

How the CIA made Google: Inside the secret network behind mass surveillance, endless war, and Skynet

By Nafeez Ahmed

INSURGE INTELLIGENCE, a new crowd-funded investigative journalism project, breaks the exclusive story of how the United States intelligence community funded, nurtured and incubated Google as part of a drive to dominate the world through control of information. Seed-funded by the NSA and CIA, Google was merely the first among a plethora of private sector start-ups co-opted by US intelligence to retain 'information superiority.'

The origins of this ingenious strategy trace back to a secret Pentagon-sponsored group, that for the last two decades has functioned as a bridge between the US government and elites across the business, industry, finance, corporate, and media sectors. The group has allowed some of the most powerful special interests in corporate America to systematically circumvent democratic accountability and the rule of law to influence government policies, as well as public opinion in the US and around the world. The results have been catastrophic: NSA mass surveillance, a permanent state of global war, and a new initiative to transform the US military into Skynet.

In the wake of the Charlie Hebdo attacks in Paris, western governments are moving fast to legitimize expanded powers of mass surveillance and controls on the internet, all in the name of fighting terrorism.

US and European politicians have called to protect NSA-style snooping, and to advance the capacity to intrude on internet privacy by outlawing encryption. One idea is to establish a telecoms partnership that would unilaterally delete content deemed to “fuel hatred and violence” in situations considered “appropriate.” Heated discussions are going on at government and parliamentary level to explore cracking down on lawyer-client confidentiality.

What any of this would have done to prevent the Charlie Hebdo attacks remains a mystery, especially given that we already

know the terrorists were on the radar of French intelligence for up to a decade.

There is little new in this story. The 9/11 atrocity was the first of many terrorist attacks, each succeeded by the dramatic extension of draconian state powers at the expense of civil liberties, backed up with the projection of military force in regions identified as hotspots harbouring terrorists. Yet there is little indication that this tried and tested formula has done anything to reduce the danger. If anything, we appear to be locked into a deepening cycle of violence with no clear end in sight.

As our governments push to increase their powers, *INSURGE INTELLIGENCE* can now reveal the vast extent to which the US intelligence community is implicated in nurturing the web platforms we know today, for the precise purpose of utilizing the technology as a mechanism to fight global ‘information war’—a war to legitimize the power of the few over the rest of us. The lynchpin of this story is the corporation that in many ways defines the 21st century with its unobtrusive omnipresence: Google.

Google styles itself as a friendly, funky, user-friendly tech firm that rose to prominence through a combination of skill, luck, and genuine innovation. This is true. But it is a mere fragment of the story. In reality, Google is a smokescreen behind which lurks the US military-industrial complex.

The inside story of Google’s rise, revealed here for the first time, opens a can of worms that goes far beyond Google, unexpectedly shining a light on the existence of a parasitical network driving the evolution of the US national security apparatus, and profiting obscenely from its operation.

The shadow network

For the last two decades, US foreign and intelligence strategies have resulted in a global ‘war on terror’ consisting of prolonged military invasions in the Muslim world and comprehensive surveillance of civilian populations. These strategies have been incubated, if not dictated, by a secret network inside and beyond the Pentagon.

Established under the Clinton administration, consolidated under Bush, and firmly entrenched under Obama, this bipartisan network of mostly neoconservative ideologues sealed its dominion inside the US Department of Defense (DoD) by the dawn of 2015, through the operation of an obscure corporate entity outside the Pentagon, but run by the Pentagon.

In 1999, the CIA created its own venture capital investment firm, In-Q-Tel, to fund promising start-ups that might create technologies useful for intelligence agencies. But the inspiration for In-Q-Tel came earlier, when the Pentagon set up its own private sector outfit.

Known as the 'Highlands Forum,' this private network has operated as a bridge between the Pentagon and powerful American elites outside the military since the mid-1990s. Despite changes in civilian administrations, the network around the Highlands Forum has become increasingly successful in dominating US defense policy.

