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NEWSLETTERRORISM



January 2018



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CBRNE-Terrorism Newsletter – 2018[®]

January 2018

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Editor's Corner

**Editorial****Brig Gen (ret'd) Ioannis Galatas, MD, MA, MC***Editor-in-Chief*
CBRNE-Terrorism Newsletter*Dear Colleagues,*

It is a global habit to wish to each other “Happy New Year” though I would prefer to do this at the last day of December 2018 – just to be sure! Every time I am about to close the Newsletter – around the 23rd day of each month – something important happens.

This time I was about to comment only about the panic the missile alert caused both in Hawaii and in Japan. Although it was a good opportunity to test the plans, the shelters and peoples reactions – until the next time... Then the Kabul Intercontinental Hotel siege appeared in the news with many hotel guests killed or wounded by the Taliban. If you are in the business study the case and try to find as much details as possible and put them together with infamous Islamabad Marriott Hotel attack (2008: 54 dead; 266 injured by a VBIED attack) in order to identify gaps and errors in your defenses – the unexpected always happens!

In Greece the situation is the same: boring, no progress, no vision! On top of that in our northern borders there is a tiny state called FYROM that insists to be called Makedonia Something! Alexander the Great was Greek, Makedonia is one of the northern prefectures of Greece (capital: Thessaloniki) and to a



significant level their economy depends on Greek trade/investments contribution What they



have is some good friends (i.e. Americans, Brits, NATO, EU) that for their own reasons want a name with Makedonia Something. Today more that 500,000 Greeks demonstrated in the city of Thessaloniki that

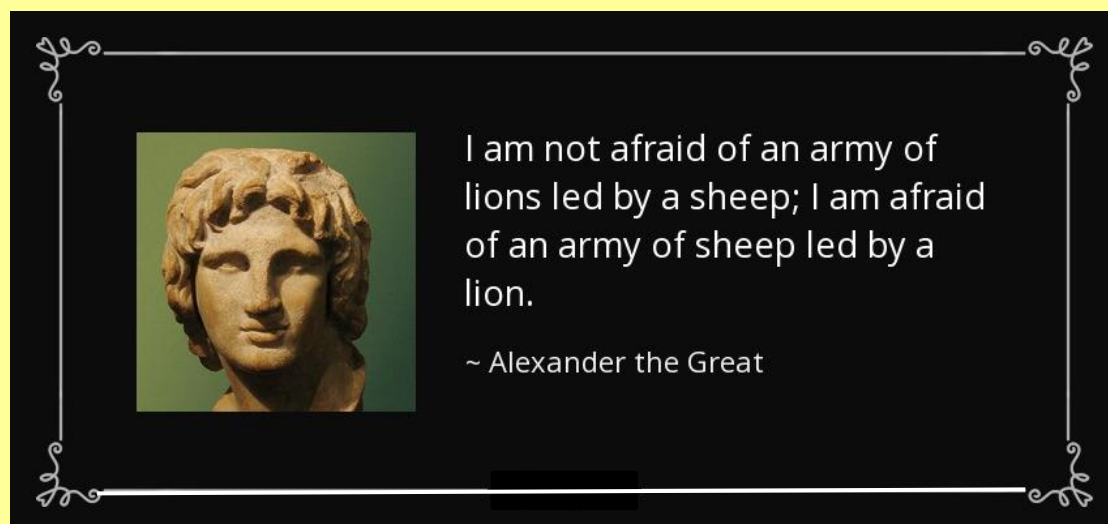


this will NEVER happen – simple as that!

Perhaps you noticed a new logo at the cover of January 2018 issue signifying the new collaboration with the multinational IPW-Group of companies active in the field of security. Now, with a new company, CBRNE issues will be covered as well with special focus on preparedness and operations. More details in the February issue.

Let us all hope that 2018 will be slightly better than 2017, watch your back and keep your heads low!

The Editor-in-Chief





2018



HAPPY NEW YEAR!



Traditional mums and hopeless dads are banned from adverts by watchdog: Commercials based on 'harmful' genders stereotypes will vanish from screens

Source: <http://www.dailymail.co.uk/news/article-5177299/End-traditional-mums-hopeless-dads-adverts.html>

Dec 13 – **Adverts that use traditional portrayals of the do-it-all housewife such as the Oxo Mum and the Fairy Liquid Housewife will be banned, watchdogs announced yesterday.**



So will any that stereotype men, ridicule them for not being masculine enough or suggest they are not suited to such domestic tasks as cleaning or childcare.

But the decision by the Committees of Advertising Practice (CAP), confirming proposals mooted earlier this year, drew criticism.

Actress Nanette Newman, who appeared in Fairy Liquid ads in the 1980s, has said: 'I find this ban ridiculously over the top. What a bizarre world we live in where the adverts I starred in might today be considered harmful, yet it's considered perfectly acceptable for women to be shown on mainstream TV having sex.'

Others said adverts that portrayed women in traditional roles were 'corny but not corrosive'.

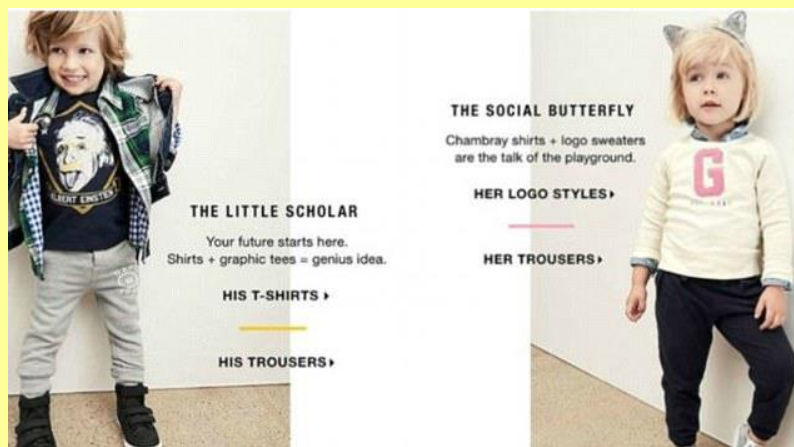
CAP's new rule to tackle gender stereotyping follows a review carried out in the summer and is due to come into effect next year. The organisation, which sets industry rules that are policed by the Advertising Standards Authority (ASA), said it is not acceptable to mock people for not conforming to gender stereotypes.

'Evidence in the review suggested that harmful stereotypes can restrict the choices, aspirations and opportunities of children, young people and adults,' CAP said.

These stereotypes can be reinforced by some advertising, which therefore plays a part in unequal gender outcomes, with costs for individuals, the economy and society.

'The new rule will not ban all forms of gender stereotypes. For example, the evidence falls short of calling for a ban on ads depicting a woman cleaning or a man doing DIY tasks.

Removed: A Gap campaign that featured a little boy wearing an Einstein T-shirt, which suggested he would grow up to become an academic. Images of a little girl suggested she would become a 'social butterfly'



'But, subject to context and content considerations, the evidence suggests certain types of depictions are likely to be



problematic, for example, an ad which depicts family members creating a mess while a woman has sole responsibility for cleaning it up or an ad that features a man trying and failing to undertake simple parental or household tasks because of stereotypes associated with his gender.'

Unilever is among a number of brands that have taken voluntary measures to end gender stereotyping. In the past, its Knorr TV adverts used to show a mother and daughter in the kitchen, but they now feature a father and son. It has also changed its Lynx commercials which, in the past, featured women in bikinis hunting down young men.

However, CAP said voluntary measures do not go far enough, so new rules are necessary. Ads that would now be at risk of a ban include:

- ◆ A Gap campaign that featured a little boy wearing an Einstein T-shirt, which suggested he would grow up to become an academic. Images of a little girl suggested she would become a 'social butterfly';
- ◆ One for Aptamil baby milk that showed girls growing up to become ballerinas and boys becoming scientists and rock climbers;
- ◆ Asda's Christmas 2012 offering that showed an exhausted mum struggling to buy the presents and tree, decorating the home, wrapping the gifts, writing cards and cooking the festive feast.

The ASA is also expected to take a stronger line on ads which could be seen to objectify and degrade women – for example, a poster for Tom Ford Black Orchid perfume that showed Cara Delevingne lying naked on her front with the side of her breast and bottom visible.

In 2009, it cleared an Oven Pride oven cleaner ad that showed men as incapable of performing simple household tasks. Ella Smillie, who lead the CAP review, said: 'Some gender stereotypes in ads can contribute to harm for adults and children by limiting how people see themselves, how others see them, and potentially restricting the life decisions they take.'

'The introduction of a new advertising rule from 2018 will help advertisers to know where to draw the line. ASA chief executive Guy Parker said: 'We are determined to make sure our regulation calls out harmful and outdated practices.'

BBC and Netflix Release First Look at 'Troy: Fall of a City'

Source: <http://variety.com/2017/tv/news/bbc-netflix-troy-fall-of-a-city-1202646162/>

Dec 21 – The [BBC](#) has released the first pictures from "[Troy: Fall of a City](#)," the upcoming swords and sandals epic it is making with [Netflix](#).



Filmed in Cape Town, South Africa, the series stars David Threlfall (main image), in a very different guise from Frank Gallagher of "Shameless," as well as Frances O'Connor ("The Missing") and David Gyasi ("Interstellar").



In the series Gyasi plays Achilles. David Farr ("The Night Manager") penned the eight-part series, which [BBC](#) drama boss Piers Wenger said "will be like nothing broadcast before: a 3,000-year-old tale crafted on a huge scale."

The story is told from the perspective of the Trojan royal family at the heart of the siege. Endemol Shine-backed producers Wild Mercury and Kudos are producing. The BBC will launch the series in the U.K. and [Netflix](#) internationally.



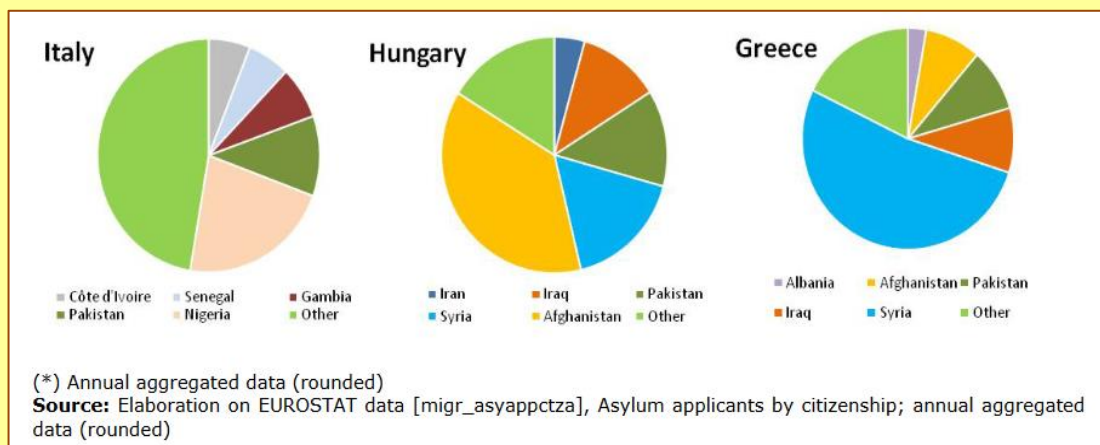
There was also a first look (below) at Louis Hunter and Bella Dayne as Paris and Helen, the lovers whose affair plunges Greece and Troy into war and threatens to bring both empires to their knees.

EDITOR'S COMMENT: UK – the land of moral destruction... No matter how hard you try, gods and semi-gods of Greek mythology will always be MEN and white. In that respect, a Chinese Mars proficient in martial arts would be no surprise since his friend Venus is an Indian transgenic creation.

Study - Integration of refugees in Greece, Hungary and Italy: Comparative Analysis

Source: [http://www.europarl.europa.eu/RegData/etudes/STUD/2017/614194/IPOL_STU\(2017\)614194_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2017/614194/IPOL_STU(2017)614194_EN.pdf)

Dec 21 – This study presents a comparative overview of recent policy developments in Greece, Hungary and Italy, which present some similarities as regards their position in the migration routes, but also very different approaches. The focus of the analysis is on progress achieved in the last three years in the adaptation of the reception and integration system for the high numbers of new arrivals and on the main challenges encountered, with a focus on labour market integration measures. Further, special attention is given to changes in perceptions, public opinion and political discourse with respect to the asylum and integration of refugees and how this influenced policy strategies.



Main countries of origin (first six) of asylum applicants in Greece, Hungary and Italy, 2016.

Advanced Camouflage Solution Defends Against Thermal Sensors

Source: <https://i-hls.com/archives/80399>

Dec 23 – Advanced mobile camouflage solutions have become an important part of the modern battlefield, protecting vehicles when moving or when in a static position. One of these developments is the **Barracuda Mobile Camouflage System (MCS)**, a flexible solution providing multispectral protection. These camouflage solutions developed by Saab offer defense from ultra-violet, visual, near infrared, shortwave infrared to thermal sensors and radar. Built-in thermal radiation protection reduces the operating temperature inside vehicles and increases crew comfort, firing accuracy, and fuel efficiency. Defense and security company Saab has recently received an order from the German company Krauss-Maffei Wegmann (KMW) for deliveries of the systems. Deliveries will take place during the period 2018-2022.





According to saabgroup.com, the camouflage systems ordered by KMW will equip the German Armed Forces new Leopard 2 A7V tank, the latest version of the Leopard 2 A7, developed and manufactured by KMW. The camouflage systems will come in woodland configuration.

“With this order, the customer will equip their tanks with a reliable, multispectral and combat-proven camouflage system. This year we celebrate 60 years of developing static and mobile camouflage systems, and this order is a proof of that experience”, says Görgen Johansson head of Saab’s business area Dynamics.

Barracuda’s advanced camouflage technology products have already been exported to more than 60 countries worldwide.

Saab offers a unique package of tailor-made camouflage systems and force protection solutions that decrease the enemy’s ability to detect and engage. These solutions protect personnel, vehicles and base infrastructure against hostile sensors and enemy target acquisition.

2018 Annual Forecast – Europe

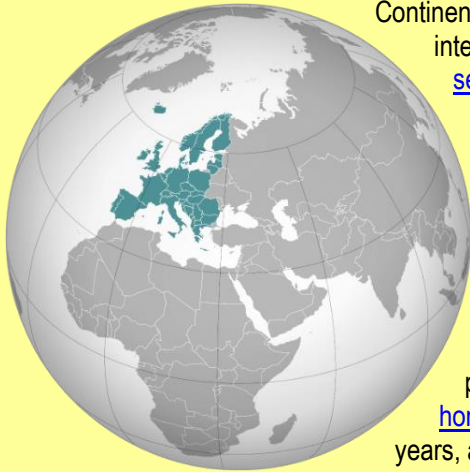
Source: <https://worldview.stratfor.com/article/2018-annual-forecast/europe>

Section Highlights

- ◆ *The debate over how best to reform the European Union will take the spotlight in 2018, laying bare the regional rifts that divide the Continent.*
- ◆ *Though France and Germany will be at the heart of this debate, they will prove more willing to cooperate than to confront each other. To that end, Paris will agree to water down or postpone many of its proposals for the bloc.*
- ◆ *General elections in Italy will generate uncertainty about the eurozone's future. Though the country won't leave the currency area in the coming year, its next government will lobby for the authorization to boost public spending.*
- ◆ *The United Kingdom will spend 2018 negotiating the terms of a trade agreement with the European Union. Though leaders probably will reach an arrangement for the transition period following the Brexit, a trade deal will be tougher to obtain.*
- ◆ *The Continental bloc also will seek out free trade agreements with other countries, a strategy that will become a cornerstone of the bloc's foreign policy.*



Debating a Continent's Future



Talks about the shape of the European Union's structure and governance will take center stage on the Continent this year. Among the items on the bloc's agenda are ways to deepen financial integration, mechanisms to cope with future crises and strategies to [increase security and defense cooperation](#). But finding a way forward won't be easy.

While most EU members agree that political, institutional and economic reforms are needed, they do not agree on what those reforms should look like or how to go about implementing them. Over time, these issues will once again expose the enduring divisions between Europe's north and south and its east and west.

At the center of the debate will be France and Germany. Though the two powerhouses are eager to preserve their alliance, they have different visions for the European Union. The French government, which campaigned on a promise to transform the bloc, [has already introduced economic reforms at home](#). Now that [it is on more equal footing with Berlin](#) than it has been in many years, an emboldened Paris will aim to advance its interests at the Continental level.

France hopes to create new structures that would allow for greater public spending and financial risk sharing within the bloc — a goal that many countries in Southern Europe, including Italy and Spain, share. These states also advocate the introduction of a common unemployment insurance for EU workers and a common deposit insurance for EU banks.

Germany isn't necessarily opposed to these ideas. It does, however, want to make sure that they are accompanied by more efficient oversight of the fiscal policies and financial sectors of member states. Berlin believes that countries often bend the bloc's fiscal rules and that the institutions tasked with enforcing regulations are too politicized. Several Northern European states, such as Austria and the Netherlands, share this view.

Still, France and Germany will have to wait to hash out a compromise until Berlin settles one of its own pressing political problems: [the formation of a new government](#). The process of trying to build a governing coalition in Germany will consume the first few months of the year. Should the talks fail, early elections will ensue, delaying any European negotiations.

Regardless of when the bartering between Germany and France begins, Berlin will protect its interests, and Paris will not get everything it wants. Instead, many French proposals will be watered down or adapted to meet German demands; others will be postponed. Room for cooperation certainly exists on some issues, such as boosting security and defense cooperation and harmonizing the tax systems of EU members. But other topics — especially those that involve [financial transfers from Northern Europe to Southern Europe](#) — will be more controversial.

For the most part, France and Germany will be more interested in cooperation than confrontation. But it is unclear whether their willingness to work together will be [enough to keep Europe united](#).

The Fate of the Eurozone

Italy will be the main source of uncertainty for the eurozone next year. The country will hold [general elections](#) by May, and most of its political parties have criticized the EU's deficit targets. Some are also critical of the eurozone. No matter who wins the elections, Rome's next administration will push to increase public spending and [redesign the bloc's deficit goals](#).

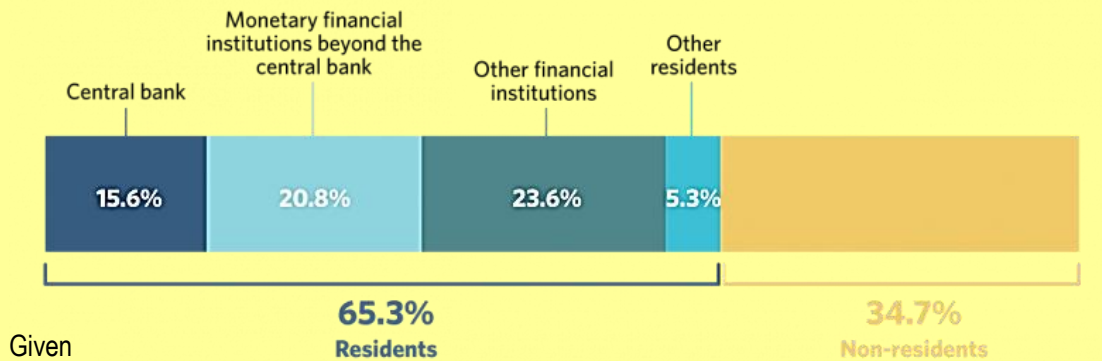
The difference between the parties, however, is in their tone. Some, like the anti-establishment Five Star Movement and the right-wing Northern League, will be more willing than others to threaten Brussels with unilateral measures if the European Union does not meet their demands. These threats could include ignoring the bloc's fiscal targets or leaving the eurozone.

Of course, Italy isn't likely to exit the currency area in 2018, but the rise of a Euroskeptical government in the eurozone's third-largest economy could still put the currency bloc at risk. The mere threat of flouting eurozone rules or quitting it outright could cause concern in financial markets, lead to higher borrowing costs for Southern European countries, and raise



questions about the prospects of [Italy's fragile banks](#). On top of these economic risks, a more Euroskeptic Italy would face the prospect of political and institutional isolation within the European Union.

Who Owns Italy's Sovereign Debt?



Source: Bruegel

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the fragmentation within Italian politics, the approaching elections are likely to end in a hung parliament. Yet even if the parties fail to cobble together a coalition government, they could still appoint a prime minister by consensus. EU institutions and financial markets would welcome such a decision because it would temporarily avert a financial crisis. But it would come at a steep cost, creating a government that is constantly on the verge of collapse, weakening Italy's influence in international affairs and undermining Rome's ability to introduce sweeping economic reforms. If, on the other hand, lawmakers are unable to agree on a prime minister, Italy might hold another round of elections by the end of 2018, prolonging the uncertainty obscuring the country's future.

Italy won't be the only eurozone member grappling with tough questions next year, either. Greece's bailout program ends in August, at which point Athens will try to [reduce the sway foreign lenders have over its policymaking](#). At the same time, however, [Greece](#) will ask its creditors to alleviate its debt burden. Athens' financiers will refuse to write down parts of Greece's debt. But they may be more amenable to other measures, such as an extension of debt maturities, lower interest rates and a grace period for debt repayments, particularly if Greece agrees to keep introducing economic and institutional reforms. Athens may indeed be willing to make this commitment if the requested measures are less painful than those attached to its bailout. So although Greece will remain a source of concern for the eurozone in 2018, its membership in the currency area won't be in jeopardy.

[Spain](#) will have two problems of its own to deal with next year. The country's minority government will have difficulty pushing through legislation, suggesting that it will make only modest economic and institutional reforms in 2018. Moreover, Catalan secessionism will remain a concern for Madrid as friction persists between the central and regional governments. Though Catalonia won't secede from Spain next year, questions about the region's future will linger.

Brexit and Beyond

Meanwhile, the United Kingdom will spend most of the year figuring out what its relationship with the European Union will look like after it leaves the bloc. Hoping to give companies and households more time to prepare for the Brexit, London and Brussels will negotiate a transitional arrangement as they work to settle a comprehensive trade agreement. Leaders likely will find it easier to approve the transitional agreement in 2018, buying themselves more time to haggle over the trickier aspects of the trade deal, including the movement of services and capital. The trade talks could last into



2019, but even if they wrap up sooner, the parties involved can't approve a deal until the United Kingdom has formally exited the European Union in March 2019.

In the United Kingdom, the negotiations will call into question [its economic and territorial integrity](#). Political interests in Northern Ireland, Scotland and Wales will keep a close eye on the talks between London and Brussels, doing what they can to shape the negotiations and voicing their expectations to the British government. London has the ability to resist some of the demands made by Scotland and Wales while reaching compromises on others. But the situation in Northern Ireland will be more delicate. There, tension between unionists and nationalists could complicate the already thorny issues the Brexit has

raised regarding the region's shared border with [the Republic of Ireland](#). To avoid introducing controls along its border with Ireland, the United Kingdom may have to soften its stance on leaving the EU single market, where goods and people move freely.

All told, 2018 will be a politically charged year for the United Kingdom, and not just because of the Brexit. The British government will encounter constant political challenges, both from the opposition and from within the ruling Conservative Party. Though the country may replace its prime minister, the Conservative Party will try to avoid early elections in which it could make a poor showing.

A Dilemma for Central and Eastern Europe

As the European Union wrestles with the existential questions before it, countries in Central and Eastern Europe [will take different approaches](#) to their own relationships with the bloc. Hungary and Poland, for instance, will fend off Brussels' attempts to interfere with their internal decision-making.

Nationalist parties are positioned to perform well in Hungary's general elections in the second quarter of 2018, signaling continuity ahead in Budapest's Euroskeptic domestic and foreign policies. Poland's government likewise will continue to censure the European Union and maintain a tense relationship with Germany. All the while it will preserve its alliance with the United States, which underpins Warsaw's security strategy.

So far this tack has proved popular among Hungarian and Polish voters, but it is risky. Budapest and Warsaw rely on the European Union for money and protection. And although neither Hungary nor Poland is interested in exiting the bloc, their actions could result in their marginalization within it and the degradation of their influence over Continental affairs.

By contrast, Austria, Slovakia and the Czech Republic will pursue more balanced foreign policies. While they will use [Central European cooperation](#) as a means of promoting their agendas and defending their interests, they also will continue to collaborate with Western Europe. The motive behind their strategy is simple: Though these countries are [skeptical of further integration into the European Union](#), they are also closely linked to the German economy. In addition, Austria and Slovakia belong to the eurozone.

An EU Foreign Policy Based on Free Trade

Amid [a surge of protectionism](#) around the globe that has clouded the future of international trade, the European Union will seek out [new free trade agreements](#). Though the bloc signed a free trade deal with Japan in late 2017, the parties will have to separately negotiate the issue of investment protection in 2018. At the same time, the European Union will try to forge ahead in its talks with Australia, New Zealand, Mexico, India, Indonesia and the Common

British Trade

43%

Percentage of British exports going to EU countries in 2016

54%

Percentage of British exports going to EU countries in 2006

38%

Percentage of British exports to EU countries that were services in 2016

Trade with EU countries

Trade with non-EU countries



Source: ONS

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Market of the South, known as Mercosur. Within these negotiations, issues like agriculture, investment protection and the flow of private data to third-party countries could [become sticking points](#). The process of reaching final deals will be lengthy, likely lasting well beyond next year, but Brussels will stay committed to expanding its collection of trade deals. However, it will also keep looking for ways to better vet non-EU investors that seek to [buy companies that are part of sensitive or strategic sectors](#) in member states.

In the meantime, the European Union's relationship with Russia will remain distant. Moscow will try to [exploit \(and at times, create\) friction](#) among the bloc's members with the tools at its disposal, including [pipeline politics](#) and propaganda. The European Union, for its part, will continue to argue that it will lift sanctions against Russia only if Moscow fully complies with [the peace deal in Ukraine](#). Because the sanctions are already a point of contention in Europe, the bloc probably won't expand them, though it may prolong the punitive measures if [conditions on the ground in Ukraine](#) do not improve. Brussels will also denounce Moscow's attempts to interfere in European politics while searching for ways to counter [Russian propaganda and cyberattacks](#). Its success on this front, however, will be only modest.

Europe will face a foreign policy challenge to the south as well. Next year, the European Union will study options for addressing immigration [from Africa and the Middle East](#), in part by reforming its migration rules. The most controversial decision the bloc must make is whether to implement a mechanism to more proportionally distribute asylum seekers across the Continent — a move that, in the end, it is unlikely to make.

Central and Eastern Mediterranean Migrant Routes

There are multiple paths by which migrants cross the Mediterranean Sea to access Europe. An agreement between the European Union and Turkey struck in March 2016 significantly cut the flow on the eastern routes. The number of migrants taking the central routes has remained steady, if comparatively lower than on the eastern routes at its peak.



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Meanwhile, the European Union will work with migrants' countries of origin to try to prevent people from leaving their homes in the first place and to disrupt human-trafficking organizations that funnel migrants into Europe. The number of people crossing into Italy from Libya fell in 2017, but [the Continent's migration troubles](#) aren't over. After all, Libya remains politically unstable, and it may not be able to consistently work with Europe to stem the flow of migrants across its borders as its internal turmoil persists. Moreover, migrants have begun using new departure points, such as Tunisia and Algeria, en route to Europe.

Against this backdrop, the European Union will be eager to preserve [its migration deal with Turkey](#) in hopes of blocking floods of people from entering its territory. To that end, Brussels will promise Ankara financial assistance and stronger trade ties, including an update to the existing customs union agreement between them. But if the Turkish government continues



to [crack down on the media and opposition at home](#), Europe will increase political and financial pressure against it, adding further strain to their migration agreement.

SPLC Labels Christmas Extremism

Merry extremism everyone!

Source: <https://www.infowars.com/splc-labels-christmas-extremism/>



Dec 27 – The Southern Poverty Law Center has designated anyone hashtagging Merry Christmas, Christmas Eve, Christmas or Jesus a far right-wing extremist.

Breitbart writes, “According to the SPLC, its ‘hate tracker’ tracks accounts that represent a ‘range of extremists,’ from ‘conspiratorial fringes of mainstream conservatism to outright white supremacists.”

The hate tracker notes that #Christmas is the second highest trending hashtag it tracked on Christmas Eve, with @whitehouse and @potus being among the four

top Twitter handles mentioned with the hashtag.



Berlin sets up New Year's Eve 'safe zone' for women amid sexual assault concerns

Source: <https://www.washingtonpost.com/news/worldviews/wp/2017/12/30/berlin-sets-up-new-years-eve-safe-zone-for-women-amid-sexual-assault-concerns/>

Dec 30 — As thousands celebrate New Year's Eve at Berlin's iconic Brandenburg Gate on Sunday night, a team of medical professionals in a white tent only yards away will be standing by, waiting for possible victims of sexual assault and harassment to seek their help.

After mass sexual assaults occurred on New Year's Eve in several German cities two years ago, Berlin officials now work on the assumption that prevention efforts alone may no longer be sufficient at such large-scale events. Women will be able to speak to psychologists immediately after being assaulted or harassed in a “safe zone” at the Berlin New Year's Eve event.

While the presence of medical professionals and police officers at crowded event sites is nothing new, it is the first time such a dedicated area with experienced staffers will be set up in Berlin, and the first time that such an effort is being undertaken on New Year's Eve in Germany.

“[Assaulted women] can stay here and calm down or speak to someone trained to offer psychological support,” said Anja Marx, the spokeswoman of Berlin's main New Year's Eve celebrations. Up to five members of a German Red Cross team will be available to offer immediate support to victims.

On New Year's Eve 2015, about 1,200 women became victims of sexual assault in several major German cities, with more than 600 women attacked in Cologne and about 400 victims in the northern German city of Hamburg. Prosecutors established that more than 2,000 men were involved in the assaults, but only a tiny fraction — about half of them foreign nationals who at the time had only recently arrived in the country — had been identified a year later.

It took months for the full scale of the 2015 assaults to emerge, but when prosecutors released their final estimates, Germans' attitude toward refugees changed dramatically: To many, New Year's

Disgrace



Eve 2015 is the night Germany's welcoming attitude toward newcomers ended. Leading politicians called for tougher deportation laws soon thereafter.

Far fewer cases of sexual assault were registered last year after authorities sent out thousands of additional police officers onto the streets and banned the use of fireworks in several locations. Privately purchased fireworks can create intense smoke, potentially hindering police operations to prevent or stop sexual assaults and other crimes.

Germany's parliament also passed stricter sexual assault laws last year that addressed complaints that German codes had been too lax. Previously, prosecutors had to prove that alleged perpetrators used force or made threats. Most of the alleged perpetrators responsible for the 2015 New Year's Eve assaults stood accused of offenses such as facilitating sex assaults as part of a group or groping, accusations that were difficult to prosecute under the old laws.

This year, authorities have doubled down on efforts to not only prosecute but also prevent assaults. Apart from an increased police presence, authorities have installed more CCTV cameras and streetlights across major cities.

Far fewer sexual assaults occurred in Berlin during the 2015 celebrations than in other cities, partially due to the experience Berlin authorities have in dealing with crowds. Still, authorities there have taken more preventative measures since, this year adding the safe zone.

A similar effort was made at the rowdy Oktoberfest celebration in the German capital.

However, Berlin's safe zone has come under some criticism. The chairman of Germany's police union, Rainer Wendt, criticized Berlin's planned safe zone for women in an interview with a German newspaper this week, saying: "Whoever came up with this idea did not understand its political dimension. It implies that there are zones of security as well as zones of insecurity."

Wendt's criticism was shared by others who believe that the introduction of women's safe zones would essentially come close to accepting sexual violence as a reality of life, and that it could lead to the "end of equality, freedom and self-determination," in Germany, as Wendt phrased it.

But experts on sexual assault prevention disagree with that assessment. "Germany's efforts are a step in the right direction — they counter the expectation that sexual violence should be treated as a private problem, not a public concern," said Rachel Davis, managing director at the Prevention Institute in Oakland, Calif., even though she emphasized that "more can be done to prevent it in the first place."

"It's also important to counter the promotion of other norms, such as rigid gender norms that associate masculinity with control and femininity with compliance, acceptance of abuse of power over others, and acceptance of aggression and violence," said Davis.

Daniel Pipes: Europe Must Control Immigration

Il Populista

January 2, 2018

Source: <http://www.meforum.org/7135/daniel-pipes-europe-must-control-immigration>



Did the "Arab spring" destabilize the whole Mediterranean area and create the crisis of illegal migrants for Europe?

The Arab revolts that began in late 2010 exacerbated existing problems in the Mediterranean area – poverty, repression, instability, and violence.

The deeper problem concerns the difficulty Muslims have coping with modernity as created in Europe.

What steps should be taken to stabilize the Mediterranean?

Stabilizing the Mediterranean region requires Muslims fully to come to terms with modernity.



This is, obviously, a vast undertaking that will take many years. Westerners standing up for their values would be a good start.

To end the illegal mass migration?

That is much easier.

It merely requires a determined European effort to stop all illegal immigration, whether crossing the Evros River into Tycherio, the Mediterranean Sea to Pantelleria, or barbed-wire fences to Ceuta (respectively, Greece, Italy, and Spain).



The Spanish enclave of Ceuta borders Morocco

It is mind-bogglingly bizarre that European governments, with all their wealth, have not taken this step.

Eastern European states are forming new alliances. Please assess

the Visegrád Group (of 4 countries), the Visegrád Plus Group (of 5 countries), and the Three Seas Initiative (of 12 countries). What importance do these groupings have?

Eastern European countries are smaller, poorer, and newer to democracy, so they tend to get overlooked in comparison to Germany, Great Britain, France, and Italy.

Therefore, their uniting into regional blocs magnifies their voice and influence, which I see as a positive development because the easterners tend to be more sensible than the westerners.

Austria's new government has been very negatively viewed in Europe and Israel, despite the leader of the Freedom Party of Austria (Freiheitliche Partei Österreichs, FPÖ), Hans-Christian Strache, declaring himself a friend of Israel and even calling for moving the Austrian embassy to Jerusalem. Please assess.

I am [optimistic about most anti-immigration parties](#) such as the FPÖ, seeing them moderating over time, shedding their cranky and eccentric elements, and gaining experience.

The FPÖ is in the vanguard of this evolution, being the first anti-immigration party to partner in a coalition focused on controlling immigration and integrating immigrants. How it fares has potentially great implications for other such parties.

What do you think about Saudi Crown Prince Mohammad bin Salman's reforming efforts?

I am a fan. In the spirit of Japan's Meiji era and Turkey's Atatürk reforms, MbS hopes to effect a top-down, wholesale reform of Saudi life, including its religious, social, economic, and foreign policy. It's a hugely ambitious undertaking that could very well fail but for the sake of Saudis and non-Saudis alike, I wish him a long and successful rule.

The European press does not appreciate those efforts but speaks negatively of them as "authoritarian." Your response?

Of course, he's authoritarian. How else does a crown prince get things done? The key is whether his efforts are constructive or destructive – and MbS' appear to be the former.

Erdoğan has criticized MbS calling for "moderate Islam," he took the lead in condemning Trump's recognition of Jerusalem as Israel's capital, and he seems to aspire to become the leader of an alliance with Qatar and Sudan. Where do you expect this will lead?

The Turkish and Iranian states have been [perpetual rivals](#) for over four hundred years. These days, this means Erdoğan emulating Khamene'i's Islamist threat to the region, and specifically versus the Arabs and Israel.

Turkey has a stronger economic base and Erdoğan enjoys greater popularity than Khamene'i, so this is a very serious challenge to the region.

Will Erdoğan and Khamene'i be able to lead the Arab world?



It is striking how the Arab trouble-makers of yesteryear – Egypt, Syria, Iraq – have gone almost quiet, while the once-solid Western allies Turkey and Iran have become the disruptive and revolutionary agents.



(Note the responses to Trump's recognition of Jerusalem as Israel's capital for an example of this.)

Turkey's Erdoğan (L) and Iran's Khamene'i keep meeting and keep competing

At this point, Khamene'i dominates in four Arabic-speaking capitals (Baghdad, Damascus, Beirut, and Sanaa) and Erdoğan in none.

But I can imagine the Turkish state catching up, though its successes will come more easily in the Balkans than in the Arab states.

You argued against involving Turkey in the development of eastern Mediterranean gas projects; accordingly, how do you assess the recent agreement between Israel, Cyprus, and Greece to construct a submarine pipeline to take the gas to Europe?

I endorsed this agreement when the news first broke, calling it "great" because the pipeline will avoid Turkey, it reduces European dependence on Russia, and it builds the Cypriot and Israeli economies.

We read that Trump is doing everything wrong both in foreign policy and in domestic politics and that the Americans cannot wait to return to a Democratic president. Is that correct?

Partially correct. Trump is not doing everything wrong but his character and mistakes combine to make him very unpopular; current polls show him supported by only 40 percent of the American public.

This will likely lead to a crushing Democratic victory in November 2018. I can't imagine that Trump will be re-elected in 2020.

But then, I could not imagine him elected in 2016, so my record of predictions about him is not the best.

This Pistol Attachment Will Teach You To Shoot More Accurately

Source: <https://i-hls.com/archives/80562>



Dec 31 – A new smartphone-compatible pistol accessory could replace your friendly neighborhood shooting range coach. Rolera LLC has released the MantisX, a device designed to attach to the rail or the magazine of any pistol to track a shooter's movements and sync the data to his or her mobile phone.

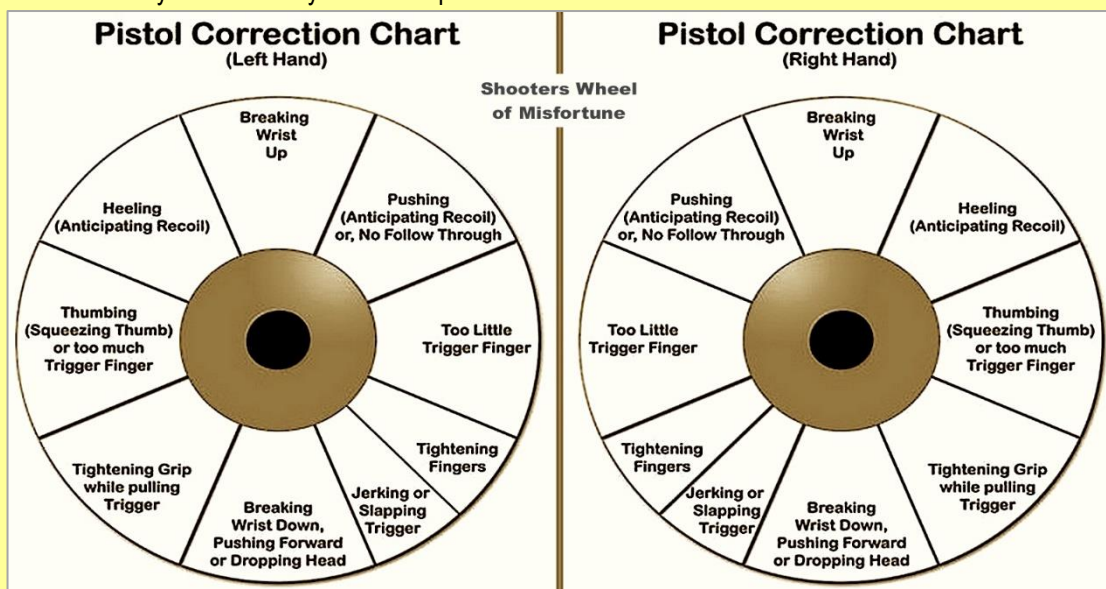
According to military.com, the wireless device, which provides real-time feedback, is designed for live fire on the range, dry fire, airsoft, CO2 and other types of pistols. The product doesn't require a special target and works at any distance.



The system works like this: first, the MantisX has to be attached to the pistol's rail or magazine, and the smartphone bluetooth-compatible app must be installed. Then, the phone and the gun system has to be paired.

With each shot the shooter takes, the MantisX attachment tracks the movement of the barrel milliseconds before, during and after the trigger pull. The shooter gets a score from 1 to a 100 (100 is impossible unless pistol is locked in a vice), and also gets direction and improves suggestions. The suggestions can vary from telling the shooters that they were too far left, to telling them that they are holding the gun too tight, thus making the next shot more accurate.

In a recently released video on YouTube, the firm bills the device as "a unique firearm training system that diagnoses shooting issues and coaches you on where you need improvement."



"While you're practicing, the MantisX is analyzing the movements of your gun before, during and after each shot," the commercial states. "It highlights and helps you avoid errors, like pulling, heeling, anticipating recoil, breaking your wrist up or down, or tightening grip while pulling the trigger."

France left shocked by 'savage' New Year attacks on police

Source: <https://www.thelocal.fr/20180102/france-shocked-by-new-years-eve-attacks-on-police>

Jan 02 – **The French government has vowed a crackdown after separate attacks on French police officers over New Year, which included a policewoman being repeatedly kicked and beaten in a "savage" assault that was filmed and posted on social media.**

French political leaders have vowed justice and promised a crackdown after a shocking attack on a female police officer on New Year's Eve was filmed and posted online.



The attack in the eastern Paris suburb of Champigny-sur-Marne saw the officer knocked to the ground before being repeatedly kicked and punched in the head and body (see video below).

President Emmanuel Macron called the crime a "cowardly and criminal lynching", and vowed that those responsible would be caught and punished.

The incident took place in the early hours of New Year's Day after an emergency call out to a private party



where huge hundreds had turned up and security were forced to turn hundreds away.

Police were called when a group of around 20 people, who refused to leave the event, broke into the warehouse where the party was taking place. The area was cleared by police.

They fired tear gas after "a group of particularly violent individuals laid into the police," local security chief Jean-Yves Oses said.

It's not clear what happened next but two police officers, one female and one male, became isolated among the crowd. Video images show youths turning over a police patrol car to cheers from crowds.

Then images show the policewoman knocked to the road and repeatedly kicked and punched.

Her colleague was also attacked and suffered a broken nose.

Two people were detained on suspicion of vandalism, but no one has been arrested for attacking the police.

On Tuesday, reports of another attack on police officers emerged, this time in the northern suburb of Aulnay-sous-Bois when police stopped two youths suspected of stealing a scooter.

One officer was punched several times while another fired his gun into the air to scare off the attackers.

The attacks on the police were widely condemned by France's outraged political class, who offered solidarity to the injured officers but also demanded swift and tough justice for those responsible. Far right leader Marine Le Pen demanded a reform to allow police to greater use of "legitimate defense" to respond to such attacks.



