps advance thinking about these kinds of issues. This exercise was a good illustration of faculty from the three universities collaborating on an important effort.”

The meeting was also opened by Rear Admiral Louis Tripoli, Command Surgeon of US Indo-Pacific Command, and Professor Anthony Kelleher, Director of the Kirby Institute. Professor Kelleher said that it is collaborations like these that strengthen our ability to address global issues. “At the core of the Kirby Institute’s work is addressing infectious diseases at a global scale. Professor MacIntyre’s role within the PLuS Alliance, and as a leader in global security research, enables us to collaborate within another extensive global network on these issues, and uncover meaningful solutions to complex problems,” he said.

Three Dimensional Bioprinting of a Vascularized and Perfusable Skin Graft Using Human Keratinocytes, Fibroblasts, Pericytes, and Endothelial Cells

By Tânia Baltazar, Jonathan Merola, Carolina Catarino, et al.

Source: <https://www.liebertpub.com/doi/10.1089/ten.TEA.2019.0201>



Dec 2019 – Multilayered skin substitutes comprising allogeneic cells have been tested for the treatment of nonhealing cutaneous ulcers. However, such nonnative skin grafts fail to permanently engraft because they lack dermal vascular networks important for integration with the host tissue. In this study, we describe the fabrication of an implantable multilayered vascularized bioengineered skin graft using 3D bioprinting. The graft is formed using one bioink containing human foreskin dermal fibroblasts (FBs), human endothelial cells (ECs) derived from cord blood human endothelial colony-forming cells (HECFCs), and human placental pericytes (PCs) suspended in rat tail type I collagen to form a dermis followed by printing with a second bioink containing human foreskin keratinocytes (KCs) to form an epidermis. *In vitro*, KCs replicate and mature to form a multilayered barrier, while the ECs and PCs self-assemble into interconnected microvascular networks. The PCs in the dermal bioink associate with EC-lined vascular structures and appear to improve KC maturation. When these 3D printed grafts are implanted on the dorsum of immunodeficient mice, the human EC-lined structures inosculate with mouse microvessels arising from the wound bed and become perfused within 4 weeks after implantation. The presence of PCs in the printed dermis enhances the invasion of the graft by host microvessels and the formation of an epidermal rete.



A Novel Coronavirus – Determining Its Spread and Severity

By Amesh A. Adalja, MD, FACP, FACEP, FIDSA

Source: <http://www.centerforhealthsecurity.org/cbn/2020/cbnreport-01222020.html>

Jan 22 – The last several days of infectious disease headlines have been focused on a mysterious outbreak in Wuhan, China, that has many concerning characteristics. This cluster of pneumonia cases—9 of which have been fatal, with others apparently severe— involves individuals who have contracted a novel coronavirus. The initial cases involved those that reportedly had exposure to a seafood market that housed many types of animals. The initial evaluation of these patients did not reveal any of the likely pathogens, and therefore these patients were determined to have an unknown viral pneumonia, which has since been determined to be caused by a novel coronavirus.



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These initial cases, which numbered in the 40s, rapidly increased to several hundred additional cases, uncovered by wider surveillance of pneumonia cases, some of which did not have contact with the market initially viewed as the epicenter. Subsequently, cases were uncovered in Thailand, Japan, South Korea, Taiwan, and the United States, as well as in other cities in China. The cases diagnosed in other countries were in people who had traveled to Wuhan. Healthcare workers also have been infected. These events have led to justified precautions in many countries that are on alert for importation of cases. The US Centers for Disease Control and Prevention (CDC) has issued health alerts and is screening for cases at 3 airports in the US (JFK, San Francisco, and LAX) with 2 more to be added (Chicago O'Hare and Atlanta). The World Health Organization (WHO) will soon convene to determine whether a public health emergency exists.