Giant defense contractors like Booz Allen Hamilton and Science Applications International Corporation are sometimes referred to as the 'shadow intelligence community' due to the revolving doors between them and government, and their capacity to simultaneously influence and profit from defense policy. But while these contractors compete for power and money, they also collaborate where it counts. The Highlands Forum has for 20 years provided an off the record space for some of the most prominent members of the shadow intelligence community to convene with senior US government officials, alongside other leaders in relevant industries.

I first stumbled upon the existence of this network in November 2014, when I reported for VICE's *Motherboard* that US defense secretary Chuck Hagel's newly announced 'Defense Innovation Initiative' was really about building Skynet—or something like it, essentially to dominate an emerging era of automated robotic warfare.

That story was based on a little-known Pentagon-funded 'white paper' published two months earlier by the National Defense University (NDU) in Washington DC, a leading US military-run institution that, among other things, generates research to develop US defense policy at the highest levels. The white

paper clarified the thinking behind the new initiative, and the revolutionary scientific and technological developments it hoped to capitalize on.

The Highlands Forum

The co-author of that NDU white paper is Linton Wells, a 51-year veteran US defense official who served in the Bush administration as the Pentagon's chief information officer, overseeing the National Security Agency (NSA) and other spy agencies. He still holds active top-secret security clearances, and according to a report by *Government Executive* magazine in 2006 he chaired the 'Highlands Forum', founded by the Pentagon in 1994.



Linton Wells II (right) former Pentagon chief information officer and assistant secretary of defense for networks, at a recent Pentagon Highlands Forum session. Rosemary Wenchel, a senior official in the US Department of Homeland Security, is sitting next to him

New Scientist magazine (paywall) has compared the Highlands Forum to elite meetings like “Davos, Ditchley and Aspen,” describing it as “far less well known, yet... arguably just as influential a talking shop.” Regular Forum meetings bring together “innovative people to consider interactions between policy and technology. Its biggest successes have been in the development of high-tech network-based warfare.”

Given Wells' role in such a Forum, perhaps it was not surprising that his defense transformation white paper was able to have such a profound impact on actual Pentagon policy. But if that was the case, why had no one noticed?

Despite being sponsored by the Pentagon, I could find no official page on the DoD website about the Forum. Active and former US military and intelligence sources had never heard of it, and neither did national security journalists. I was baffled.

The Pentagon's intellectual capital venture firm

In the prologue to his 2007 book, *A Crowd of One: The Future of Individual Identity*, John Clippinger, an MIT scientist of the Media Lab Human Dynamics Group, described how he participated in a "Highlands Forum" gathering, an "invitation-only meeting funded by the Department of Defense and chaired by the assistant for networks and information integration." This was a senior DoD post overseeing operations and policies for the Pentagon's most powerful spy agencies including the NSA, the Defense Intelligence Agency (DIA), among others. Starting from 2003, the position was transitioned into what is now the undersecretary of defense for intelligence. The Highlands Forum, Clippinger wrote, was founded by a retired US Navy captain named Dick O'Neill. Delegates include senior US military officials across numerous agencies and divisions—"captains, rear admirals, generals, colonels, majors and commanders" as well as "members of the DoD leadership."

What at first appeared to be the Forum's main website describes Highlands as "an informal cross-disciplinary network sponsored by Federal Government," focusing on "information, science and technology." Explanation is sparse, beyond a single 'Department of Defense' logo.

But Highlands also has another website describing itself as an "intellectual capital venture firm" with "extensive experience assisting corporations, organizations, and government leaders." The firm provides a "wide range of services, including: strategic planning, scenario creation and gaming for expanding global markets," as well as "working with clients to build strategies for execution." 'The Highlands Group Inc.,' the website says, organizes a whole range of Forums on these issues.

For instance, in addition to the Highlands Forum, since 9/11 the Group runs the ‘Island Forum,’ an international event held in association with Singapore’s Ministry of Defense, which O’Neill oversees as “lead consultant.” The Singapore Ministry of Defense website describes the Island Forum as “patterned after the Highlands Forum organized for the US Department of Defense.” Documents leaked by NSA whistleblower Edward Snowden confirmed that Singapore played a key role in permitting the US and Australia to tap undersea cables to spy on Asian powers like Indonesia and Malaysia.