Pressure grew on France's interior minister Gerard Collomb, who called the attacks "savage" and "unacceptable".

He denounced a "society of violence" that "cannot continue to exist".

Collomb said reforms were needed to improve lives in "pauperised, ghettoised" French suburbs, which have long suffered a reputation for violence and poverty.

"These are neighbourhoods that must change," Collomb said, ahead of new pilot schemes in local policing set to begin next month following a large-scale consultation with security forces.

President Macron set out a raft of policies to fight poverty in downtrodden districts in November after critics labelled him a "president of the rich" due to his generous tax cuts for high earners.

He reached out to the poor again in his New Year's message, promising a "grand social project" in 2018. But the two New Year's attacks on police are just the latest in a long line of incidents in which the forces of law and order have been targeted.

French police have long suffered testy relations with youths in poor immigrant-heavy suburbs, not least since the nationwide riots in 2005 sparked by the death of two teenagers who were electrocuted while hiding from officers.

The assault of a young man by police in Aulnay-sous-Bois -- which led to officers being charged, including for rape after a truncheon was shoved up the youth's anus -- sparked fresh unrest last year.

[In October 2016 a police patrol car was attacked with petrol bombs in a suburb near Paris leaving officers seriously injured.](#)

Politicians condemned the attack and [police officers staged protests on the Champs-Élysées to denounce the violence.](#)

"We want to fight against the trivialization of violence against the police," one police officer in Nice told the Nice Matin newspaper at the time.

"We want to be heard by our hierarchy and by the judiciary. If we become victims ourselves, who will protect the public?"

"We are under huge demand, but younger colleagues are being discouraged."

Another police officer told the LCI news site: "We don't feel safe anymore so the French people don't either."

EDITOR'S COMMENT: Usually it is "surprise"; this time it was a "shock". Are we improving or we have to wait for the next police man/woman that would be killed?

Mass Migration: Uninvited Guests

By Philip Carl Salzman

Source: <http://www.meforum.org/7140/mass-migration-uninvited-guests>

Dec 31 – In our desire to insure an inclusive, humane, and tolerant society, we seem to have constructed a simplistic and inadequate picture of refugees and illegal immigrants.

Perhaps the majority of Americans and Canadians do not approach the question of refugees and immigrants with an open mind, but with a set of "progressive" assumptions:

- ◆ The idea that all cultures are equally good and equally valuable, sometimes known as "cultural relativism." When faced with an uninvited influx of outsiders, we do not worry about *what* culture the incomers are bringing, because, whatever it is, it supposedly must be fine.
- ◆ That multiculturalism, the coexistence of a variety of cultures, is desirable. The more cultures in a multicultural society, the more cultural diversity, the better.
- ◆ That in our society, and in the world generally, each person falls into the category of either oppressor or oppressed. our simple classification of oppressor and oppressed can generally class refugee claimants and illegal migrants as oppressed, because they are leaving a place of conflict or poverty or despotism, are people of colour, are Hindu or Muslim or Buddhist or from a smaller, non-Christian group, or are homosexual. We therefore define refugee claimants and illegal refugees as oppressed, as victims, desperate, and in need. We view them through a humanitarian lens, with generosity and sympathy.





If we open our hearts to the oppressed, we must view the oppressors with disdain. Who are the oppressors? We are quite certain that women are oppressed by men, that homosexuals are oppressed by heterosexuals, that people of colour are oppressed by whites, that the poor are oppressed by the well off, and that Muslims are oppressed by Christians and Jews.

[A monument to Canadian multiculturalism in Toronto](#)

So while our inclusiveness, tolerance, and rejection of hate furthers multiculturalism, our society is rife with villains to be attacked and suppressed: whites, men, heterosexuals, the financially well off, Christians and Jews. We do not wish to hate, but we righteously hate oppressors. Gender, race, religion, and sexual preference have once again become reasons to reject whole

categories of people, just *different* categories of people than before.

Framed primarily by our humanitarian intentions, we reduce refugees and immigrants to no more than people in need for whom we should have sympathy. But perhaps we should hesitate to reduce people to such empty general categories, and dehumanize them by ignoring the culture that they carry with them. Refugees and immigrants bring their own cultures, their own assumptions, beliefs, values, fears and hopes from their homelands. One cannot just assume that they wish to integrate or assimilate into the Western culture. Willingness to assimilate might well vary from individual to individual, and from culture to culture.

Immigrants from South Asia have grown up in a hierarchical caste society, in which higher castes are pure and lower castes polluted. Sharing food or marrying is forbidden between low castes and high castes.



Violators of these rules may [suffer penalties](#) of beating, gang rape, and even execution. There are cases of Canadians from South Asia who have been [convicted of murdering](#) a young family member who grew up in Canada, and who married into a low caste.

[Immigrants from the Middle East have grown up in societies where men are in charge of women.](#)

Immigrants from the Middle East have grown up in societies where men are in charge of women, and it is women's duty to obey and maintain modesty in demeanor and behaviour. There are cases of Americans or Canadians originating in the Middle East whose female family members become "too American" or "too Canadian," too immodest to protect family honour. Their family members, to [defend family honour](#), commit murder, especially of their women. We call these as honor killings, because they are motivated by



the desire to defend family and community honor, and are commonly approved of by many members of the ethnic community.

Muslim immigrants have grown up in a tradition defined by sharia law, which forbids, on pain of death, a Muslim leaving Islam; criticism of religion, and homosexual acts. Women who have suffered rape are considered to have engaged in adultery, in some Muslim countries subject to death by stoning. Non-Muslim Christian or Jewish "infidels" must pay protection money, called a *jizya*, annually to be considered inferior *dhimma*, tolerated fourth-class citizens, with whom Muslims should not become friends. Other infidels, such as Yazidis, who are not "protected" are subject to murder, capture, gang rape, and sexual slavery, all legitimate under sharia law.^[1]

Many of these rules and penalties are totally inconsistent with Western law and with human rights as defined by the Canadian Charter of Rights and Freedoms, the US Bill of Rights, and the UN's Universal Charter of Human Rights.

Canadians and Americans presumably do not wish to see their rights replaced by sharia law or caste law. Some immigrants, however, hold their caste and religious law above Western law, and would [like to see](#) caste and religious law replace Western law. In the meantime, they act as a fifth column, attempting to undermine Western law and custom, whether by electoral pressure or violent attack. Some Western legislators, in the face of immigrant and minority pressure, back pedal, in the name of multiculturalism and diversity, and withdraw support for free speech, for the right of criticism of religion, for freedom of sexual choice, and other individual liberties.

There is, unfortunately, no simple policy solution. Policies directed at categories of people based on origin or religion are prejudicial and illiberal. You cannot know someone's beliefs, values, and propensities from labels indicating their origin, ethnicity, or religion. Immigration policy needs to be directed toward individuals, welcoming those whose values and attitudes are consistent with Western culture. Close scrutiny of applicants is in our collective interest. We should accept those immigrants who are willing and able to respect American and Canadian law and Western culture, and who wish to join other Americans and Canadians in building a society based on human rights.

Are all cultures around the world equally good and equally valuable? The evidence indicates that cultures are often very different and have very different results for those living under them. While North American, Western Europe, and many English-speaking countries are all, for example, highly democratic, elsewhere in the world, such as the Middle East, all countries (but Israel) are despotic. While there is political freedom in the West, all Arab countries are [regarded](#) as "unfree," with the exception of Morocco, which is "partially free." In the non-Arab Middle East, all are "unfree," except Turkey, which, at least for now, is "partially free."

Some countries, such as Saudi Arabia and Iran, have rejected the United Nations Universal Declaration of Human Rights on the grounds that it is inconsistent with their culture and religion, and instead wrote the [Cairo Declaration Human Rights](#), ratified by the Organization of Islamic Conference (now the 57 member Organization of Islamic Cooperation) on August 5, 1990. In it, human rights are subordinated to Islamic law, Sharia. If something is permitted in Sharia, such as stoning a woman to death for adultery or rape, it is a human right; if it is not permitted in Sharia, it is not a human right.

Development, measured by a wide variety of indices, varies greatly among the regions of the world. The UN Development Program Arab Human Development Reports [places](#) the Arab world at the bottom or second to the bottom in most indices of human development, while Europe and North America are at the top. If all countries are equally good and valuable, why should a vast number of people be trying to escape the Middle East and Africa to come to North America and Europe? Is that not testimony to which countries and cultures they judge as "better" and which they judge as "worse"?

Is "the more the merrier" in multiculturalism sensible? Can all cultures, all ways of life, coexist happily? A society can only function smoothly if there is a large degree of agreement and commonality regarding to what language people shall speak, what rules they should follow in dealing with one another, and how government is to be established. Where is it written that all cultures are necessarily compatible with one another? The [success](#) of immigrants in North America is a result of immigrants [assimilating](#) to Western culture and society, not due to immigrants clinging to the laws and practices of the lands they have left behind.



Finally, the culturally empty category of "oppressed" is also not necessarily helpful in deciding which potential immigrants would make a positive contribution to the receiving society. Societies are built on common sentiment, not on sentimental sympathy for alleged "victims."

Immigrants built Canada and the United States, but not by flying the flags of their old country and lobbying for the ancient laws. Immigrants joined in with others to build a common culture, a unified government and legal system, and a vibrant economy. We are multicultural in the sense that we welcome people from all over the world, but we welcome them to share our rights and freedoms, our challenges and opportunities, and to benefit with us. We welcome them to become Americans and Canadians; we welcome them to the West.

[1] Bat Ye'or, *Islam and Dhimmitude: Where Civilizations Collide*, Madison, NJ: Associated University Presses, 2001.

Philip Carl Salzman is a professor of anthropology at McGill University and a fellow at the Middle East Forum.

Houthi Navy discovers spy device along Yemeni coast – video

Source: <https://www.almasdarnews.com/article/houthi-navy-discovers-spy-device-along-yemeni-coast-video/>



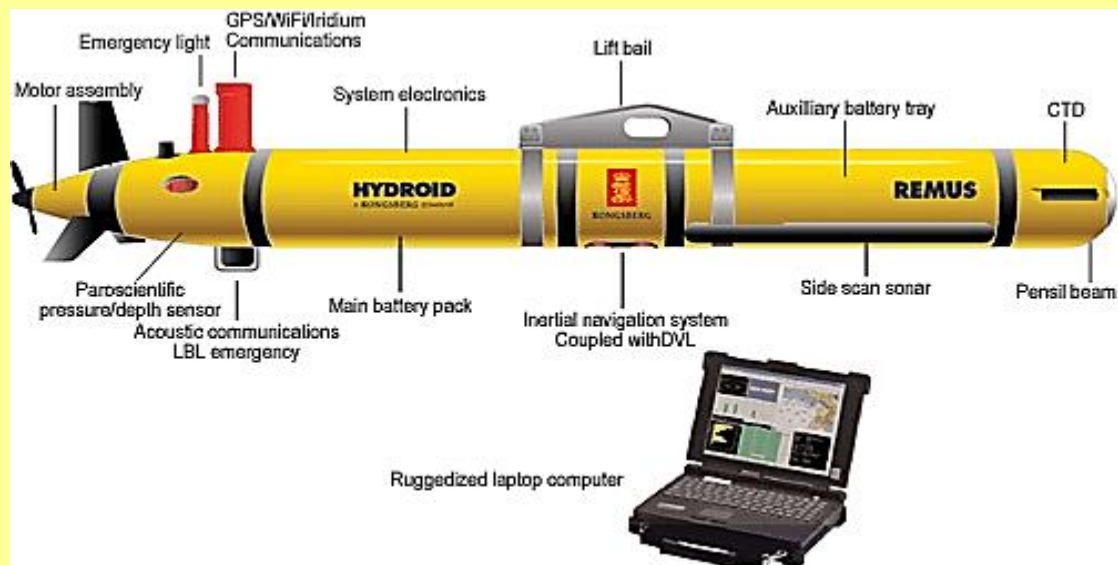
Jan 01 – The Houthi Navy discovered an autonomous underwater vehicle used for spying missions while patrolling the waters around Yemen's coast this week.

According to Houthi media, their navy discovered and seized the REMUS 600 spying device, yesterday,

claiming that it belonged to the Saud-led Coalition currently fighting inside Yemen.

The REMUS 600 was also use by the US Army during their seven year long war in Iraq.





The REMUS 600 is designed to be remotely controlled and is capable of spotting mines underwater.

Greece – 2017 Christmas Manger in Naxos Island...



What Are Iranians Really Protesting About?

By Raymond Ibrahim

Source: <http://www.meforum.org/7141/are-iranians-protesting-against-islam>

Jan 04 – What began on December 28 as local protests against high food prices in the northern city of Mashhad, Iran, has spiraled into mass protests by hundreds of thousands of Iranians in some two dozen cities, including if not especially Tehran, the seat of government. So far over 20 protesters have been killed and many hundreds arrested in what has been widely [described](#) as "the most serious internal crisis the country has faced this decade."

The protests have morphed from mundane topics concerning the economy to more existential topics concerning Islamic leadership. Reportedly hundreds of thousands of protesters have been heard shouting "We don't want an Islamic Republic," and calling blessings on Reza Shah, the staunch secularist and political reformer who did much to



Westernize Iran, until his son and successor, Muhammad Reza Shah was deposed during the Islamic Revolution of 1979. According to Mideast media, women—such as Maryam Rajavi—are spearheading the current protests (and symbolically rejecting Islamic impositions by publicly removing their hijabs). Even the Iranian regime sees the current unrest as a revolt against Islam. In his initial remarks after demonstrations first erupted, Supreme Leader Ayatollah Khamenei [said](#), "All those who are against the Islamic Republic ... have all joined forces in order to create problems for the Islamic Republic and the Islamic Revolution" (note the recurrent and telling adjective "Islamic").



Even so, "mainstream media" see growing poverty and frustration at the lack of social freedoms as the *only* reasons behind the current unrest. Overlooked in their analysis is that, because Islam is not meant to be a "spiritual thing" one does privately, but is rather a complete system of governance, permeating the whole of private and social life, the ongoing protests in Iran, while ostensibly revolving around economic, social, and political issues, are ultimately protests against Islamic teachings *concerning* economic, social, and political issues, which the Islamic Republic of Iran has been imposing on the populace since coming to power in 1979.

This is evident even in the new rallying cry of the protestors—"Death to the Dictator"—in reference to Supreme Leader Ayatollah Ali Khamenei himself. By its very nature, Islamic law—both Sunni and Shia—calls for dictatorial rule. So long as the caliph, sultan, or emir governs society according to Sharia, Muslims must obey him—even if he is a despicable and cruel personage. After examining a number of Islamic rulings from authoritative exegetes, as well as a number of statements attributed to Muslim prophet Muhammad and in the Koran concerning the importance for Muslims to follow Islamic law—which is the only relevant question of when Muslims should and should not seek to overthrow their ruler—Ayman al-Zawahiri writes,

To summarize: It is forbidden to overthrow a tyrant, but it is a duty to overthrow an infidel. If the ruler is despotic, it is unlawful for a Muslim to rally other Muslims in order to condemn him, for if they do so then they become the aggressors and it becomes incumbent for the sultan to fight them (*The Al Qaeda Reader*, p. 122).

As it happens, the social oppression currently being protested against in Iran—from second-class status for women, to bans on all forms of expression critical of Islam, its prophet, and his representative on earth—is mandated by Islamic law, thereby making the protesters "the aggressors."

But even the economic aspects of the protests are largely by-products of Islamist aspirations. As Donald [Trump tweeted](#) last Friday, the Iranian "people are finally getting wise as to how



their money and wealth is being stolen and squandered on terrorism." Indeed, the economic suffering of the people has come at a time when the regime has grown rich—not least by Barack Obama giving them over \$100 billion as part of a nuclear deal. The reason for the disparity is that the regime has been and continues to spend much of its wealth in trying to realize its stated Islamic ideals; that is, it prefers supporting Hezbollah (currently Forbes [wealthiest terrorist organization](#)) and Hamas (third wealthiest) against Islam's arch "infidel" enemy, Israel, in the name of and for the greater glory of Allah, rather than feed its people.

Incidentally, because the right to protest is a given in the West, and thus occurs often—including over trivial and/or absurd matters, as when university students planned a "[sh*t-in](#)," occupying restrooms as a way of demanding more "[gender-neutral facilities](#)"—the grave consequences of the current protests in Iran can easily be underestimated. Objectively speaking, they are indicative of just how fed up Iranians are—and the fatal risks they are willing to take—which, unsurprisingly, also trace back to Islam:

Protesters could also potentially face the death penalty when their cases come to trial, according to the head of Tehran's Revolutionary Court, [the AP reported](#). Iran's semiofficial Tasnim news agency quoted Mousa Ghazanfarabadi as saying: "Obviously one of their charges can be Moharebeh," or waging war against God [Allah], which is a death penalty offense in Iran.

Moharebeh is precisely what al-Zawahiri was referring to in the above excerpt: the only legitimate reason to overthrow an Islamic ruler is his failure to govern according to Islam—which Khamenei and his regime can hardly be accused of (from a Shia prism, that is). Seeking to depose him because he is personally corrupt, despotic, cruel, or spending more money on jihad than food is forbidden, and transforms the protesters into aggressors against Allah, a crime worthy of punishment, including death.

Raymond Ibrahim is a Judith Friedman Rosen Fellow at the Middle East Forum.

Swedish zoo admits killing nine healthy lion cubs because they became 'surplus' animals

Source: <http://www.independent.co.uk/news/world/europe/zoo-kills-lion-cubs-sweden-nine-surplus-animal-cruelty-boras-djurpark-bo-kjellson-a8155546.html>



Only two of 13 lion cubs from different litters have survived the last five years Boras Djurpark

A zoo in Sweden has said it euthanised healthy lion cubs because it could no longer keep them.



CBRNE-TERRORISM NEWSLETTER – January 2018

Boras Djurpark, an [animal](#) park around 25 miles from Gothenberg, admitted it had put down nine healthy lion cubs since 2012.

Bo Kjellson, chief executive of the park, said healthy [animals](#) sometimes had to be euthanised if they were rejected by their pride, or cannot be rehomed elsewhere.

"I think they were killed after two years," Mr Kjellson told Swedish broadcaster [SVT](#).

"At that time we had tried to sell or relocate them to other zoos for a long time but unfortunately there were no zoos that could receive them, and when the aggressions became too big in the group we had to remove some animals. And then it had to be them.



"It's no secret in any way and we do not try to hide that we were working this way. So it's unfortunately a natural path for groups of lions."

Mr Kjellson said the zoo was unsure of what would happen to the other [lions](#).

Boras Djurpark CEO said the cubs could not be rehomed (Boras Djurpark)



"That we will see in the future. Currently, the group works well, but some of them may become surplus animals, and then we will try to place them elsewhere.

"It could be so that we have to put them to death."

Only two of the 13 cubs, born to three separate litters, have survived the past five years.

Two lions died of natural causes and the remaining cubs were put down.

Helena Pederson, a researcher in animal studies at Gothenburg University, told SVT the euthanasia of animals in [zoos](#) raised the question of whether such institutions should be open.



"It is clear that there is a contrast to the public's perception of what a zoo is," she said.

"To kill animals as part of the organisation, I think that upsets quite a few.

"I think we need to contemplate on why it's important for us to have zoos and if it's worth the price the animals pay for it."

EDITOR'S COMMENT: It would be unfair to call Swedish people as savages because of this zoo incident. But since it is the third time innocent baby animals are killed for no apparent reason, I can call them insensitive – at least... Shame on you if you allow this to happen again – ever!



Sixteen Year Old Ahed Tamimi Offers Israelis a Lesson Worthy of Gandhi

By Jonathan Cook

Source: <https://www.globalresearch.ca/sixteen-year-old-ahed-tamimi-offers-israelis-a-lesson-worthy-of-gandhi/5625439>

Jan 09 – Eventually, colonised peoples bring to the fore a figure best suited to challenge the rotten values at the core of the society oppressing them. Ahed is well qualified for the task.



Sixteen-year-old **Ahed Tamimi** may not be what Israelis had in mind when, over many years, they criticised Palestinians for not producing a **Mahatma Gandhi** or **Nelson Mandela**.

She was charged last week with assault and incitement after she slapped two heavily armed Israeli soldiers as they refused to leave the courtyard of her family home in the West Bank village of Nabi Saleh, near Ramallah. Her mother, Nariman, is in detention for filming the incident. The video quickly went viral.



Western commentators have largely denied Ahed the kind of effusive support offered to democracy protesters in places such as China and Iran. Nevertheless, this Palestinian schoolgirl – possibly facing a long jail term for defying her oppressors – has quickly become a social media icon.



While Ahed might have been previously unknown to most Israelis, she is a familiar face to Palestinians and campaigners around the world.

For years, she and other villagers have held a weekly confrontation with the Israeli army as it enforces the rule of Jewish settlers over Nabi Saleh. These settlers have forcibly taken over the village's lands and ancient spring, a vital water source for a community that depends on farming.

Distinctive for her irrepressible blonde hair and piercing blue eyes, Ahed has been filmed regularly since she was a small girl confronting soldiers who tower above her. Such scenes inspired one veteran Israeli peace activist to anoint her Palestine's Joan of Arc.

But few Israelis are so enamoured.

Not only does she defy Israeli stereotypes of a Palestinian, she has struck a blow against the self-deception of a highly militarised and masculine culture.

She has also given troubling form to the until-now anonymised Palestinian children Israel accuses of stone-throwing.

Palestinian villages like Nabi Saleh are regularly invaded by soldiers. Children are dragged from their beds in the middle of the night, as happened to Ahed during her arrest last month in retaliation for her slaps. Human rights groups document how children are routinely beaten and tortured in detention.

Many hundreds pass through Israeli jails each year charged with throwing stones. With conviction rates in Israeli military courts of more than 99 per cent, the guilt and incarceration of such children is a foregone conclusion.

They may be the lucky ones. Over the past 16 years, Israel's army has killed on average 11 children a month.

The video of Ahed, screened repeatedly on Israeli TV, has threatened to upturn Israel's self-image as David fighting an Arab Goliath. This explains the toxic outrage and indignation that has gripped Israel since the video aired.

Predictably, Israeli politicians were incensed. **Naftali Bennett**, the education minister, called for Ahed to "end her life in jail". Culture minister **Miri Regev**, a former army spokeswoman, said she felt personally "humiliated" and "crushed" by Ahed.

But more troubling is a media debate that has characterised the soldiers' failure to beat Ahed in response to her slaps as a "national shame".

The venerable television host **Yaron London** [expressed astonishment](#) that the soldiers "refrained from using their weapons" against her, wondering whether they "hesitated out of cowardice".

But far more sinister were the threats from **Ben Caspit**, a leading Israeli analyst. In a column in Hebrew, he said Ahed's actions made "every Israeli's blood boil". He proposed subjecting her to retribution "in the dark, without witnesses and cameras", adding that his own form of revenge would lead to his certain detention.

That fantasy – of cold-bloodedly violating an incarcerated child – should have sickened every Israeli. And yet Caspit is still safely ensconced in his job.

But aside from exposing the sickness of a society addicted to dehumanising and oppressing Palestinians, including children, Ahed's case raises the troubling question of what kind of resistance Israelis think Palestinians are permitted.

International law, at least, is clear. The United Nations has stated that people under occupation are allowed to use "all available means", including armed struggle, to liberate themselves.

But Ahed, the villagers of Nabi Saleh and many Palestinians like them have preferred to adopt a different strategy – a confrontational, militant civil disobedience. Their resistance defies the occupier's assumption that it is entitled to lord it over Palestinians.

Their approach contrasts strongly with the constant compromises and so-called "security cooperation" accepted by the Palestinian Authority of **Mahmoud Abbas**.

According to Israeli commentator **Gideon Levy**, Ahed's case demonstrates that Israelis deny Palestinians the right not only to use rockets, guns, knives or stones, but even to what he mockingly terms an "uprising of slappings".



Ahed and Nabi Saleh have shown that popular unarmed resistance – if it is to discomfort Israel and the world – cannot afford to be passive or polite. It must be fearless, antagonistic, and disruptive. Most of all, it must hold up a mirror to the oppressor. Ahed has exposed the gun-wielding bully lurking in the soul of too many Israelis. That is a lesson worthy of Gandhi or Mandela.

Jonathan Cook won the Martha Gellhorn Special Prize for Journalism. His books include "Israel and the Clash of Civilisations: Iraq, Iran and the Plan to Remake the Middle East" (Pluto Press) and "Disappearing Palestine: Israel's Experiments in Human Despair" (Zed Books).

99 Percent of "Palestine Refugees" Are Fake

By Daniel Pipes

Source: <http://www.meforum.org/7149/99-of-palestine-refugees-are-fake>

Jan 10 – In the words of a veteran Washington hand, the problem of the United Nations Relief and Works Agency (UNRWA), the main UN agency dealing with Palestinians, is always important but never urgent.

Well, it just became urgent.

That's because President [Trump](#) tweeted "with the Palestinians no longer willing to talk peace, why should we make any of these massive future payments to them?" Then, U.S. ambassador to the United Nations [Nikki Haley](#) added that the U.S. government is prepared to cut off funds to UNRWA. And, [Axios reported](#), a U.S. payment of \$125 million was not delivered (though that was later [denied](#)).

The American taxpayer is UNRWA's largest donor, paying in \$370 million in 2016. Few expenses would be more satisfying to cut from the federal budget, for UNRWA has a long record of misbehavior: incitement against Israel, supporting violent attacks on Jews, corruption, and perpetuating (rather than ending) the refugee problem. Not surprisingly, many attempts have been made in Congress to cut its funding. But, as



[Steven J. Rosen](#) documented with regard to ten initiatives in the years 1999-2014, every one of them ended in failure because of Israeli government opposition.

[International financing of UNRWA encourages Palestinian rejectionism](#)

Because of what, you ask? Yes, contrary to what one might expect, the Government of Israel

wants continued U.S. payments to UNRWA, fearing that their termination might cause a new intifada, the collapse of the Palestinian Authority, or renewed warfare with Hamas. Also, Jerusalem sees UNRWA as a lesser evil than alternative recipients of the money, such as the PA.

Perhaps this time, with the president wanting funds to be stopped, that will happen? Not likely, because, as a news report from Israel indicates, while Prime Minister Binyamin Netanyahu has [publicly endorsed](#) an American cut, behind the scenes he [seeks to block](#) or [slow down](#) this move, and for the usual reasons. Should that be so, it's hard to imagine the president and members of Congress ignoring his wishes, as they never have until now.

Even were U.S. funding to UNRWA ended, plenty of governments – and even individuals – could easily replace the \$370 million, and have incentive to do so. Qatar could consolidate



its role as protector of the Palestinians. Beijing could purchase a role at the heart of Arab politics. Moscow could reverse some of the damage of siding with Tehran. [Carlos Slim](#), estimated by *Forbes* today to be



worth \$67.9 billion, could decide to burnish his Arab credentials. Worse yet, were any of them to fill the funding gap, the Trump administration would look ineffectual and isolated.

UNRWA claims that this child, pictured in 2015 in Syria, is a "Palestine refugee"

And even if no one replaced U.S. donations, denying

UNRWA money does not get to the heart of the problem, which lies not in its sponsored activities but in its perpetuating and expanding population of "Palestine refugees" in three unique, even bizarre ways: allowing this status to be transferred without limit from generation to generation; maintaining the status after refugees have acquired a nationality (such as the Jordanian); and assigning the status to residents of the West Bank and Gaza, who live in the putative Palestinian homeland. These tricks allowed UNRWA artificially to expand the refugee population from [600,000](#) in 1949 to [5.3 million](#) now; an accurate count of real refugees now alive numbers around [20,000](#).

Therefore, while enthusiastically endorsing Trump's political goals, I suggest that withholding funds is not the right tactic. Better would be to focus on the "Palestine refugee" status. Denying this to all but those who meet the U.S. government's normal definition of a refugee (in this case, being at least 69 years old, stateless, and living outside the West Bank or Gaza), diminishes the irredentist dagger at Israel's throat by over 99 percent. It also puts the "Palestine refugee" status into play, permits millions of Palestinians to live more healthily, addresses the dank heart of Arab anti-Zionism, and helps resolve the Arab-Israeli conflict.

Accordingly, I propose that the president adjust U.S. policy to work with Jerusalem and continue to send aid to Palestinians while making it contingent upon the overwhelmingly majority of recipients formally acknowledging that they are not now and have never been refugees.

The Middle East Forum, which has been working this issue since 2010, has [proposed legislation](#) to make such a shift. It's both simple and feasible, as it does nothing fancier than bring Washington's relations with UNRWA into line with U.S. law and policy. About time.

Daniel Pipes is president of the Middle East Forum.



Animal Victims: It's Not Just Humans Who Die In Wars

By Kevin Mathews

Source: <https://www.care2.com/causes/animal-victims-its-not-just-humans-who-die-in-wars.html>

Jan 11 – War is by nature a deadly affair, yet when all is said and done, we tend to only take stock of the human casualties. The loss of human life is plenty devastating on its own, but make no mistake: in times of war, [animals get caught up in the carnage](#), too.

It probably goes without saying that when bullets are flying and bombs are exploding that animal bystanders are inevitably going to be killed, as well. However, succumbing to weapons by being in the wrong place at the wrong time is not the only way that animals suffer.



Beyond that, more locals turn to poaching during times of war to sell ivory and carcasses as their only source of income in a collapsed economy. Others simply kill the animals so that they have something to eat since food in a warzone is otherwise scarce. Plus, due to the inherent danger, animal charities and governments have to back off their conservation efforts, leaving the animals vulnerable to threats that could be more adequately addressed in times of peace.

These are the [conclusions](#) of Joshua Daskin and Robert Pringle, scholars from Princeton University. Curious about the cost of war on animals incidentally caught up in battles, the pair studied animal populations in nature preserves throughout the continent of Africa between 1946 and 2010. Their study is the [first](#) to demonstrate how war has a negative effect on animal populations.



The Gorongosa National Park in Mozambique is the most startling example of animal casualties during wartime. From the mid '60s to the mid '70s, Mozambique was in upheaval, first in search of independence, and then in a bloody civil war. During that time, 90 percent of the area's large herbivores (we're talking hippos, zebras, elephants, antelope, etc.) perished. Though it's the most extreme example, it's hardly an isolated one. Since 1946, 70 percent of Africa's protected nature reserves have been turned

into battlegrounds, typically knocking down animal populations along with them.

Thankfully, the research comes with some optimistic news: damage inflicted on animal populations during times of war is reversible. Although it's not as simple as ending the war and the animals returning, with some deliberate conservation efforts, communities can create the conditions necessary to revive the numbers over time.

Even the aforementioned Gorongosa National Park, despite the massive losses, is back up to having about 80 percent of the animal population it did about 40 years ago. That success did require intervention, however.

The Princeton team hopes that their research is utilized by conservation organizations to better allocate funds. With the knowledge that animals in war-torn regions are most vulnerable and that post-war regions could use the most assistance, animal charities could maximize their efforts accordingly.



Although this study focused on Africa, be aware that this problem is not limited to one continent. For example, there were [750,000 animal casualties](#) during World War II. More currently, animals are abandoned as humans flee for their lives, as summarized in "[In Times of Conflict, We Often Forget Animals Trapped with Nowhere to Go](#)." Finally, if that last story leaves you sad, you're entitled to a related pick-me-up: "[9 Animals Rescued from Zoo in Aleppo](#)."





Somaliland Parliament Passes **First Bill Criminalizing Rape**

Source: <https://www.voanews.com/a/somaliland-parliament-bill-criminalizing-rape/4201780.html>

Jan 13 – **The parliament in the self-declared republic of Somaliland has approved a bill criminalizing rape for the first time, and requiring prison terms for individuals convicted of the crime.**

The bill, passed Saturday, is the first of its kind in Somaliland criminalizing not only rape but all gender-based violations against women. It lays out a process to investigate the cases and prosecute perpetrators.



The bill now goes to the upper house of parliament and could be the first major legislation signed by President Muse Bihi Abdi who was elected in November.

FILE - Muse Bihi Abdi speaks to the media after casting his vote in the presidential election in Hargeisa, in the semi-autonomous region of Somaliland, in Somalia, Nov. 13, 2017.

Women's organizations and human rights activists in Somaliland welcomed the passage of the bill, which was approved by 46 of the 51 MPs present.

Among those praising the parliamentary approval was Nafisa Yusuf Mohamed, the executive director of Nagaad, a women's organization based in Hargeisa, the capital of Somaliland.



"We have been working on this bill since 2011. It has gone through different processes, but we are very happy that it has been adopted," she told VOA Somali. "The people of Somaliland have welcomed it, we congratulate the parliament for discharging their duties."

Under the bill, an attempted rape conviction would carry a four to seven-year jail sentence. An individual who rapes a victim using force or threats would get 15 to 20 years. If the victim is under the age of 15, the perpetrator gets 20 to 25 years.

Attackers who cause bodily harm or infect their victim with HIV in addition to committing rape would receive life in prison.

An increasing number of reported rape cases are related to gang rape. Gang rape was not mentioned in the existing penal code, but the new bill has a specific provision for gang rape which carries 20 to 25 years imprisonment.

Recently, the Somaliland Human Rights Center said rape is one of the least reported crimes in Somaliland. It said that in 2017, 81 rape cases were prosecuted, a small number compared to the number of alleged victims.

No more mediation by elders

In the past, elders have mediated between the families of the rapist and the victim, often leading to a lack of justice for the victim. In few cases, a victim ended up marrying her rapist under pressure from her family or the elders.

Mohamed Hersi Farah is an elder who performed mediations but says he stopped it in 2006.



"Before we intervened in individual cases and we dealt with clans, and there were no laws. But now there are gang rapes with more than 10 people involved [in a case]. We didn't know where to start," Farah said. The new bill criminalizes mediation and other attempts to solve rape cases outside the courts.

"Anyone who attempts or mediate a rape case in this way could go to jail. We hope this will scare those who performed this outside the court who will now realize the government will jail them," says the chairman of the human rights center, lawyer Guled Ahmed Jama.

Jama says he welcomes the fact the bill specifically focuses on rape and gender based violations and empowers law enforcement agencies powers to investigate and prosecute the perpetrators.

"This is a modern bill specifically on rape, previously rape was just an article under the penal code; this is a comprehensive bill," he said.

Somaliland declared secession from rest of Somalia in May 1991 but so far failed to gain international recognition.

3 Things You Learned In Elementary School

Source: <https://clarionproject.org/elementary-school/>



Jan 15 – Elementary school! Our memories include recess, minimal work and crayons. But there were some vital lessons you learned in that place. Yet, in all the hustle and bustle of adult life, you may have forgotten some of the most important lessons.

Here's a reminder, and what those lessons mean for the struggle against radical Islam.

1. No Take-sie Back-sies

This is one of the most important life lessons of all. You can't take anything back. No one can. For better or worse, Bush ordered the invasion of Iraq, Osama Bin Laden ordered the terror attack on the Twin Towers on 9/11 and Hillary Clinton failed to reinforce the embassy in Benghazi.

The past cannot be changed just because we don't like something that happened. We have to come to terms with the reality of the world and move forward proactively, not waste time arguing about whether or not the current instability in Pakistan is really the fault of British imperialists who have been dead for nearly a 100 years.

Accepting what has happened is the first step to deciding how you want to react to it.

2. Finders Keepers Losers Weepers

One of the more brutal facts of life, this one underscores the unfairness of the world. The Gulf States have the oil and therefore they have the money. They found it and they kept it.



The fact they have used that money (in part) to fund extremism worldwide is what they chose to do with it.

The same goes for the current borders of countries. Pretty much every state on the planet has committed war crimes at least once. The breakup of the Ottoman Empire was a complete mess that saw many groups disenfranchised.

But today it doesn't necessarily make sense to alter national borders and radically restructure societies. In many cases, doing so would require massive amounts of force and risk killing many innocent people. In those cases, the winners may not deserve what they have. But they are probably going to get to keep it, and we have to accept that.

Supporting incremental change to improve human rights is often going to be a better bet than "regime change."

3. It's Just a Small Minority Ruining it For the Rest of Us

Remember that time the teacher kept everyone behind after class because one kid put a whoopee cushion on his chair? That's how Muslims feel right now. It only takes a small number of committed ideologues to wreak global havoc.

But just like with the whoopee cushion, because it can be very difficult to tell who is radical and who isn't until it's too late, it can be easy to fall into the trap of lashing out at Muslims collectively. Of course, this only improves in-group solidarity against the unfair punishment, just like how you resented Mr. Collins for making you stay an hour after school on the first day of snow when you didn't even have anything to do with that whoopee cushion.

This is why it's important to isolate the political ideology of radical Islam specifically, rather than unfairly demonize Muslims as a whole.

These three life lessons are foundational to life in general and the struggle against radical Islam.

Catholicism is the One True Faith

Source: <https://clarionproject.org/catholicism-is-the-one-true-faith/>



The Creation of Adam, as depicted on the ceiling of the Sistine Chapel, by Michelangelo. (Photo: Wikimedia Commons)

Jan 15 – Catholicism is the "one true faith." You might think that's a pretty odd thing for a Jew to say. But in a Western context, we treat it as if it's true.



Everything in the West is oriented around the Catholic church. Sunday is the day of rest. Even if contemporary corporate culture has largely abandoned the idea of resting as a concept, government offices and banks and other such things are more often than not closed on Sundays. We even use the Catholic calendar, created by a pope and dating the years from the birth of the Catholic savior, Jesus Christ.

The other major western branch of Christianity (in all its myriad fractions) defines itself relationally to the Catholic Church. It's called Protestantism – because they were protesting against the papacy.

Catholic terminology and ideas are embedded into our culture. We say talk about things being “sinful” or “pure” and mutter “Jesus Christ” when we swear. The way God is traditionally depicted, as an old, white

Catholic vs. Orthodox

Roman Catholic	Similarities	Eastern Orthodox
Services are conducted in Latin.	They base their faith on the gospel of Jesus and the Bible.	Services are conducted in Greek or local languages.
The pope has authority over all other bishops.	They use sacraments such as baptism.	The patriarch and other bishops head the Church as a group.
The pope claims authority over all kings and emperors.	Their religious leaders are priests and bishops.	The emperor claims authority over the patriarch and other bishops of the empire.
Priests may not marry.	They seek to convert people.	Priests may be married.
Divorce is not permitted.		Divorce is allowed under certain conditions.

man sitting on a throne with a long beard comes from Catholic iconography and art.

The history we learn centers the Catholic church, for a long time the most powerful religious institution in

1 FAITH, 2 FACTIONS

SUNNIS	SHIA/ SHIITE
1. Absolute acceptance of Koran	1. Accept Koran as it supports their agenda
2. No additions or deletions	2. Imams can add or subtract as needed
3. Leadership chosen on basis of piety, trustworthiness and devotion to Koran	3. Leadership thru the line of Muhammad
4. More conservative	4. More radical
5. 80-90%	5. 10-20%



Europe, and then later on the planet. We talk about separation of church and state because the historical norm was the opposite (they were fused under Catholic rulers for hundreds of years).

The very way Western culture conceives religion makes Catholicism the default, with other systems defined as how they compare to Catholicism. This has been imprinted over a 2,000-year period of social conditioning.

Why else would we talk about “the Old Testament” or “Eastern spirituality?” Both of those terms define their respective traditions in relation to a European Christian norm.



A lot of this has to do with the history of European colonialism, which very successfully exported Christianity in general and Catholicism in particular around the world. Extricating Catholicism from that context is all but impossible.

Which brings us to Islam. Muslims are aware that Western countries and people see Catholicism as the default. Contrary to what some people have argued, religions are actually quite different. The way Muslims conceive of and operate their faith is very different to how Catholics do so.

Many Westerners do not know this, and thus treat Muslims as if they relate to their faith as Catholics do. Many Westerners may not even realize they are doing this, as they may not have thought deeply about how they conceive of religion.

Treating Islam and Muslims in this way is insulting inherently. It also inevitably leads to misunderstandings. If we are serious about tackling radical Islam, we need to engage fully with Islam — as a faith, as the background context to a myriad of cultural norms, as a living tradition and as a variety of sects, factions and practices. This means treating it on its own terms and not seeing it relationally to a Christian default.

Once we start doing that on a societal level and understand each other better, we can make progress towards true intercultural harmony. Then we might be within a shot of defeating radical Islam for good.

EDITOR'S CORNER: First there is not a word about Orthodox Christians. Second, just compare the differences presented in the two tables I added in this article to realize how unimportant they are (at least to my logic) compared to the problems they caused worldwide and will continue to do so...

Beware Iran: The Current Middle East Lull Is Transient

By Jonathan Spyer

Source: <http://www.meforum.org/7158/wanted-a-counter-iran-strategy>

Jan 12 – A common but mistaken reading of the current strategic situation in the Middle East presents the region as approaching the end of a period of instability. The "return of the Arab state" is one of the more arresting refrains that this perspective has produced.

According to this view, the wars in Syria and in Iraq are drawing to a close. The defeat of the Islamic State in these countries represents the eclipse of the political ambitions of Salafi jihadi Islamism for the foreseeable future. Assad

is set to restore his repressive but stable rule in Syria. In Iraq, the firm reaction by the government of Prime Minister Haider al-Abadi to the Kurdish bid for independence has ended prospects of the imminent fragmentation of the country. In Lebanon, attempts by Sunni jihadis to export the Syrian war have failed, and all is quiet.



If one looks at these examples of stability, it

becomes apparent that they have two things in common: Firstly, they are to a considerable extent the result of Iran's policy of interference in neighboring Arab countries. In every case—Syria, Iraq, and Lebanon—it is Iran's local clients and proxies that are in the ascendant.

Secondly, and relatedly, the supposed stability is an illusion. It was brought about by the empowerment of the pro-Iranian side and the temporary weakening, but not the eclipse, of Tehran's enemies. In truth, the inevitable net result of Iranian involvement in neighboring



countries is further instability, strife, and bloodshed. Stability will remain a chimera until this problem is addressed.

Observe: In Syria, the Iranian provision of proxy fighters, in the form of Lebanese Hezbollah, various Iraqi Shi'a militias, the Afghan Fatemiyun, the Pakistani Zeynabiyoun and other groups, was crucial in preventing the fall of the Assad regime. In addition, Tehran's Islamic Revolutionary Guards Corps helped plug the regime's chronic manpower shortages by establishing and training new auxiliary light infantry units such as the National Defense Forces.