Comparisons to SARS

Even before the identification of a novel coronavirus as the culprit virus, this outbreak had been compared by journalists and infectious disease experts to the 2003 outbreak of [severe acute respiratory syndrome \(SARS\)](#), a disease caused by a novel coronavirus with animal origins that also occurred in China around this time of the year. In that incident, more than 8,000 cases and almost 800 deaths occurred as the virus swept the globe and created international disruption. Another novel coronavirus that shares a predilection for severe disease with SARS, Middle East respiratory syndrome (MERS), has also been invoked.

It is important to note that the current novel infection is, thus far, unlike SARS (and MERS) in at least 2 very important respects. First, the **rate of fatalities** currently appears to be much lower. SARS had about a 10% fatality rate, while MERS fatality rates reach around 35%. There is also some question as to the degree of **human-to-human transmission** that is possible with this virus. It is increasingly becoming clear, however, that this does not appear to be a single source animal exposure outbreak, and some human-to-human transmission has occurred. But to what degree and with what sustainability human-to-human transmissibility is possible remains to be determined.

Coronaviruses Are a Major Cause of the Common Cold but Have Pandemic Potential

Post-SARS, it has been common to associate coronaviruses almost exclusively with severe disease. However, it is crucial to remember that these viruses, which resemble a crown when viewed with an electron microscope, are much more likely to cause uncomplicated upper respiratory infections, such as the common cold. Before SARS, the first human coronaviruses described were thought of as one of the many common cold viruses, without much concern for any more severe infections in people with a normally functioning immune system. SARS drastically changed that misperception and has since placed coronaviruses, for good reason, near the top of pandemic threats.

Those reasons include the fact that coronaviruses are spread via the respiratory route, have shown their ability to cause severe disease, have many strains circulating in animal reservoirs such as bats, and have no effective vaccine or antiviral available.

This reconceptualization of the risk of coronaviruses has since led to the discovery of novel coronaviruses. In addition to MERS, 2 other human coronaviruses have been discovered: NL63 and HKU1. In the case of HKU1, it was found that this virus had been circulating clandestinely even before SARS and was capable of causing critical illness.

Key Questions: Spectrum of Illness, Animal Reservoir, Family Tree

The concern regarding this outbreak will remain justified until some key questions are answered.

- What is the severity of illness?
Most respiratory infections have a spectrum of illness; some have very minor symptoms, while others can have more serious complications, such as pneumonia or respiratory failure. Understanding what the usual course of infection is will be crucial. Is this novel coronavirus syndrome more akin to the usual coronavirus infection, or is it more like MERS and SARS?
- Do those who have died or are critically ill have other medical conditions, such as diabetes, emphysema, or cardiovascular disease, that explain the severity of illness? How is critical illness being defined?
- Which animal in the live market is the likely origin for the virus, and how is the virus acquired?
- Has this virus been circulating in the population for some time? What is the baseline serological positivity?