The Highlands Group website also reveals that Highlands is partnered with one of the most powerful defense contractors in the United States. Highlands is “supported by a network of companies and independent researchers,” including “our Highlands Forum partners for the past ten years at SAIC; and the vast Highlands network of participants in the Highlands Forum.”

SAIC stands for the US defense firm, Science Applications International Corporation, which changed its name to Leidos in 2013, operating SAIC as a subsidiary. SAIC/Leidos is among the top 10 largest defense contractors in the US, and works closely with the US intelligence community, especially the NSA. According to investigative journalist Tim Shorrock, the first to disclose the vast extent of the privatization of US intelligence with his seminal book *Spies for Hire*, SAIC has a “symbiotic relationship with the NSA: the agency is the company’s largest single customer and SAIC is the NSA’s largest contractor.”



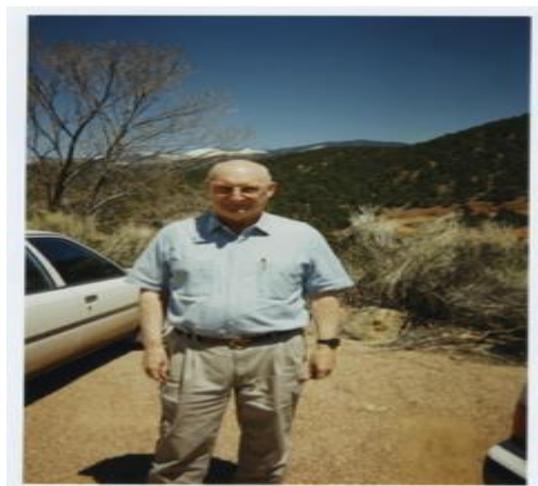
Richard ‘Dick’ Patrick O’Neill, founding president of the Pentagon’s Highlands Forum

The full name of Captain “Dick” O’Neill, the founding president of the Highlands Forum, is Richard Patrick O’Neill, who after his work in the Navy joined the DoD. He served his last post as deputy for strategy and policy in the Office of the Assistant Secretary for Defense for Command, Control, Communications and Intelligence, before setting up Highlands.

The Club of Yoda

But Clippinger also referred to another mysterious individual revered by Forum attendees:

“He sat at the back of the room, expressionless behind thick, black-rimmed glasses. I never heard him utter a word... Andrew (Andy) Marshall is an icon within DoD. Some call him Yoda, indicative of his mythical inscrutable status... He had served many administrations and was widely regarded as above partisan politics. He was a supporter of the Highlands Forum and a regular fixture from its beginning.” Since 1973, Marshall has headed up one of the Pentagon’s most powerful agencies, the Office of Net Assessment (ONA), the US defense secretary’s internal ‘think tank’ which conducts highly classified research on future planning for defense policy across the US military and intelligence community. The ONA has played a key role in major Pentagon strategy initiatives, including Maritime Strategy, the Strategic Defense Initiative, the Competitive Strategies Initiative, and the Revolution in Military Affairs.



Andrew ‘Yoda’ Marshall, head of the Pentagon’s Office of Net Assessment (ONA) and co-chair of the Highlands Forum, at an early Highlands event in 1996 at the Santa Fe Institute. Marshall is retiring as of January 2015