But contrary to some accounts, the successful preservation of the brutal and blood-soaked Assad regime by Iran (and of course, Russia) does not presage a return to stability for Syria. Syria remains divided, and in conflict, despite recent regime gains. East of the Euphrates, the U.S.-supported, Kurdish dominated Syrian Democratic Forces remain in possession of about 28 percent of the country. A report in the regional newspaper *Sharq al-Awsat* this week quoted the prediction by an unnamed senior Western official of an imminent U.S. "diplomatic recognition" of the *de facto* authority there.

Meanwhile, the rebellion may be in retreat, but it has not yet been destroyed. In the southwest and northwest of Syria, the insurgency remains powerful and in control of territory. More fundamentally, the Iranians simply have nothing to offer the 60 percent of Syrians who are Sunni Arabs and the 15 percent who are Kurds. Their continued support for Assad thus ensures two things: Assad's survival, and the continuation of conflict in Syria.

Similarly, the IRGC-supported Shi'a militias in Iraq played a key role both in defeating ISIS and in swiftly crushing Kurdish hopes for independence following the referendum in September of last year. The militias of the Popular Mobilization Units are currently preparing to stand in the elections of May 2018. Elements among them, such as the veteran pro-Iran Badr Organization, already sit in the government of Prime Minister Abadi.

But the militias cannot entirely destroy Kurdish and Sunni Arab aspirations. Their ascent, rather, promises only continued sectarian strife. The Iraq that Tehran and its clients are trying to build is a Shi'a Islamist and sectarian place, with nothing much to offer its Kurdish and Sunni Arab citizens. Their opposition to it, and the strife that will ensue, are a certainty.

In Lebanon, the Iranian proxy Hezbollah has achieved *de facto* domination of the country. But Hezbollah has been financed and armed by Iran not to bring stability to Lebanon, but rather to turn the country into a forward operating base for a long war against Israel. In so doing, the Iranian regime has effectively taken the non-Hezbollah-supporting population hostage. Thus, even in Lebanon, where the anti-Iranian forces appear most cowed, the net result of Iranian domination is more potential strife, more war.

The fragmentation of the states in its vicinity is not an accidental by-product of Iranian strategy. It is its direct goal. Iran likes weak neighbors: It is in the process of achieving a land corridor to the Mediterranean through the hollowed-out Arab states in between. Strong neighbors, even allied ones, would not have permitted the emergence of Iran-dominated spaces on their soil.

The energetic pursuit of regional hegemony is the preferred policy of the ascendant hardline element in the Iranian regime. Shi'a Islamist in its nature and ideology, it is quite incapable of attaining or even seriously seeking the loyalties of the large non-Shi'a populations in the countries in which it is active. The net result of Iranian interference is strife and chaos, in the midst of which Iran can pursue its own interests while ignoring the sovereignty of the country in question.

In recent days, of course, Iran has been facing its own internal strife. Tehran's strategy of regional interference and its heavy costs is a central focus for the protestors. Slogans such as "Leave Syria, think about us!" and "Death to Hizballah!" have been heard.

The bad news is that unless the regime falls as a result of the unrest (which looks at present highly unlikely), the hardliners are likely to emerge from the current unrest strengthened. It is, after all, the current "reformist" administration of President Hassan Rouhani that is likely to be used as a scapegoat.

This means that Iranian outreach in the region—in Syria, Iraq, Lebanon, and elsewhere (Yemen, the Palestinian territories, Bahrain, eastern Saudi Arabia)—looks set to continue. If regional stability and good governance are ever to arrive in the blighted Middle East, one of the necessary conditions will be the recognition of the problems represented by Iran's



systematic interference in the internal affairs of its neighbors, and the development of a coherent strategy by Western and regional states to roll it back.

President Trump's characterization of Iran as the "the world's leading state sponsor of terrorism," and his identification of the need to "neutralize Iranian malign influence" in his recent outlining of the Administration's National Security Strategy, are encouraging. It remains to be seen if these statements of intent will be translated into a coherent effort. But it is high time.

Jonathan Spyer, a fellow at the Middle East Forum, is director of the Rubin Center for Research in International Affairs and author of The Transforming Fire: The Rise of the Israel-Islamist Conflict (Continuum, 2011).

Trump's "Muslim ban" produced rare shift in public opinion: Study

Source: <http://www.homelandsecuritynewswire.com/dr20180115-trump-s-muslim-ban-produced-rare-shift-in-public-opinion-study>

Jan 15 – President Donald Trump signed Executive Order 13769 on 27 January 2017, effectively barring individuals from seven predominately Muslim countries from entering the United States for ninety days.

Within a day of his decree, thousands of protesters flooded airports around the country in opposition to what was quickly deemed a "Muslim ban," and by 6 March, the order had been formally revoked.

According to a political scientist at the University of California, Riverside, and his colleagues, **visible resistance to the order in the immediate aftermath of its signing may have produced a rare shift in public opinion that resulted in mass opposition to Trump's policy.**

The shift was caused by "an influx of information portraying the ban as being at odds with egalitarian principles of American identity and religious liberty," said researchers [Loren Collingwood](#), an assistant professor of political science at UCR; [Nazita Lajevardi](#) of Michigan State University; and [Kassra A. R. Oskooji](#) of the University of Delaware.

UCR [says](#) that the [findings](#), published last week in the journal *Political Behavior*, suggest the bounty of information that surfaced after the order went into effect — information that painted the ban as deeply un-American and in fact "incompatible with American values" — contributed to a broad-based increase in opposition to it.

The researchers compared the results of two surveys of the same 311 people — one

conducted just days before the order's announcement, and the other in the two weeks after. They found that among those respondents, more than 30 percent moved against the ban in the interim.

Those who shifted most radically, meanwhile, were "high American identifiers." Such respondents were shown to consider their status as Americans who belong to one nation to be a defining element of their identities.

Media coverage of anti-ban demonstrations, the researchers noted, often depicted protesters "shrouded in American flags," visually linking the concept of more inclusive immigration policies to American egalitarianism. The movement against the ban also benefited from the outspokenness of various news commentators and publications, many of whom were quick to criticize the order by characterizing it as antithetical to core American ideals.

To test their results, the researchers also looked at attitudes toward two other hot-button issues linked to executive orders that were signed just days before No. 13769: The Keystone Pipeline and the U.S.-Mexico border wall. They found that although attitudes toward both did shift slightly, the differences were not statistically significant.

The profound response to the ban, the researchers wrote, represents "one instance in which the priming of American identity shifted citizens' opinions toward more



inclusive, rather than restrictive, immigration-related policy stances.”

Overall, their findings suggest that American identity can be “primed” to produce shifts in

public opinion. It also demonstrates that public opinion may be more malleable than previously thought, especially as certain policy issues cycle in and out of the news.

— Read more in Loren Collingwood et al, “A Change of Heart? Why Individual-Level Public Opinion Shifted Against Trump’s ‘Muslim Ban’,” [Political Behavior](#) (8 January 2018): 1-38.

Child Abuse on German State Children TV ?

Source: <https://www.youtube.com/watch?v=sHFE4T98w50>

Why I Killed My Best Greek Friend [Satire]

By Burak Bekdil

Source: <http://www.meforum.org/7143/why-i-killed-my-best-greek-friend-satire>

Jan 02 – In a span of a week we heard [Turkey's] powerful religious affairs office, Diyanet, issuing a *fatwa* endorsing the classical Muslim thinking in which a man can renounce his wife unilaterally by pronouncing



the word *talaq* on three occasions. That is against Turkey's civil laws and the constitution. In fact, by issuing that *fatwa* Diyanet violated Article 136 of the Constitution, which requires Diyanet to function in line with the constitutional principle of secularism.

In another occasion, the provincial Mufti of Hatay told a gathering of parents that they should marry their daughters between the ages of nine and 15, "as commanded both by the Quran and by our Prophet."

Diyanet's *fatwa* and the Mufti's call for the marriage of nine-year-old girls gave me the opportunity I was craving in the past years.

H.F. is, or rather was, my best Greek friend. I

tolerated his faith thinking he, being Christian Orthodox, is a "person of the book." A few years ago H.F. shocked me when he confessed that he was a radical polytheist.

I have spent the past few years trying, unsuccessfully, to have him converted to Islam. He refused. I waited with patience. He refused again. And I waited. He would not get circumcision and become a Muslim, stubborn H.F. I told him endless times that he should repent, establish prayer and give *zakah*. He refused. Which left me with one unpleasant option.

One day as he parked his car, got out and started walking on a dark street I quietly went after him and shot him in the back of his head three times. H.F. died immediately. I walked to the nearest police station to inform law enforcement authorities about the murder. My lawyer arrived at the courthouse and demanded my immediate release. The prosecutor on duty asked my lawyer to legally substantiate his demand, to which my lawyer simply answered by citing a Quranic verse (9:5):

And when the sacred months have passed, then kill the polytheists wherever you find them and capture them and besiege them and sit in wait for them at every place of ambush. But if they should repent, establish prayer, and give zakah, let them [go] on their way. Indeed, Allah is Forgiving and Merciful.



I had waited for the sacred months to pass before killing H.F. I had acted exactly in the way the Quran commanded Muslims to act. So, where was the offense? Was it an offense when Diyanet or the Mufti endorsed behaviour that is in line with holy commandments but is not entirely legal? Why not apply the same logic to the murder case? Was every offense stated in the laws not the same from the legal point of view?

Fortunately the prosecutor, being a devout Muslim, ordered my immediate release. **Now I can go and discuss conversion with my best Italian friend who, unfortunately, is another polytheist. I hope he will agree to establish prayer.**

Burak Bekdil is an Ankara-based political analyst and a fellow at the Middle East Forum.

Human-Machine Teaming Reaches New Record

Source: <https://i-hls.com/archives/80794>



Jan 15 – The level of human trust in military autonomous systems influences their teaming performance. In fact, the U.S. Defense Science Board identified six barriers to human trust in autonomous systems, with ‘low observability, predictability, directability and auditability’ as well as ‘low mutual understanding of common goals’ being among the key issues.

A new situation awareness technology has been developed to address these problems. The U.S. Army Research Laboratory scientists developed ways to improve collaboration between humans and artificially intelligent agents in two projects recently completed for the Autonomy Research Pilot Initiative supported by the Office of Secretary of Defense.

They did so by enhancing the agent transparency, which refers to a robot, unmanned vehicle, or software agent's ability to convey to humans its intent, performance, future plans, and reasoning process.

ARL's Dr. Jessie Chen, senior research psychologist, explains: “As machine agents become more sophisticated and independent, it is critical for their human counterparts to understand their intent, behaviors, reasoning process behind those behaviors, and expected outcomes so the humans can properly calibrate their trust in the systems and make appropriate decisions.”

According to phys.org, the situation awareness-based Agent Transparency, or SAT, model deals with the information requirements from an agent to its human collaborator in order for the human to obtain effective situation awareness of the agent in its tasking environment.

At the first SAT level, the agent provides the operator with the basic information about its current state and goals, intentions, and plans. At the second level, the agent reveals its



reasoning process as well as the constraints/affordances that the agent considers when planning its actions. At the third SAT level, the agent provides the operator with information regarding its projection of future states, predicted consequences, the likelihood of success/failure, and any uncertainty associated with the aforementioned projections.

In one of the projects, IMPACT, a research program on human-agent teaming for management of multiple heterogeneous unmanned vehicles, ARL's experimental effort focused on examining the effects of levels of agent transparency, based on the SAT model, on human operators' decision making during military scenarios.

The results suggest that transparency on the part of the agent benefits the human's decision making and thus the overall human-agent team performance. The human's trust in the agent was significantly better calibrated — accepting the agent's plan when it is correct and rejecting it when it is incorrect — when the agent had a higher level of transparency.

In another project, the Autonomous Squad Member (ASM), on which ARL collaborated with Naval Research Laboratory scientists, is a small ground robot that interacts and communicates with an infantry squad. Chen's group developed transparency visualization concepts, which they used to investigate the effects of agent transparency levels on operator performance. Informed by the SAT model, the ASM's user interface features an at a glance transparency module where user-tested iconographic representations of the agent's plans, motivator, and projected outcomes are used to promote transparent interaction with the agent. The use of this technology had positive effects of agent transparency on the human's task performance without increase of perceived workload.

Mysterious Balkan Assassination Threatens Regional Peace

By John R. Schindler

Source: <http://observer.com/2018/01/assassination-of-oliver-ivanovic-threatens-peace-in-balkans/>

Jan 16 – The always narrow and winding path to peace in Southeastern Europe hit a major



obstruction this morning with the murder of **Oliver Ivanović** (photo), **the leader of the Serbs of Kosovo**, who was gunned down in a drive-by killing in Kosovska Mitrovica. That city is precariously divided between Kosovo's Albanian majority and Serbian minority, and Ivanović had been the latter's political boss since the 1999 war that dragged NATO into that messy ethnic conflict.

The 64-year-old Ivanović was murdered in front of his political party's office by a gunman in a moving car. Local media in Kosovo claim the car has been found, burned out, but as of this hour no suspects have been officially named, much

less located. Shot five times with a pistol, Ivanović was dead on arrival at a local hospital. His murder fell on the exact day that representatives of Serbia and Kosovo were set to meet in Brussels to normalize relations between them. Since the 1999 war, Belgrade has remained unreconciled to the loss of its former province—keeping Kosovo in Serbia was [the issue that led to the rise of Slobodan Milošević](#), while its loss at the hands of NATO caused his downfall—and finally there seemed to be some hope for progress, after years of cajoling by the European Union. Ivanović's murder has undone any forward movement on the Kosovo issue.

Already, Serbian President Aleksandar Vučić has denounced the assassination as an “act of terror” while convening an emergency national security meeting in Belgrade to discuss the killing and its aftermath. Predictably, today Serbian representatives in Brussels walked out of the long-awaited meeting with Kosovo Albanian counterparts in protest over Ivanović's murder.

The victim was a man with many enemies. Many Albanians hated Ivanović for his alleged



involvement in war crimes in 1999. An EU-established court in 2016 convicted Ivanović for involvement in the deaths of civilians during the Kosovo war, but that was soon thrown out on appeal. At the time of his death, Ivanović was awaiting a new trial.

However, Ivanović was no more popular among Serbian nationalists, who despised his willingness to parley with Prishtina over Kosovo's final status, with the aim of protecting the country's dwindling Serbian minority. Eventually, Ivanović accepted political reality—above all, that Kosovo has gone its own way, irrevocably—even if many in Belgrade still have not. In recent years, Ivanović had gotten more death threats from fellow Serbs than from Albanians. For anyone eager to scuttle any chance for rapprochement between Belgrade and Prishtina, Oliver Ivanović offered a tempting target.

In the last years of the Milošević regime, which collapsed in October 2000, Serbia witnessed a wave of assassinations of prominent politicians, security officials, journalists, and mob bosses; many of those killings remain unsolved, and there are valid concerns that the Ivanović hit will be just one more mysterious murder in the Balkans that never gets properly explained.

The root of the problem is that, after the collapse of Yugoslavia in 1991, the region never experienced any serious efforts at cleaning up the Communist security apparatus, a tricky process called lustration by experts. Though seldom discussed in the West, Yugoslavia possessed [a particularly nasty secret police force](#) that employed organized crime elements for its dirty work abroad. After 1991, these secret networks metastasized further, and they include spies, mafia kingpins, and politicians; in many ways, these covert cadres are the real rulers of the Balkans.

The murky unpleasantness of this system was laid bare by the last big Balkan assassination back in March 2003, when Zoran Djindjić, Serbia's reform-minded prime minister, was gunned down in Belgrade in broad daylight. His

killers turned out to be senior officials of the Serbian intelligence service, specifically of its sinister Special Operations Unit, who were simultaneously top organized crime bosses. They feared Djindjić, whose desire for cleaner governance threatened their criminal empire.

The Djindjić assassination led to a series of arrests that damaged the covert cadres that possess too much power across the former Yugoslavia, but they did not end this corrupt system. Fifteen years later, it remains in place, doing as it likes, with its secret agents and helpers in all the major political parties and most big businesses too. It's easy to imagine that they had a hand in the murder of Oliver Ivanović.

However, Southeastern Europe is in a more dangerous place now than it was in 2003. Russian influence has grown enormously in recent years, particularly in Serbia and Bosnia, while the [Kremlin's backing of the Serbs of Kosovo is no secret](#). Vladimir Putin has restored Russia's historic ties with the “brother Orthodox” Serbs, and anyone acquainted with how malign that influence has sometimes been—[particularly when assassinations are involved](#)—for the Balkans and all of Europe should worry that there may be a Kremlin link to the Ivanović assassination. After all, turning Serbia away from the EU and NATO is Moscow's top foreign policy aim in the Balkans. Not to mention that [Kremlin spies plotted the violent overthrow of the government of neighboring Montenegro](#) only a year ago.

For now, the region awaits word of who murdered Oliver Ivanović and why. This is the Balkans, so nobody expects quick justice or that official accounts will be especially truthful. It's a safe bet that conspiracy theories will proliferate in every possible direction. Worse, any hope for normalization of relations between Belgrade and Prishtina anytime soon died with Ivanović, in a pattern that's all too predictable in Southeastern Europe. How Moscow now reacts to this crime may determine the fate of this troubled region—and beyond.

John Schindler is a security expert and former National Security Agency analyst and counterintelligence officer. A specialist in espionage and terrorism, he's also been a Navy officer and a War College professor. He's published four books.



Where Is the Latest Iranian 'Revolution' Headed?

By Jonathan Spyer

Source: <http://www.meforum.org/7160/where-is-the-latest-iranian-revolution-headed>

Jan 13 – The protests in Iran appear, for now at least, to be subsiding. The key moment was the decision to task the Islamic Revolutionary Guard Corps with security in the three provinces that formed the center of the unrest – Hamadan,



Isfahan and Lorestan.

It is still too soon to say that the wave has entirely spent itself. Demonstrations are still taking place, despite the IRGC's announcement on Monday of an end to the unrest. In the cities of Sanandaj, Zahedan, Meybod, Abarkuh, Kordkuy, Aqqala, Alvand and Buin Zahra, among other centers, rallies were held. But the number of those attending the demonstrations is decreasing.

The wave of unrest was the most intensive to hit the country since 2009. Its details constitute evidence of broad alienation from the regime of a significant section of Iran's youthful population. The unrest at its height spread to over 80 cities and towns. The average age among those arrested was 25.

Demonstrators chanted anti-regime slogans and attacked facilities of the Basij paramilitaries and other regime-associated institutions.

Notably, Teheran's costly policy of regional interference formed a focus for the protesters' rage. Slogans such as "Leave Syria, think about us!" and "Death to Hezbollah!" were heard. More general anti-regime slogans, including "We don't want an Islamic Republic" and "Death to the dictator" were also chanted by demonstrators.

The protests began in the pro-regime, conservative city of Mashhad. Their initial focus was new austerity measures introduced by

President Hassan Rouhani. There is evidence that the initial instigators of the demonstrations were themselves from among the hard-line "principalist" opponents of Rouhani.

But these elements did not anticipate the rapid growth of the demonstrations or their intensity. The regime, clearly taken by surprise, reacted in the only way it knows – with a strong hand. Twenty-two people are dead. Hundreds more are wounded.

A number of conclusions can be drawn from the direction of events so far.

1. For those hoping for the downfall of the Islamist regime, a major absence in the Iranian context is that of a revolutionary "party." This does not necessarily mean a formal political party but, rather, a revolutionary trend with a level of organization and popular appeal, a vision for the future and a broad strategy for defeating the Islamist regime.

At present, nothing of this type exists in the Iranian context – neither as a network inside the country, nor as a widely respected focus on the outside.

Because of this absence, the 2009 protests, which were concerned with the apparently rigged reelection of then-president Mahmoud Ahmadinejad, were diverted through the election of the "moderate" Rouhani.

The current protests, meanwhile, which are economic in nature, may well be similarly diverted by a combination of a strong hand, some cosmetic concessions, and probably, ironically, also by the scapegoating of the "moderate" president.

Such diversionary moves are possible because of the dispersed and divided nature of the opposition. As long as no nucleus of political (and, probably, military) opposition to the regime emerges, it is difficult to see a way that a wave of unrest can smash the edifice of the Islamic Republic.



2. The regime has been keen, naturally, to blame the unrest on foreign agitators. Supreme Leader Ali Khamenei's Twitter feed suggested that a "pattern activating these events" was apparent. According to the supreme leader, a "scheme by the US and Zionists" with money from a "wealthy government near the Persian Gulf" (obviously Saudi Arabia) was responsible. Given the Iranian regime's penchant for interference in neighboring countries – with Iraq, Syria, Lebanon and Yemen chief among them – it is tempting to hope that the supreme leader's fears are justified. There is, however, no actual evidence to support such a claim.

In US President Donald Trump's recent speech outlining his national security strategy, he referred to Iran as "the world's leading state sponsor of terrorism" and identified the need to "neutralize Iranian malign influence."

One way to help the achievement of the latter goal would be to keep the Iranian home fires burning. Tehran prefers to foment unrest in neighboring countries in order to keep neighbors weak and divert unrest at home. There is now an opportunity to return the compliment.

There are a variety of ways that this might be achieved – from ensuring that protesters and demonstrators remain organized and in communication with one another, to punitive means to disincentivize those countries and individuals assisting the regime in acquiring the means of repression.

3. Among the most difficult type of people to unseat from power through revolution are revolutionaries themselves – at least as long as the revolutionary elite does not begin to crumble from within. There are as yet no signs of this in Iran. Rather, the rising force within the elite is precisely that force most committed to the values of the Islamic Revolution of 1979 (and to spreading its influence into neighboring lands) – namely, the IRGC and associated hard-line figures.

The rising, militant elements within the regime were themselves participants as young men in the revolution of 1979. Even if there were a similarly determined and organized leadership seeking to make revolution against the Islamic Republic, it would find this cadre a tough nut to crack. And as we have seen above, currently there is not.

Nevertheless, the protests of the last week are significant. They point to the sharp fissures within Iranian society and the extent to which the regime is detached from large sections of the population and its wants and needs.

The guardians of the Islamic Republic of Iran have in recent years proved masters at identifying and exploiting the fissures in neighboring societies. The field is now ripe for this process to turn into a two-way street, depending on the will and the ability of Iran's opponents to recognize the opportunity and make use of it.

Jonathan Spyer, a fellow at the Middle East Forum, is director of the Rubin Center for Research in International Affairs and author of The Transforming Fire: The Rise of the Israel-Islamist Conflict (Continuum, 2011).

L'Oreal makes history by casting hijab-wearing model in hair campaign

Source: <http://www.independent.co.uk/life-style/fashion/loreal-hijab-hair-advert-model-amena-khan-muslim-beauty-blogger-ardere-cosmetics-a8167331.html>

Jan 20 – L'Oréal Paris Elvive has made history by casting a hijab-wearing model in a major haircare campaign for the very first time.

Teaming up with a group of British ambassadors and influencers, the new campaign for L'Oréal features a diverse cast of men and women including model Neelam Gill, Dougie Pointer from McFly, and blogger Megan Ellaby.

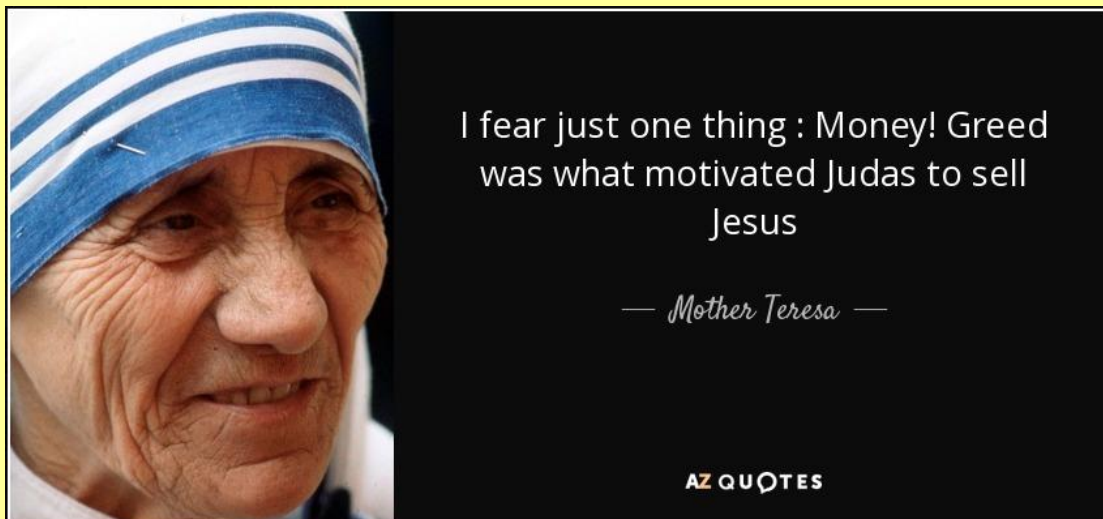
But, in a bid to explore the unique relationship each of us have with our hair, it is L'Oréal's casting of Amena Khan, a British beauty blogger who wears a hijab, that has really cemented the campaign's place in history.





A mother, model, blogger, Youtuber and co-founder of Ardere Cosmetics, Khan's latest achievement makes major strides in the representation of Muslim women within the beauty industry.

"How many brands are doing things like this? Not many," Khan said in a powerful interview with [Vogue](#).



[Instead of comment by the Editor...](#)

"They're literally putting a girl in a headscarf – whose hair you can't see – in a hair campaign. Because what they're really valuing through the campaign is the voices that we have."

In the campaign, which was shot by photographer Rankin, Khan wears a pink headscarf and complementary shade on her lips.

By starring in the history-making project, the influencer also hopes to correct a common misconception about Muslim women's relationship with their hair.

"You have to wonder – why is it presumed that women that don't show their hair don't look after it? Hair is a big part of self-care," she added.

"For me, my hair is an extension of my femininity. I love styling my hair, I love putting products in it, and I love it to smell nice. It's an expression of who I am."

A move that follows model Halima Aden becoming the first hijab-wearing woman to make the cover of *Vogue*, a shift to embrace male beauty ambassadors and more inclusive foundation ranges from the likes of Fenty Beauty, it's clear that diversity is gradually becoming more of a priority to fashion and beauty brands.

"L'Oréal Paris UK are both proud and excited to be launching such a unique and disruptive campaign for the haircare market, a category which in previous years has been perceived



as the cliché of beauty advertising,” Adrien Koskas, L’Oréal Paris UK general manager, said in a statement.

“We want to create campaigns that deeply connect with our consumers through spokespeople that inject sincerity, emotion and personality.”

LGBTQ - The Islamic Perspective - Canada

Source: <http://acdemocracy.org/lgbtq-the-islamic-perspective-in-canada/>

Canadian Prime Minister, Justin Trudeau touts himself as a leader who equality and rights for the LGBTQ community. At the same time, he also embraces and promotes the growing Islamist movement in Canada, which views homosexuality as a crime punishable by lashing and even death. And the Islamists make no secret of their views. They promote them in mosques, public lectures, articles and books often distributed free in bookstores and on city street corners.

In November 2016, Trudeau has appointed a special advisor to develop and coordinate the Canadian government's LGBTQ agenda within and without Canada. Trudeau's government is also "funding and implementing LGBTQ-related projects abroad supporting violence-prevention programs, awareness-raising campaigns and advocacy efforts, including initiatives aimed to combat homophobia and transphobia in education systems."

Trudeau has spoken of the "great strides in securing legal rights for the LGBTQ community in Canada. But the fight to end discrimination is not over and a lot of hard work still needs to be done. Canadians know our country is made stronger because of our diversity, not in spite of it."

Yet, Canada, which prides itself of draconian "hate speech" laws, allows major Muslim organizations, imams preaching in mosques, open lectures, books, videos and on social media, the notion that "The Hadd [fixed punishment] of homosexuality is stoning to death. The methods of killing them (the two who committed the homosexual act) that have been related from the Companions have differed. From among them, there were those who burned them with fire. Others among them killed them by stoning them with stones. Ibn 'Abbas said about them. "The highest building in the village should be sought, then they should be thrown from it upside down (i.e. on their heads). Then they should be stoned after that." Excerpts from the book **Minhaj-Al-Muslim** by Abu Bakr Al-Jazairi (purchased at the Islamic Circle of North America's bookstore in Toronto).

These views are no different attitudes than those of the Salafis, such as Da'esh (ISIS), the Muslim Brotherhood's affiliate, Hamas, and the mullahs in Iran.



▶▶ Watch: <https://www.youtube.com/watch?v=E6GmX0hVS1g&feature=youtu.be>

Inside the secret world where oligarchs and criminals hide their money

By Moises Naim

Source: https://www.washingtonpost.com/outlook/inside-the-secret-world-where-oligarchs-and-criminals-hide-their-money/2018/01/18/b78ed0fa-e43e-11e7-ab50-621fe0588340_story.html?utm_term=.efda1ade59aa

Jan 19 – In the days after the Sept. 11, 2001, attacks, it became clear to intelligence agencies that tracking the funds of terrorist groups and individuals was one of the most powerful tools at their disposal. Thus, “follow the money,” a Watergate-era dictum, acquired renewed relevance in the 21st century. Monitoring money flows would not only allow those fighting terrorism to disrupt al-Qaeda’s financial support, but, even more important, it could provide



actionable intelligence about the terrorists' identities, their whereabouts and, in some cases, even their future targets.

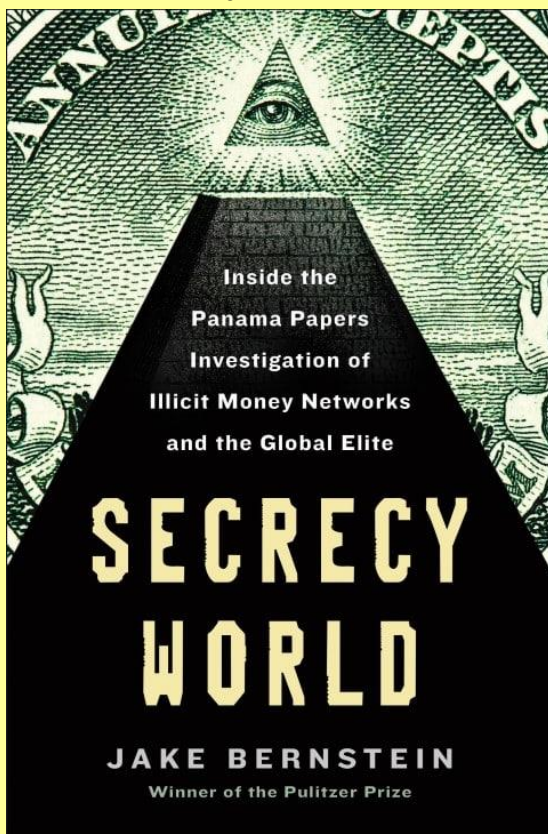
Unfortunately, it became equally apparent that there were significant hurdles in tracking these money



flows. The international financial system was rife with centuries-old rules, institutions and practices that made it very easy for banks to shield their clients' identities and hide their assets and transactions from the prying eyes of tax authorities, law enforcement agencies, and litigious business partners or former spouses. Guaranteeing

secrecy and anonymity to their customers was the main promise of most banks catering to a wealthy international clientele.

This needed to change. Thus, the month after the attacks, Congress enacted the Patriot Act, a broad set



of provisions aimed at enhancing domestic security against terrorism, strengthening border controls, boosting surveillance and improving intelligence gathering. The law also included a section "intended to facilitate the prevention, detection and prosecution of international money laundering." This mandated strict new controls on financial transactions and unprecedented banking regulations, such as the obligation to know the identities of the ultimate owners of accounts held offshore and of those involved in international money transfers. Moreover, Washington vigorously pressed other nations to adopt similar measures.

Four years later, as part of my research for a book on global illicit trades, I interviewed in Zurich a well-known private banker who specialized in what he described as "wealth management for high-net-worth individuals from around the world." I asked him how much harder it was now for his clients to hide fortunes or move them around. He smiled and calmly replied: "The main difference is that now I charge more."

In "[Secrecy World: Inside the Panama Papers Investigation of Illicit Money Networks and the Global Elite](#)," two-time Pulitzer Prize winner Jake

Bernstein shows that almost two decades of governmental efforts to make the global financial system more transparent have yielded scant results. While the system is now more tightly regulated and its controls harder to evade, those who have the motives and the money can still buy opacity, anonymity and secrecy for their financial dealings.

Provided, of course, that they retain the assistance of experts like the lawyer I interviewed in Zurich or Mossack Fonseca, a Panamanian law firm that until 2016 was one of the world's



largest providers of offshore financial services. But what are those? A leaked internal memorandum from the firm helpfully explained that 95 percent of its work consisted of [“selling vehicles to avoid taxes.”](#) Mossfon, as the giant law firm is also known, is the source that underpins Bernstein’s exhaustive investigation of what he calls the “largely unregulated place known as the secrecy world,” where, in his estimate, 8 percent of the world’s household financial wealth is hidden.

Bernstein, an experienced journalist, was a senior member of the International Consortium of Investigative Journalists (ICIJ) team that broke the Panama Papers story, which in 2017 won the Pulitzer Prize for explanatory reporting. The Panama Papers consist of more than 11 million files stolen from Mossack Fonseca and anonymously obtained by the German newspaper *Süddeutsche Zeitung*, which turned for help in analyzing them to the ICIJ. The consortium then organized a massive investigative effort that eventually involved journalists from 107 media organizations in more than 80 countries. The large endeavor was necessary because of the scale of the leak, which included files for more than 200,000 Mossfon clients from the past 40 years. The files contained 2.6 terabytes of data, far more than the information made public by WikiLeaks in 2010 or Edward Snowden in 2013.

But as Bernstein painstakingly documents, the impact of the Panama Papers was not due to just the huge size of the leak but the details it revealed about how the shadowy world works and who some of its inhabitants are. Most of them are not household names, just very rich individuals. And because owning an offshore corporate entity is not illegal, many of Mossfon’s clients use the complex legal structures the firm designed for them for legitimate purposes.

Bernstein, however, is not that interested in the run-of-mill global rich who seek anonymity. Instead, he concentrates on telling the stories of those who broke the law, evaded taxes, circumvented international sanctions, hid assets, cheated partners, or “normalized” fortunes made through crime and corruption. Among Mossfon’s best-known clients are a dozen current or former heads of state, including dictators with immense fortunes that were impossible to accumulate honestly. They also include more than 60 relatives and friends of heads of state and influential politicians, including close associates of Vladimir Putin and relatives of eight current and former members of China’s ruling body.

Bernstein also notes that “though Donald Trump did not personally interact with Mossack Fonseca, the Trump Organization engaged in real estate transactions with Panama-based Mossfon companies as early as 1994.” The book concludes with a chapter titled “The Secrecy World Enters the White House,” which describes how several important — and quite shadowy — business associates of the current president had extensive links to Mossfon.

In a brief epilogue, the author does not discuss the broader context that has shaped and is now changing the illicit world he so ably dissected. Instead, Bernstein describes the details of the predictable decline of Mossfon and then goes into the organizational frictions that led the ICIJ to part ways with its parent organization, the Center for Public Integrity.

While the book’s ending paragraphs stress that, even before the publication of the Panama Papers, the secrecy world was adapting and changing to new circumstances, Bernstein does not offer any significant insights about the future of that world. He does note that “secret bank accounts were finding new homes in Dubai and Singapore” and that “the only difference was that it now cost more.”

But many questions linger. What are we to make of the fact that the most important disruption to the secrecy world was caused not by the substantial and long-term efforts of governments but by John Doe, the anonymous person who leaked the Panama Papers? What are the larger implications of the fact that one of the leading dwellers of the secrecy world was a giant, but largely unknown and poorly regulated Panamanian law firm? And the fact that the organization leading the global investigation was not one of the world’s media powerhouses, but instead a small nongovernmental organization that despite its meager financial resources deployed what probably was one of the largest journalistic projects ever undertaken? What about the end of privacy and secrecy? Can the rich who hide their money behind seemingly secure offshore legal structures sleep well at night, knowing that hackers and whistleblowers may divulge to the world their most private and sensitive financial secrets at any time?



As Bernstein correctly suggests, many aspects of the secrecy world are still intact. But many others are in flux. The broader world is changing rapidly. And that will create a very different offshore world from the one that has hitherto existed.

Moises Naim is a distinguished fellow at the Carnegie Endowment for International Peace and the author of “[The End of Power: From Boardrooms to Battlefields and Churches to States, Why Being in Charge Isn’t What It Used to Be](#)” and “[Illicit: How Smugglers, Traffickers, and Copycats are Hijacking the Global Economy](#).”

Threat to humanity in 2018 are not asteroids or aliens but something completely unexpected

Source: <http://www.ibtimes.sg/threat-humanity-2018-are-not-asteroids-aliens-something-completely-unexpected-23377>

Jan 21 – In 2017, conspiracy theorists all around the world vehemently claimed that rogue **planet Nibiru** will hit the earth on September 23, causing massive destruction. However, the day went by quite uneventfully. Again theorists have started talking about two other big threats expected to shake the earth in 2018.



According to the World Economic Forum survey, participated by more than 1000 experts, this year will be dominated by environmental disasters, illicit trade, cybercrimes, and widespread involuntary migration. 2018 will also see a rise in political risks, which may escalate into open conflict between various nations in the world.

As per the survey, **extreme weather events will be the biggest risk in 2018** and the

experts did not rule out the possibility of using weapons of mass destruction during this year. As the tensions in the Korean peninsula is escalating day by day, experts believe that the possibility of a war between the United States and North Korea is very high.

In the survey, experts were asked to name 30 dangerous risks, which will impact our planet very badly in 2018. Most of the experts who took part in the survey unanimously voted that weather events and drastic climatic change will create chaos on Earth in the coming days.

In 2017, earth witnessed a rise in natural disasters. While Hurricane Irma and Harvey hit the US, a mammoth earthquake created immense damage to men and property in Mexico.

Turkey, the Arab World Is Just Not That into You

By Burak Bekdil

Source: <http://www.meforum.org/7162/arabs-are-just-not-that-into-turkey>

Jan 14 – He runs around in a fake fire extinguisher's outfit, holding a silly hose in his hands and knocking on neighbors' doors to put out the fire in their homes. "Go away," his neighbors keep telling him. "There is no fire here!" I am the person to put out that fire, he insists, as doors keep shutting on his face. That was more or less how Turkish President Recep Tayyip Erdogan's neo-Ottoman, pro-ummah (Islamic community), "Big Brother" game has looked in the Middle East.

After years of trial and failure Erdogan does not understand that his services are not wanted in the Muslim neighborhood: The Iranians are too Shiite to trust his Sunni Islamism; the



(mostly Sunni) Kurds' decades-long dispute with the Turks is more ethnic than religious; and Sunni Arabs do not wish to revisit their Ottoman colonial past. Still, Erdogan insists.

Turkish textbooks have taught children how treacherous Arab tribes stabbed their Ottoman ancestors in the back during the First World War, and even how [Arabs collaborated](#) with non-Muslim Western powers against Muslim Ottoman Turks. A pro-Western, secular rule in the modern Turkish state in the 20th century coupled with various flavors of Islamism in the Arab world added to an already ingrained anti-Arabism in the Turkish psyche.

Erdogan's indoctrination, on the other hand, had to break that anti-Arabism if he wanted to revive the Ottoman Turkish rule over a future united ummah. The Turks had to rediscover their "Arab brothers" if Erdogan's pan-Islamism had to advance into the former Ottoman realms in the Middle East.

It was not a coincidence that the number of imam [religious] school students, under Erdogan's rule, has risen sharply to 1.3 million from a mere 60,000 when he first came to power in 2002, an increase of more than twenty-fold. Erdogan is happy. "We are grateful to God for that," [he said](#) late in 2017.

Meanwhile, the Turkish Education Ministry [added Arabic courses](#) to its curriculum and the state broadcaster, TRT, [launched](#) an Arabic television channel.

Not enough. In addition, Erdogan would pursue a systematic policy to [bash Israel](#) at every opportunity and play the champion Muslim leader of the "Palestinian cause." He has done that, too, and in an exaggerated way, by countless times [declaring](#) himself the champion of the Palestinian cause -- and he still does it.

Erdogan's Turkey [championed](#) an international campaign to recognize eastern Jerusalem as the capital city of the Palestinian state, with several Arab pats on the shoulder.

His spokesman, Ibrahim Kalin, happily [said](#) that the dispute over Jerusalem after President Donald Trump's decision to move the U.S. embassy from Tel Aviv to the Israeli capital "had in fact united the Muslim world."

A united Muslim front around the "Palestinian capital Jerusalem" is a myth. Iran, for instance, renounced Turkey's Jerusalem efforts because, [according](#) to the regime, the entire city of Jerusalem, not just eastern Jerusalem, should have been recognized as the Palestinian capital. Before that, Turkey [accused some Arab countries](#) of showing a weak reaction to Trump's decision to move the U.S. embassy to Jerusalem. The Turkish-Arab fraternity along Muslims lines is an even bigger myth. For instance, the Saudi-led Gulf blockade of Qatar imposed in June came as a complete [shock](#). One of his Sunni brothers had taken out the sword against another?! Turkey's Sunni brothers had once been sympathetic to his ideas but no longer are.

Only two years ago, Turkey and Saudi Arabia were mulling the idea of a [joint military strike](#) in Syria.

For the Sunni Saudis, the Turks were allies only if they could be of use in any fight against Shiite Iran or its proxies, such as the Baghdad government or the Syrian regime. For the Saudis, Turkey was only useful if it could serve a sectarian purpose. Meanwhile, as Turkey, together with Qatar, kept on championing Hamas, Saudi Arabia and Egypt distanced themselves from the Palestinian cause and consequently from Turkey. Both the Saudi kingdom and Egypt's al-Sisi regime have viewed Hamas, an Iranian satellite, with hostility, whereas Turkey gave it logistical and ideological support. Another reason for the change in Saudi Arabia's position toward Turkey -- from "friendly" to "semi-medium-hostile" -- is Saudi Arabia's newfound alliance with Egypt's President el-Sisi. El-Sisi replaced the Muslim Brotherhood president, Mohamed Morsi, in Egypt, while Turkey and Qatar, have effectively been the embodiments of the Muslim Brotherhood in the region.

Erdogan offered to build a Turkish military base in the Kingdom, for example, but in June, Saudi officials [turned him down](#).