A “B” mask proposal

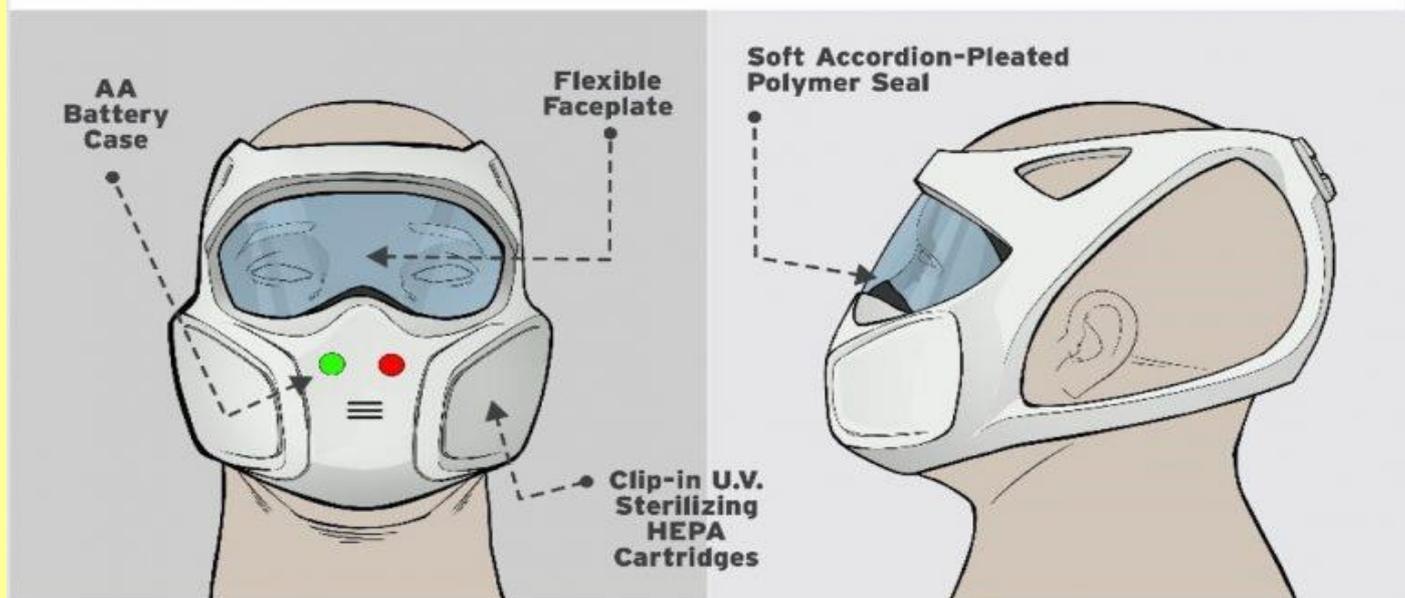
Source: <https://threesecondsuntilmidnight.com/read-a-chapter/>

A significant number of full-face respirators are manufactured by a variety of companies. Their cost range is between \$120 to \$420. However, they require a precise donning and doffing procedure and some may require submersion for complete decontamination. Some models are bulky, heavy, and require fit testing to ensure a good face seal. Some require OSHA-mandated respiratory medical clearance for institutional use.

Hence, there is an urgent need for an affordable, simple, negative pressure, air purifying respirator that is lightweight, easy to don and doff, and able to reliably achieve a face-seal without qualitative fit testing. Searching the internet for concept ideas, we came across a design called the “**social gas mask**”. We were immediately attracted to the design and in Figure 22 (below), we have made suggested improvements for use of this basic concept by both healthcare workers and by the minimally-trained general public during a severe 1918-type Influenza pandemic. Such a design would be comfortable, low profile, and compatible with wearing corrective eyeglasses or contact lenses. Because this could be used by the public, a suitable modified design would feature dual self-sterilizing filter units based on low-voltage U.V. LEDs embedded into the inside of an insertable, replaceable HEPA filter cartridge. These inexpensive 3-volt Ultraviolet (UV) Light Emitting Diodes (LED) would supply a wavelength sufficient to create nucleic acid dimer formation to sterilize any viral agent trapped in the HEPA material of the filter cartridge. Minimal training could ensure that the wearer properly decontaminates both the respirator and their hands when doffing.



HALF SIZE POLYMER CONSTRUCTION THAT STRETCHES TO FULL -HAT SIZE



The Social Gas Mask; Designer: Zlil Lazarovich. Modified into a Concept for an Integral Pandemic Respirator

The most critical component of this respirator concept would be the novel use of a soft polymer “pleated accordion cup” which would act to seal the HEPA filters to the mouth and nose using only the mild outside pressure provided by the chin extension and the top polymer retaining band. Such a product could be extremely useful during the projected “Vaccine Gap” between an initial severe Influenza outbreak and general vaccine availability for the public. A “just-in-time” manufacturing capability could be pre-arranged as part of the Strategic National Stockpile. It is likely that such a reusable “Integral Pandemic Respirator” could be mass produced for the same price as a single course of generic Tamiflu (\$155.86). Unlike Tamiflu, the respirator can be used for long periods of time (days) and if hermetically-sealed packaging is used in conjunction with oxygen absorbing packets, it could feature an extended shelf life. ■