Erdogan might benefit by being reminded of a few facts and shaken out of his make-believe world. For instance, he might recall, that his worst regional nemesis is an Arab leader, Syrian President Bashar al-Assad, not an "infidel king." He must realize that he is no longer the "rock star" he was in the streets of Amman or Beirut that he once was -- when the only currency he could sell on the Arab Street was his anti-Semitic rants. Turkey does not even have full diplomatic relations with the most populous Sunni Arab nation, Egypt.



More recently, a tiny sheikdom had to remind Erdogan that his expansionist, "ummah-ist" design for the Middle East was no more than a fairy tale he persistently wanted to believe. In December, United Arab Emirates (UAE) Foreign Minister Sheikh Abdullah bin Zayed Al Nahayan shared a [tweet](#) that accused Turkish troops of looting the holy city of Medina a century ago. In response, Erdogan himself lashed out: Some impertinent man sinks low and goes as far as accusing our ancestors of thievery ... What spoiled this man? He was spoiled by oil, by the money he has.

But that was not the end of what looks like a minor historical debate. The row symbolized the impossibility of what Erdogan has been trying to build: An eternal Arab-Turkish fraternity.



UAE Foreign Minister Anwar Gargash: The Arab world will "not be led by Turkey."

Anwar Gargash, UAE's Minister of State for Foreign Affairs, said there was a need for Arab countries to rally around the "Arab axis" of Saudi

Arabia and Egypt. Did Erdogan hear that? If not, he should have heard this one: Gargash also said that "the Arab world would not be led by Turkey." In what better plain diplomatic language could the idea have been expressed?

Meanwhile Erdogan keeps living in his make-believe world. Last summer, as part of his futile "euphemizing Arab-Ottoman history" campaign, he [claimed](#) that "Arabs stabbed us in the back was a lie." Not even the Arabs claim they did not revolt against the Ottomans in alliance with Western powers.

If none of that is enough to convince Erdogan he should read some credible polling results. Taha Akyol, a prominent Turkish columnist, recently [noted some research](#) conducted by the pollster Zogby in 2016. The poll found that 67% of Egyptians, 65% of Saudis, 59% of UAE citizens, and 70% of Iraqis had an unfavorable opinion of Turkey.

Do not tell Erdogan, but if "polling" had existed a century ago, the numbers might have been even worse.

Burak Bekdil is an Ankara-based political analyst and a fellow at the Middle East Forum.

Shocking Irregularities in Screening Aliens for Terror Ties

Source: <https://clarionproject.org/shocking-irregularities-found-screening-aliens-terrorist-ties/>

Jan 18 – An [audit on the screening practices](#) of known or suspected terrorists made by Immigration and Custom Enforcement (ICE) showed non-compliance with proper protocol in every file that was checked, *The Washington Free Beacon* [reported](#).

The audit was made by the Department of Homeland Security (DHS) as a follow-up to 2011 recommendations made by the department for screening aliens who maybe terrorists.

Of the 40 case files surveyed, DHS auditors found that all 40 cases had at least one instance of noncompliance with the Known or Suspected Terrorist Encounter Protocol (KSTEP). The cases sampled occurred during the Obama years, between 2013-2015.

However, ICE noted that the problems have continued into the Trump administration where they found 19 further documented cases since 2016 in which ICE workers in the field failed to send their reports to ICE headquarters as required.





Illegal aliens on an ICE deportation flight to Guatemala (Illustrative photo: John Moore/Getty Images)

In addition, as of July 2017, nine field offices and smaller offices did not have “the infrastructure necessary to communicate derogatory information about known or suspected terrorists.”

“The lack of real-time information sharing capabilities jeopardizes ICE’s ability to make decisions on known or suspected terrorists,” the DHS stated.

The audit also blasted sanctuary cities and their law enforcement agencies that refuse to cooperate with ICE, saying such practices prevent the government from identifying “possible terrorist connections” in illegal aliens.

The main problems cited in the audit were:

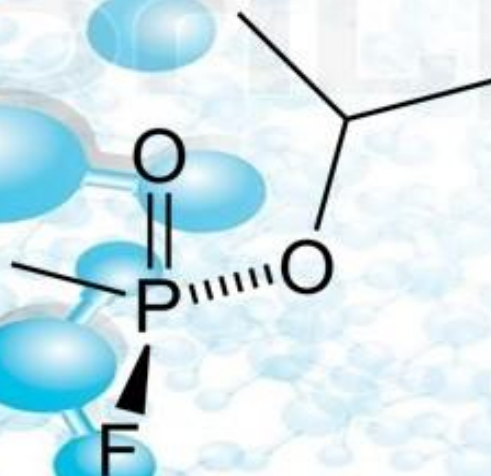
- ◆ Failure to run initial background checks
- ◆ Not placing a hard copy of evidence of an alien’s ties to terror in his or her case file
- ◆ No continued screening when an alien is released
- ◆ No access by ICE field offices to DHS classified networks (which would enable them to communicate derogatory information about an alien’s terror ties)
- ◆ Weak management controls
- ◆ Limited program oversight

As a result, ICE’s Enforcement and Removal Operations (the office which screens aliens) “may be missing opportunities to identify, take into custody, communicate status of, and make decisions on those aliens who pose the highest risk to national security and public safety,” the report concluded.





Chem News



When It Comes to Hazmat, Are Two Technologies in One Better Than Two Instruments?

By Chris Langford

Source: <https://www.thermofisher.com/blog/identifying-threats/2017/12/19/when-it-comes-to-hazmat-are-two-technologies-in-one-better-than-two-instruments/>



Dec 19 – Traditionally, first responders or military personnel who were faced with an unknown chemical substance would use either [Raman spectroscopy](#) or [Fourier Transform Infrared \(FTIR\) spectroscopy](#) to help identify the solid or liquid material. Currently, these two techniques have become a powerful and necessary tool when performing material identification in the field.

In both FTIR and Raman spectroscopy, the instruments acquire a spectral fingerprint of an unknown substance, and then compare the collected fingerprint against a reference library. Both methods are lab-proven, precise optical technologies offering distinct advantages in specific applications.

FTIR and Raman spectroscopy both measure the interaction of energy with the molecular bonds in a sample of an unknown material. However, FTIR measures how much light is absorbed by the bonds of a vibrating molecule; that is, the remaining energy from the original light source after being passed through the substance. In comparison, Raman measures the energy that is scattered after being excited by a laser.

There are many analyzers on the market that do one or the other. **However, there is one that offers both technologies in one instrument.** What types of advantages can be gained if elite military personnel and first responders in the field have access to these [two technologies in one instrument](#)? Here are some advantages:

1. **Better protection for the responder and the community.** Used together, FTIR and Raman spectroscopy provide a broader range of unknown substance identification.
2. **Having the right technology in the field.** The degree to which a substance responds to each technology is dictated by its unique molecular structure, with some responding extremely well to FTIR analysis and others being better suited to Raman. Having an integrated instrument enables personnel to have both technologies in hand when needed.
3. **Reducing the load.** One does not have to carry two instruments into the field. Military personnel and first responders carry extensive equipment with them. Having one less instrument to carry takes some weight and stress away from the operator.



4. **Easier Transportation.** One handheld instrument is easier to bring into the hazard zone, whether it's hand carried or brought in a backpack.
5. **Quicker Access.** No wasted time finding and setting up a second instrument. Responders can get in and out of the situation very quickly, reducing the time on-target.
6. **Better decision making.** The two technologies can be used as confirmatory techniques, providing a more comprehensive identification for greater confidence in response.
7. **Reduced Training Burden.** Having two technologies in one device, sharing the same workflow, reduces the overall training time and eases the transition between using the two technologies.
8. **Quicker decision making.** Every second counts when there are unknown substances that could cause injury. One easy-to-carry instrument utilizing complementary and confirmative proven technologies gives military personnel, bomb technicians, hazmat teams and first responders significant tactical advantage, helping them minimize time on target and confidently make life-saving decisions more quickly.

►► Watch the Video at: https://www.thermofisher.com/qc/en/home/industrial/spectroscopy-elemental-isotope-analysis/portable-analysis-material-id/chemical-explosives-narcotics-identification/hazardous-materials-toxic-chemicals-identification.htm?icid=CAD_blog_safety_2017Decl

DTRA Brings Technology to Bear Against Chemical and Biological Warfare

Source: <https://www.meritalk.com/articles/dtra-brings-technology-to-bear-against-chemical-and-biological-warfare/>

Dec 20 – The Defense Threat Reduction Agency (DTRA), faced with a growing and diverse threat of chemical and biological attacks, is ramping up efforts to use technology to detect and, when possible, prevent attacks.

DTRA's Chemical and Biological Technologies Department recently held a demonstration called [Perceptive Dragon](#) that combined sensors with an algorithm-driven information architecture to inform decision making in response to attacks (including conventional kinetic attacks).

The demonstration showed off the enhanced capabilities of its Integrated Early Warning (IEW) Advanced Technology Demonstration program.

During the demonstration, IEW software integrated light detection and ranging, fixed site sensors, and unmanned platforms. It also demonstrated advanced algorithms working between fixed sensors and autonomous unmanned platforms, according to DTRA. "Advancing these technologies may save warfighters' lives and ensure their ability to conduct successful military operations in a chemical or biological environment," the agency said.

DTRA, which also is working with the Department of Homeland Security on a cloud-

based [Biosurveillance Ecosystem](#) to identify signs of pandemics, is pursuing a number of programs to put detection in the hands of units in the field. It has worked with the Marines on testing a [portable biohazard detection](#) system and is investigating using chemical weapons [sensors on drones](#) to limit the exposure to troops, but needs to get around the problem that most sensors are designed to be stationary or slow-moving – carried by hand – rather than flying at relatively high speeds. The DoD Chemical and Biological Defense Program's [2017 Annual Report to Congress](#), obtained by the Federation of American Scientists via the Freedom of Information Act, mentions work with the Army Robotics Program Manager to integrate chemical and biological sensors into [TALON IV](#) ground robots.

The agency also is working with Leidos on an international program involving non-governmental organizations that underscores the breadth of efforts to counter chemical and biological threats. Under [a contract](#) valued at up to \$170 million (a one-year base with four one-year options) Leidos will support DTRA's Cooperative Biological Engagement Program (CBEP) and Cooperative Threat Reduction (CTR) Program through a



worldwide Scientific and Technical Engagement Partnership (STEP) program, according to the company. As part of its work, Leidos said it will partner with industry, research institutions, and other organizations to reduce biological threats. As the CBEP points out in its [strategic plan](#), defense against biological and chemical threats has become a cross-agency and international effort. The program's efforts intersect with other government programs, "including national security, force health protection, global health security, science, as well as development and engagement," and engages with international organizations such as the World Health Organization and international police. The use of chemical and biological agents as weapons of mass destruction dates to the use of

[chlorine gas](#) by German forces in World War I and the release of [biological agents](#) by Japan during World War II. Although various treaties have aimed to curb their use, some countries continued to stockpile them.

Recent events have renewed fears of their use, mostly notably [Syria's use of sarin gas](#) and reports that North Korea has accelerated its program to develop an [arsenal of bioweapons](#). And, as pointed out in the CBEP plan, although chemical and biological capabilities have for decades remained the province of military forces, terrorist organizations now also potentially [pose a threat](#), making the need for new technology to act as a counter even more critical.

Obituary – Virginia Morlock

By Gwyn Winfield

Source: http://www.cbrneworld.com/news/obituary_virginia_morlock#axzz52S4soNlj



Virginia with the 'Rio' respirator that she successfully bid on during the charity auction in 2012. Ed.

Dec 18 – MORLOCK, Virginia M of Arlington, VA, died unexpectedly Dec 11, 2017. Beloved daughter of Marie (LaVoix) Morlock and the late Laurence Morlock of Centerville, MA. Also survived by her brother Paul Morlock and his wife Cathy of Derry, NH, her late brother William Morlock, her sister Elaine Morlock of Palm Beach Gardens, FL, her brother Raymond Morlock and his wife Gail of Winchester, MA, her sister



Julie Keene and her husband Wade of Sagamore Beach, MA and her brother James Morlock and his companion Angelique Lamoreaux of Centerville, MA. Virginia enjoyed many special events and travel experiences with her companion Fred Burchill, Richmond, VA. Also survived by many nieces, nephews,



aunts, uncles and other family members who deeply loved her for her ability to bring unique entertainment to every family event. We will all miss her enthusiastic smile and contagious laugh for many years to come.

Virginia's career as Manager in the Mission Systems Strategy division based at the Northrop Grumman headquarters in Falls Church, Virginia began in 1999. Gin cherished the opportunities she had to engage with many thousands of associates and personnel throughout her 18 year tenure. Her prior roles included Government Relations Manager, Army Research & Development, and Program Capture Manager for Chemical/Biological Detection Systems.

Virginia was affectionately known as the "first lady" in the Nuclear, Biological, and Chemical (NBC) Defense community. She traveled extensively around the world, often to austere locations, to test and improve advanced threat detection systems.

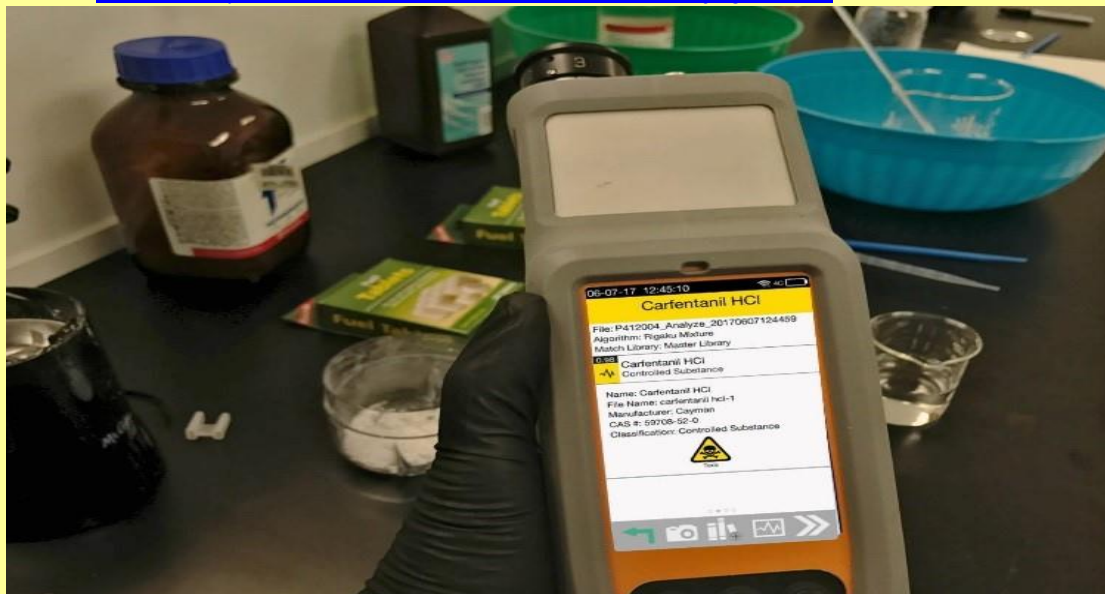
She was a tireless leader of numerous industry and women's professional organizations. Virginia was one of the founding members and Chair Emeritus of the Nuclear, Biological, Chemical Industry Group, an industry advocacy group representing more than 130 Chemical and Biological companies. She also chaired the Dr. Billy Richardson Scholarship Committee that each year recognizes one of industry's young researchers with a \$1000 annual scholarship for the Aberdeen Science and Math Academy. Virginia was co-founder of a

Washington DC-based networking organization for women with more than 250 members from Government, Academia and Industry and she was most recently elected to chair the Northrop Grumman Women's International Network. She also had the passion for being an entrepreneur as owner of Captain Sam's Treasures & Electric Bikes of Centerville, MA.

In lieu of flowers, please consider a donation to Wounded Warrior Project www.woundedwarriorproject.com. This was Gin's favorite charity; one that was so important to her.

ResQ handheld Raman aids officers in seizure of 750 kg of cocaine.

Source: https://www.youtube.com/watch?time_continue=145&v=kjQgaix5mak



European anti-terrorism package prioritizes CBRN preparedness, expert says

Source: <https://homelandprepnews.com/countermeasures/26013-european-anti-terrorism-package-prioritizes-cbrn-preparedness-experts-say/>



Jan 02 – Experiencing an escalating threat level of chemical, biological, radiological and nuclear (CBRN) attacks across its region, the European Commission's related preparedness plan is extremely important, a London-based expert recently told Homeland Preparedness News.

"I consider this to be highly significant as for the first time, the European Commission is proposing that **medical preparedness for CBRN attacks is a high priority**" for the European Union, said Steven Neville Chatfield, an independent consultant in biopharmaceuticals and a director for the Centre for Emergency Preparedness and Response in the United Kingdom's Health Protection Agency.



The European Commission's (EC) Action Plan to enhance preparedness against CBRN security risks is part of its anti-terrorism package released in October 2017, a strategy aimed at better protecting the more than 511 million citizens across the 28 member states of the European Union (EU).

Considering the current state of affairs, the terror-threat level in Europe requires immediate attention. In fact, according to the EC's plan, the EU faces a range of violent terrorist threats and attacks from networked groups and lone actors.

"Both terrorist groups and radicalized individuals have sought to carry out mass-casualty attacks in the EU with the aim of maximizing both the number of victims and the psychological and economic impact on society," the plan states.

"I would describe the threat level in Europe as being high and evolving," said Chatfield, who holds a PhD in microbiology and has published more than 100 papers in the biotechnology field. His previous roles include executive positions at Medeva plc, Microscience Ltd., and Emergent BioSolutions.



“There are several reports and studies that provide good reason to believe that threats from deliberate release of CBRN materials is credible,” he said, adding that future threats are likely to come from the use of chemical and biological weapons.

“Chemical weapons have already been used in Syria and Iraq and there are indications that organizations such as ISIS are experimenting with biological weapons,” Chatfield wrote in an email sent from London. Comparatively, he thinks the threat levels are similar in Europe and the United States.

“Although it could be said that recent events in displacing ISIS from its strongholds in Iraq and Syria, leading to the return of a large number of European citizens that fought with ISIS, could increase the threat level in Europe,” Chatfield explained.

Action plan elements

There are several critically important elements of the EC’s action plan against CBRN security risks. The EC’s proposal notes that attacks involving, for instance, “a radioactive dispersal device or an anthrax attack using unmanned aerial systems,” could be extremely high, and directly says that member states have an obligation to provide medical countermeasures.

“The Directive on Combating Terrorism includes for the first time provisions on all strands of CBRN terrorism,” according to the document. “It imposes obligations on Member States when it comes to the response to a terrorist attack, including an obligation to provide medical assistance to all victims. The initiatives proposed in this Communication will help Member States to meet their obligations to assist victims when it comes to an attack conducted with the CBRN materials.”

Notably, Chatfield said the plan makes equally relevant recognitions, including:

- ◆ There are credible indications suggesting terrorist groups might have the intention of acquiring CBRN materials or weapons and they’re developing the knowledge and capacity to use them;
- ◆ Member states should increase preparedness for cross-border threats to health via joint purchases of medical countermeasures; and
- ◆ Member states and the EC should develop a shared vision at the EU level on how to improve vaccine coverage in the EU and then take actions to strengthen vaccine supplies and stock management, and should increase the effectiveness of vaccine research and development.

“My opinion,” Chatfield wrote, “is that this is a recognition that stockpiles of specialist countermeasures — such as vaccines and antibody therapies — need to be established at EU level (as the U.S. has done through the establishment of the strategic national stockpile) in order to provide a full and effective response in the event of a CBRN attack.”

Unlike conventional medicines, some countermeasures — such as those for anthrax and botulinum, two of the biggest threats — may not be immediately available to member states in the aftermath of an attack, he added.

“They may take several months to manufacture and supply when in reality they would only be effective if used within days after the attack for which the ideal solution is the establishment of stockpiles at the EU level,” he said.

Additionally, the section of the Action Plan on developing CBRN Security Cooperation would call for several EU-U.S. workshops to be held and to “invite strategic partners to dedicated sessions of the CBRN Security Advisory Group where appropriate.”

There also are Action Points calling for the “elaboration of national preparedness strategies for bioterrorism issues;” for member states to “appoint national CBRN Security Coordinators” as primary points of contact; and for member states to cooperate with the industry.

Existing tools

The EC’s action plan — which Chatfield said is not a legislative proposal but rather a document that sets out the commission’s strategy and intentions — would be implemented in cooperation with the 28 member states.

“Previously this policy area was considered to be the responsibility of national governments,” explained Chatfield, who said the commission’s CBRN action plan could change after



reviews are concluded by the Council of the EU and the European Parliament, which comprise the EU's legislature.

However, a 2017 EU directive on terrorism is in place that provides guidance on how the member states may assist and support victims of terrorism, said Chatfield.

"Importantly, this directive also obliges member states to provide medical assistance (i.e. CBRN countermeasures) to all victims of terrorism," he said. "In essence, this will underpin the legislative base for the action plan."

Additionally, the EC's 2014-approved procurement mechanism established a voluntary and centralized process for member states to jointly and collaboratively "engage in ... the advance purchase of medical countermeasures for serious cross-border threats to health," according to language contained in the Joint Procurement Agreement (JPA).

Specifically, the JPA is designed to strengthen the member states' purchasing power and ensure equitable access to medical countermeasures like vaccines and antiviral medications that would be used in the event of a pandemic and "to protect their citizens against CBRN incidents," said Chatfield.

"This is another tool that can be used in the implementation of the action plan," he added.

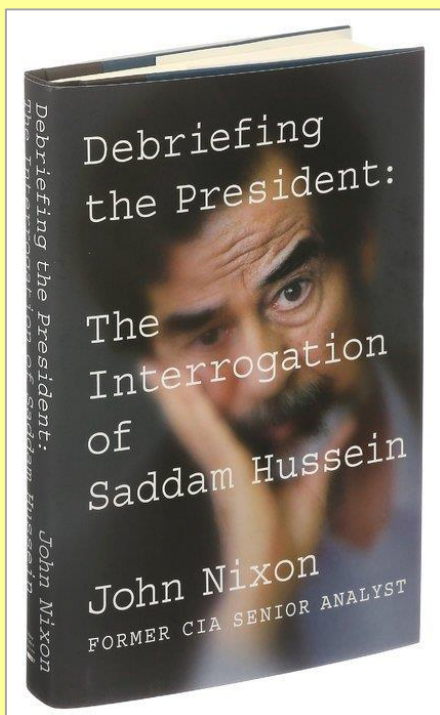
As of Fall 2017, the JPA had been signed by 24 EU countries.

EDITOR'S COMMENT: Bla, bla, bla ... since 2004 – especially in the medical/hospital sector.

Review: 'Debriefing the President' Tears Into the C.I.A.

By James Risen

Source: <https://www.nytimes.com/2016/12/18/books/review-debriefing-the-president-tears-into-the-cia.html>



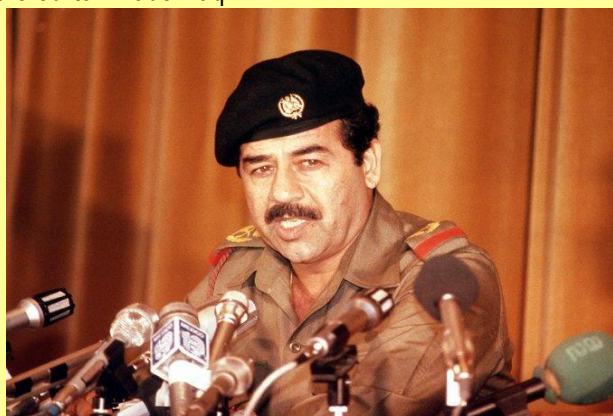
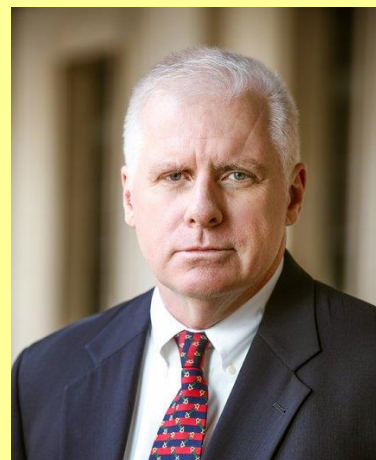
Dec 2016 – Most [C.I.A.](#) memoirs are terrible — defensive, jingoistic and worst of all, tedious. Others are doomed by the C.I.A.'s heavy-handed and mandatory censorship.

There are exceptions, and that list includes the refreshingly candid "Debriefing the President: The Interrogation of [Saddam Hussein](#)" by John Nixon.

Mr. Nixon, the first C.I.A. officer to interrogate Hussein after his capture in December 2003, reveals gobsacking facts about that deposed Iraqi leader that raise new questions about why the United States bothered to invade Iraq to oust him from power. These details will likely appall

Americans who have watched their nation's

blood and treasure wasted in Iraq ever since. More broadly, Mr. Nixon offers a stinging indictment of the C.I.A. and what he sees as the agency's dysfunctional process for providing intelligence to the president and other policy makers. The agency, he writes,



is so eager to please the president — any president — that it will almost always give him the answers he wants to hear.

Mr. Nixon's book comes at an extraordinary moment, when President-elect Donald J. Trump is already at war with the C.I.A. He [has attacked](#) the C.I.A.'s assessment [that Russia intervened in the 2016 presidential election](#) to help his candidacy, and he has cited the agency's failures on prewar intelligence on Iraq as an example of how the C.I.A. is often wrong.

"Debriefing the President" will add fuel to the fire of the Trump-led criticism. It will also send a chilling warning to anyone counting on the C.I.A. to stand up to Mr. Trump once he is in office.



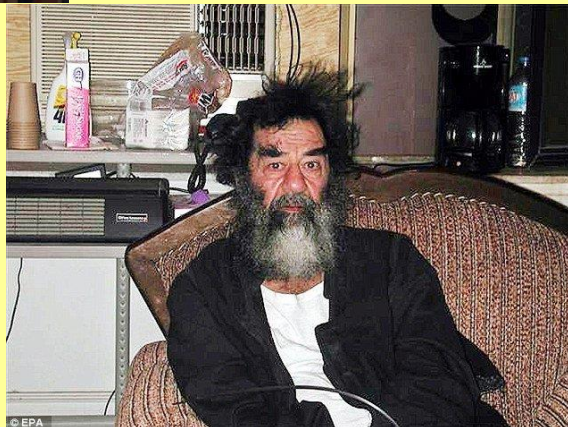
Mr. Nixon had been preparing for his interrogation of Hussein for years before he ever met him. Mr. Nixon, 55, did graduate work at New York University and Georgetown University, where he wrote about Hussein in his master's thesis. He joined the C.I.A. in 1998, and was immediately assigned to be a "leadership analyst" on Iraq, which meant that his job was the full-time study of Hussein.

Mr. Nixon was an analyst in Iraq when the United States military captured Hussein, and

he was asked to identify him so the Americans could be certain they had the right man. Mr. Nixon confirmed Hussein's identity by checking for a tribal tattoo on the back of his right hand and a scar from a 1959 bullet wound.

Once he began debriefing Hussein, though, Mr. Nixon realized that much of what he thought he knew about him was wrong.

His most astonishing discovery was that by the time of the United States-led invasion of Iraq in March 2003, Hussein had turned over the day-to-day running of the Iraqi government to his aides and was spending most of his time writing a novel. Hussein described himself to Mr. Nixon as both president of Iraq and a writer, and complained to Mr. Nixon that the United States military had taken away his writing materials, preventing him from finishing his book. Hussein was certainly a brutal dictator, but the man described by Mr. Nixon was not on a mission to blow up the world, as George W. Bush's administration had claimed to justify the invasion.



"Was Saddam worth removing from power?" Mr. Nixon asks. "I can speak only for myself when I say that the answer must be no." Saddam was busy writing novels in 2003. He was no longer running the government." Strikingly, Mr. Nixon says that the C.I.A. had some evidence that this was the case before the invasion, but that "it was never relayed to policy makers and emerged only after the war." By 2003, Mr. Nixon writes, Hussein's disengagement meant that he "appeared to be as clueless about what was happening inside Iraq as his British and American enemies were."

With Hussein increasingly detached, Mr. Nixon says that by 2003 Iraqi foreign policy decision-making had fallen to his lieutenants, led by the "unimaginative and combative" Iraqi vice president, Taha Yassin Ramadan, who "repeatedly missed opportunities to break Iraq's international isolation."

Regarding Iraq's supposed weapons of mass destruction, the justification for the 2003 invasion, Hussein admits to Mr. Nixon that it was a mistake for him not to make clear before the war that he had long since gotten rid of them. "Saddam turned philosophical when asked how America got it so wrong about weapons of mass destruction," Mr. Nixon writes. He quotes him as saying that "the spirit of listening and understanding was not there ... I don't exclude myself from this blame."



Hussein never understood the United States, and Mr. Nixon describes him as repeatedly mystified by American intentions in the Middle East. After the Sept. 11 attacks, Hussein fatally misread how America would react. He thought the attacks would bring the United States and Iraq closer together to jointly combat Islamic extremists.

"In Saddam's mind, the two countries were natural allies in the fight against extremism," Mr. Nixon writes, "and, as he said many times during his interrogation, he couldn't understand why the United States did not see eye to eye with him."

The findings from Mr. Nixon's interrogations of Hussein that cast doubt on the Bush administration's original justifications for the war, Mr. Nixon says, were ignored by senior officials at the C.I.A. and the White House. "The policy makers at the White House and the leadership on the seventh floor at the C.I.A. didn't want to hear that many of the reasons for going after Saddam were based on false premises," he writes.

Mr. Nixon's most scathing criticism is reserved for the C.I.A., which he describes as a haven for yes-men excessively eager to please the White House. When he joined the C.I.A., Mr. Nixon says, he was told that analysts should "dare to be wrong" — in other words, be willing to take chances when the evidence called for counterintuitive reasoning. But he says experience taught him that the C.I.A. didn't really reward out-of-the-box thinking. "As I found out in the Clinton, Bush and Obama years, the agency's real operating principle was 'dare to be right.'"

Mr. Nixon, who left the C.I.A. in 2011 when, he says, the work no longer excited him, depicts a sclerotic agency not much different from the Agriculture Department or any other large bureaucracy, complaining that the agency "was governed by lines of authority that were often clogged by people who got ahead by playing it safe and who regarded fresh thinking as a danger to their careers." Since he had to submit the book to the C.I.A.'s censors, he doesn't identify the stultifying bureaucrats and timeservers, although he does reserve special wrath for one boss he names only as "Phil," who, he says, "as a schmoozer, had few equals."

Mr. Nixon thoughtfully argues that the C.I.A.'s overeagerness to please the White House has led to a serious degradation in the quality of its intelligence. Virtually the entire analytical arm of the C.I.A. is focused on quickly pumping out short memos on the issues of the day that are immediately read at the White House. But the agency has largely abandoned its tradition of freeing up analysts to engage in deeper, long-term research. As a result, Mr. Nixon writes, few analysts at the agency now know very much about anything. "Expertise is not valued, indeed not trusted."

The C.I.A.'s brief memos have become like "crack cocaine for consumers of classified information," Mr. Nixon says. It's as if the C.I.A.'s analytical branch has been transformed from a college faculty into a cable news network.

The trend toward quick-hitting but shallow intelligence reports — which other former C.I.A. analysts have also criticized in recent years, particularly since 9/11 — makes the agency much more susceptible to manipulation and politicization, and to repeating the kinds of mistakes it made when it inaccurately concluded that Hussein had weapons of mass destruction.

When it came to Iraq, Mr. Nixon writes, the "agency slavishly sought to do the president's bidding — as it usually does — in an effort to get a seat near the center of power and justify its budget. That was the institutional imperative."

Mr. Trump may soon test whether the C.I.A. has learned any lessons.

Pinochet's Mad Scientist

By Samuel Blixen

December 15, 2014

Source: <https://consortiumnews.com/2014/12/15/pinochets-mad-scientist/>

On Nov. 15, 1992, a terrified scientist — trapped inside a white bungalow in the Uruguayan beach town of Parque del Plata — broke a window to escape. Chubby, in his mid-40s, the man struggled through the opening. Once outside, furtively and slowly, he picked his way through the town's streets to the local police station.



"I am a Chilean citizen," the scientist told the police. He pulled a folded photostatic copy of his identification papers concealed in his right shoe. "I have been abducted by the armies of Uruguay and my country," he claimed.



Chile's Gen. Augusto Pinochet, who seized power in a U.S.-backed coup in 1973 and helped create Operation Condor, a campaign of assassinations across Latin America and even into the United States. Pinochet died in 2006.

The scientist, rumpled with a graying beard, said he feared for his life. He insisted that his murder had been ordered by Gen. Augusto Pinochet, then the chief of Chile's army who

had ruled as a dictator from 1973 to 1990.

The motive for the execution order was the man's anticipated testimony at a politically sensitive trial in Chile, a case that could have sent reverberations all the way to Washington, D.C., potentially embarrassing the man who in November 1992 still sat in the White House, President George H.W. Bush. The scientist had worked as an accomplice in a terror campaign that included the bombing deaths of Chilean dissident Orlando Letelier and an American co-worker Ronni Moffitt as they drove to work in Washington in 1976. That terrorist attack in America's capital had occurred when George H.W. Bush was CIA director, despite prior warnings to the CIA about the plot.

'Unbalanced' Chilean

The police in Parque del Plata, a beach town about 30 kilometers from Uruguay's capital Montevideo, weren't sure what to make of the man's convoluted tale.

An Uruguayan army officer had alerted them earlier that an "unbalanced" Chilean prisoner was on the loose. The scientist, who had escaped from a house owned by a Uruguayan army officer, apparently was that man.

But the issue was quickly taken out of the hands of local authorities. A half an hour after the man's arrival, armed and uniformed Uruguayan army troops burst into the police precinct station and seized control. At their head was the district police chief, a retired army colonel named Ramon Rivas.

Rivas ordered that the Chilean scientist be turned over to the soldiers. The police were told that two Uruguayan army officers would then escort the scientist out of Uruguay to Brazil. Faced with soldiers brandishing rifles, the police relented. The scientist was led away.

From that moment, the scientist's fate became a complex kidnap-murder mystery, with improbable twists and turns, an apparent disinformation trick, raw political power, a grisly discovery and, finally, forensic science.

The disappearance of the scientist, a biochemist named Eugenio Berrios, also had relevance to later legal battles seeking to hold Pinochet accountable for thousands of human rights cases during his reign as Chile's dictator and for an international terror campaign that hunted down opponents of the dictatorships in Chile and other South American countries in the 1970s.

The case also underscored the enduring power of right-wing military officers within the fragile democracies of South America — and the difficulty of bringing Pinochet to justice in Chile.

Poison Gas

The mystery of Eugenio Berrios starts in 1974 when he began doing scientific research for Chile's feared intelligence service, DINA.

Berrios worked closely with an American-born DINA agent, Michael Townley, in a clandestine unit known by the name "Quetropilla." The base of operations was a sprawling, multi-level house — registered to Townley but purchased by DINA — in Lo Curro, a wooded, middle-class neighborhood of Santiago, Chile.



One of Berrios's assignments was the development of **sarin gas** that could be packaged in spray cans for use in assassinations. DINA officials thought the nerve gas could create lethal symptoms that might be confused with natural causes while giving time for the assailants to escape.



The need for sophisticated murder devices grew more important for Pinochet's intelligence teams when they turned their sights on political enemies living abroad in 1975.

In September 1975, DINA chief Manuel Contreras launched an international assassination project called Operation Condor, named after the powerful vulture that traverses the Andes mountains from Colombia to the Strait of Magellan. The theory behind Condor was that enemies of South American military dictatorships should be hunted down wherever they sought refuge, whether in the nations of participating governments or elsewhere.

In October 1975, after soliciting \$600,000 in special funds from Pinochet, Contreras chaired the organizational meeting of Operation Condor with military intelligence chiefs from Argentina, Uruguay, Paraguay and Brazil. After the meeting, the intelligence services stepped up their trans-national coordination. More than 100 Chileans were rounded up and

returned to Chile for execution. Others were gunned down where they were found.

According to later testimony by DINA agent Townley, Berrios made a major contribution to the cause in April 1976 by recreating sarin, a poisonous nerve gas first invented by the Nazis during World War II.

Townley said the original plan for assassinating Orlando Letelier — who had been foreign minister under Chile's leftist elected government of Salvador Allende, who was overthrown and killed in Pinochet's 1973 coup — was to use a female operative to seduce the debonair former diplomat and then administer a liquid form of sarin concealed in a Chanel perfume bottle. But Berrios also supplied the operation with explosive devices in case the nerve gas proved unworkable.

In September 1976, Townley entered the United States on an official Chilean passport with a false name. He contacted anti-Castro Cubans and recruited their help in hunting down Letelier, a vocal critic of Pinochet. When the Cubans refused to participate unless the Chileans had a direct role in the assassination, Townley switched from poison to a car bomb.

The assassins traveled to Washington where the exiled Letelier lived and worked at a left-of-center think tank, the Institute for Policy Studies. They concealed the bomb under Letelier's car and followed Letelier as he and two American associates drove to the IPS offices on Sept. 21, 1976.

As the car proceeded past the ornate buildings of Embassy Row on Massachusetts Avenue, the assassins detonated the bomb. Letelier and one American, Ronni Moffitt, died in the blast. Moffitt's husband was wounded.

Bush's CIA

Despite official requests, George Bush's CIA provided little help unraveling the mystery. Only later would authorities discover that the CIA director's office received a warning about the Townley operation but failed to stop it. [For details, see Robert Parry's [Secrecy & Privilege](#).]

Still, the FBI and federal prosecutors managed to uncover Operation Condor and break the Letelier case. Extradited to the United States, Townley agreed to plead guilty, serve a short prison sentence and enter a federal witness protection program.

But progress in bringing to justice the architects of the terror campaign was much slower, given Pinochet's continued hold on power through 1990. Long-term U.S. pressure, however, finally led to criminal charges in Chile against former DINA chief Contreras.



Berrios, who continued to work on assassination schemes even after Townley's arrest, emerged as a prospective witness. In October 1991, a Chilean judge called Berrios to testify. The move sent chills through the Chilean military establishment.

It became important for DINA to get Berrios beyond the reach of the Chilean court. That month, Capt. Carlos Herrera Jimenez, a former intelligence officer, escorted Berrios from Santiago on a clandestine trip through the Andes to Argentina.

To hide Berrios, the old Condor network quickly reasserted itself. From Buenos Aires, Uruguayan counterintelligence chief, Lt. Col. Thomas Casella, coordinated Berrios's move to Uruguay. There, Berrios and Herrera holed up in a Montevideo apartment rented by Casella, who frequently had trained with the Chilean military.

But complications continued to arise. In February 1992, while on a trip to Buenos Aires, Capt. Herrera was arrested on an Interpol warrant connecting him to another assassination plot. That forced other Chilean agents to take charge of Berrios in Uruguay. Berrios was becoming a burden — as well as a risk — to Chile's intelligence services.

Gen. Emilio Timmerman, a military officer at the Chilean embassy in Montevideo, assumed the Berrios duty. But Timmerman complained to an embassy cultural attaché, Emilio Rojas, that "it is costing us too much money." Timmerman, who later became second-in-command of the Chilean army, also was growing nervous. Timmerman ordered Rojas to keep his mouth shut about Berrios's whereabouts, the cultural attaché said later.

By November 1992, Berrios realized that his Chilean superiors might want him silenced — as the safest and cheapest alternative to a long exile. He apparently overheard his captors discussing Pinochet's orders for them to eliminate the scientist.

A Disappearance

So, on Nov. 15, 1992, Berrios climbed through the broken window of the white bungalow and fled to the precinct station at Parque del Plata. He begged the police to protect him, but the escape was cut short by the intervention of Uruguayan troops. Berrios disappeared.

Exactly what happened next remains a mystery. Senior Uruguayan officials only learned about the November 1992 police confrontation the next June from an anonymous caller.

The discovery of the abduction touched off a political crisis inside the Uruguayan government where the army still wielded great power. Uruguayan President Luis Alberto Lacalle was in Great Britain when the story broke. He immediately ducked out of a reception at the Uruguayan embassy in London and flew back to Montevideo.

There, Lacalle met with 14 of the 16 generals heading the armed forces. After four hours of tough negotiations and threats from 12 generals, Lacalle backed down to avoid a new military challenge to the civilian government. The president relented on his initial inclination to impose severe sanctions against the intelligence services. Lacalle did fire the police chief, Rivas, but agreed only to transfer the head of military intelligence, Mario Aguerrondo.

As for Berrios's fate, Col. Casella, who had supplied an apartment for hiding Berrios, reported that Berrios had gone to Brazil. The colonel assured the government that he had talked to Berrios by phone at the end of November 1992, weeks after his disappearance.

There were public doubts that Berrios was still alive. But another assurance about Berrios's well-being surfaced in Europe. The Uruguayan consulate in Milan received an anonymous letter supposedly signed by Berrios and a photo of him holding a recent issue of the Milan newspaper, *Il Messaggero*.

President Lacalle, seeking political peace with Uruguay's military, announced that "Berrios is not in Uruguay. He is somewhere else." That made the Berrios mystery "a Chilean matter" again, the Uruguayan president declared.

At the end of the crisis, Uruguay's foreign minister Sergio Abreu met with the Chilean ambassador and bluntly admitted that Lacalle had no choice but to "doblar el pescuezo" — "let it go." If President Lacalle pursued sanctions against powerful figures in the military, the 12 generals had threatened another military coup, the foreign minister said. Chile's ambassador cabled that news back to Santiago, according to a cable that I later obtained.



For Uruguay, the Berrios case was closed — or so the authorities thought.

Grisly Discovery

The Berrios case resurfaced, quite literally, in April 1995 when two fishermen found a man's decomposed body partially buried at a beach in El Pinar, another resort town about 25 kilometers from Montevideo. The body had broken bones suggesting torture, was wrapped in wire, and had two .45-calibre bullet holes in the back of the neck and head.

Forensic doctors used new research techniques to reconstruct the victim's face. The face looked remarkably like Berrios. DNA tests were ordered on the remains with comparisons made against genetic samples from Berrios's relatives. In early 1996, forensic specialists concluded, with near certainty, that the dead man was Berrios. They also placed the date of his death as the first half of March 1993, just four months after his abduction.

The findings contradicted the June 1993 photograph — which presumably had been composed using computer graphics to insert a current issue of the Italian newspaper into the photo. But the timing of Berrios's death added yet another side to the mystery.

In March 1993, Pinochet had made a personal visit to Uruguay accompanied by 12 bodyguards and with Col. Casella joining his entourage. In Uruguay, there were suspicions that Pinochet might have used the visit to confront Berrios one more time about his knowledge and then eliminate him.

But few observers in either Uruguay or Chile believe that those civilian governments were strong enough — or determined enough — to follow the Berrios case and others to clear answers. The nations of Operation Condor remained in the grip of the vulture's powerful claws.

Samuel Blixen is a Uruguayan journalist and author of several books.

Couple were 'preparing to carry out chemical and bomb attacks in UK'

Source: <http://www.thejournal.ie/couple-preparing-attacks-in-uk-3787386-Jan2018/>

Jan 09 – A couple who met on a dating site were today convicted today of preparing to carry out chemical and bomb attacks in the UK.

Munir Mohammed, 37, from Derby, bought items to make the lethal devices and received support and advice from Rowaida El-Hassan, a 32-year-old qualified pharmacist.



She sent messages to him via WhatsApp with links to websites where he could find information on manufacturing the deadly poison **ricin**, the Crown Prosecution Service (CPS) said in a statement.

He sent her graphic videos showing members of the so-called Islamic State (IS or Daesh) taking part in beheadings and shootings and killing prisoners using explosives.

At the time of his arrest in December 2016, Mohammed possessed two of the three

components required to create an explosion as well as instruction manuals on how to prepare them, mobile phone detonators and ricin.

Mohammed was also in touch with someone he believed to be an IS commander via Facebook and asked him for bomb-making instructions and expressed willingness to participate in "a new job in the UK".

The CPS explained to a jury at the Old Bailey in London how the pair's exchanges showed they supported IS's goal to spread fear through terrorism and that Mohammed was prepared



to carry out a “lone actor” attack. El-Hassan, from Willesden in London, knew what he was planning and she actively supported him.

The couple first got in touch with each other via a website for single Muslims in March 2016, and on her dating profile El-Hassan wrote: “I am looking for a man I can vibe with on a spiritual and intellectual level. Someone who can teach me new things and inspire me.”

‘They planned to kill’

Sue Hemming, head of the CPS’s Head of the Special Crime and Counter Terrorism Division, said the couple “were clearly attracted to each other through their support for Daesh’s violent ideology and its intolerance of those who do not subscribe to its views”.

They planned to kill and injure innocent people in the UK and had the mind-set, the methodology and almost all the material needed, for Mohammed to carry out an attack.

“Both will be in prison, where they cannot plot together and will no longer be a danger to the public.”

Both were charged with one count each of intending to commit an act of terrorism or helping someone else to commit an act of terrorism under Section 5 of the Terrorism Act 2006. It carries a maximum sentence of life in prison. They will be sentenced on 22 February.

Dahlgren Decon

Source: <http://www.firstlinetech.com/product/dahlgren-decon/>



Dahlgren Decontamination solution is a three-component solution that can immediately decontaminate chemical and biological warfare agents as well as personal protective equipment (PPE), sensitive equipment, and critical infrastructure. Dahlgren Decontamination solution has a ten-year shelf life in storage and will be efficacious for at least six hours after being mixed with any available water source. Live-agent testing indicates that the surfactant based decontamination formula with Dahlgren Decontamination solution is capable of 100% neutralization of HD in less than 2 minutes, 100% neutralization of GD in 5 minutes, and approximately 95% neutralization of VX in 15 minutes with no toxic byproducts observed.

Dahlgren Decon is available in the following volumes: 200 ml, 22 oz, 1 gal, and 5 gal. Other volumes may be requested.

Lightweight Terahertz Laser Could Be Used for Chemical, Explosives Detection

Source: https://cbrnecentral.com/lightweight-terahertz-laser-could-be-used-for-chemical-explosives-detection/10811/98/*

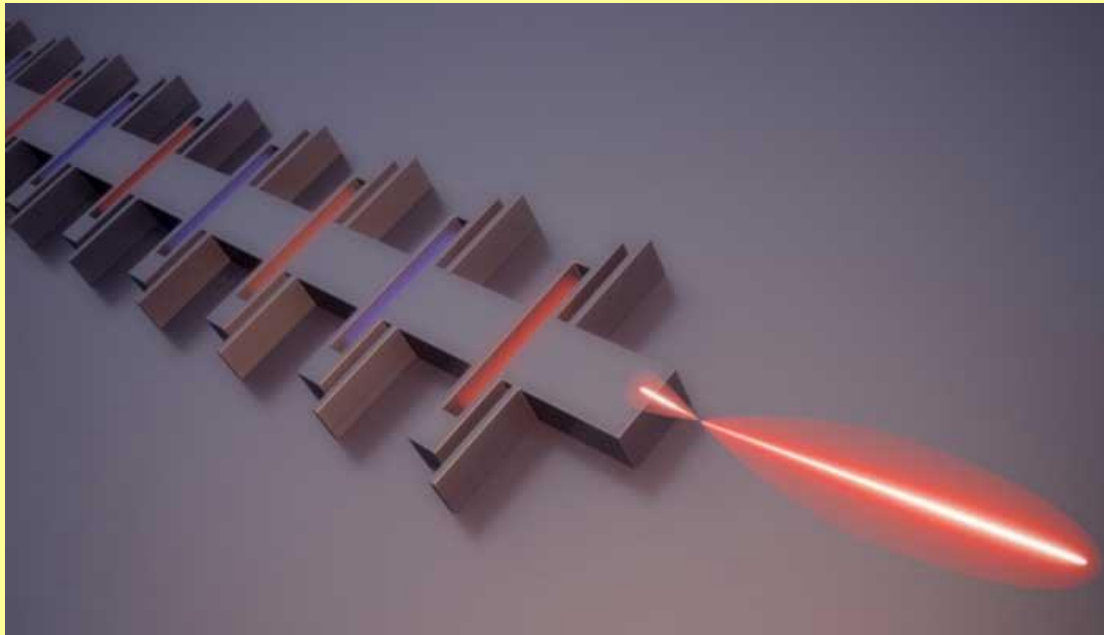
October 2017 – A new technique boosts the power output of tiny, chip-mounted terahertz lasers by 88 percent. Image credit: Demin Liu/Molgraphics via MIT News Office

For more than 20 years, Qing Hu, professor of electrical engineering and computer science at MIT, and his group have been working on sources of terahertz radiation that can be etched onto microchips.

Terahertz spectroscopy, which uses the band of electromagnetic radiation between microwaves and infrared light, is a promising security technology because it can extract the spectroscopic “fingerprints” of a wide range of materials, including chemicals used in explosives. But traditional terahertz spectroscopy requires a radiation source that’s heavy and about the size of a large suitcase, and it takes 15 to 30 minutes to analyze a single sample, rendering it impractical for most applications.

Working with colleagues at Sandia National Laboratories and the University of Toronto, Hu’s group [describes a novel design](#) that boosts the power output of chip-mounted terahertz lasers by 80 percent in the latest issue of *Nature Photonics*.





The researchers' design is a new variation on a device called a quantum cascade laser with distributed feedback. "We started with this because it was the best out there," says Ali Khalatpour, a graduate student in electrical engineering and computer science and first author on the paper. "It has the optimum performance for terahertz."

Until now, however, the device has had a major drawback, which is that it naturally emits radiation in two opposed directions. Since most applications of terahertz radiation require directed light, that means that the device squanders half of its energy output. Khalatpour and his colleagues **found a way to redirect 80 percent of the light that usually exits the back of the laser**, so that it travels in the desired direction. As the best-performing chip-mounted terahertz source yet reported, the researchers' device has been selected by NASA to provide terahertz emission for its [Galactic/Extragalactic ULDB Spectroscopic Terahertz Observatory \(GUSTO\)](#) mission. The mission is intended to determine the composition of the interstellar medium, or the matter that fills the space between stars, and it's using terahertz rays because they're uniquely well-suited to spectroscopic measurement of oxygen concentrations. Because the mission will deploy instrument-laden balloons to the Earth's upper atmosphere, the terahertz emitter needs to be lightweight.

As Khalatpour explains, the researchers' design is not tied to any particular "gain medium," or combination of materials in the body of the laser. "If we come up with a better gain medium, we can double its output power, too," Khalatpour says. "We increased power without designing a new active medium, which is pretty hard. Usually, even a 10 percent increase requires a lot of work in every aspect of the design."

In fact, bidirectional emission, or emission of light in opposed directions, is a common feature of many laser designs. With conventional lasers, however, it's easily remedied by putting a mirror over one end of the laser.

But the wavelength of terahertz radiation is so long, and the researchers' new lasers — known as photonic wire lasers — are so small, that much of the electromagnetic wave traveling the laser's length actually lies outside the laser's body. **A mirror at one end of the laser would reflect back a tiny fraction of the wave's total energy.**

Khalatpour and his colleagues' solution to this problem exploits a peculiarity of the tiny laser's design. A quantum cascade laser consists of a long rectangular ridge called a waveguide. In the waveguide, materials are arranged so that the application of an electric field induces an electromagnetic wave along the length of the waveguide.

This wave, however, is what's called a "standing wave." If an electromagnetic wave can be thought of as a regular up-and-down squiggle, then the wave reflects back and forth in the waveguide in such a way that the crests and troughs of the reflections perfectly coincide with



those of the waves moving in the opposite direction. A standing wave is essentially inert and will not radiate out of the waveguide.

So Hu's group **cut regularly spaced slits into the waveguide, which allow terahertz rays to radiate out.** "Imagine that you have a pipe, and you make a hole, and the water gets out," Khalatpour says. The slits are spaced so that the waves they emit reinforce each other — their crests coincide — only along the axis of the waveguide. At more oblique angles from the waveguide, they cancel each other out.

In the new work, the research team simply put reflectors behind each of the holes in the waveguide, a step that can be seamlessly incorporated into the manufacturing process that produces the waveguide itself.

The reflectors are wider than the waveguide, and they're spaced so that the radiation they reflect will reinforce the terahertz wave in one direction but cancel it out in the other. Some of the terahertz wave that lies outside the waveguide still makes it around the reflectors, but 80 percent of the energy that would have exited the waveguide in the wrong direction is now redirected the other way.

"They have a particular type of terahertz quantum cascade laser, known as a **third-order distributed-feedback laser**, and this right now is one of the best ways of generating a high-quality output beam, which you need to be able to use the power that you're generating, in combination with a single frequency of laser operation, which is also desirable for spectroscopy," says Ben Williams, an associate professor of electrical and computer engineering at the University of California at Los Angeles. "This has been one of the most useful and popular ways to do this for maybe the past five, six years. But one of the problems is that in all the previous structures that either Qing's group or other groups have done, the energy from the laser is going out in two directions, both the forward direction and the backward direction."

"It's very difficult to generate this terahertz power, and then once you do, you're throwing away half of it, so that's not very good," Williams says. "They've come up with a very elegant scheme to essentially force much more of the power to go in the forward direction. And it still has a good, high-quality beam, so it **really opens the door to much more complicated antenna engineering to enhance the performance of these lasers.**"

The new work was funded by NASA, the National Science Foundation, and the U.S. Department of Energy.

OPEN ACCESS
IOP Publishing

J. Phys. D: Appl. Phys. **50** (2017) 043001 (49pp)

Journal of Physics D: Applied Physics

doi:10.1088/1361-6463/50/4/043001

Topical Review

The 2017 terahertz science and technology roadmap

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Source: <http://iopscience.iop.org/article/10.1088/1361-6463/50/4/043001/pdf>

Science and technologies based on terahertz frequency electromagnetic radiation (100 GHz–30 THz) have developed rapidly over the last 30 years. For most of the 20th Century, terahertz radiation, then referred to as sub-millimeter wave or far-infrared radiation, was mainly utilized by astronomers and some spectroscopists. Following the development of laser based terahertz time-domain spectroscopy in the 1980s and 1990s the field of THz science and technology expanded rapidly, to the extent that it now touches many areas from fundamental science to 'real world' applications. For example THz radiation is being used to optimize materials for new solar



cells, and may also be a key technology for the next generation of airport security scanners. While the field was emerging it was possible to keep track of all new developments, however now the field has grown so much that it is increasingly difficult to follow the diverse range of new discoveries and applications that are appearing. At this point in time, when the field of THz science and technology is moving from an emerging to a more established and interdisciplinary field, it is apt to present a roadmap to help identify the breadth and future directions of the field. The aim of this roadmap is to present a snapshot of the present state of THz science and technology in 2017, and provide an opinion on the challenges and opportunities that the future holds. To be able to achieve this aim, we have invited a group of international experts to write 18 sections that cover most of the key areas of THz science and technology. We hope that The 2017 Roadmap on THz science and technology will prove to be a useful resource by providing a wide ranging introduction to the capabilities of THz radiation for those outside or just entering the field as well as providing perspective and breadth for those who are well established. We also feel that this review should serve as a useful guide for government and funding agencies.

Comparison of terahertz technologies for detection and identification of explosives

By René Beigang, Sandra G. Biedronb, Sławomir Dyjakc, et al.

Source: https://www.researchgate.net/publication/269321911_Comparison_of_terahertz_technologies_for_detection_and_identification_of_explosives



Figure 1. The photonic THz systems used in this trial. Top left: Optical subsystem of the NorT spectrometer; top right: fiber-coupled NorT measurement heads in dried air enclosure; bottom left: TPS Spectra 3000 with external fiber-coupled add-on compartment for reflection measurements; bottom right: modified electro-optic TeraKit spectrometer.

We present results on the comparison of different THz technologies for the detection and identification of a variety of explosives from our laboratory tests that were carried out in the framework of NATO SET-193 “THz technology for stand-off detection of explosives: from laboratory spectroscopy to detection in the field” under the same controlled conditions. Several laser-pumped pulsed broadband THz time-domain spectroscopy (TDS) systems as well as one electronic frequency-modulated continuous wave (FMCW) device recorded THz spectra in transmission and/or reflection.



France to launch international group targeting toxic gas attacks

Source: <https://www.reuters.com/article/us-syria-chemicalweapons-france/france-to-launch-international-group-targeting-toxic-gas-attacks-idUSKBN1F72ZF>

Jan 18 – France has asked some 30 countries to work together to preserve evidence of chemical weapons attacks and impose sanctions on those responsible after Russia ended an international inquiry into who is to blame for using toxic gas in Syria.

France will host a meeting on Tuesday in Paris to launch the initiative, French U.N. Ambassador Francois Delattre told a United Nations Security Council meeting on nonproliferation of weapons of mass destruction on Thursday.

U.S. Secretary of State Rex Tillerson is due to attend, the State Department said.

The group will work together “collecting, conserving, exchanging and using ... all the mechanisms at our disposal to name the guilty parties and impose the necessary sanctions on them,” according to the invitation sent to states and seen by Reuters.

"It is important that, when the time comes and the political timing is right, all the information on the perpetrators of chemical weapons attacks and those who participated in their programs is immediately available so as to ensure they are brought to justice for their actions," the invitation said.

The move comes after an international investigation into who is to blame for chemical weapons attacks in Syria ended in November after Syrian ally Russia blocked for the third time in a month attempts at the United Nations to renew the inquiry, which Moscow has slammed as flawed.

In the past two years, the joint inquiry of the United Nations and the Organization

for the Prohibition of Chemical Weapons (OPCW) had found the Syrian government used the nerve agent sarin in an April 4, 2017 attack and has also several times used chlorine as a weapon. It blamed Islamic State militants for using mustard gas.

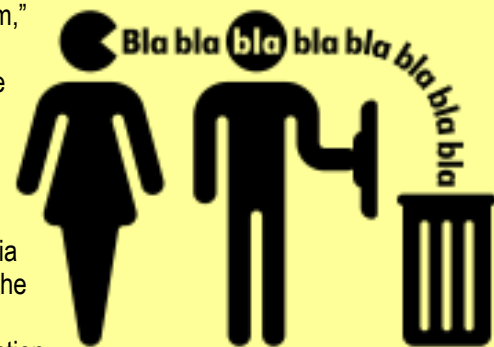
“The current paralysis of multilateral forums is preventing us from taking legal action against the perpetrators of these crimes and dissuading them from continuing down this path. This must change,” the French invitation said.

Syria agreed to destroy its chemical weapons in 2013 under a deal brokered by Russia and the United States. The Syrian government has denied using chemical weapons.

Russian Foreign Minister Sergei Lavrov said accusations against the Syrian government were “baseless” and accused Western states of ignoring a chemical weapons threat posed by extremist groups.

"We are gravely concerned by the growing threat of chemical weapon terrorism in the Middle East. Specifically on the territory of Iraq and Syria," Lavrov told the U.N. Security Council on Thursday.

"We must bear in mind the real risks of chemical terrorism spilling over beyond the Middle East, taking into account the significant amounts of foreign fighters among extremists," he said.



Checking chemical detectors' sensitivity to chemicals

Source: <http://www.homelandsecuritynewswire.com/dr20180119-checking-chemical-detectors-sensitivity-to-chemicals>

Jan 19 – The Joint Chemical Agent Detector (JCAD) has become an important defense tool on battlefields and in war-torn cities over the last few years. About the size and shape of a VHS tape or a hardcover bestselling novel, JCADs sound an alarm and begin to light up if nerve agents such as sarin or blister agents such as mustard gas are present.

The detectors are already designed to withstand intense environments and repeated use. But when the Department of Defense wanted a way to check the devices' sensitivity to chemicals over time, a measurement team at the National Institute of Standards and Technology (NIST) was called in to provide a cost-effective solution.



NIST [says](#) that the result is an accessory device, known as the Threshold Confidence Checker, or TCC, which weighs just a few grams and looks vaguely like a cigarette lighter. The TCCs can be slid on top of



the chemical detectors so that an exact measurement can be made of each device's sensing capabilities.

TCCs demand no special operator training or scientific knowledge and offer a repeatable test that costs less than \$1 per use. The test takes only a few moments, and detectors do not need to be taken out of service while the critical components are verified.

The small, inexpensive TCCs are vastly different than the first solution that was offered to the testing problem, which involved using a large spectrometer to identify vapors by

detecting their chemical signatures in infrared light.

"We realized those wouldn't work very well in this situation," said Pamela Chu, the researcher in charge of the NIST team. The heavy spectrometers are about the size of a refrigerator and cannot be easily transported to the kinds of remote places where troops are often deployed. In addition, each spectrometer system can cost more than \$100,000 and requires specially trained staff. Detectors would also have to be periodically pulled out of the field and sent in for testing at a centralized depot, often at a distant location.

"The solution we were able to develop instead is inexpensive, effective and reproducible for other, similar detection equipment," said Chu.

To run a test, an operator simply loads the TCC onto the intake area of the detector. Inside the TCC, a small glass ampoule contains a known quantity of chemical simulants that are safe and nontoxic to people, but that cause the devices to react as if they had been exposed to the dangerous nerve and blister agents. As the ampoule is crushed, the simulant provides a measured amount of harmless gas meant to trigger the detector just above its set sensitivity limit. If the alarm sounds and a specific number of lights are activated, the soldier or testing personnel know the device is still in working order and can be returned to the field immediately.

JCADs that fail to display the required number of lights are subjected to additional maintenance, and then, if they still don't pass, are returned to the depot for additional checks and any needed maintenance.

The amount of simulant used for TCCs can be traced to established standards and reference methods. What's more, the technology used to develop the current round of TCCs can be replicated as sensor technology evolves and the handheld chemical agent detectors change and evolve, too. Although the TCCs themselves might need to be adapted or reconfigured, the principles established through their research and development will remain the same and can be repeatedly reapplied.

NIST notes that research and development for the TCCs was done by Chu and her team over several years, beginning in 2010. The Department of Defense, which funded the research, has now announced it will begin large-scale production of these testing devices, and a private company has already been contracted to make 60,000 for immediate use.





Bio News

Global respiratory surveillance program detects dangerous pathogens to keep armed forces healthy

By Armed Forces Health Surveillance Branch

Source: <https://okinawa.stripes.com/news/global-respiratory-surveillance-program-detects-dangerous-pathogens-keep-armed-forces-healthy>

Dec 23 – The potential threat of respiratory disease outbreaks can hamper the military's ability to carry out its mission. The mobility of military units, along with the crowded living conditions and a high-stress working

global respiratory surveillance program for the military. The GEIS section funds the Department of Defense Global Respiratory Pathogen Surveillance Program at the U.S. Air Force School of Aerospace Medicine at Wright-

Patterson Air Force Base in Dayton, Ohio. The program conducts year-round respiratory surveillance at 46 military installations in the U.S. and 33 sites overseas to identify influenza and other respiratory pathogens that could jeopardize the health and readiness of service members and their families.

The respiratory surveillance program offers a glimpse of AFHSB's comprehensive work that allows the Department of Defense and the Military Health System to develop



preventive and treatment programs to maintain combat readiness. The program also shares data with the Centers for Disease Control and Prevention (CDC) and World Health Organization to reduce gaps in their respective civilian respiratory surveillance efforts throughout the globe. The program also helps fulfill the Defense Department's contributions toward the Global Health Security Agenda, a growing partnership of over 70 nations, international organizations, non-government stakeholders to help build countries' capacity to detect and prevent infectious disease threats.

environment, can increase service members' susceptibility to illness. Frequent deployments to developing countries where pathogens can be transmitted from animals to humans can expose service members to potentially susceptible novel pathogens that can spread quickly and cause serious illness. "Given the ever-changing nature of the flu virus, constant surveillance is necessary. The concern is that some of these changes will lead to a more transmissible and more lethal virus—a dangerous combination for our military members and the world," said U.S. Public Health Captain Michael Cooper, who oversees the Armed Forces Health Surveillance Branch's (AFHSB) Global Emerging Infections Surveillance section's (GEIS) Respiratory Focus Area. "Early detection of such a situation will give public health authorities and vaccine makers' opportunity to prepare interventions that will hopefully stem the tide of illness."

To reduce the impact of respiratory pathogens on service members, AFHSB coordinates a

Respiratory sentinel sites submit between six and 10 respiratory specimens each week from patients who meet the case definition for influenza-like illness (i.e., present with a fever greater than 100.5°F and cough or sore throat within 72 hours of the onset of symptoms). The program has increased the number of specimens that are tested with the addition of high-throughput



multiplex polymerase chain reaction systems that can detect up to 20 respiratory pathogens and co-infections. This testing panel is performed on respiratory specimens received for routine testing as well as viral culture.

Next-generation sequencing also provides whole genome sequencing in less time than previous methods to identify genetic changes in all eight gene segments of currently circulating influenza viruses. All the sequencing information is organized into phylogenetic trees that show the degree of variation and genetic grouping among the strains. These sequences are shared with the CDC and compiled into the GenBank database for use by public health researchers. Finally, the respiratory surveillance program conducts estimated influenza vaccine effectiveness (VE) at mid-season and the end of the flu season to account for potential antigenic drift or shift. VE estimates are performed using a test-negative, case-control study design and

include Department of Defense healthcare beneficiaries and select non-military subjects who seek health care in response to symptoms associated with respiratory infection. When appropriate, respiratory specimens are taken and submitted to the program for testing. "Cases" are patients who tested positive for influenza while "controls" are individuals who tested negative for influenza.

Mid-season estimates are presented at the Food and Drug Administration's annual Vaccine and Related Biological Products Advisory Committee meeting in early spring and contribute to the determination of the influenza vaccine strain in the U.S. for the upcoming season. Additionally, VE estimates are provided to the WHO Global Influenza Vaccine Effectiveness report, which helps determine the Northern and Southern Hemispheres' influenza vaccine strains.

***A PROPOSED FRAMEWORK FOR
IDENTIFYING POTENTIAL BIODEFENSE
VULNERABILITIES POSED BY SYNTHETIC BIOLOGY:
INTERIM REPORT***

Committee on Strategies for Identifying and Addressing Biodefense
Vulnerabilities Posed by Synthetic Biology

Source: <https://www.nap.edu/read/24832/chapter/1>

Homeland Security suspending bioterror testing in Oklahoma

Source: <http://www.foxnews.com/us/2017/12/21/homeland-security-suspending-bioterror-testing-in-oklahoma.html>

Dec 22 – **The Department of Homeland Security said Thursday it is suspending plans to conduct bioterrorism drills near the Kansas-Oklahoma border over concerns about their impact on grounds Native American tribes consider sacred because more than 100 children are buried there.**

Homeland Security spokesman John Verrico said in an email that the tests were suspended over objections to them taking place at the Chilocco Indian Agricultural School. The Chilocco school, which operated from the late 1800s until 1980, was one of several federally-run boarding schools where the U.S. once sought to assimilate Native American children. The tribes say the federal agency is failing to protect a site with religious and cultural significance. The agency's environmental assessment for the test said several inert chemical and non-hazardous biological materials were to be released to evaluate the ability of buildings to protect occupants from outdoor biological hazards. The proposed testing was planned for the months of February and June and July.



"While the work remains very important for the security of our nation, further evaluation will be conducted to identify the best location for future testing," Verrico said.

Homeland Security said the chemicals it wants to use are found in common household products such as sunscreen, cosmetics and laundry detergents.

One chemical that's caused the most worry, especially among the many farmers who live nearby, is called DiPel, a biological insecticide that's been commercially available since the 1970s and approved for use in organic farming. The Homeland Security project manager has said the chemicals won't pose harm to humans, animals or hundreds of acres of nearby cropland and pasture.

Bioethicist discusses four keys to know about possibilities, pitfalls of gene editing

Source: <https://phys.org/news/2017-12-bioethicist-discusses-keys-possibilities-pitfalls.html>



Dec 21 – **Gene editing has captivated scientists and medical providers with tantalizing visions of wiping out debilitating inherited diseases.** Could conditions like Huntington's disease, for example, be cured by using a tool that acts as a "molecular scissors" to remove and replace disease-causing DNA? Or, would gene editing tempt some to engineer designer babies with genes encoded for superior intelligence, beauty or athletic abilities? Gene editing technology is rapidly advancing, putting tools at the forefront of medical research. One of the best known [gene editing](#) tools is CRISPR-Cas9, which stands for clustered regularly interspaced short palindromic repeats and CRISPR-associated protein. CRISPR-Cas9 has the potential to make gene editing faster, cheaper and more accurate, which could speed basic research studies and findings.

Although Mayo Clinic does not use gene editing as part of any treatment, it is studying the implications. Megan Allyse, Ph.D., a bioethicist who works with the Bioethics Program of the Mayo Clinic Center for Individualized Medicine and the Department of Obstetrics and Gynecology, warns that, along with improvements in understanding of the genome, gene editing also poses ethical concerns.

"It's important to have public conversations to understand the limitations of this new technology. What are best practices (for gene editing)? What are the implications? What are the misuses of technologies like this? How can we harness it to benefit patients? How do we prevent harming populations or increasing health disparities or side effects that are not acceptable?" Allyse said.



Allyse shares four key factors on why gene editing is still years away from medical practice:

There's a lot we don't understand yet

"CRISPR-Cas9 is a tool that works very well," Allyse said. "The problem is with us and how we use the tool. Technology can be used in many ways: It can be harmful or beneficial. We know so little about the human genome and how it works. How can you edit what you don't know?" One concern is that gene editing won't work the way we want it to. Allyse points to a study that found that embryos rejected attempts to replace a sequence of genetic code that coded for disease with healthy DNA. Instead, the embryos reverted to inherited DNA from parental genomes to replace what was removed.

Another concern is that editing one portion of a gene could lead to damage or unwanted side effects in another part of that gene.

"For example, some of the [genes](#) that have been associated with intelligence have also been associated with psychopathy," Allyse said. "Do we want to alter genetic intelligence only to risk creating psychotic problems in a different part of the genome? Is it worth the risk?"

Existing technologies may accomplish the same thing

Researchers are studying whether gene editing could be used to remove defects in embryos to prevent genetically inherited diseases. Edits to the germline (inherited) portion of the genome would then affect all future descendants of that embryo.

However, Allyse points out that we don't have to turn to gene editing to achieve that goal. Parents can have carrier screening to learn whether they have a disease-causing variant that could be passed to children. And, in vitro DNA tests can identify embryos with known genetic conditions. Parents have the option of using in vitro fertilization to implant only healthy embryos.

"For the most part, we already have the technology to do what gene editing seeks to accomplish," Allyse said. "We have a proven track record with existing technology. Why would we need to turn to the uncertainty of gene editing to do the same thing?"

Genetics is just one factor to consider

Research has shown that environment, personal habits and how someone is raised tend

to play a greater role than genetics in overall health and disease.

"People tend to overestimate that genetics is the be-all, end-all answer to everything," Allyse said. "With the exception of certain, clearly genetic conditions, research has shown that access to education, nutrition and immunizations may have a greater influence on a child's health and abilities than genetics."

Medical practice isn't ready for it

Allyse said the closest clinical application of gene editing may be its use in gene therapy. Gene therapy is used to replace genetic deficiencies, such as when the body's enzymes or amino acids are not functioning properly. Gene editing may make [gene therapy](#) more effective by speeding up research and delivering replacement therapy to more precise locations within the genome.

Despite that, Allyse predicts that gene editing is still many years from becoming part of the mainstream [medical practice](#), if it gets there at all."

We just don't have the knowledge of how it will impact our overall health.

We don't have the mechanisms to understand. Medical practice and society are not yet ready for gene editing to become a part of routine clinical care," says Dr. Allyse.

Aside from gene editing, researchers and physician-scientists at Mayo Clinic Center for Individualized Medicine continue to seek ways to apply the latest genomic, molecular and clinical science to personalized care for every individual, so patients receive the exact care they need—when they need it—and to address unmet needs of the patient.

Scientists think public opinion important before human gene editing

Source: <https://medicalxpress.com/news/2017-10-scientists-opinion-important-human-gene.html>

October 2017 – The public should be consulted before gene editing is used to treat human embryos, according to a survey of scientists published in the American Heart Association's journal *Circulation: Cardiovascular Genetics*.

"Early studies with [human embryos](#) have established the feasibility of



human germline genome editing but raise complex social, ethical and legal questions," said Kiran Musunuru, M.D., Ph.D., MPH, lead survey author and an associate professor of cardiovascular medicine and genetics at the Perelman School of Medicine at the University of Pennsylvania in Philadelphia.

"The future is on us, whether we like it or not."

While new scientific advances have made [gene editing](#) easier and open possibilities for improved treatment and prevention of genetic diseases, the technology has risks, including the unintentional alteration of other [genes](#), and ethical concerns, such as the introduction of mutations that will impact all future progeny.

Musunuru and colleagues presented data on the state of gene editing at the American Heart Association's Arteriosclerosis, Thrombosis and Vascular Biology | Peripheral Vascular Disease Scientific Sessions in **May 2017, then polled 300 attendees - cardiovascular researchers - to gauge their opinions on gene editing in humans.**

They found:

- ◆ **80 percent** of respondents supported gene editing in adults to prevent serious diseases

but not for enhancements, such as improving athletic ability.

- ◆ **68 percent** supported conducting research on [germline cells](#) (male sperm cells, female egg cells or **embryos resulting from the joining of sperm and egg cells**) if the **experiments did not lead to pregnancy.**
- ◆ **61 percent** supported using gene editing of germline cells as an option for parents with no other means to have a healthy biological child.
- ◆ **Opinions were split** (45 percent in favor and 40 percent opposed) on parents using germline gene editing to reduce their child's risk of having a serious medical condition.

If gene editing for germline cells became a viable treatment, 68 percent of respondents supported government coverage of costs to ensure that the therapies were available to everyone. However, 72 percent of survey respondents opposed germline gene editing if the general public was not asked for their opinions about the technology first.

"This appears to reflect a general sentiment that the public should be consulted before any clinical application of [germline](#) gene editing proceeds," the survey authors wrote.



Meet the tiny machines in cells that massacre viruses

Source: <https://www.sciencedaily.com/releases/2017/12/171221143114.htm>

Dec 21 – "Fighting viruses is essential for survival," says Brenda Bass, Ph.D., distinguished professor of Biochemistry at U of U Health who co-led the study with assistant professor Peter Shen, Ph.D. "It is fascinating to see how biology has evolved to solve this problem." Their findings will be published online in the journal *Science* on Dec. 21.

Bass, Shen and their colleagues examined one such specialized machine, a protein from the common fruit fly, *Drosophila melanogaster*. Now that scientists know how the fly protein works, they may be able to use some of the same tricks to overcome viruses that cause human disease. At first glance, the **"L"-shaped protein, aptly named Dicer**, doesn't look like anything special. But put it next to virus, and its machete-like properties spring to life. Viruses spread infection by replicating and copying their genomic material inside the cell, and during this process make double-stranded RNA (dsRNA). Dicer rids

the cell of the offending intruder by grabbing hold of the rope-like dsRNA, chopping it into pieces as it reels it in.

One small difference between viral and cellular dsRNA is responsible for giving the virus away as an unwanted intruder. The ends of both strands of viral dsRNA are even, while one strand of cellular dsRNA is a tad longer at the end.

"Dicer has to be careful about what it destroys because otherwise it would shut down the cell," explains graduate student and first author Niladri Sinha. "Seeing how Dicer works answers a long-standing question of how antiviral-receptors can discriminate between 'self' from 'non-self'."

This property is important for more than one reason. As a part of normal cell function, Dicer slices dsRNA made by the cell, too. For the first time, this study shows that



this single machine processes dsRNA from viruses using a completely different mechanism. In a way, this new view of Dicer has been nearly 20 years in the making. When Bass first started investigating the protein, she noted it had a region known as the helicase domain. But for all those years, no one knew why. It was pure curiosity that led her to collaborate with Shen to determine whether seeing the protein could help them answer that question.

To do so, they flash-froze and analyzed Dicer using cryo-electron microscopy, this year's Nobel prize winning technology. Despite using advanced methodologies, it was not easy to get a picture of the protein interacting with viral RNA. Dicer is tiny even by cryo-EM standards. Plus, it bends and moves, making it difficult to pin down.

The scientists overcame these difficulties by using biochemistry to trap the pair in defined

poses, and then taking hundreds of thousands of images. They discovered that the mysterious helicase domain defines the previously unknown mechanism for destroying virus: it recognizes the intruder and reels it in just before the kill. Importantly, once the helicase grabs hold of the viral material, it doesn't dare let go, improving its chances for eradicating infection.

"What I love about this is that we had no idea how the enzyme was working. Just by looking at it, we came upon something unexpected," says Shen.

It's possible that Dicer only functions this way in flies. But biology has a habit of reusing tools that work well. "I'm sure people will be thinking that perhaps under certain conditions, or in the presence of additional protein factors, human Dicer could act like the fly's." Such a discovery could give scientists new ways to control viral infection, and our body's response to infection.

Journal Reference: Niladri K. Sinha, Janet Iwasa, Peter S. Shen, Brenda L. Bass. Dicer uses distinct modules for recognizing dsRNA termini. Science, 2017; eaaq0921 DOI: 10.1126/science.aag0921



Team maps magnetic fields of bacterial cells, nano-objects for the first time

Source: <https://www.sciencedaily.com/releases/2017/12/171222090320.htm>

Dec 21 – "It is much like being able to travel to a Jurassic Park and witness dinosaurs walking around, instead of trying to guess how they walked by examining a fossilized skeleton," said Tanya Prozorov, an associate scientist in Ames Laboratory's Division of Materials Sciences and Engineering.

Prozorov works with biological and bioinspired magnetic nanomaterials, and faced what initially seemed to be an insurmountable challenge of observing them in their native liquid environment. She studies a model system, **magnetotactic bacteria**, which form perfect nanocrystals of magnetite. In order to best learn how bacteria do this, she needed an alternative to the typical electron microscopy process of handling solid samples in vacuum, where soft matter is studied in prepared, dried, or vitrified form.

For this work, Prozorov received DOE recognition through an Office of Science Early Career Research Program grant to use cutting-

edge electron microscopy techniques with a liquid cell insert to learn how the individual magnetic nanocrystals form and grow with the help of biological molecules, which is critical for making artificial magnetic nanomaterials with useful properties.

To study magnetism in bacteria, she applied **off-axis electron holography**, a specialized technique that is used for the characterization of magnetic nanostructures in the transmission electron microscope, in combination with the liquid cell.

"When we look at samples prepared in the conventional way, we have to make many assumptions about their properties based on their final state, but with the new technique, we can now observe these processes first-hand," said Prozorov. "It can help us understand the dynamics of macromolecule aggregation, nanoparticle self-assembly, and



the effects of electric and magnetic fields on that process."

"This method allows us to obtain large amounts of new information," said Prozorov. "It is a first step, proving that the mapping of magnetic fields

in liquid at the nanometer scale with electron microscopy could be done; I am eager to see the discoveries it could foster in other areas of science."

Journal Reference: Tanya Prozorov, Trevor P. Almeida, András Kovács, Rafal E. Dunin-Borkowski. Off-axis electron holography of bacterial cells and magnetic nanoparticles in liquid. Journal of The Royal Society Interface, 2017; 14 (135): 20170464 DOI: 10.1098/rsif.2017.0464



Is North Korea Planning to Use Anthrax?

Source: <https://www.thetrumpet.com/16693-is-north-korea-planning-to-use-anthrax>

Dec 27 – North Korea may be planning to test intercontinental ballistic missiles (icbm) loaded with anthrax, [Bloomberg reported on December 19](#). According to the report, the rogue state is testing whether anthrax bacteria can survive the intense heat of reentering the atmosphere. If so, North Korea can add mobile biological weapons to its arsenal of threats to the world.

Some claim that the report of anthrax-tipped missiles is simply a scare tactic—a projection of power with little substance to back it up. But even if this is just another attempt by North Korea to frighten its enemies into not attacking, it highlights the rogue state's belligerent foreign policy. It also emphasizes the new, deadly reality of the world we live in—a world where nuclear, chemical and biological weapons are a very real threat.

United States President Donald Trump's National Security adviser believes that North Korea is the "[greatest immediate threat to the U.S.](#)" North Korea has repeatedly threatened the U.S. and its military bases with nuclear attack. Now it might be threatening an anthrax attack as well. North Korea may have anywhere between 2,500 and 5,000 tons of chemical weapons on hand, and it has the capability to produce biological weapons like anthrax and smallpox, [according to South Korea](#).

The day before the *Asahi* report, the U.S. government published its [National Security Strategy](#) report, which said that North Korea is "pursuing chemical and biological weapons that could also be delivered by missile." [Popular Mechanics](#) wrote that although the anthrax report could be significant, it should be taken with a grain of salt:

For one, the sourcing—an anonymous Japanese intelligence official—is thin. Second, transporting anthrax spores in a missile warhead is relatively easy. Anthrax pores would not have to survive 7,000-degree reentry temperatures, as warheads insulate their payloads against such extremes of heat. If all icbm warheads had to survive a 7,000-degree roasting, any payload, nuclear weapons included, would burn up during atmospheric reentry.

Third, although North Korea does have a biological weapons program, it's been eclipsed by the country's nuclear program. ... Nuclear weapons quickly incinerate their targets with heat and blast, irradiating everything around it with lethal levels of radiation. A biological weapon such as anthrax could take weeks or even months to generate the same level of destruction.

In other words, there's little point in deploying anthrax spores on the country's handful of icbms if nuclear weapons are available.

That is a fair point. Depending on the size of the weapon and where it is targeted, a nuclear attack is a much more efficient way of destroying an enemy than a biological attack. However, biological warfare can also pose a "[catastrophic danger](#)" to any society, particularly if the contamination is widespread. And it would certainly be effective at spreading terror.

[Popular Mechanics](#) wrote about the reported anthrax missile tests: "If war begins, North Korea's only real option is to attempt to shock the U.S. and its regional allies into not responding with a regime-ending campaign" (emphasis added throughout).



Hence the bioweapons threat. Biological attacks are more difficult to monitor than nuclear attacks, and they can also have widespread effects if they are not detected and contained quickly. [cnn wrote](#): “Bioweapons pose a threat that is real and tangible from any number of sources—and easily as lethal, potentially far broader and as irreversible as the outcome of any nuclear attack by a determined enemy.”

Another dimension of bioweapons is the threat of a miserable, drawn-out death. As [Jeanne Guillemin wrote](#) in her book *Anthrax: The Investigation of a Deadly Outbreak*: “The power of terrorism lies in its threat of potential harm. To this coercion, the threat of biological weapons adds its own powerful symbolic implications of dissolution and despair. On a collective level, a major epidemic can destroy social order.”

Biological weapons are a real threat to the world. Whether or not North Korea actually has any, [several other nations](#) around the world are strongly suspected to have biological weapons, including Russia, Syria, Iraq and Iran.

The Bible prophesied that in this end time, terribly destructive weapons would arise that would make it possible to extinguish all life on Earth. In Matthew 24:22, Jesus Christ prophesied this for our day: “And except those days should be shortened, there should no flesh be saved [alive; Moffatt translation]: but for the elect’s sake those days shall be shortened.”

In the [January 2013 Trumpet](#), editor in chief Gerald Flurry wrote:

After World War I, Winston Churchill said, “Mankind has never been in this position before.

... Without having improved appreciably in virtue or enjoying wiser guidance, it has got into its hands for the first time the tools by which it can unfailingly accomplish its own extermination.”

Since that time, we have developed chemical and biological weapons. We can *exterminate* ourselves many times over! The number one problem we face is human extermination! That has never been possible in history until very recent times.

We are now in exactly the position Jesus Christ prophesied about in Revelation and Matthew 24! *This is the crisis at the close!*

Prophecy doesn’t specifically say what North Korea’s role will be in end-time prophetic events, but it will almost certainly be part of the “kings of the east”—a united power bloc of Asian nations. The Bible doesn’t say if North Korea will back up its threats against the U.S. and send a biological or chemical weapon against it, but we do know that North Korea will *not* be the catalyst for the coming world war.

Trumpet executive editor Stephen Flurry and managing editor Joel Hilliker [wrote on August 15](#): “If nothing else, the mere threat of a mentally unstable tyrant in North Korea using nuclear weapons *should* cause all of us to be asking some very hard questions.”

Whether or not North Korea uses its anthrax-tipped missiles, the emergence of such weapons is helping fulfill prophecies that were recorded thousands of years ago. To learn more about these prophecies, request our free booklet [Nuclear Armageddon Is ‘At the Door.’](#)

South Korea Has Anthrax Meds Shipped In

Source: <https://www.trunews.com/article/south-korea-has-anthrax-meds-shipped-in>



Dec 26 – After an online media report accused the Blue House of importing an anthrax cure in order to inoculate President Moon Jae-in and other key government officials while leaving the general public vulnerable to a potential biological attack from North Korea, a government spokesman hit back Monday. Park Soo-hyun issued a press release that stated the drugs were ordered, as reported by the conservative Newstown website, but noted the order was made by the previous government to serve as



emergency in case of such an attack, or an accidental exposure. In 2015, a U.S. lab accidentally sent live spores, rather than dead samples, to Osan Air Base to be used in training exercise.

Although no exposure or infection occurred at the time, the South Korean military didn't want to be caught off-guard if another mistake occurred during a future training exercise. The order was made in July through a Canadian company and is reflected in the annual government budget, Park added.

The spokesman said the purchase was completed in November upon delivery of 350 doses, and said they were taken to a military facility for storage. He called Newstown's interpretation—he said it was tied to an opposition politician—of the information “extremely malicious” and vowed the government would take legal action.

Park said the Korea Centers for Disease Control and Prevention also purchased 1,000 doses of anthrax vaccines for use on counter-terrorism agents or civilians who are exposed to the disease.

He noted antibiotics are generally used to treat patients, but the purchased anthrax vaccines are for emergency use after exposure in certain situations, such as a bioterrorist attack.

North Korean soldier who defected to the South is found to have ANTHRAX antibodies in his bloodstream after a report warned Kim is testing warheads loaded with the deadly disease

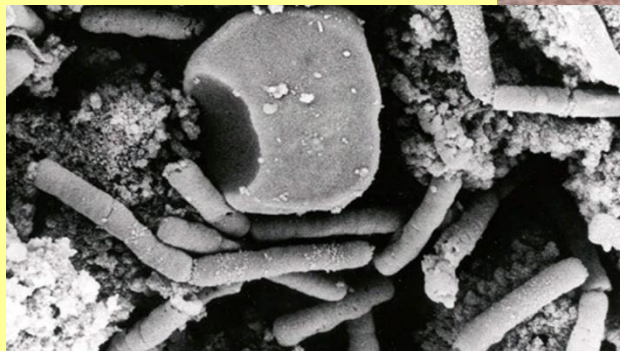
Source: <http://www.dailymail.co.uk/news/article-5213249/North-Korean-defector-ANTHRAX-antibodies-blood.html>

Dec 27 – **A North Korean soldier who defected to the South has been found to have anthrax antibodies in his bloodstream,** local news reports.

The unidentified soldier, believed to be the man who defected in November this year, would have been either exposed to or vaccinated against anthrax before he defected to South Korea.

This comes after a report that North Korea is conducting biological weapons experiments to test the possibility of loading anthrax-laden warheads on its intercontinental ballistic missiles.

'Anthrax antibodies have been found in the North Korean soldier who defected this



year,' a South Korean intelligence official told local news network Channel A according to UPI.

It is not known who the unnamed defector is, but it could be the young soldier who was caught on camera running across the border and nearly shot dead by his fellow comrades in November.

Oh Chong Song, 24, was shot four times as

he made a mad dash for South Korea, and has been recovering in a Seoul hospital since.

Song had been shot in his knee, arm, back and chest through his shoulder, but despite his serious injuries, the team at the hospital saved his life.

The hepatitis B and the parasites - some more than 10 inches long - found in his body highlight nutrition and hygiene problems that experts say have plagued North Korea for decades.

He is believed to be an army staff sergeant who was stationed in the Joint Security Area in the United Nations truce village of Panmunjom, according to Kim Byung-kee, a lawmaker of South Korea's ruling party, briefed by the National Intelligence Service.



It could also be the soldier who defected on December 21, who took the opportunity to run across to the Demilitarized Zone that divides the peninsula during a thick fog.

Earlier this week, Japan's Asahi newspaper cited another unidentified person connected to South Korean intelligence, who said that North Korea was conducting biological weapons experiments to test the possibility of loading anthrax-laden warheads on its intercontinental ballistic missiles.

The Asahi report said the U.S. government was aware of the tests, which were meant to ascertain whether the anthrax bacteria could survive the high temperatures that occur during warheads re-entry from space. North Korea vehemently denied the allegation and said it will 'take revenge' on the US for saying it is developing biological weapons.

In a statement issued via the state Korean Central News Agency, the regime said it is party to the Biological Weapons Convention and as such 'maintains its consistent stand to oppose development, manufacture, stockpiling and possession of biological weapons'.

It went on that the more the US 'clings' to its anti North Korea stance 'the more hardened the determination of our entire military personnel and people to take revenge will be'.

The news that North Korea may have been testing anthrax-laden warheads comes as South Korean President Moon Jae-in is seeking to soothe relations with China and the North before the Winter Olympics in South Korea in February.

He suggested on Tuesday he was prepared to postpone military drills with the United States.

Pyongyang sees the joint exercises as preparation for war, while Beijing is still angry about the deployment of a U.S. anti-missile system, commonly known as THAAD, by South Korea.

China believes the system's powerful radar can see far into its territory, but Seoul argues it needs it to guard against the threat posed by North Korea's missile and nuclear programmes.

Seoul has proposed the potential delay in drills to Washington, which was also discussed during a summit last week between Moon and Chinese President Xi Jinping, an official from the presidential Blue House in Seoul said on Wednesday.

China has in the past proposed a 'freeze for freeze' arrangement under which North Korea would stop its nuclear and missile tests in exchange for a halt to the exercises. However, Washington has rejected the idea and Pyongyang has shown little interest in negotiations.

U.S. Secretary of State Rex Tillerson said in Ottawa on Tuesday he was unaware of any plans to 'alter longstanding and scheduled and regular military exercises'.

North Korea has stepped up its missile and nuclear tests to an unprecedented rate this year, and any new provocation from the North would 'inevitably have an impact' on the exercises, the Blue House official said.

'It is a display of the president's strong message that North Korea must not conduct any provocation (during the Olympics),' the official told reporters.

North Korea has also been hit with increased international sanctions over its missile and nuclear tests this year.

The United States has given China a draft resolution for tougher U.N. sanctions on North Korea and is hoping for a quick vote on it by the U.N. Security Council, a Western diplomat said on Tuesday, however Beijing has yet to sign on.

Details of the draft given to China last week were not immediately available, but the United States is keen to step up global sanctions to pressure North Korea to give up a weapons programme aimed at developing a nuclear-tipped missile capable of hitting the United States.

China resumed some restrictions on group tours into the South, South Korea's inbound travel agency said on Wednesday.

What is anthrax and how can it be used as a weapon?

Anthrax is a disease caused by the organism *Bacillus anthracis*.

It is possible to use anthrax as a military weapon by placing it in missiles, rockets or bombs.

Anthrax spores could also be released by planes which could spray it over large areas and once present the spores can remain dormant for decades.



The deadliness of an anthrax attack depends on the quantity of spores and the effectiveness of a delivery system.

An initial phase of flu-like symptoms can usually last for one to three days, before the patient enters a second phase of high fever, chest pains, severe breathing problems and shock. Death usually follows within two days.

A wave of attacks occurred in the US in late 2001 with the spores placed in envelopes which killed five people.

The first mass use of anthrax spores as a weapon in war is said to have taken place during the Japanese occupation of China from 1932 to 1945.

The Japanese allegedly experimented with the use of anthrax and other biological weapons in Manchuria, and some 10,000 deliberately infected prisoners are thought to have died as a result.

Britain experimented with anthrax as a weapon in the 1940s and the US made some for military use in the 1950s and 1960s.

The Soviet Union also weaponised anthrax and Iraq admitted to doing so in 1995.

The World Health Organisation estimated that, should 50kg of anthrax be released from an aircraft over an urban population of five million, there would be 250,000 cases of the disease.

Biodefense Policy Landscape Analysis Tool

Source: <http://www.homelandsecuritynewswire.com/dr20171228-biodefense-policy-landscape-analysis-tool>

Dec 28 – Outbreaks of new and reemerging infectious diseases, coupled with an increasing biological threat from non-state actors, highlight the continued need for the U.S. to prioritize biodefense efforts. The Blue Ribbon Panel on Biodefense has noted that the U.S. remains underprepared for a catastrophic biological attack or global pandemic, and has highlighted the need for increased government coordination in biodefense. Following the events of 2001, multiple policy directives and public laws were enacted, assigning enduring biodefense responsibilities to at least sixteen different entities within the federal government. As a result, it is difficult to comprehend the full continuum of federal responsibilities.

PNNL [says](#) that in 2017, it chartered an internally funded working group, the Policy Wranglers, to capture relevant biodefense policy directives, public laws, and corresponding sections of the U.S. Code, in a format conducive to visualization. The resulting tool can be utilized to better understand the current state of the U.S. biodefense enterprise.

This version of the Biodefense Policy Landscape Analysis Tool, updated on November 14, 2017, captures the *enduring biodefense responsibilities* from the following sources:

- Homeland Security Presidential Directive (HSPD) 9: Defense of United States Agriculture and Food
- HSPD-10: Biodefense for the 21st Century
- HSPD-18: Medical Countermeasures Against Weapons of Mass Destruction
- Public Law (PL) 101-298: Biological Weapons Anti-Terrorism Act of 1989
- PL 102-182: Chemical & Biological Weapons Control & Warfare Elimination Act of 1991
- PL 107-56: Uniting & Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism (USA PATRIOT) Act of 2001
- PL 107-188: Public Health Security & Bioterrorism Preparedness & Response Act of 2002
- PL 107-296: Homeland Security Act of 2002
- PL 108-276: Project BioShield Act of 2004
- PL 109-417: Pandemic & All-Hazards Preparedness Act
- PL 110-53: Implementing Recommendations of the 9/11 Commission Act of 2007
- PL 113-5: Pandemic & All-Hazards Preparedness Reauthorization Act of 2013
- PL 115: Securing our Agriculture and Food Act of 2017
- Presidential Policy Directive (PPD) 21: Critical Infrastructure Security & Resilience

PNNL notes that where responsibilities have been incorporated into the U.S. Code, the USC reference has been included, as well as the originating public law. The primary documents used are available in the Document Library. Given the number of laws and directives relating



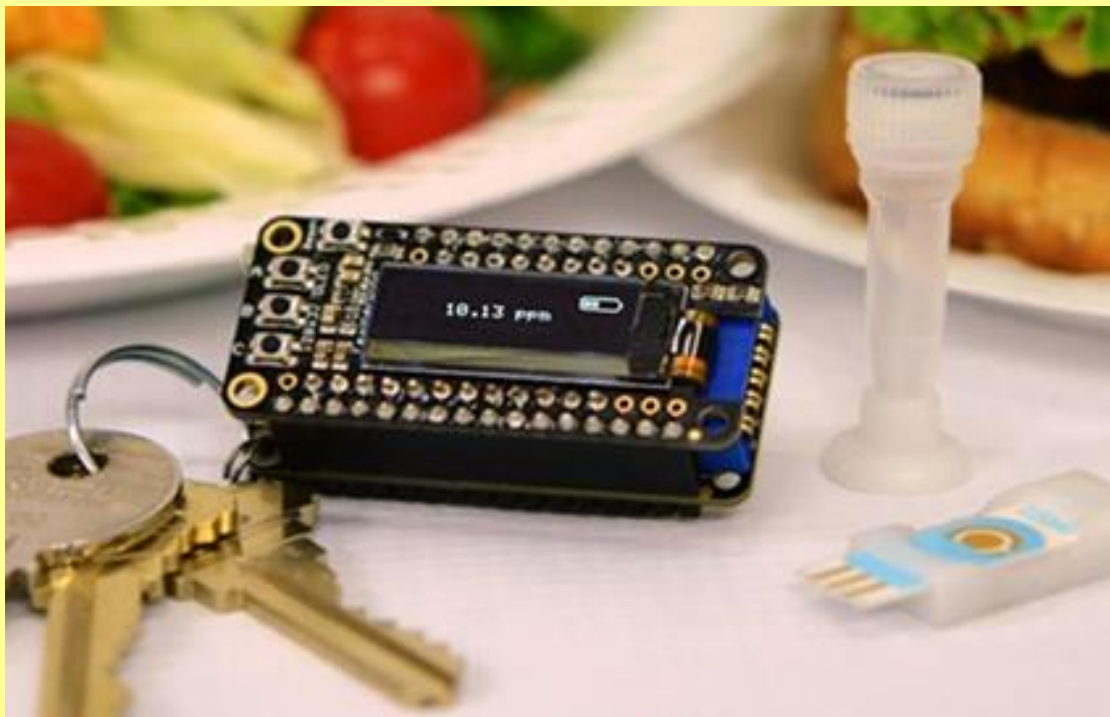
to biodefense, and the complexity of the U.S. Code, the Biodefense Policy Landscape Analysis Tool is not intended to be a comprehensive reference of all biodefense and public health related responsibilities assigned to the federal departments and agencies, nor does it indicate which responsibilities are supported by corresponding appropriations. Rather, it is intended to educate the community on the current state of the biodefense enterprise.



Medgadget's Best Medical Technologies of 2017

Source: <https://www.medgadget.com/2017/12/medgadgets-best-medical-technologies-of-2017.html>

Dec 26 – The year 2017 is coming to a close, and as in years past, we look back with excitement at the medical technologies that have been gracing the pages of *Medgadget*. As usual, there are trends that have revealed themselves, with many research teams around the world working on similar technologies. There are also new devices that are unlike anything we've seen before, solving medical problems in novel and unexpected ways. Take a journey with us as we review the most innovative, full of impact, and revolutionary medical technologies of the past year!



For people with serious food allergies, it is not only a question of what they are allergic to, but also what foods are contaminated with the allergens. [Researchers at Harvard University developed a \\$40 keychain device](#) that can quickly, inexpensively, and accurately detect common food antigens. The device was developed to detect five common antigens, including those in peanuts, hazelnuts, wheat, milk, and egg whites from food particles. Impressively, it can detect antigen concentrations at levels far below industry standards.

Vultures, Hippos and Anthrax

By Corinne Kendall

Source: <https://blogs.scientificamerican.com/observations/vultures-hippos-and-anthrax/>

Dec 28 – Want to clear a room quickly? Just casually mention you've recently encountered anthrax. Turns out the mere whisper of the word, to most Americans, conjures up a mental image of white powder falling like snow from an envelope sent by terrorists, followed by a



gruesome and highly exaggerated death scene. Indeed anthrax in high doses can be extremely lethal and many a government has even considered it for biological warfare.

My experience with anthrax, though, has been more organic, because it is actually caused by a naturally occurring bacterium that lives in the soil. Spores that cause anthrax are known for being hardy—they can lay dormant for decades or even centuries, survive all over the world, and withstand extreme heat, cold and drought. In Tanzania, where I work, and throughout much of Africa, anthrax outbreaks occur occasionally—when an unsuspecting cow, wildebeest or hippo consumes or inhales spores while grazing. And anthrax has a little trick for attracting unsuspecting, hungry ungulates: its spores encourage plant growth, literally making the grass greener where it is present.

Now I'll let you in on a little secret: I didn't go to Tanzania to study anthrax. I've learned about (and probably even been exposed to) a number of maladies, not because of my love for disease ecology itself, but rather because I study a species that eats diseases, along with a bit of carrion, for breakfast—the white-backed vulture. My passion for African vultures has found me counting, watching, trapping and tracking these birds for the last nine years, primarily in Kenya and Tanzania. Unlike me, the vultures have the advantage of being resistant to a whole host of horrific diseases such as rabies, tuberculosis and brucellosis. In the case of anthrax, we suspect that they can digest the microbes into oblivion with their incredibly acidic gut, and this maybe one of the few ways to remove bacteria from the environment during an outbreak.

During a recent trip to Ruaha National Park, Tanzania, we had the unique opportunity to study the spread of anthrax using vultures. I was back in the field as part of my job with North Carolina Zoo, working with Wildlife Conservation Society biologists, to satellite-tag white-backed vultures. Things did not go according to plan. After 14 days of attempting to trap vultures with our own bait—a dead goat—we saw almost no interest from the birds. We knew about the anthrax outbreak, but were unaware of the scale or the effect it would have on the birds' behavior. However, this was not our first rodeo. We had actually tagged 10 vultures in the previous year and could see from daily downloads of their whereabouts that something was up.



Hippo felled by anthrax, Tanzania. Credit: Corinne Kendall

This particular outbreak had started with, and was still mostly infecting, hippos. The common hippopotamus, a species I love dearly and had studied in Ruaha many years back, is highly susceptible to anthrax for a number of reasons. First, hippopotamuses come into contact



with spores when out munching grass at night. Second, they aggregate, especially as waterholes shrink during the dry season. The terrible effect was obvious as blood gushed from the eyes and mouth of one dead hippo slowly filling the pond—still occupied with its live compatriots—with anthrax spores. Third, and we actually witnessed this, hippos are cannibalistic. That's right, they eat each other. Not often, but when there are lots of dead around, as in the case of this outbreak, these supposed herbivores get to consuming one another, which probably further spreads the infection.

Not too surprisingly, the vultures had been spending a lot of time along the river. But as we began investigating the data more closely, interesting patterns emerged. Because multiple birds either aggregate in one place, or a single individual devotes extended periods of time to a location when it finds a carcass, we could establish the location and timing of where and when hippos were dying along the river from our tagged flock.



Vultures eat the carcass of a dead hippo (center right). Credit: Corinne Kendall

In essence, we could determine when the outbreak started, how it had spread from pool to pool along the river, when new mortalities occurred in a given pool, and how long it was going to continue—a unique dataset about the disease dynamics of anthrax. In this situation, our tagged vultures were not only going to do their important job by digesting and therefore reducing the spread of anthrax, but were going to teach us something new about how the disease operated in real time. Such information could prove useful for understanding and potentially even containing future outbreaks, not just here but around the world, lending a whole new value to the vulture, nature's ultimate garbage disposer.

The views expressed are those of the author(s) and are not necessarily those of Scientific American.

Corinne Kendall is Associate Curator of Conservation and Research at the North Carolina Zoo. She manages and supports several international conservation programs and oversees the zoo's on-site research program.



Growing Number of U.S. Hospitals Can't Treat Kids

PEDIATRICS 2017

Source: <https://www.medscape.com/viewarticle/890445>

Dec 21 – A growing number of children who show up in U.S. emergency rooms can't get the treatment they need at their local hospital and need to be transferred elsewhere for care, a new study suggests.

Overall, in California, Florida, Massachusetts and New York - four of the most populous U.S. states - pediatric transfers surged 25%: from roughly 64,000 in 2006 to close to 80,000 in 2011, researchers report in Pediatrics.

The biggest increase in transfers was for kids with common health problems like abdominal pain and asthma, offering fresh evidence that **even basic pediatric care is disappearing from community hospitals**, said senior study author Dr. Michael McManus of Boston Children's Hospital and Harvard Medical School.

"When kids are taken to their local hospital's emergency department, they are increasingly likely to be transferred to more distant referral centers for care they used to be able to get at home," McManus said by email. "We now know that pretty much the same thing is happening across the country."

The researchers examined data on more than 252 million hospital encounters for children and adults, including about 59 million that resulted in admissions.

During the study, adult admissions remained constant at more than 7.1 million a year.

But the annual number of pediatric admissions declined 9.3% from more than 545,000 in 2006 to slightly under 495,000 in 2011.

The range of conditions treated, also known as pediatric capacity, declined at hospitals in all four states.

Over the course of the study, capacity declined an average of 13% in California, 24% in Florida, 27% in New York and 25% in Massachusetts.

Across all four states, the ten conditions that had the biggest average reductions in availability of pediatric care at local hospitals included appendicitis, skin infections, asthma, broken legs and tonsillitis.

The study wasn't a controlled experiment designed to prove whether or how transferring children from one hospital to another might impact the quality of their care. It's possible that transfer might improve outcomes for some conditions and worsen outcomes for others, the study authors note.

"We know that patients want to be treated close to home if possible, but children are not just little adults," said Dr. Fizan Abdullah, a researcher at the Ann and Robert H. Lurie Children's Hospital of Chicago and Northwestern University Feinberg School of Medicine.

"They have special needs that can often best be treated by a pediatric specialist," Abdullah said by email.

Those specialists tend to be located where other pediatric services are located, for instance in a facility that has a pediatric anesthesiologist who is trained in the nuances of working with children, Abdullah added. That's why pediatric specialists tend to gravitate toward children's hospitals that have extensive resources specifically for kids.

For care closer to home, telemedicine and second opinion consults are often options, connecting hospitals that are sometimes closer to home with a regional center, Abdullah said. Parents can also look for satellite outpatient centers that are affiliated with a hospital with pediatric specialists.

"The objective is to treat the child in the best way possible, with the most expertise, and get them home as soon as possible," Abdullah said.

"Physicians at the referring hospital, or children's hospital, can then also continue to work with their local provider as needed."

When families have a choice of health insurance, they should also make sure those hospitals caring for their kids are in their insurance network, McManus advised.

"For families taking sick kids to their local hospital, they should not be surprised if transfer is necessary to get the best care even for common conditions," McManus said.





Rubber Bullets Cause Injury, Disability, Death

BMJ Open 2017

Source: <https://www.medscape.com/viewarticle/890553>

Dec 26 – Rubber bullets and other kinetic impact projectiles (KIPs) used in crowd-control settings can cause serious injury, permanent disability, and death, according to a systematic review.

"We conclude by saying that there is likely no role for projectiles in crowd control, primarily because they are indiscriminate at long ranges (where they are supposed to be used) and similar to live ammunition at close ranges (where they are unfortunately often used)," Dr. Rohini J. Haar from University of California, Berkeley, told Reuters Health by email.

Manufacturers produce more than 75 different types of KIPs that are designed as crowd-control weapons to incapacitate individuals by inflicting pain or sublethal injury. KIPs can cause blunt and penetrative injuries, ranging from local contusions to severe organ damage and death. Injuries resulting from KIPs are not well documented.

Dr. Haar and colleagues systematically reviewed the literature on these weapons as part of a larger effort by Physicians for Human Rights and the International Network of Civil Liberties Organization to research their health effects and develop recommendations on avoiding preventable injury, disability, and death.



The 26 reviewed articles identified 1984 people with injuries, including 53 (3%) who died from their injuries and 300 (15%) who were permanently disabled, according to the December 18 BMJ Open online report. Most of the deaths resulted from penetrative injuries (56%), with blunt injury accounting for 23%.



injuries were generally minor, whereas 87% of musculoskeletal injuries to the limbs were severe.

Most of the injuries and permanent disabilities were from bullets that had a metal core or were otherwise composed of metal, and the firing distance of the weapon was generally less than designated or directly related to the severity of the injury.



The majority of injuries resulting in permanent disability were secondary to vision loss and abdominal injuries resulting in splenectomy or colostomy. Two individuals required limb amputations.

Of the 2,135 injuries among the 1,931 survivors (including the 300 with permanent disabilities), 71% were severe. Of the head-and-neck, ocular, nervous, cardiovascular, pulmonary and thoracic, abdominal, and urogenital injuries, 91.5% were severe. Skin



Several articles pointed out that KIPs are inherently inaccurate at longer distances, with some reporting instances in which these weapons unintentionally injured bystanders and nonviolent demonstrators instead of the targeted individuals.

Seven articles also indicated that delays to medical care contributed to morbidity from these injuries.

The researchers note, "While this article focuses on the injuries caused by KIPs, other crowd-control weapons (CCWs), such as tear gas, water cannons, acoustic weapons and electrical devices, have caused significant injury. This discussion does not in any way suggest that other weapons are safer but rather that appropriate use of force and alternatives to weapons must be considered in all contexts."

"The best alternative would be proportionate and community-based traditional policing strategies (arresting trouble makers and protecting peaceful protestors' safety and right to assembly and speech)," Dr. Haar said. "If things get violent and single arrests are not viable, there are other alternatives that can be used with caution - anything from clear communication, discussing with leaders, to kettling (confining demonstrators to a small area), to cautious use of other crowd-control weapons. Rubber bullets, however, represent some of the most dangerous and should not be used."

"There are countries (Ireland, for instance) that have made strong headway in collaborating with human rights organizations and really understanding the proportionate use principle and human rights foundations for policing," he added. "Many other countries, including the U.S., perhaps Egypt is an extreme example, have not taken any steps and have gotten worse. Most are somewhere in the middle. We hope, with this article, to shine a light on a global issue - all countries deal with it."

"More research is required to better understand regional differences in the usage, policy and accountability around the use of these weapons," the authors conclude. "There is an urgent need to establish international guidelines on the use of CCWs to prevent unnecessary injury, disability and death, particularly in the use of operational models that avoid the use of weapons."

As emerging diseases spread from wildlife to humans, can we predict the next big pandemic?

By Karl Gruber

Source: <http://www.homelandsecuritynewswire.com/dr20171229-as-emerging-diseases-spread-from-wildlife-to-humans-can-we-predict-the-next-big-pandemic>

Dec 29 – Earlier this month, the World Health Organization (WHO) reported [some troubling news](#). On September 20, a man from Kween District in eastern Uganda was admitted to a local hospital after developing fever, bleeding, vomiting and diarrhea. According to WHO, the man, a 35-year-old herdsman, frequently hunted near an area known to host bat-inhabited caves. He died five days later, after being transferred to a nearby hospital, but no blood samples were collected at that time and his death was not attributed to a specific disease.

Some three weeks later, his sister, who had cared for him and helped with burial rituals, was hospitalized with similar symptoms and died shortly after. Posthumous samples confirmed the presence of Marburg virus, a microbe that can infect both animals and humans. Shortly afterward, the Ugandan Ministry of Health declared an outbreak of Marburg virus disease (MVD) in Kween District.

But the story didn't end here. A brother of these two also was diagnosed with MVD — but before he died, the man travelled to Kenya, potentially spreading the virus. Ugandan and Kenyan health authorities, WHO, UNICEF, and the Kenya Red Cross Society are watching for evidence of further dissemination of this virus.

The outbreak, which may have begun when the first man was infected by a bat carrying the virus, is an example of a disease outbreak of zoonotic origin — one that can be transmitted from animals into humans. It appears that this incident has been limited to a local spillover of an animal-borne virus into humans. But the international travel component is a very real reminder that such a course of events can lead to a zoonotic pandemic, a worldwide spread of a pathogen — most often a virus — transmitted from animals to humans. From severe acute respiratory syndrome



(SARS) to AIDS and Ebola, zoonotic diseases [cause more than a billion cases of illness each year](#). As humans increasingly encroach on wildlife territory and increasingly travel long distances in short times, the threat of zoonotic pandemics is growing. At the same time, so are efforts to prevent or curtail them.

Recipe for a pandemic

Viruses have been moving between organisms [for millions of years](#). And not always in a way that causes harm: Animals and humans alike host millions of different microorganisms, many of which are beneficial.

"We live in an essentially microbial world, and we are actually complex ecosystems comprising a whole lot of microorganisms," says Fabian Leendertz, head of the Epidemiology of Highly Pathogenic Microorganisms group at the Robert Koch Institute in Berlin. "Some are pathogenic, but most of them live at peace with us."

For those that do harm humans, the first step is to come in contact with us. And that's becoming more and more likely as we invade pristine forests in search of food, building materials, space for commercial developments or land upon which we can create new grassland for our livestock — or catch critters for bushmeat, pets or the ["wildlife selfie" trade](#).

"The typical formula for a zoonotic outbreak starts with a human getting into contact to a viral host, like a bat or rodent. Then just a dash of luck that specific host carries [a] virus capable of jumping species barriers, and the epidemic starts from here," Leendertz says.

Sometimes a zoonotic virus can jump directly into humans, as occurred with the Marburg virus. Other viruses, like the virus responsible for SARS, first spill over from a wildlife species into a domestic animal host, where the virus multiplies and evolves to become better able to infect a human host.

Once a zoonotic virus infects a human, different things can happen. If it is extremely virulent, it will rapidly kill its human host — which from a strictly epidemiological perspective can be seen as beneficial, because there may be fewer chances that the virus will spread to others. But if the virus takes some time before it makes the person sick and is easily transmitted from one person to another, a larger problem could occur.

"All you need then is for host to interact with more people, to move around and pass along the virus," says Leendertz. "Before we even know about the virus, we can end up with a full-blown epidemic on our hands. This was the case with the HIV epidemic."

Detection and discovery

What can be done to reduce the likelihood that new zoonotic viruses will emerge? And how can we become better prepared to deal with those that do?

The PREDICT [project](#), led by the One Health Institute at the School of Veterinary Medicine at the University of California, Davis, has been working since 2009 to identify viruses in wildlife such as bats, rodents and nonhuman primates around the world. The goal is to find viruses with potential for zoonotic outbreaks before they become a pandemic. The hope is that learning about these viruses will help governments design policies that can better deal with outbreaks.

The project is a [worldwide collaboration](#), including scientists, government personnel, physicians, veterinarians, biologists, laboratory technicians, students and members of the general public from across 35 countries in Asia and Africa.

In the first phase of the PREDICT project, completed in 2014, researchers collected blood and tissue samples from wildlife and humans from across the world. These samples were tested for the presence of viruses with the goal of understanding where and how viruses spread from other animals into humans.

According to Tracey Goldstein, co-lead for PREDICT's viral detection and discovery team based at UC Davis, as of October 2017 PREDICT had detected 1,044 distinct viruses present in wildlife and humans, of which 864 were newly discovered. It's hard to say which of these new viruses can cause us harm, but the PREDICT team has compared their DNA sequences with those of known pathogenic viruses in order to identify potentially dangerous viruses. "About 5 percent of the new viruses have been prioritized so far for further study to understand their potential of causing disease in humans. The number of viruses we would like to understand better are likely to



increase as we detect more of them,” Goldstein says.

But what matters most is not how many viruses were found, but where. “We have detected some of these viruses in more than one country or in more than one host species,” Goldstein says. This information ought to help PREDICT identify what countries should be considered high risk for viral spillover from animals to humans. This information may help policy-makers and others develop improved and more targeted surveillance, detection and prevention guidelines to address specific threats.

By comparing the DNA sequences of known pathogenic viruses with those discovered by PREDICT, researchers found that potentially harmful viruses are widespread across the globe. In Malaysia, for example, they found a new enterovirus species in a Bornean orangutan. Also found harbouring enteroviruses were five chimpanzees in the Democratic Republic of Congo and two mice in Cameroon. Enteroviruses are known to cause a wide range of symptoms in humans, from mild respiratory conditions to disorders of the central nervous system.

Coronaviruses related to the viruses responsible for SARS and [Middle East respiratory syndrome \(MERS\)](#) were found in Malaysia, Bolivia, China and Uganda, mostly in bats. One SARS-like coronavirus found in China called HKU3, was particularly troubling, PREDICT researchers say, because it [shares many similarities](#) with the human SARS coronavirus.

Several new members of the Rhabdoviridae family were found in Thailand, Indonesia, Tanzania and Republic of Congo, mostly in bat hosts. Some members of this family cause rabies or other types of fatal encephalitis in humans and other animals.

PREDICT has now moved into a second phase, PREDICT-2, with the scope broadened to include collecting samples from livestock as well as humans and wildlife. This new approach will serve to reveal viruses that already made the jump and are being shared by humans and other animals.

“This is the next step to better understand how viruses move between animals and people, as once you identify the viruses that have made the jump from wildlife into humans we can begin to

understand what allowed this to happen and if they could be pathogenic,” Goldstein says.

PREDICT not only has identified viruses, it also has built infrastructure in many countries that allows for the detection and surveillance of zoonotic outbreaks. In these countries PREDICT has established protocols and trained personnel to identify viruses and handle animal samples safely. According to PREDICT, more than 3,500 individuals have been trained in the basic skills needed to respond to a zoonotic disease outbreaks in more than 35 countries across Latin America, Africa and Asia since 2009.

“Along with a more prepared workforce, many of these countries now have improved infrastructure and knowledge in place that allow for early detection of potentially zoonotic events that can enable more rapid response to new outbreaks,” says David John Wolking, global operations officer for the One Health Institute and member of the PREDICT team.

Global Virome Project

Another project that is currently in its initial phase is the [Global Virome Project \(GVP\)](#), first [proposed in 2016](#) by a group of international stakeholders that included researchers, policy-makers and representatives from the public and private sector. This project seeks to detect and sequence the DNA of almost all viruses found in wildlife with potential to cause a human pandemic. Having a better understanding of the DNA makeup of viruses present in animals may help future studies identify viruses that are more likely to make the jump into humans.

Researchers involved with the development of the GVP are aiming to identify about half a million viruses, and estimate that it will cost around US\$3.4 billion over the next 10 years to complete their goals. The results of this ambitious project could serve as a valuable reference database for future studies focused on identifying the main drivers and other factors to better understand how zoonotic outbreaks may occur.

While the price tag may seem hefty, it is a fraction of the costs associated with responding to past zoonotic outbreaks, such as SARS ([more than US\\$50 billion](#)) or influenza ([US\\$570 billion per year](#)). And



that's just the beginning of the benefits, says GVP group leader Linfa Wang, director of the emerging infectious diseases program at Duke-NUS Medical School, a collaboration between Duke University and the National University of Singapore.

"In addition, the ambitious aim of GVP to create the atlas of viruses in the world will benefit not only those interested in emerging zoonotic diseases, but also the general scientific community in general, as it will also teach us new lessons in evolutionary biology, environmental impact, farming practice, urban development" and more, Wang says.

Policy and capacity

But what happens once we know about all the viruses we share with wildlife? Scientists hope the results from PREDICT will serve as the basis for future projects, studies, and policies. For example, policy-makers can use PREDICT information to make decisions about how and where to invest health-care resources. Likewise,

wide-reaching institutions like the U.S. Centers for Disease Control and Prevention (CDC) can benefit from this information, because it might provide guidance on identifying countries representing a high risk of zoonotic outbreak.

Today, the CDC and USAID, through the [Global Health Security Agenda](#) launched in February 2014, are helping governments, international organizations, and non-governmental stakeholders build their technical capacity to respond to infectious diseases in over 50 countries.

The details on the whereabouts of novel viruses is a crucial component of this complex team effort. Thanks to these efforts, countries like Uganda, Vietnam and Ethiopia now have a network of laboratories with diagnostic capabilities and personnel trained in optimal emergency responses to disease outbreaks.

These capabilities have already been shown to be beneficial: They helped contain the recent Marburg outbreak in Uganda.

Karl Gruber is an evolutionary biologist and a freelance writer currently based in Perth, Western Australia.

Special Report: In a hospital ward in Yemen, the collapse of a nation

By Selam Gebrekidan

Source: <https://in.reuters.com/article/us-yemen-diphtheria/special-report-in-a-hospital-ward-in-yemen-the-collapse-of-a-nation-idINKBN1EN0OG>

Dec 29 – Nahla Arishi, chief pediatrician at the al-Sadaqa hospital in this Yemeni port city, had not seen diphtheria in her 20-year career. Then, late last month, a three-year-old girl with high fever was rushed to

Arishi's ward. Her neck was swollen, and she gasped for air through a lump of tissue in her throat. Eight days later, she died.



Nahla Arishi, a pediatrician, checks a woman infected with diphtheria at the al-Sadaqa teaching hospital in the southern port city of Aden, Yemen December 18, 2017. REUTERS/Fawaz Salman

Soon after, a 10-month-old boy with similar symptoms died less than 24 hours after arriving at the hospital.

Two five-year-old cousins were

admitted; only one survived.

A 45-day-old boy, his neck swollen and bruised, lasted a few hours. His last breath was through an oxygen mask.



One morning in early December, 16-month-old Sameh arrived at the hospital carried by his aunt and delirious with fever. Arishi immediately recognized a new case of diphtheria. “Put on your mask,” she ordered the aunt.

Sameh's father, a fighter in Yemen's three-year war, rushed in, grabbed his son, yanked off the baby's shoes and threw them on the floor. “Sameh is the light of the house,” he wailed, feeling the boy's feverish brow and body.

This is the emergency ward to a nation. After three years of warfare, cholera and hunger, Yemen faces a new battle: In the past four months, doctors across the country have recorded at least 380 cases of diphtheria, a bacterial disease that last appeared here in 1992.

Arishi, like her country around her, is struggling to cope. Every month, she and her team drip-feed dozens of Yemen's half a million severely malnourished children. Her ward has also treated hundreds of the one million people infected by cholera.

This spring, Arishi and her colleagues reopened an abandoned wing of al-Sadaqa hospital, fenced it with chicken wire and created a makeshift cholera treatment center. Now, they are converting part of that center into a diphtheria ward, cordoning off isolation units by barring hallway doors.

But with rusty oxygen tanks and only two functional ventilators in a different part of the hospital – and with the expectation that the cholera epidemic will worsen in coming months — her triage upon triage is no longer working.

“We're getting more patients but we can't deal with them. We don't have supplies. We don't have money,” said Arishi, “This war has got to end.”

For the past three years, Yemen has been the combat zone of a struggle for regional supremacy between Saudi Arabia and Iran. Riyadh and some of its Arab allies jumped into Yemen's civil war in 2015 to help quell an uprising by the Houthis, an Islamic political-religious movement backed by Iran. In addition to airstrikes, Riyadh – with U.S. and U.N. backing – has positioned ships in Yemeni waters as a way to stop arms reaching Houthi militia.

But the blockade has ended up isolating a country that was already the poorest in the Middle East. Vital provisions – food, medicine, fuel, medical equipment, batteries, solar panels and more – are not getting through. Humanitarian shipments of food and medicine have mostly been allowed into the country. Yet Saudi-led forces have severely delayed aid shipments or closed ports outright, especially in northern Yemen where fighting and the humanitarian crisis are most acute.

The war and blockade have also thwarted Yemen's vaccination programs.

Seven years ago, 80 percent of children were fully immunized with three doses of diphtheria, whooping cough and tetanus vaccine, or DTP as the combined shot is called, according to Zaher Sahloul, a critical-care specialist who cofounded a nonprofit called MedGlobal. Now, he says, that has dropped to 60 percent.

Poor record keeping means there are discrepancies in data related to vaccine coverage. Yemen's Ministry of Health says 85 percent of Yemeni children have been immunized against diphtheria, whooping cough, tetanus, Hepatitis B and bacterial influenza since the beginning of the conflict, a mere two percentage point drop from pre-war years.

In late November, the U.N.'s World Health Organization (WHO) sent a shipment of diphtheria antitoxins - designed to treat those already infected - and vaccines to the capital Sanaa. The vaccines were delayed by the Saudi blockade for a week, the WHO said.

In July, the Geneva-based International Coordinating Group on Vaccine Provision earmarked a million cholera vaccines for Yemen. An initial shipment of 500,000 doses was sent to the African Horn country of Djibouti, and was ready to send on to Sanaa. But the WHO and local authorities in Sanaa decided together to scrap the vaccination plan, citing logistical and technical issues.

“Yemen needs a Marshall Plan,” said Sahloul, who was visiting al-Sadaqa's treatment center in December. “It is difficult to foresee an optimistic scenario if the current conditions persist,” he said.



Disease after disease

Arishi began her medical career in the mid-1990s after Yemen unified following years of conflict between communist and pro-western forces. She joined the al-Sadaqa hospital, which was built in the 1980s with funds from the Soviet Union.

In her two decades at the hospital's pediatric ward, Arishi has seen Yemen slowly come apart again. Even in the mid 2000s, the country faced widespread hunger because of rising food prices. The feeding center of al-Sadaqa's hospital, she said, was crowded even before the new civil war began.

In the spring of 2015, Houthi forces, aided by the now-deceased former president Ali Abdullah Saleh, advanced south from their stronghold in the Yemeni capital Sanaa and took over Aden's airport. It was then that the coalition of Arab states led by Saudi Arabia joined the war and began launching airstrikes against Houthi-held enclaves. Fighting raged until troops backing the officially-recognized government wrenched Aden from Houthi control in July of that year.

During the first months of fighting, al-Sadaqa filled with hundreds of wounded children and adults.

By the middle of 2016, another group of patients began pouring into the hospital. A cholera outbreak that started in Sanaa had spread to Aden. Dehydrated children, their condition made worse by malnutrition, flooded into her pediatric ward. Many did not survive, Arishi said.

Cholera can kill because patients quickly lose their fluids through vomiting and watery diarrhea. When caught early, it can be treated by replacing fluids.

When a second wave of cholera infections swept Yemen in April this year, Arishi and her colleagues decided to set up the new treatment center. They picked a building away from the main wings of the hospital to avoid contamination and repaired it with funds from the WHO and medical aid group Médecins Sans Frontières (MSF). Converting the building, which had been abandoned for two years after the war, required "heavy cleaning work, electricity, water system repairs as well as installing air conditioners," according to MSF.

Yet, like the country itself, al-Sadaqa was overwhelmed by the cholera epidemic. Nationwide, a million people have been infected, according to the International Committee of the Red Cross. The WHO says cholera has killed more than 2,200 people.



Nahla Arishi, a pediatrician, checks a boy infected with diphtheria at the al-Sadaqa teaching hospital in the southern port city of Aden, Yemen December 18, 2017. REUTERS/Fawaz Salman

Most of the infected were in the populous north of the country. But al-Sadaqa, which took in patients from across south Yemen, was also unprepared. Arishi and her colleagues had expected 10 patients at a time. Instead, by the summer, they were treating more than a hundred, mostly adults, a day.

Since September, the spread of cholera across the country has abated. However, doctors agree that a new wave of infections is likely in March, when the country's rainy season returns. Cholera spreads more easily in wet weather, because the bacteria live in rivers and coastal waters which swell with the rain. Rain brings sewage into sources of drinking water.

In August, a new disease began to emerge. In Ibb governorate, 170 km south of Sanaa, a 17-year-old boy was diagnosed with diphtheria, according to the WHO.

Diphtheria is caused by bacteria that mainly infect the throat, nose and airways and send toxins into the bloodstream. It has largely receded as a global health threat, because much of the world's population is protected through routine immunization.

But the disease is highly contagious once it takes root, doctors say, since it spreads in the droplets from coughing and sneezing. Small children are particularly vulnerable because toxins from the bacteria build up a coating of dead tissue that blocks their small airways.



Since the mid-August case, more than 380 patients have been admitted to hospitals across Yemen with diphtheria-like symptoms, according to the WHO. Doctors diagnosed the cases based solely on patients' symptoms. Close to 40 of the patients have died, by WHO estimates.

The first case of suspected diphtheria reached al-Sadaqa in November. Of the seven children who arrived within a fortnight, nearly all were initially misdiagnosed with mumps or flu. Four died.

Arishi faced the problem of isolating children with symptoms of diphtheria. She asked hospital administrators to block a hallway door with a cupboard. Behind it, she tried to isolate those who might infect others.

But she lacked basic resources to treat the new disease. Al-Sadaqa hospital, like most others in Yemen, does not have the reagents needed to test for diphtheria. In fact, none of Arishi's diagnoses has been confirmed by laboratory tests.

Marc Poncin, an MSF emergency coordinator in Ibb governorate, said the lack of recent experience means it could be harder to treat diphtheria.

"There has been a loss of knowledge regarding its treatment, because it's become something of a neglected and forgotten disease," he said.

After a diagnosis, treatment is far from easy. Doctors can prescribe antitoxins and antibiotics. But until a few weeks ago, Yemen had no such antitoxin stocks.

The United Nations Children's Fund and the WHO have imported more than 5 million doses of vaccines to immunize children in the worst affected areas. The WHO has already distributed antibiotics to patients and, as prophylactics, to their families.

Some diphtheria patients need emergency surgery to remove blockages from their airways or need machines to breathe. But most of Yemen's hospitals don't have such equipment. As of early December, only two of al-Sadaqa's three mechanical ventilators were working, and the hospital didn't have an isolated operating room for diphtheria patients.

The lack of resources has caused strains with the hospital's supporters. When Arishi cordoned off a part of the cholera ward for the incoming diphtheria patients a couple of weeks ago, the WHO was not happy with the decision, according to Hussein Hassan, head of the WHO's Aden office.

"We cannot confidently say that cholera is over. It is a seasonal problem and it may come back. What happens if another wave starts and the ward is filled with diphtheria patients?" said Hassan.

"I didn't want to lose my kid"

Arishi says there is another sign that Yemen is breaking down: parents' waning faith.

She sees more examples of families that have not vaccinated their children because they distrust both their government and international organizations.

Earlier this month she confronted Saleh Khaled, the father of a five-year-old boy called Yasir, who arrived with severe diphtheria symptoms.

"Why did you not vaccinate your son?" Arishi asked.

Yasir's first cousin, who was also five years old and unvaccinated, had died a few days earlier. When the first symptoms had appeared on Yasir's neck and chin, the boy's parents had given him honey.

Khaled said he had heard rumors, years earlier, about children who had died after healthcare workers had allegedly switched vaccine vials with insulin during a door-to-door vaccination campaign.

"I didn't want to lose my kid because of something like this," he said. "We don't trust the people who work in the health department."

Others in the al-Sadaqa ward that day echoed similar fears.

"We live only because of God's mercy," said Khaled Nasser, the father of 16-month-old Sameh. Nasser, a member of a local armed group that fights alongside Saudi-allied forces, said fellow fighters had helped him buy medicine when Sameh got sick.

Arishi herself barely ekes out a living. She makes \$210 a month at al-Sadaqa and works at a private clinic three days a week to supplement her income. The mother of three treats neighbors and relatives without getting paid. Her husband, also a pediatrician, works at another clinic in Aden.





For Arishi, war is both burden and inspiration. She says it has made her commitment to medicine stronger.

“If I leave and my husband leaves and everyone leaves, who will stay to treat our patients?” she said. “Aden is my city. It is my responsibility.”

Humidity may intensify heat stress to a point exceeding human endurance

Source: <http://www.homelandsecuritynewswire.com/dr20180103-humidity-may-intensify-heat-stress-to-a-point-exceeding-human-endurance>



Jan 03 – Climate scientists say that killer heat waves will become increasingly prevalent in many regions as climate warms. However, most projections leave out a major factor that could worsen things: humidity, which can greatly magnify the effects of heat alone. Now, [a new global study](#) projects that in coming decades the effects of high humidity in many areas will dramatically increase. At times, they may surpass humans' ability to work or, in some cases, even survive. Health and economies would suffer, especially in regions where people work outside and have little access to air conditioning. Potentially affected regions include large swaths of the already muggy southeastern United States, the Amazon, western and central Africa, southern areas of the Mideast and Arabian peninsula, northern India and eastern China.

“The conditions we’re talking about basically never occur now—people in most places have never experienced them,” said lead author Ethan Coffel, a graduate student at Columbia University’s Lamont-Doherty

Earth Observatory. “But they’re projected to occur close to the end of the century.” The study is published in the journal [Environmental Research Letters](#).

Columbia [notes](#) that warming climate is projected to make many now-dry areas dryer, in part by changing precipitation patterns. But by the same token, as global temperatures rise, the atmosphere can hold more water vapor. That means chronically humid areas located along coasts or otherwise hooked into humid-weather patterns may only get more so. And, as many people know, muggy heat is more oppressive than the “dry” kind. That is because humans and other mammals cool their bodies by sweating; sweat evaporates off the skin into the air, taking the excess heat with it. It works nicely in the desert. But when the air is already crowded with moisture—think muggiest days of summer in the city—evaporation off the skin slows down, and eventually becomes impossible. When this cooling process halts, one’s core body temperature rises beyond the narrow tolerable range. Absent air conditioning, organs strain and then start to fail. The results are lethargy, sickness and, in the worst conditions, death.

Using global climate models, the researchers in the new study mapped current and projected future “wet bulb” temperatures, which reflect the combined effects of heat and humidity. (The measurement is made by draping a water-saturated cloth over the bulb of a conventional thermometer; it does not correspond directly to air temperature alone.) The study found that by the 2070s, high wet-bulb readings that now occur maybe only once a year could prevail 100 to 250 days of the year in some parts of the tropics. In the southeast United States, wet-bulb temperatures now sometimes reach an already oppressive 29 or 30 degrees Celsius; by the 2070s or 2080s, such weather could occur 25 to 40 days each year, say the researchers.

Lab experiments have shown wet-bulb readings of 32 degrees Celsius are the threshold beyond which many people would have trouble carrying out normal activities outside. This level is rarely reached anywhere today. But the study projects that by the 2070s or 2080s the mark could be reached one or two days a year in the U.S. southeast, and three to five days in parts of South America, Africa, India and China. Worldwide, hundreds of millions of



people would suffer. The hardest-hit area in terms of human impact, the researchers say, will probably be densely populated northeastern India.

“Lots of people would crumble well before you reach wet-bulb temperatures of 32 C, or anything close,” said coauthor Radley Horton, a climate scientist at Lamont-Doherty. “They’d run into terrible problems.” Horton said the results could be “transformative” for all areas of human endeavor—“economy, agriculture, military, recreation.”

The study projects that some parts of the southern Mideast and northern India may even sometimes hit 35 wet-bulb degrees Celsius by late century—equal to the human skin temperature, and the theoretical limit at which people will die within hours without artificial cooling. Using a related combined heat/humidity measure, the so-called heat index, this would be the equivalent of nearly 170 degrees Fahrenheit of “dry” heat. But the heat index, invented in the 1970s to measure the “real feel” of moist summer weather, actually ends at 136; anything above that is literally off the chart. On the bright side, the paper says that if nations can substantially cut greenhouse-gas emissions in the next few decades, the worst effects could be avoided.

Only a few weather events like those projected have ever been recorded. Most recent was [in Iran’s Bandar Mahshahr](#), on 31 July 2015. The city of more than 100,000 sits along the Persian Gulf, where seawater can warm into the 90s Fahrenheit, and offshore winds blow moisture onto land. On that day, the “dry” air temperature alone was 115 degrees Fahrenheit; saturated with moisture, the air’s wet bulb reading neared the 35 C fatal limit, translating to a heat index of 165 Fahrenheit.

Bandar Mahshahr’s infrastructure is good and electricity cheap, so residents reported adapting by staying in air-conditioned buildings and vehicles, and showering after brief ventures outside. But this may not be an option in other vulnerable places, where many people don’t have middle-class luxuries.

“It’s not just about the heat, or the number of people. It’s about how many people are poor, how many are old, who has to go outside to work, who has air conditioning,” said study coauthor Alex de Sherbinin of Columbia’s [Center for International Earth Science Information Network](#). De Sherbinin said that even if the weather does not kill people outright or stop all activity, the necessity of working on farms or in other outdoor pursuits in such conditions can bring chronic kidney problems and other damaging health effects. “Obviously, the tropics will suffer the greatest,” he said. Questions of how human infrastructure or natural ecosystems might be affected are almost completely unexplored, he said.

Only a handful of previous studies have looked at the humidity issue in relation to climate change. It was in 2010 that a paper in the Proceedings of the National Academy of Sciences [proposed the 35-degree survivability limit](#). In 2015, researchers published [a paper](#) in the journal *Nature Climate Change* that mapped areas in the southern Mideast and Persian Gulf regions as vulnerable to extreme conditions. There was [another this year](#) in the journal *Science Advances*, zeroing in on the densely populated, low-lying Ganges and Indus river basins. The new study builds on this earlier research, extending the projections globally using a variety of climate models and taking into account future population growth. Elfatih Eltahir, a professor of hydrology and climate at the Massachusetts Institute of Technology who has studied the issue in the Mideast and Asia, said the new study “is an important paper which emphasizes the need to consider both temperature and humidity in defining heat stress.”

Climate scientist Steven Sherwood of the University of New South Wales, who proposed the 35-degree survivability limit, said he was skeptical that this threshold could be reached as soon as the researchers say. Regardless, he said, “the basic point stands.” Unless greenhouse emissions are cut, “we move toward a world where heat stress is a vastly greater problem than it has been in the rest of human history. The effects will fall hardest on hot and humid regions.”

— Read more in Ethan David Coffel et al., “Temperature and humidity based projections of a rapid rise in global heat stress exposure during the 21st century,” [Environmental Research Letters](#) 13, no. 1(22 December 2017).



Could ultraviolet lamps slow the spread of flu?

Source: <http://www.sciencemag.org/news/2018/01/could-ultraviolet-lamps-slow-spread-flu>



Jan 03 – Hospitals and laboratories often use ultraviolet (UV) light to kill microbes, but the practice has one major drawback: It can harm humans. So UV lights only do their killing in places such as empty operating rooms and under unoccupied lab hoods. Now, researchers have discovered that people might be safe around **a shorter wavelength of microbe-slaying UV light**, theoretically turning it into a new tool that could slow the spread of disease in schools, crowded airplanes, food processing plants, and even operating rooms and labs.



UV lights disinfect by disrupting the molecular bonds that hold together microbial genetic material or proteins. The most commonly used lights have a wavelength of 254 nanometers (nm), which has a relatively short UV wavelength—the so-called “C” category—but can penetrate the skin and eyes, leading to cancers and cataracts. So for the past 4 years, a group led by physicist David Brenner at Columbia University Medical Center in New York



City has tested shorter wavelengths, known as “far UVC light” that can’t penetrate the outer layers of the eyes or skin. The researchers found that far UVC eliminated bacteria on surfaces and did not harm lab mice.

Brenner and his co-workers next addressed whether far UVC could address a major health concern in many public settings: airborne microbes. The team first aerosolized influenza viruses inside a chamber and exposed them to UVC light with a **wavelength of 222 nm** or, as a control, to nothing. The researchers then collected liquid samples from the chamber and spread them on dog kidney cells susceptible to the flu. Unexposed samples could infect the cells, [but the UVC-treated ones couldn’t](#), the researchers reported in a preprint study published online 28 December 2017 on bioRxiv. If the studies pan out, “that could really be beneficial in disrupting disease transmission,” says Shawn Gibbs, an industrial hygienist who has studied the disinfectant properties of UVC at the Indiana University School of Public Health in Bloomington.

Brenner became interested in UVC’s germicidal properties 5 years ago, after a friend went to the hospital for a minor surgery and became infected with drug-resistant bacteria that took his life. “I declared my own personal war on superbugs,” Brenner said in a [TED talk](#) he gave in April 2017.

Brenner works at a radiological research facility founded by Marie Curie, where he has long specialized in ionizing radiation, x-rays, and gamma rays—paying little attention to UVC’s germicidal properties. But after his friend’s death, he started to wonder. “People had certainly shown that far UVC light kills bacteria, but they hadn’t put it together that it wasn’t able to penetrate human cells,” he says.

Brenner’s team took advantage of recent improvements in excimer lamps, best known for their use in LASIK eye surgery. The lamps mix krypton and chlorine gases to produce single-wavelength photons—as opposed to a broad spectrum—that can range from 207 nm to 222 nm. The researchers added filters to the lamps to remove all but the desired wavelength. “Our idea wouldn’t have been much use if there hadn’t been a technology to produce mono light of that wavelength,” Brenner says. The cost per lamp is less than \$1000, which could drop significantly if the technology proves itself and a company mass produces them, he says. He would not discuss his own commercial plans.

James McDevitt, an industrial hygienist at the Harvard T. H. Chan School of Public Health who has studied UVC’s germicidal properties, says he is “surprised” at the killing efficiency Brenner and colleagues reported, given predictions made by “commonly presented” calculations. Their methods seem sound at first glance, he adds, but notes that the new paper has yet to go through peer review. McDevitt also cautions that even if 222 nm does prove relatively safe, there are still [exposure limits](#). Furthermore, it may not work against as broad a spectrum of bacteria and viruses as 254 nm. Finally, lamps hung in the upper parts of rooms may work on aerosolized bacteria and viruses but have little impact on microbe-contaminated surfaces.

Brenner and co-workers plan to conduct more studies with far UVC light and microbes, both to better assess its safety and effectiveness at different doses. If all continues to go well, he says they may have enough data to seek regulatory approval within the next few years.

Two ways you can tell someone is sick just by looking at them

Source: <http://www.sciencemag.org/news/2018/01/two-ways-you-can-tell-someone-sick-just-looking-them>



Jan 02 – When you’re sick, it’s written all over your face. That’s the conclusion of a new study in the *Proceedings of the Royal Society B*, which finds that sick people share facial features—pale skin, swollen faces, droopy eyelids, and looking tired—that reveal they might be contagious. Although those signs may seem obvious, no one has explicitly tested them until now. Researchers took mug shots of 16 Caucasian



volunteers a few hours after injecting them with a placebo or a piece of bacteria that made people feel sick and caused their immune systems to respond as if they had an infection. They then showed the photos to 62 people, who rated the faces (pictured above as composite images with noninfected individuals on the left and infected on the right) as “sick” or “healthy” in 5 seconds or less. [Raters identified 81% of sick people better than chance.](#) But, what is it about our faces that give away whether we’re feeling under the weather? To find this out, a separate group of 60 people assessed how sick and tired the people in the photos looked and the extent to which each trait—pale skin and lips, droopy eyelids and corners of the mouth, how puffy their faces looked, eye redness, and tiredness—publicized illness. [The researchers found pale skin and hanging eyelids were the best predictors of sickness.](#) So, if staying healthy is part of your New Year’s resolution, perhaps give pallid and tired looking friends and colleagues a wide berth.

The Rise of Citizen Bioscience

By Eleonore Pauwels

Source: <https://blogs.scientificamerican.com/observations/the-rise-of-citizen-bioscience/>

Jan 05 – It is 5 P.M. in Santa Clara, California. Elodie Rebesque, a senior at Los Altos High School, is rushing out of class. She has a medical appointment of sorts. A few blocks away, she pushes open the door of [BioCurious](#), a community lab whose mission is to create a space for amateurs, inventors, entrepreneurs and anyone else who wants to learn and experiment with biology in a friendly, educational environment. Eric Espinosa, Elodie’s mentor, quickly assesses the results of her last experiment to identify next steps.

Growing up, Elodie witnessed her brother suffering from sudden crises called pneumothoraxes, triggered by a disease in which a lung collapses and separates from the chest wall. In severe cases, doctors resort to creating scar tissue on the wall as a grip to stitch back the lungs, an invasive treatment. But for Elodie, it was too painful and too slow. So she came up with her own, less invasive design—a “biological Velcro” that would leverage the inner mechanisms of proteins to bind her brother’s outer lungs to his pleural cavity.

This is not science fiction. Biotechnologies have progressed to a point where it is now possible for high school students to be taught how to use gene-editing techniques, which aim to modify the genetic code underlying cells and proteins. Advances could be unprecedented with the next generation learning how to turn their own ideas and know-how into new bio-constructs. Just like algorithms in software engineering, our cells have become intelligent-design material.

For weeks, Elodie dissected the literature to find the proteins that are responsible for helping cells bind together. After narrowing down her search to a few candidates, she genetically modified them to enhance the binding effect. She made sure her proof of concept was reproducible, obtaining three optimally engineered proteins that bind very tightly to lung cells. Soon she will start bio-printing the engineered proteins on a “molecular patch,” a thin matrix of collagen to be placed between the chest and the lungs. In collaboration with a university research team, she will then explore opportunities for clinical testing.

This is just one example of an upstart revolution where citizens are deciding not to wait around for a cure or even a diagnosis. From analyzing their own genetics and mastering genome editing on simple bacterial and viral cells to prototyping surgical devices, these “bio-citizens” are using newly available biotechnologies and resources to better understand and improve their health. Last September, with hundreds of them from the U.S., Mexico, India and China, we [met](#) at the renowned MIT Media Lab to discuss governance models for a “biotech without borders” movement.

We as a society are at a turning point. We could build adaptive regulatory support that ensures safe and responsible citizen participation in health research, or we could drive these emerging communities of innovators underground or out of existence. The way forward is to create a dialogue through which regulators can help bio-citizens

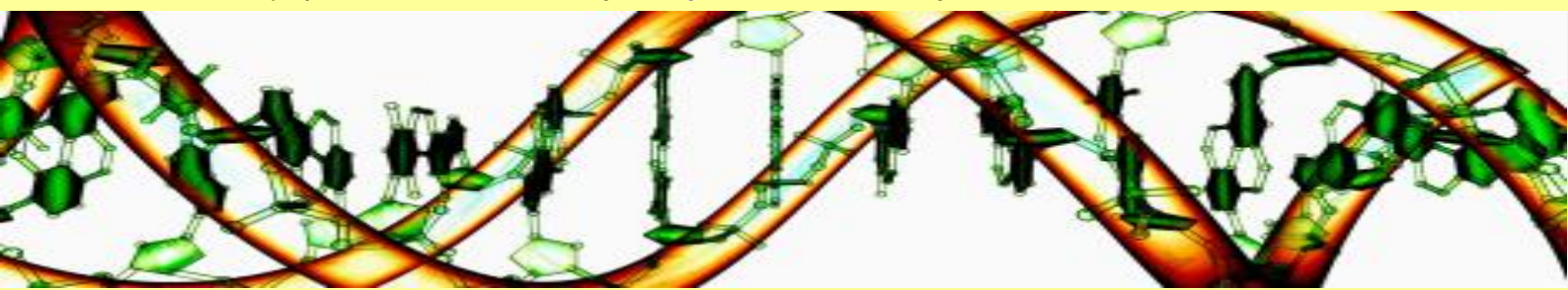


embed tailored governance mechanisms into their endeavors.

Until recently, pioneers of democratized health innovation had remained at the margins of our biomedical research and regulatory establishment. Yet in the last two months alone, two individuals widely shared [videos](#) in which they injected themselves with unregulated [gene](#)

gene therapies for self-administration are being made available to the public. The sale of these products is against the law. FDA is concerned about the safety risks involved."

Self-experimentation with unregulated gene therapies raises troubling safety and ethical questions, from the potential for infections and immunological reactions to lack of



[therapies](#). Josiah Zayner is one of the self-experimenters and the CEO of [the Odin](#), a start-up that has a long-term mission of making genetic engineering available to consumers. For about \$200, the Odin sells the [gene-editing kits](#) required to design gene therapies at home.

Like Zayner, I share the goal of empowering citizens with different abilities and resources to understand and shrewdly act upon the complex information contained in their genes. Yet I fear that without a robust structure for conducting risk assessment, self-experimentation using untested gene therapies will transfer the burden of weighing complex risk-benefit trade-offs to individuals at their own cost and peril.

Is self-experimentation with gene editing techniques something we should herald as a new form of "permissionless" innovation? Or will self-proclaimed biohackers, by testing the regulatory framework, harm the emerging ecosystem of citizens who contribute to biomedical innovation? Could they induce federal regulators to shut down all types of self-experimentation or severely restrain different forms of citizen-driven biomedical research?

While a scientist is required to get approval to conduct research on humans, the U.S. government had not yet explicitly warned against self-experimentation by a practitioner outside of a traditional research institution. Then, on November 21, the U.S. Food and Drug Administration issued a first-of-its kind [statement](#) on the practice: "FDA is aware that gene therapy products intended for self-administration and 'do it yourself' kits to produce

understanding of the risks involved and unrealistic expectations from patients. Yet banning the sale of gene-editing kits is only a weak, temporary solution. What we need is to foster an ethos of responsible innovation outside of traditional research institutions.

We must recognize the urgent need to build legitimacy, but also tailored regulatory support for new forms of democratized health research. The path forward is not to promote radical, unregulated science, but to develop engagement channels that force citizens, patients, ethicists and regulators to rethink and design an adaptive oversight system—one that fosters empowerment and responsibility rather than just adherence to the status quo. The only way to avoid a blanket ban on all self-experiments is to engage stakeholders, and it is worth it.

Elodie is not alone in her quest to improve medical treatments for a disease that runs in the family. A professor of computer engineering, [Matt Might](#), worked with many physicians for multiple years to find even a preliminary diagnosis for his son, who has a rare genetic disease. Just as he analyses the algorithms of a computer program, Matt hunted the genetic mechanisms responsible for Bertrand's disease with the hope of finding targets for experimental therapies. His subsequent work in building a community of families whose children possessed similar symptoms ultimately aided researchers and physicians in the discovery of a



more concrete diagnosis for the rare neurological disorder.

What these stories often have in common is a taste for entrepreneurship. Sean Ahrens, a young Californian with Crohn's disease, harnessed funding from a few start-up accelerators to build [Crohnology](#), an open platform where patients share and rate their experiences with medications, dietary changes and supplements, leveraging data that had previously gone to waste. Sean went as far as ingesting pig worms, meticulously documenting the daily effect on his Crohn's, and [publishing](#) his findings in a renowned medical journal.

Three intersecting factors—access to technologies, mentorship and funding—are fueling democratized health innovation. First, you can now buy online the tools of an amateur biologist, from secondhand [PCR machines](#) and [DNA synthesizers](#) to chemical compounds such as peptides and reagents. Better still, the mushrooming of community bio-labs ensures exposure and mentorship into the technologies required for bioengineering and personal genomics analysis. To cap it off, motivated patients have started crowdfunding selected clinical research strategies as a kind of “venture philanthropy” that can generate from several thousand to [several million](#) dollars.

Yet empowerment often collides with hard truths. While intending to break new ground in underserved health domains, new forms of participatory health research suffer from a lack of legitimacy. Regulators tend to question the quality and scientific validity of experiments that occur outside of certified clinical trials—maybe, in some cases, rightly so.

Another hard truth is that the potential for citizens to take a proactive role in their own diagnosis and treatments, outside of medical practices, probes many unresolved ethical issues: blurred boundaries between treatments and self-experimentation, peer pressure to participate in trials, exploitation of vulnerable individuals, lack of oversight concerning quality control and risk of harm, and more.

The company [Wego Health](#), for instance, connects patients with research and pharmaceutical brands that will ultimately pay

the patients for helping to recruit clinical trial participants. In this big-pharma version of the gig economy, the potential looms for these patients to enter conflicts of interest while getting paid for their influence.

Notwithstanding the concerns, we should not simply discount medical research conducted outside of traditional institutions as ipso facto less safe, less reproducible or unethical. Patients often have in-depth experiential knowledge of their conditions along with a vested interest to make sure that a treatment or device will be effective, safe and beneficial. Facing regulatory uncertainty, however, they might not overcome the “chill factor”—the fear of confronting regulators by sharing their prototypes or experimental protocols with others.

The press has recently covered cases of bio-hackers who self-experimented with unregulated gene therapies. But the stories I encountered in community bio-labs, such as BioCurious and Denver Biolabs, are different. As Eric Espinosa, Elodie's mentor, told me: “The FDA is always at the back of my mind; we want our proof of concept to be safe and reproducible, and we will work towards that.”

The next step is to foster legitimacy for citizen-driven biomedical innovation by supporting citizens and patients to document and share their data, evidence and ethical concerns in ongoing conversations with regulators and society at large.

Because they respect [biological safety levels](#) and function as a peer-review culture, community bio-labs constitute an ideal ecosystem for mentorship in the most current bioengineering techniques and their related risk-benefit trade-offs. By the same token, these labs are the perfect place to start a continuing dialogue about how to adapt our regulatory standards to an increasingly democratized form of biomedical innovation.

We need empowerment, but also greater collective intelligence. If risks are properly managed without dampening the energy of this new movement, we might all gain in the process.

Eleonore Pauwels is a writer and international science policy expert, who specializes in the governance of converging technologies, including artificial



intelligence, genomics, digital bio-engineering, participatory health design, and citizen science. At the Wilson Center, she is the Director of The AI Lab within the Science and Technology Innovation Program.

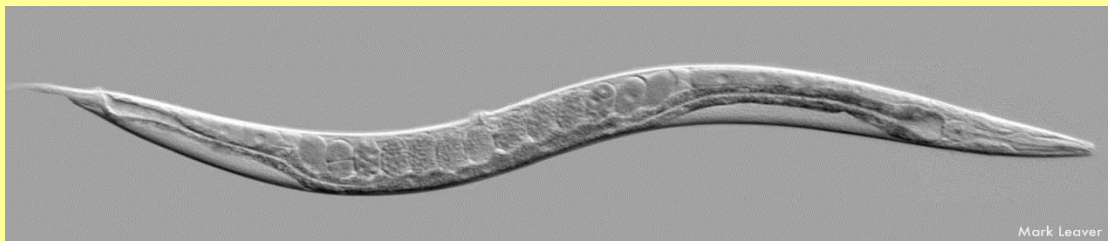


***Caenorhabditis elegans* Predation on *Bacillus anthracis*: Decontamination of Spore Contaminated Soil with Germinants and Nematodes**

By Bettina Schelkle, Young Choi, Leslie W. Baillie et al.

Front. Microbiol., 05 January 2018

Source: <https://www.frontiersin.org/articles/10.3389/fmicb.2017.02601/full>



Remediation of *Bacillus anthracis*-contaminated soil is challenging and approaches to reduce overall spore levels in environmentally contaminated soil or after intentional release of the infectious disease agent in a safe, low-cost manner are needed. *B. anthracis* spores are highly resistant to biocides, but once germinated they become susceptible to traditional biocides or potentially even natural predators such as nematodes in the soil environment. Here, we describe a two-step approach to reducing *B. anthracis* spore load in soil during laboratory trials, whereby germinants and *Caenorhabditis elegans* nematodes are applied concurrently. While the application of germinants reduced *B. anthracis* spore load by up to four logs depending on soil type, **the addition of nematodes achieved a further log reduction in spore count**. These laboratory based results suggest that the combined use of nematodes and germinants could represent a promising approach for the remediation of *B. anthracis* spore contaminated soil.

Future Trends and Key Industry Analysis of **Biodetection Market by 2025**

Source: <http://www.military-technologies.net/2018/01/11/future-trends-and-key-industry-analysis-of-biodetection-market-by-2025/>

Jan 11 – Biodetection is perceiving better acceptance due to growing bio-terrorism, which results in increasing the number of illness and deaths. Bioterrorism is mainly caused by organisms or toxins that weaken or kill livestock, crops and people. These organisms can be dispersed by person to person contact, by contaminating food and water, by infecting animals that carry disease to human and others. These pathogens can be identified by the system called biodetection which directs the entry and presence of pathogens. The increasing attacks have brought a major worry to the public as well as governments. Bio

detection has an emerged solution to the government as well as public as these can give a negative impact on a large number of population. Ebola outbreaks, H1N1 attacks has resulted in loss of human resources and affect adversely on overall healthcare system. The increase in bio-terrorist attacks has increased the need for bio-security systems that secure the people from pathogen attacks and reduce the risk of disease transmission to others. Biological analyses includes determining the contaminants along with identification of biological effects.



These assays also assist in identification of the compounds imposing positive health effects such as inhibition and activation of cellular pathways. Contaminant detection is based on detection of biological effect or chemical analysis, and the services include the detection of contaminants in defense, food and environment settings, and clinical. Chemical analyses aid in detection and determination of complex mixture of bioactive compounds present in the sample. These analyses involve the implementation of several chemical analytical fractionation techniques such as solid phase extraction (SPE), high performance liquid chromatography (HPLC), and gel permeation chromatography.

The global biodetection market is anticipated to register a significant CAGR over the forecast period. The biodetection market is being majorly driven due to increasing awareness about bio-terrorism and biological warfare. This may anticipated to propel the demand for biodetection and drives the global market of biodetection market. The increasing support from the government to develop effective bio-detection technologies also enhance the growth of biodetection market over the forecast period. The need for an early detection system for bio-terrorist attack also boost the demand for biodetection systems. However, the problems faced in the detection of minute pathogens, may hamper the growth of biodetection market. The

increasing misuse of scientific technologies along with increasing circulation of harmful biological agents also restraining the growth of the biodetection market.

Geographically, the biodetection market is segmented into five key regions such as North America, Latin America, Europe, Asia pacific (APAC), and Middle East & Africa (MEA). The North America has become the lucrative market for biodetection and is anticipated to emerge as the fastest growing market due to the rising investments in bio surveillance systems. The Europe is expected to register a significant growth over a forecast period due to the increase in implementation of highly efficient technologies. APAC region is also expected to register a significant growth in the biodetection market over a forecast period as the government is trying to prevent these bio attacks and trying to minimize damage caused by these attacks by implementing effective methods.

Some of the players operating in the global biodetection market are environmental bio-detection products Inc., New Horizons Diagnostics Inc, BioDetection Instruments, Inc., BioVeris, Bertin Technologies, ANP Technologies, Haztech Systems, Tetracore, BioDETECT, BioSentinel, Inc. and others. These companies are highly focused and further contributing to the growth of biodetection market globally.

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No Entry for ISIS Fighter for Emergency Surgery

Source: <https://clarionproject.org/no-entry-to-isis-fighter-for-emergency-surgery/>

Jan 11 – **Austria's interior ministry refused entry to a suspected ISIS fighter from Georgia who required emergency surgery, the Inquirer.net reported.**

The 19-year-old fighter, identified only as Temirlan, was shot in the head in a special forces operation in Georgia and is in a coma. The fighter is thought to be connected to the Chechen jihadi kingpin Akmad Chatayev, who was wanted for the triple bombing and shooting attack on Ataturk Airport in Turkey. Forty-six people were killed in the June attack in Istanbul with more than 230 injured. Chatayev himself was killed in November in a counter-terror operation in Tbilisi, Georgia's capital.

Citing security concerns as the primary reason, the ministry also said the fighter's entrance would increase the risk of a possible rescue or a blackmail attempt.

Austria has a large [Chechen community](#) and has one of the highest numbers of foreign fighters per capita.

The interior ministry is run by the far-right Freedom Party which joined with the conservative People's Party to make a coalition government late last year. The party vowed to concentrate on national security as well as stop illegal immigration.





The science of Biology and the future of man

By Prof. Anton J. Karlson

Science 17 Nov 1944

Vol. 100, Issue 2603, pp. 437-43

Source: <http://science.sciencemag.org/content/100/2603/437>

Experts criticize lack of flu pandemic readiness, commitment

Source: <http://www.homelandsecuritynewswire.com/dr20180115-experts-criticize-lack-of-flu-pandemic-readiness-commitment>

Jan 15 – Armed with 1940s-vintage flu vaccine technology and supported by only anemic funding for developing truly revolutionary vaccines, the world is woefully unprepared for the next influenza pandemic, and the Trump administration is ignoring the problem, two experts wrote in a [New York Times](#) op-ed piece. “There is no apparent effort to make [next-generation flu] vaccines a priority in the current administration. Its national security strategy published last month cites Ebola and SARS as potential bioterrorism and pandemic threats, yet makes no mention of the risk of pandemic influenza nor any aspect of critical vaccine research and development,” write infectious disease expert Michael Osterholm and his book coauthor Mark Olshaker.

Osterholm is director of the University of Minnesota’s Center for Infectious Disease Research and Policy (CIDRAP), which publishes CIDRAP News. He and Olshaker last year wrote [Deadliest Enemy: Our War Against Killer Germs](#) (2017), which details the most pressing public health threats and includes a nine-point action plan.

The urgency expressed in the commentary was echoed by other experts.

“Worst-case scenario”

In their op-ed piece, Osterholm and Olshaker point out that the infamous “Spanish flu” pandemic of 1918-19 killed 50 million to 100 million people worldwide—at a time when the globe held only a quarter of the population it now houses.

In addition, the current flu season demonstrates how disruptive even everyday seasonal flu can be.

“The next few weeks,” the two write, “will highlight how ill prepared we are for even

‘ordinary’ flu. A worldwide influenza pandemic is literally the worst-case scenario in public health.”

Amesh Adalja, senior scholar with the Center for Health Security at the Johns Hopkins Bloomberg School of Public Health, concurs.

“The difficulties currently being experienced in handling a predictable rougher-than-usual flu season should be a wake-up call to all that we will be greatly underprepared for the infectious disease emergencies we are certain to face in the years ahead,” he [told](#) CIDRAP News.

Antiquated weaponry

Outdated flu vaccines lie at the heart of the problem.

“Our current vaccines are based on 1940s research. Deploying them against a severe global pandemic would be equivalent to trying to stop an advancing battle tank with a single rifle,” Osterholm and Olshaker write. “Limited global manufacturing capacity combined with the five to six months it takes to make these vaccines mean many people would never even have a chance to be vaccinated.

“The only real solution is a universal vaccine that effectively attacks all influenza A strains, with reliable protection lasting for years, like other modern vaccines.”

A universal vaccine targets the “conserved” portion of influenza viruses, the parts that vary little from strain to strain. Such a vaccine would protect against not only the four strains commonly circulating during flu season in any given year but also any strains—such as H7N9 avian flu, which has caused mounting cases in China in recent years—that cause a future pandemic.



"I don't think anything else is more important for public health than developing a universal influenza vaccine," said John Barry, author of *The Great Influenza: The Story of the Deadliest Pandemic in History* (2005), a definitive account of the 1918-19 pandemic that was said to be instrumental in building momentum for U.S. preparedness efforts during the George W. Bush administration.

"The threat of a pandemic virus aside, a vaccine targeting conserved portions of the virus would very likely be far more effective than current seasonal vaccines, saving hundreds of thousands of lives a year," Barry says. "It makes no sense that it has not been a higher priority in past decades."

Adalja adds, "The pressing need for a universal flu vaccine, as expertly argued in the op-ed, is becoming more critical as the threat of H7N9 looms. Facing such challenges with technology that is obsolete and suboptimally effective is a recipe for disaster."

CIDRAP News notes that in *Deadliest Enemy*, Osterholm and Olshaker paint a fictitious yet chilling scenario of what an H7N9 flu pandemic could look like and how the disease would spread rapidly among today's highly mobile global population.

Lack of funding commitment

In their op-ed piece, the pair details the bleak reality of current U.S. funding efforts.

"Although the National Institutes of Health has publicly declared developing a vaccine a priority, it has only about \$32 million this year specifically for such research. The Biomedical Advanced Research and Development Authority, the other federal agency responsible for developing and making available new vaccines for emergency response, has in fiscal year 2017 only a single project for \$43 million supporting game-changing influenza vaccines."

But together those funds total less than 8 percent of what the U.S. government spends each year on developing an effective HIV vaccine, which is still a long way off.

"By contrast," Osterholm and Olshaker write, "the search for an H.I.V. vaccine—still a scientific long shot—receives \$1 billion annually (which it should). We estimate that international governments, vaccine manufacturers and the philanthropic community must make a similar commitment to influenza vaccine research if the kind of vaccine we need is to be developed in the next 10 years."

They note that eradicating smallpox in the 1970s was arguably public health's greatest accomplishment, adding, "We have the tools to potentially accomplish this with influenza, and with the stakes as high as they are, isn't it worth a Manhattan Project-scale effort to defend ourselves?"

— Read more in Michael Osterholm and Mark Olshaker, "We're Not Ready for a Flu Pandemic," [New York Times](#) (8 January 2017).

Ban on deadly pathogen research lifts, but controversy remains

Source: <http://www.homelandsecuritynewswire.com/dr20180115-ban-on-deadly-pathogen-research-lifts-but-controversy-remains>

Jan 15 – Last month, the U.S. government lifted a three-year moratorium on funding risky research to genetically alter deadly [viruses](#) in ways that could make them even more lethal (see "U.S. ends 3-year ban on research involving enhanced-lethality viruses," [HSNW, 20 December 2017](#)). Karen Feldscher of the Harvard T. H. Chan School of Public Health, [talked](#) with epidemiologist Marc Lipsitch of Harvard Chan School, who thinks the move could create an accidental pandemic.

Karen Feldscher: Why is there such a fierce debate about the end of the moratorium?

Marc Lipsitch: Those who support such research think that it is necessary to develop strategies to fight rapidly evolving pathogens that pose a threat to public health, such as the flu virus, the viruses causing Middle East respiratory syndrome (MERS) and severe acute respiratory syndrome (SARS), or Ebola. For instance, some of this so-called "gain-of-function" research—which aims to make germs more contagious, more deadly, or both—has aimed to create viruses that can easily pass between ferrets, so that researchers can understand



how those changes occur and potentially how viruses go from infecting animals in the wild to transmitting between humans.

But others, like myself, worry that human error could lead to the accidental release of a virus that has been enhanced in the lab so that it is more deadly or more contagious than it already is. There have already been accidents involving pathogens. For example, in 2014, dozens of workers at a U.S. Centers for Disease Control and Prevention lab were accidentally exposed to anthrax that was improperly handled. Another accident like that—if it involved a virus that was both newly created and highly contagious—has the potential to jeopardize millions of people.

Feldscher: *In lifting the funding ban, the U.S. government has said that it will establish scientific review panels to ensure that the benefits of such research justify the risks. What do you think of this approach?*

Lipsitch: My overall take is that this is a small step forward. The government has indeed proposed a review for the most concerning kinds of research. However, I also believe that gain-of-function experiments to date have given us only modest scientific knowledge and have done almost nothing to improve our preparedness for pandemics, yet they have risked creating an accidental pandemic. Therefore, I think that a review of the sort proposed by the government should disallow most of these risky experiments.

Feldscher: *Do you have a sense of what these government review panels will consider when making their determinations?*

Lipsitch: It's unclear. Under the new guidelines, there is an ambiguous statement that suggests that the review panel would potentially allow a risky experiment only if there is no safer alternative method of addressing the same question. There are certain narrow questions—such as how does one specific virus change to become more contagious—that can be answered only by a dangerous experiment. But these are not the questions we need to answer for public health. The more informative questions—for example, about what makes flu viruses more easily transmissible—can be, and have been, answered by safe approaches, such as comparisons of genetic sequences and experiments that use parts of a virus, rather than a whole live virus. These approaches, besides being safe, can be done on a larger scale with many different types of viruses and can yield much more generalizable information than dangerous gain-of-function experiments. Gain-of-function is only one of many techniques, so avoiding it would be a very small modification to the overall research program on flu and other pandemic threats, but one that would considerably increase our safety.

Scientists identify what may have killed millions in mystery epidemic

By Ashley Strickland (CNN)

Source: <http://edition.cnn.com/2018/01/15/health/salmonella-epidemic-16th-century-mexico/index.html>

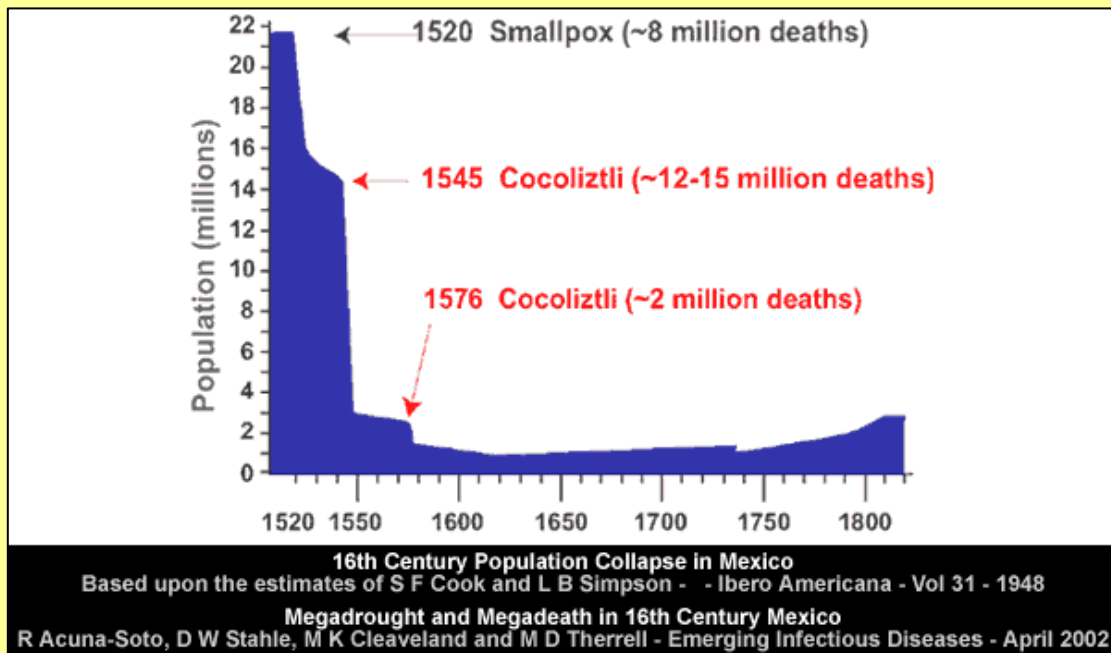
Jan 16 – In the 16th century, an epidemic known as "**cocoliztli**" that caused bleeding and vomiting swept through large areas of Guatemala, Mexico and even reached Peru. It wiped out 80% of the population, [killing millions](#) of people.

Ancient DNA and a new technique have been used to determine the likely cause of this mysterious epidemic that contributed to a "cataclysmic" population decline.

Salmonella genomes, which cause typhoid fever, were recovered from DNA within the teeth of 10 skeletons buried in an undisturbed "cocoliztli" or "pestilence" cemetery in Oaxaca, Mexico. This would be the first known occurrence of salmonella in the Americas, according to a new study published in the [journal Nature](#) on Monday. Typhoid fever has long been suspected due to the recorded symptoms, but this is the first identification of bacteria at the site.

The researchers also believe that the arrival of Europeans to what was then known as Mesoamerica caused the devastating epidemic. Europeans were susceptible to enteric fever, also known as typhoid fever, and it is very likely that they were carriers for the disease when they arrived to conquer Mesoamerica.





"The cocoliztli is a mysterious historical epidemic, and over the years many have speculated on its cause," said Kirsten Bos in an email, study author and group leader of molecular palaeopathology at the Max Planck Institute for the Science of Human History in Germany. "This is the first time that ancient DNA has been successful in identifying a candidate pathogen for it."



The Teposcolula-Yucundaa's Grand Plaza cemetery is the only one known to be linked to this specific outbreak. The epidemic was so devastating that the city was relocated to a nearby valley, which allowed the cemetery to remain untouched for centuries. This, along with the thick, protective floor of the Grand Plaza, created the perfect conditions for testing and research.

While the culprit diseases behind later epidemics, like smallpox, measles, mumps and influenza, have been well documented, earlier epidemics in the "New World" aren't as well-characterized, creating debate among researchers.

Infectious disease pathogens don't leave telltale marks on skeletons, either, according to the researchers. This is largely due to the fact that they are fast-acting and take their toll very quickly before the skeleton can be deformed in any way.



So when researchers look at skeletons like those in the pestilence cemetery, they have to search for possible causes based on what they know from historical accounts. But diseases and symptoms can change over the years, or the symptoms can be so broad and similar that it could be one of many causes. But a new screening technique called the **Metagenome analyzer Alignment Tool**, or MALT, allowed the researchers to search for all bacterial DNA present, rather than testing for each specific possibility -- which can be tedious and disappointing. It's the classic "needle in a haystack" scenario.

Other factors can also play a role. When archaeological tissues sit in the ground for centuries, DNA from environmental sources can leach in, Bos said.

"One limitation that we, and everyone else, face is that we can only look for pathogenic organisms that we already know exist and that have been genetically characterized today," said Åshild Vågene in an email, study author and doctoral student in the department of archaeogenetics at Max Planck Institute for the Science of Human History. "If the individuals that we studied from Oaxaca, Mexico, were infected by something that does not exist today or that has yet to be characterized, then we would not be able to detect it with our current method."

MALT revealed *Salmonella enterica* Paratyphi C, the bacterial cause of enteric/typhoid fever, which has been the suspected cause of the epidemic for years. Identifying the bacteria supports the typhoid hypothesis. Symptoms of typhoid fever include high fevers, red spots, dehydration, bleeding, vomiting and gastro-intestinal issues.

"After we identified traces of *Salmonella enterica* DNA using our new computational technique, we conducted further experiments and computational analyses that allowed us to study the whole genomes of the *Salmonella enterica* bacteria identified in the teeth of individuals included in our study," Vågene said.

But the case may not be closed.

"We cannot say that it definitively caused the epidemic," Bos said. "It was the only pathogen that surfaced from our extensive analysis, and an enteric fever is consistent with the recorded symptoms of the epidemic. But it may not have been the only disease circulating in the population at this time. Others could have been present that were not detectable by us through the techniques we used."

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The MALT technique is opening up new research possibilities for diagnosing diseases of the past, and solving centuries-old medical mysteries.

"The screening technique used here will be transformative for future work on archaeological disease -- it's no longer necessary to have a candidate pathogen in mind for molecular detection," Bos said. "The flexibility offered by our approach is what's needed to tackle many questions related to disease history and ecology, where you often don't know what disease you're looking for until you've found it."

"We intend to apply similar techniques to search for diseases in other archaeological samples from different time periods and locations. This technique opens so many doors for us to learn about disease in the past."

'Bleeding eyes fever' outbreak 'could SPREAD across Africa' as more victims struck down

Source: <https://www.dailystar.co.uk/news/world-news/674536/outbreak-bleeding-eyes-viral-hemorrhagic-fever-south-sudan-uganda-new-cases>

Jan 17 – Latest World Health Organisation figures show a total of five people, three of whom died, have been struck down by [viral hemorrhagic fever \(VHF\)](#) in South Sudan.

Meanwhile, a [nine-year-old girl died last week after contracting VHF](#) – a horrific disease associated with lethal internal bleeding – in the Nakaseke District of Uganda.

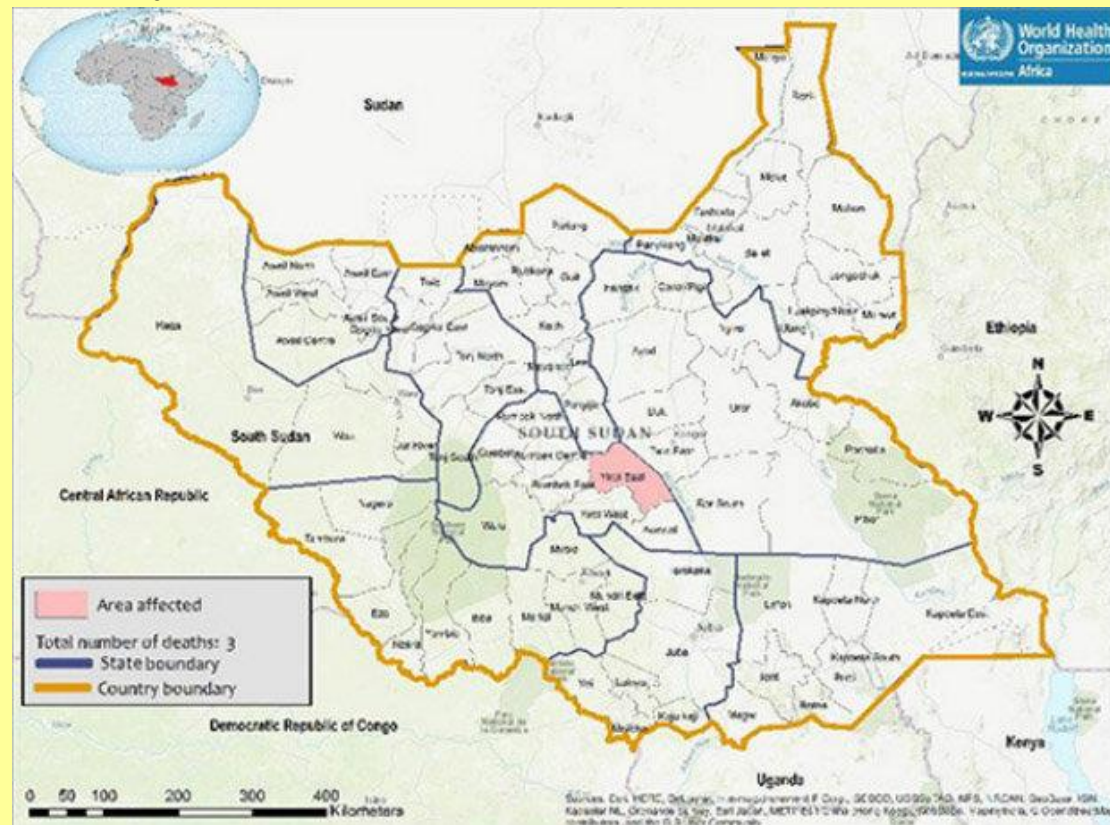
Distressing pictures show the tragic girl being removed from her home in a body bag by health officials wearing protective hazmat suits.



Ugandan authorities yesterday [confirmed another girl tested positive for the Crimean-Congo Hemorrhagic Fever](#), whose symptoms include fever, vomiting, diarrhea, and bleeding into the skin.

New research from the WHO, published today, shows a strain of VHF has infected a further two people in South Sudan, in east Africa, since January 5.

An 18-year-old pregnant woman who was in contact with the initial cluster of cases in Yirol East county has been diagnosed with VHF



A 14-year-old girl from Arwa village – close to where the initial cases originated – has also been admitted to hospital with similar symptoms.

However, the WHO has not yet been able to identify the exact strain of VHF, leaving the disastrous spectre of a wider pandemic wide open.

Speaking to Daily Star Online, Paul Hunter, professor of health protection at the University of East Anglia, said “widespread transmission” was “not impossible” if the infection is not quickly identified.

“There is still not indication of what the infection is,” he said.

“Although Ebola is possible, so is Rift Valley Fever, or even *Borrelia recurrentis* (a bacterium not a virus), or any number of other possible candidates.

“There have been regular reports of small outbreaks of haemorrhagic fevers in Sudan over the years and few such outbreaks are adequately investigated and the cause identified.”

WHO collected six blood samples from patients struck down with the disease and sent them to the Uganda Virus Research Institute (UVRI) for examination.

All six samples tested negative for a number of VHR strains, including Ebola, which killed an estimated 11,315 people across Africa in 2014.

But the WHO is working with the Sudanese health ministry to conduct further tests and investigations into the outbreak.

Prof Hunter, an expert in disease control, said more evidence needs to be collected to determine whether the VHF strain could lead to a wider outbreak.

“I suspect that widespread transmission is unlikely this time, but not impossible,” he said.



"In the most recent previous outbreak it does not appear that person-to-person transmission occurs.

"Given the indication of infection in animals and the lack of evidence of person to person transmission, I would think Ebola is less likely."

In its latest outbreak bulletin, the WHO concludes that the cases of VHF recorded in South Sudan are likely to be Rift Valley fever.

Rift Valley fever is a virus transmitted by mosquitoes and blood feeding flies that usually affects animals.

"The suspected VHF outbreak in South Sudan needs to be closely monitored" WHO said in the bulletin.

"While investigations to establish the etiology of the event are ongoing, surveillance in human and animal populations needs to be strengthened rapidly to detect new human and animal cases in a timely fashion, along with better clinical capacity to manage any new cases in affected areas.

"Preliminary indications are that Rift Valley fever is the etiological agent.

"However, more substantial confirmation is required."

Medical Countermeasures for Large-Scale Biological Attacks

By Robert Kadlec

Source: <https://www.domesticpreparedness.com/commentary/final-report-medical-countermeasures-for-large-scale-biological-attacks/>

January 2011 – Following a large-scale biological attack, the rapid delivery of effective medical countermeasures to the affected population is vital for saving lives and preserving the public's confidence in the federal government's ability to respond effectively. The Department of Health and Human Services (HHS) launched the Cities Readiness Initiative (CRI) in 2004. The CRI objective is to prepare major U.S. cities and metropolitan areas to respond effectively to large-scale biological attacks by, among other things, dispensing antibiotics to the targeted population within 48 hours. However, despite and after more than five years of federal funding and support, few if any CRI jurisdictions can meet this 48-hour goal. Because of the perceived shortfalls, President Obama signed an executive order (EO 13527), in December 2009, "Establishing Federal Capability for the Timely Provision of Medical Countermeasures Following a Biological Attack." This EO explicitly acknowledges the urgent necessity of establishing a federal response capability to augment existing state and local plans for the distribution and administration of oral antibiotics. In addition, the Advisory Committee on Immunization Practices (ACIP) published recommendations, also in 2009, governing use of the anthrax vaccine (anthrax vaccine adsorbed) in the United States.

Anthrax is considered to be the most likely agent to be used in a potential biological attack. Studies and modeling indicate that pre-exposure vaccination with the anthrax vaccine approved by the U.S. Food and Drug Administration (FDA) or the immediate administration of oral antibiotics can reduce the likelihood of morbidity and mortality in exposed individuals. The U.S. Strategic National Stockpile holds sufficient quantities of anthrax vaccine and oral antibiotics to treat up to 60 million individuals.

In a recent Harris poll – conducted in December 2010 – 54 percent of respondents said they believe that a terrorist attack in the United States is likely to happen within the next 10 years, with 29 percent of respondents believing it will be a chemical or biological attack. The Harris poll serves as an important backdrop to the results that were obtained when DomPrep40 (DP40) members and DomPrep readers responded to a survey about the appropriateness of: (a) enhancing current mechanisms to deliver medical prophylaxis in the event of a biological attack; and (b) possible approaches to provide or pre-position such countermeasures before an attack.

Key Findings

The results show a generally strong concordance between responses by DP40 members and DomPrep readers. The majority of respondents believe both that pre-event anthrax vaccinations should be provided to persons at risk and that there should be prepositioning of antibiotics to prepare for a bioterrorist attack. The respondents also believe that other establishments should be enlisted to assist in the delivery and distribution process, but do not support making these antibiotics available to the general public for stockpiling at home.



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Robert Kadlec is Former Special Assistant to the President for Homeland Security & Senior Director for Biological Defense Policy.

Pandemic Influenza and the Need for an Armageddon Plan

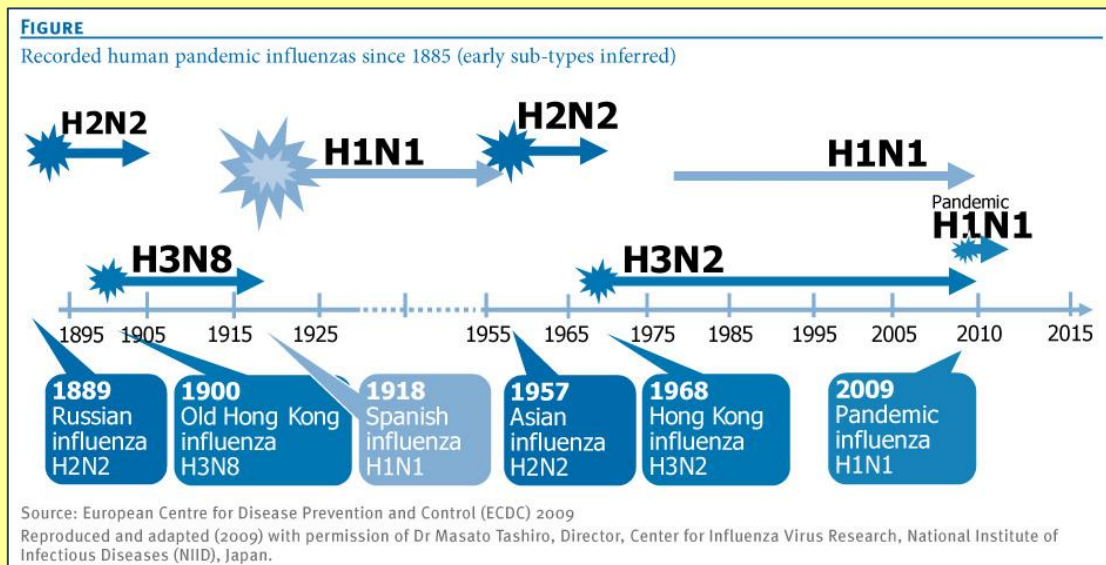
By Joseph Cahill

Source: <https://www.domesticpreparedness.com/healthcare/pandemic-influenza-and-the-need-for-an-armageddon-plan/>

October 2005 – Pandemic influenza, or “Pan Flu,” differs from the “regular” flu in a number of substantial ways. To understand them it is important first to understand what the flu is – namely, an infectious disease that is caused by a virus.

In the simplest terms, viruses are strands of deoxyribonucleic acid (DNA) or ribonucleic acid ([RNA](#)), the blueprints that cells use to reproduce. When the virus infects healthy living cells it plugs its own DNA into the cellular machinery of reproduction and tricks the invaded cells into creating more viruses.

For the person infected with influenza the results can range from mild “flu-like” symptoms such as body ache, fever, headache, tiredness, sore throat, runny nose, and cough – lasting a week to ten days, or so – through a fatal pneumonia. Hundreds of thousands of people die each year from the flu – including, according to the U.S. Centers for Disease Control and Prevention ([CDC](#)), an estimated 36,000 in the United States.



Control Measures and the Drift-and-Shift Effects

The main method for protecting oneself from influenza is to be vaccinated every year. There are both an injection version and a spray version of the vaccine in use in the United States. Every virus has proteins on its outer surface that are unique to that viral strain. When a person encounters these proteins it “takes an image” of them and stores it within his or her immune system.

Later, when the person encounters other proteins, that person’s immune system checks them against the stored images. If a match is found, the immune system can deal fairly quickly with the virus. A vaccine works by introducing just enough material into the body to trick the immune system into forming images that will help identify the complete virus.

The influenza virus is not a static creature. Central to understanding why annual vaccinations are needed is a factor called genetic drift and shift. Each time a virus reproduces itself there is the possibility of a mistake. When enough small mistakes accumulate, these errors result



in a virus that no longer matches the old image, so the immune system sees it as something novel. This process, which is called drift, may take six months or more to become different enough to evade even vaccinated immune systems.

When two viruses encounter one another they sometimes exchange pieces of their genetic material, and each comes away as something distinctly different from the original. This process, called shift, allows for rapid major changes in the virus in a single event. The exchange is often significant enough to transfer characteristics from one virus to the other.

Of major concern is that a flu virus such as H5N1 (the designation given to the avian flu) that is lethal to humans but hard to pass from person to person will exchange material with a virus that is relatively easy to pass from person to person. If this shift occurs, the resulting virus not only may cause a high mortality rate but also be person-to-person transmissible – and thus would be a likely candidate for causing the next pandemic influenza.

Regardless of the process, shift or drift, that creates a new virus, current immunity to the original might not be effective against the new virus. In other words, last year's flu shot probably would not be effective against this year's flu.

There are other defenses against influenza. Anti-viral medication can be administered. From the patient's perspective these are somewhat similar to antibiotics: One pill one or more times a day helps the body fight off the infection. Unfortunately, there are not enough of these medications available to treat all probable cases of the flu in the United States (and the shortages are worse in almost all other countries). Moreover, viruses repeatedly exposed to these medications may become resistant to them, rendering the antiviral less effective.

Good basic hygiene and good manners both play a large role in controlling the spread of influenza. [Washing one's hands](#) and covering one's mouth when [coughing](#) will significantly slow the spread of the flu. Alcohol-based waterless hand-washing liquids also can help, particularly in situations that do not allow for frequent hand washing.

The Emergency Planning Issues Involved

Pandemic influenza presents some specific, and major, problems for medical professionals involved in emergency planning and/or with vaccine production and delivery. There is no way to stockpile the vaccine, because the vaccine stored away this year will probably be no longer effective next year. However, the stockpiling of anti-viral medications is possible.

Last year's vaccine shortage in the United States provides a good model to use in estimating the possible effects on the vaccine supply at the start of a pandemic. The British manufacturer of vaccine, Chiron Corporation, was unable to bring its product to market. It was more than just a lost batch of vaccine; Chiron's operation was shut down for the season. The company's production capacity was thus removed from the total worldwide capacity. But there is very little excess worldwide capacity available at any time; as a result, even with a full-capacity effort by other manufacturers, shortages ensued.

Vaccine production during an influenza pandemic can be expected to exhibit a similar gap – of much greater magnitude, though – between capacity and demand. During the initial phase of pandemic influenza there probably will be little or no effective vaccine available. Because the normal time lag between vaccine development and production is about six months, this means that there will undoubtedly be major shortages – resulting more from the increase in demand than the decrease in supply – during the first year of a new pandemic. An even worse problem, perhaps, is that, because of shift and drift, the vaccine developed during year one may be ineffective during year two and so on.

Question: Who Will Be Saved?

One of the major issues facing state and local public health officials is determining who or what categories of citizens must or should receive the first doses of the vaccine. There are two schools of thought on this issue. The first places highest priority on the *risk imperative*, as presented by the CDC recommendations for annual flu vaccinations, which holds that those persons considered to be at an increased risk should be vaccinated on a priority basis. The second school adheres to what is called the *functional imperative*, as outlined in the [World Health](#)



[Organization \(WHO\) Guidelines on the Use of Vaccines and Antiviral during Influenza Pandemic](#), which holds that those who are essential to the safety and basic functioning of the community should be the first persons vaccinated.

A good example for discussion are those in the medical community who would care for the ill. These people should be protected not only because of the increased risk they face from their continuous work exposure but also because of the essential role they play in saving the lives of others.

During a supply crisis one of the most important task facing decision makers will be to prioritize groups needing vaccination on a priority basis. Doctors and nurses working at hospitals are an obvious first choice. Less obvious are all other hospital workers: the technicians who provide respiratory care, for example; the doctors who are now administrators, primarily, and no longer see patients; the housekeepers without whom patients' rooms never get cleaned and therefore become unusable (because proper hygiene is a mainstay of flu prevention). The litany of groups with varying claims to priority status is, in short, a very long one.

Even if high priority is given to the entire hospital staff, difficult triage-type decisions must still be faced. Many medical people do not work in hospitals, for example. Nor do the first responders in the community – firemen and policemen as well as EMS (emergency medical services) workers who play an essential role in times of crisis. Truck drivers, railroad engineers, and the officers and crews of ships who transport the food, energy supplies, and other necessities of life – and keep the nation's economy on an even keel – all could justifiably lay claim to the title of “essential worker.”

Unfortunately, there simply will not be enough vaccine and/or other medications to protect all of these groups. In fact, a decision that priority be given to the entire staff of hospitals may require more vaccine than is likely to be initially available.

According to a Government Accountability Office ([GAO](#)) report, 15-37 percent of the population is likely to be affected at any given time during the pandemic. The CDC estimates that 5-20 percent of the population would be ill at any time. The difference between these seemingly conflicting estimates is that the CDC estimate includes those who are actually ill, whereas the GAO estimate also includes both those who, because they are concerned about being infected, choose not to come to work, as well as those who are staying at home to take care of a sick relative. For practical purposes, it seems reasonable to use a 15-percent average to represent the number of people staying home for all of these and perhaps other reasons.

By canceling elective procedures and taking other short-term steps a hospital may be able to operate without 15 percent (or perhaps slightly more) of its staff. The history of previous influenza pandemics suggests, though, that a future pandemic may well continue for at least several years - beyond the effectiveness of these short-term solutions. Moreover, hospitals and other medical facilities will have an extra burden to carry if 15 percent of their own service populations are seeking medical care for the flu (more, if there are large numbers of what are described as the “worried well”).

Also contentious is the issue of how to prioritize under the imperative of risk. The priority could be assigned by age, giving babies from six months to two years or so the highest priority because their immune systems are not up to the challenge of fighting off the virus; another option is to give the old and infirm high priority because their immune systems have become weak.

The Right Answers Are Not Always Fair

Coming up with the “right answers” – however that term is defined – will not be easy. During the first days of a pandemic there simply will not be enough vaccine to cover all of those in the priority groups, much less all others who, fairly or unfairly, are in lower-priority categories.

If and when an effective vaccine is available in sufficient quantity, moreover, it will be a daunting challenge to inoculate the entire population. Annual flu vaccination clinics cannot be looked at as the solution for dispensing the pan flu vaccine. “Routine” clinics conducted by public health officials and the medical communities differ significantly, in two critical ways – the first is volume; the second is security – from those needed to respond to a pan-flu outbreak.

Annual flu clinics inoculate about half of the population; numerically, therefore, the complete inoculation of the population required in a pan-flu crisis would require the capacity of twice



as many clinics. But with the estimated non-availability of 15 percent of those needed to operate existing clinics this may not be possible.

A better model to consider, perhaps, may be the local POD (points of distribution) plans developed for use under the Strategic National Stockpile (SNS) program. In the event of a pandemic flu that is killing people in large numbers it can be anticipated that when there is not enough vaccine available there will be violent encounters when and where the vaccine is believed to be. One result is that, to maintain order, even those clinics *without* vaccine probably will need a law-enforcement presence, a requirement that would undoubtedly put another strain on the community.

It seems obvious that decision makers at all levels of government – federal, state, and local – must develop the mindset that *Pandemic Influenza represents as significant a public-health emergency as a smallpox attack by a terrorist*, and then let that mindset guide their planning. The only substantive difference between these two extremely different crisis scenarios is that even the most rigorous actions and investigations by law-enforcement personnel cannot stop pandemic influenza.

Too Much To Do, And Not Enough Time

In short, time is on the side of the virus. It normally takes about six months to bring a vaccine to market. That time may be shortened somewhat by hard work and the cutting of bureaucratic red tape, but it is almost certain that major improvements in speed would be impossible.

Pandemic influenza can start at any time, independent of what is believed to be the flu “season,” and it runs its course over the span of years, not just one year. Once a pandemic strain of influenza starts to roll, moreover, it will affect a certain percentage of the population constantly for a number of years. This means that at any time during a pandemic the same estimated 15 percent of the population will not be going to work. The net effect will be that every government agency, every component of the public and private infrastructure, and every other business and non-government organization will have to operate with only 63 to 85 percent of their current work forces available – management and technical experts included – and few if any replacement workers on call as substitutes.

Dealing with a pan-flu outbreak will require exploration of the extremes of continuity both of operations and of government planning. Every agency, organization, and business should for that reason develop what might be described as an “Armageddon” plan – i.e., one that deals with the total loss of all resources. Systematically, planners should go through the normal operations of the organization and ask at least three questions: (a) “What resources are needed for each task?” (b) “What would be the impact of losing this or that specific resource or function?” (c) “What contingency plan can and should be activated to deal with the loss of each such resource or function?”

It should not be assumed, of course, that *all* provisions of an Armageddon plan would have to be put into operation at one and the same time. Such a scenario would mean that there had been a total loss of all resources, but at that point *no* contingency would work because there would be nothing to work with. The purpose in developing an Armageddon plan is that it would be a resource unto itself. Because the response to the loss of each specific resource and/or function would be spelled out in considerable detail, the plan could be activated whenever there is the loss of just one resource or function.

Government also must plan well ahead of the pan-flu time curve, not only for how essential services will continue to be provided, but also for how the legitimate leadership of government will continue. At the federal level there are provisions in place for the orderly transfer of power if the president dies or can no longer function in office (the vice president would be next in succession, then the speaker of the House, and then the president pro tempore of the Senate, and so on). Individual government agencies also should consider either setting up their own orders of succession (under the direction of the president, of course) or face the possibility of being unable to provide their services during future times of crisis. Done properly, these and other forward-looking steps would be equally applicable during any future event that might stress the system.

To summarize

Pandemic influenza represents a major threat not only to the United States but to all other countries of the world, friends and foes alike. It is for that reason that a projection of the



effects of pandemic influenza is one of the national-crisis scenarios that is of continuing concern to contingency planners. Moreover, unlike the various scenarios projecting terrorist attacks of one type or another, there is no law-enforcement solution available that might lower the risk from a pandemic. Continued surveillance, by the U.S. CDC and the World Health Organization, of the H5N1 strain of the u is likely to be the only consistent source of valid intelligence information available to contingency planners and public officials for the foreseeable future.

But that should not stop the governments of all nations – all businesses and other private-sector entities, individual citizens as well – from making their own plans and preparations now while there is still time. Even with the best, most detailed, and most comprehensive planning, though, and the most energetic follow-on effort required, there still may not be enough time to prevent the death of not just millions, but tens of millions of people throughout the world.

Tularemia and the Battle to Protect Against It

By Saskia V. Popescu

Source: <http://www.contagionlive.com/contributor/saskia-v-popescu/2018/01/tularemia-and-the-battle-to-protect-against-it>

Jan 16 – When we think of biological threats and bioterrorism, it's easy to imagine diseases like [smallpox](#), anthrax, Ebola, etc. [Tularemia](#), however, is often forgotten as a disease that poses both a public health threat and application as a biological weapon.

Its classification as a Category A agent makes the bacterium that causes tularemia, *Francisella tularensis* (*F. tularensis*), particularly challenging. Its ability to spread through both animal/vector exposures and through occupational hazards makes it unique. Tularemia is highly infectious and can spread through tick or deer fly bites, handling of infected animals, or inhalation of dust or aerosols that are contaminated. The distribution of cases mirrors that of the vectors and animals *F. tularensis* inhabits, which reflect profound changes to the environment through globalization, mass migration, and industrialization (ie, flooding, mild winters, abandoned housing, etc.). In fact, [several state-sponsored programs](#) have studied and utilized *F. tularensis* in their offensive bioweapons programs in the past. Although these offensive programs have vanished, [there is still a concern for its use as a biological weapon](#) by non-state actors or for a potential biosafety failure that would result in accidental infection in a laboratory setting.

There have also been occupational exposures due to aerosol-generating practices or laboratory safety mishaps that have occurred, which is somewhat unique to tularemia. Although [laboratory accidents have occurred](#), the natural occurrence of the disease in the environment makes the occupational exposures particularly unique. Landscape work or farming is such a risk factor that even disease [surveillance involves questions](#) involving such work for potential cases.

Naturally-occurring tularemia infections tend to follow the distribution of its animal and arthropod vectors, thus cases are seen in Martha's Vineyard, the south-central United States, the Pacific Northwest, etc. A [2003 study](#) evaluated occupational exposure to the infection in landscapers in Martha's Vineyard, Massachusetts, and found that not only were many workers seropositive, but those who were seropositive tended to use power blowers and weed-whackers and worked more hours than those who were negative. The US Centers for Disease Control and Prevention (CDC) monitor cases of the disease each year and reported 314 cases within the United States in 2015 and 180 cases in 2014. (A map of 2015 reported cases can be found [here](#).)

Because tularemia infections can occur naturally, surveillance and response efforts against the infection are critical. Antibiotics like streptomycin and doxycycline can treat the bacterial infection; however, the disease is uncommon and has non-specific symptoms, it can pose diagnostic challenges for clinicians. According to the CDC, the only [prevention strategy is to reduce exposure](#) as a vaccine is not generally available in the United States and is under review by the US Food and Drug Administration.

There have been [considerable efforts to develop an effective and available vaccine](#) for the disease; however, such attempts have been costly and difficult.

Appili Therapeutics is one company that is making progress towards a tularemia vaccine. They recently signed a license agreement with the National Research Council of Canada to



develop [ATI-1701](#), a vaccine to protect against *F. tularensis*. Partially funded by Defense Threat Reduction Agency, the hopes are to conduct pre-clinical and clinical testing and roll out this preventative measure as soon as possible.

Highly infectious diseases like tularemia pose unique threats to global health security, especially as zoonotic diseases that are susceptible to environmental and social influencers. Prevention efforts through vaccination, rapid diagnosis, and stronger surveillance will be critical as populations grow and encroach on nature.

Saskia v. Popescu, MPH, MA, CIC, is a hospital epidemiologist and infection preventionist with Phoenix Children's Hospital. During her work as an infection preventionist she performed surveillance for infectious diseases, preparedness, and Ebola-response practices. She is currently a PhD candidate in Biodefense at George Mason University where her research focuses on the role of infection prevention in facilitating global health security efforts. She is certified in Infection Control

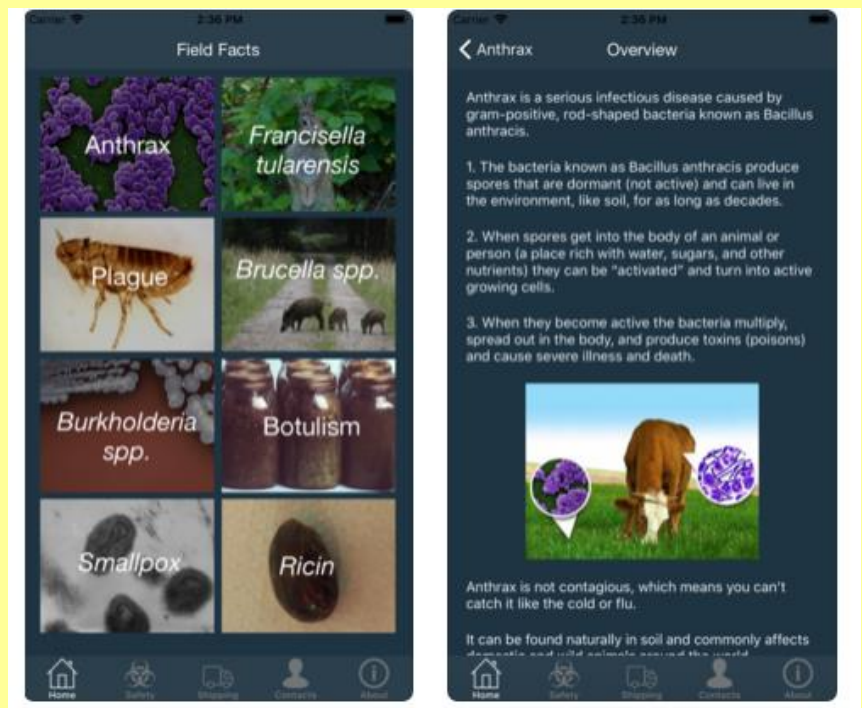


CDC app: Field Facts

Source: <https://itunes.apple.com/us/app/field-facts/id1301387266?mt=8>

Field Facts gives first-responders crucial information to use in the first few moments and hours of a response to a potential bioterrorism incident. Access descriptions of safety measures and protective clothing to protect yourself from exposure. Learn how to recognize signs and symptoms of disease associated with eight potential bioterrorism agents. And find additional expert help quickly with the contact details for the Centers for Disease Control and Prevention's Emergency Operations Center, FBI Field Offices, and state public health laboratories. The biological agents covered are:

- Ricin
- Botulism toxin
- Bacillus anthracis (anthrax)
- Yersinia pestis (plague)
- Francisella tularensis (tularemia, also known as rabbit-fever)
- Brucella (brucellosis)
- Smallpox virus
- Burkholderia (melioidosis and glanders)



Compatibility: Requires iOS 8.0 or later. Compatible with iPhone, iPad, and iPod touch.



India joins Australia Group against spread of bio-chem weapons

Source: <http://www.wionews.com/india-news/india-joins-australia-group-30086>

Jan 20 – After gaining entry into two export control regimes — MTCR and Wassenaar — India on Friday joined the Australia Group, which seeks to ensure that exports do not contribute to the development of chemical or biological weapons.



“On 19 January 2018 India formally became the 43rd member of the Australia Group (AG), the cooperative and voluntary group of countries working to counter the spread of materials, equipment and technologies that could contribute to the development or acquisition of chemical and biological weapons (CBW) by states or terrorist groups,” the AG said in a release.

Reacting to India's entry to the group, ministry of external affairs spokesperson Ravish Kumar said it would be “mutually beneficial and to help in non-proliferation”.

He said the AG membership will help in establishing India's credentials further.

India joined the Missile Technology Control Regime in 2016 and the Wassenaar Arrangement (WA) last year.

The Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies is a multilateral export control regime.

Flu spreads by aerosols, not just coughs, sneezes

Source: <http://www.homelandsecuritynewswire.com/dr20180122-flu-spreads-by-aerosols-not-just-coughs-sneezes>

Jan 22 – It is easier to spread the influenza virus (flu) than previously thought, according to a new University of Maryland-led study. People commonly believe that they can catch the flu by exposure to droplets from an infected person's coughs or sneezes or by touching contaminated surfaces. But, new information about flu transmission reveals that we may pass the flu to others just by breathing.

The study, published in the *Proceedings of the National Academy of Sciences*, provides new evidence for the potential importance of airborne transmission because of the large quantities of infectious virus researchers found in the exhaled breath from people suffering from flu.

“We found that flu cases contaminated the air around them with infectious virus just by breathing, without coughing or sneezing,” explained Dr. Donald Milton, M.D., MPH, professor of environmental health in the University of Maryland School of Public Health and lead researcher of this study. “People with flu generate infectious aerosols (tiny droplets that stay suspended in the air for a long time) even when they are not coughing, and especially during the first days of illness. So when someone is coming down with influenza, they should go home and not remain in the workplace and infect others.”

U Maryland [says](#) that Dr. Milton and his research team captured and characterized influenza virus in exhaled breath from 142 confirmed cases of people with influenza during natural breathing, prompted speech, spontaneous coughing, and sneezing, and assessed the infectivity of naturally occurring

influenza aerosols. The participants provided 218 nasopharyngeal swabs and 218 30-minute samples of exhaled breath, spontaneous coughing, and sneezing on the first, second, and third days after the onset of symptoms.

The analysis of the infectious virus recovered from these samples showed that a significant number of flu patients routinely shed infectious virus, not merely detectable RNA, into aerosol particles small enough to present a risk for airborne transmission.

Surprisingly, 11 (48 percent) of the 23 fine aerosol samples acquired in the absence of coughing had detectable viral RNA and 8 of these 11 contained infectious virus, suggesting that coughing was not necessary for infectious aerosol generation in the fine aerosol droplets. In addition, the few sneezes observed were not associated with greater viral RNA copy numbers in either coarse or fine aerosols, suggesting that sneezing does not make an important contribution to influenza virus shedding in aerosols.

“The study findings suggest that keeping surfaces clean, washing our hands all the time, and avoiding people who are coughing does not provide complete protection from getting the flu,” said Sheryl Ehrman, Don Beall Dean of the Charles W. Davidson College of Engineering at San José State University. “Staying home and out of public spaces could make a difference in the spread of the influenza virus.”

According to the authors, the findings could be used to improve mathematical models of the risk of airborne influenza transmission



from people with symptomatic illness and to develop more effective public health interventions and to control and reduce the impact of influenza epidemics and pandemics.

Improvements could be made to ventilation systems to reduce transmission risk in offices, school classrooms and subway cars, for example.

— Read more in Jing Yan et al., “Infectious virus in exhaled breath of symptomatic seasonal influenza cases from a college community,” *Proceedings of the National Academy of Sciences* (18 January 2018).



You could soon be manufacturing your own drugs—thanks to 3D printing

By Robert Service

Source: <http://www.sciencemag.org/news/2018/01/you-could-soon-be-manufacturing-your-own-drugs-thanks-3d-printing>

Jan 18 – Forget those long lines at the pharmacy: Someday soon, you might be making your own medicines at home. That’s because researchers have tailored a 3D printer to synthesize pharmaceuticals and other chemicals from simple, widely available starting compounds fed into a series of water bottle–size reactors. The work, they say, could digitize chemistry, allowing users to synthesize almost any compound anywhere in the world.

“It could become a milestone paper, a really seminal paper,” says Fraser Stoddart, a chemist and chemistry Nobel laureate at Northwestern University in Evanston, Illinois, who was not involved with the work. “This is one of those articles that has to make [people] sit up and take notice.”

3D printing [already has a broad reach](#). It’s used to make everything from shoes and car parts to blood vessels and guns. In recent years, chemists in Australia and Europe have jumped into the fray, using the benchtop devices to create small-scale chemical reactors. But the reactors are designed to be integrated into manufacturing plants to improve their efficiency and safety, says Christian Hornung, a chemical engineer and 3D printing expert at CSIRO Manufacturing in Melbourne, Australia.

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But Leroy Cronin, a chemist at the University of Glasgow in the United Kingdom, was looking for a stand-alone device. He wanted to broaden the ability of nonspecialists to make drugs and other chemicals, in essence “democratizing” chemistry in much the same way MP3 players did for music, by turning songs into a digital code that can be played by any device with the right software.

Cronin’s first stab was a 2012 paper in *Nature Chemistry* in which he and his colleagues described something he called reactionware, [3D-printed chemical reaction vessels](#) containing catalysts and other components needed to carry out specific reactions inside. By simply adding the starting compounds, Cronin’s team could synthesize a variety of simple compounds, including a ring-containing organic compound called ethylbenzene. At the time, however, Cronin says that critics doubted whether this approach would be useful for making more complex compounds, such as pharmaceuticals. “I like annoying people, scientifically,” he says. So, he pressed on.

It appears the effort paid off. In today’s issue of *Science*, Cronin and his colleagues report [printing a series of interconnected reaction vessels](#) that carry out four different chemical reactions involving 12 separate steps, from filtering to evaporating different solutions. By adding different reagents and solvents at the right times and in a precise order, they were able to convert simple, widely available starting compounds into a muscle relaxant called baclofen. And by designing reactionware to carry out different chemical reactions with different reagents, they produced other medicines, including an anticonvulsant and a drug to fight ulcers and acid reflux.

So why not just buy a reactionware kit and scrap the printing? “This approach will allow the on-demand production of chemicals and drugs that are in short supply, hard to make at big facilities, and allow customization to tailor them to the application,” Cronin says. That could



encourage the production of medicines used too rarely to justify conventional commercial production, as well as use in remote settings, such as on space missions, Hornung adds.



Cronin says that removing organic chemists from the mix is another one of his goals. These workers need to be present for most synthesis steps, and run the risk of being exposed to dangerous reagents in the process. “It will allow organic chemists to focus on creating new molecules,” he says. It could also let biologists and other nonspecialists easily create short-lived compounds on demand for their research, including fluorescently labeled compounds.

A 3D-printed reactor makes medicines on demand.

But 3D-printed reactionware could also lower the barriers to synthesizing dangerous drugs. That is “absolutely” a concern, Hornung says.

But Cronin argues that it shouldn’t prevent beneficial uses that could save many lives. One of those is that distributed chemical production could quash drug counterfeiting, a huge global problem in which drug

manufacturers replace active pharmaceutical ingredients with inert or even dangerous compounds. Counterfeit drugs are estimated to make up as much as 30% of medicines in some developing countries and cost legitimate pharmaceutical companies up to \$200 billion per year. Distributed chemical manufacturing, Cronin argues, could ensure that drugs are made as advertised, because each reactionware setup would only be able to produce a single medicine.

But it remains to be seen whether drug regulators will go along with a new way of making medicines. To do so, agencies like the U.S. Food and Drug Administration will need to rewrite their rules for validating the safety of medicines. Instead of signing off on the production facility and manufactured drug samples, regulators would have to validate that reactionware produces the desired medication. Cronin agrees it’s a hurdle. But he argues that future printed reactors could simply include a final module containing standard validation tests that produce a visual readout, much like a pregnancy test. “I think it’s manageable.”

Robert Service writes about chemistry and materials science, delving into topics ranging from solar energy and fuel cells to proteomics and artificial bone. Bob majored in psychology and international studies at the University of Oregon. From there he moved on to work on a research project at Oregon Health Sciences University. After a short stint in research, Bob decided he preferred writing about research to actually carrying it out. So it was off to New York University, where he earned a masters degree in journalism at the school’s Science and Environmental Reporting Program. In the early 1990s, Bob reported for Newsweek, where he covered science and business. In 1994, he moved to Washington, D.C., to join Science. In 1999, he moved to Portland, Oregon, and now helps cover scientific institutions in the western United States. His articles have also appeared in Scientific American and Technology Review, among other publications.

EDITOR’S COMMENT: Good idea! 3-D printing of auto-injectors; then just fill them up!