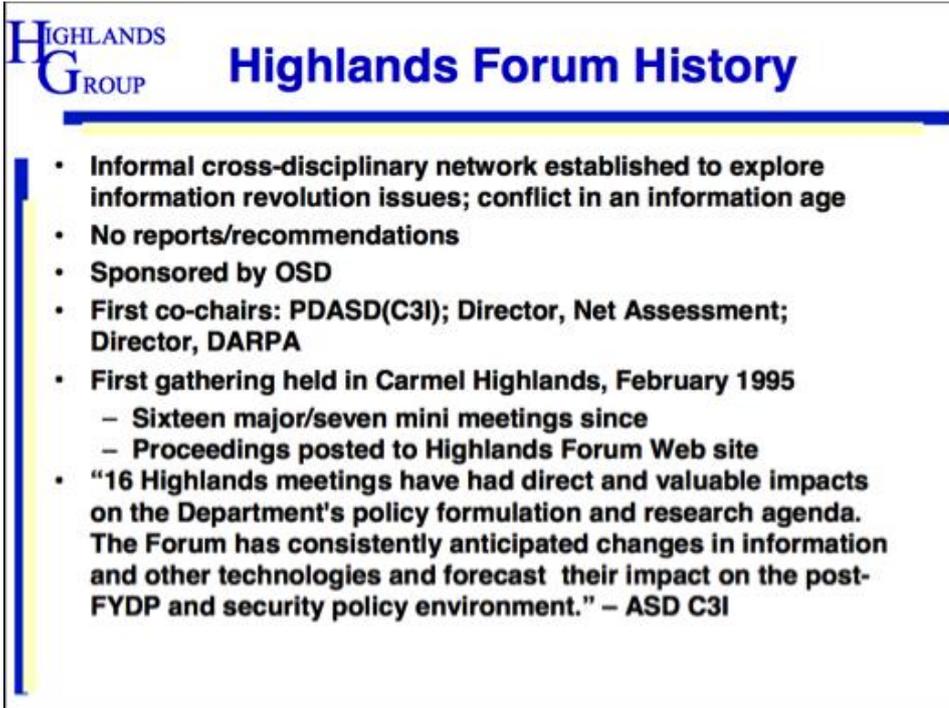
In a rare 2002 profile in *Wired*, reporter Douglas McGray described Andrew Marshall, now 93 years old, as “the DoD’s most elusive” but “one of its most influential” officials. McGray added that “Vice President Dick Cheney, Defense Secretary Donald Rumsfeld, and Deputy Secretary Paul Wolfowitz”—widely considered the hawks of the neoconservative movement in American politics—were among Marshall’s “star protégés.”

Speaking at a low-key Harvard University seminar a few months after 9/11, Highlands Forum founding president Richard O’Neill said that Marshall was much more than a “regular fixture” at the Forum. “Andy Marshall is our co-chair, so indirectly everything that we do goes back into Andy’s system,” he told the audience. “Directly, people who are in the Forum meetings may be going back to give briefings to Andy on a variety of topics and to synthesize things.” He also said that the Forum had a third co-chair: the director of the Defense Advanced Research and Projects Agency (DARPA), which at that time was a Rumsfeld appointee, Anthony J. Tether. Before joining DARPA, Tether was vice president of SAIC’s Advanced Technology Sector.



Anthony J. Tether, director of DARPA and co-chair of the Pentagon’s Highlands Forum from June 2001 to February 2009

The Highlands Forum’s influence on US defense policy has thus operated through three main channels: its sponsorship by the Office of the Secretary of Defense (around the middle of last decade this was transitioned specifically to the Office of the Undersecretary of Defense for Intelligence, which is in charge of the main surveillance agencies); its direct link to Andrew ‘Yoda’ Marshall’s ONA; and its direct link to DARPA.



HIGHLANDS GROUP

Highlands Forum History

- Informal cross-disciplinary network established to explore information revolution issues; conflict in an information age
- No reports/recommendations
- Sponsored by OSD
- First co-chairs: PDASD(C3I); Director, Net Assessment; Director, DARPA
- First gathering held in Carmel Highlands, February 1995
 - Sixteen major/seven mini meetings since
 - Proceedings posted to Highlands Forum Web site
- “16 Highlands meetings have had direct and valuable impacts on the Department’s policy formulation and research agenda. The Forum has consistently anticipated changes in information and other technologies and forecast their impact on the post-FYDP and security policy environment.” – ASD C3I

A slide from Richard O’Neill’s presentation at Harvard University in 2001

According to Clippinger in *A Crowd of One*, “what happens at informal gatherings such as the Highlands Forum could, over time and through unforeseen curious paths of influence, have enormous impact, not just within the DoD but throughout the world.” He wrote that the Forum’s ideas have “moved from being heretical to mainstream. Ideas that were anathema in 1999 had been adopted as policy just three years later.”

Although the Forum does not produce “consensus recommendations,” its impact is deeper than a traditional government advisory committee. “The ideas that emerge from meetings are available for use by decision-makers as well as by people from the think tanks,” according to O’Neill:

“We’ll include people from Booz, SAIC, RAND, or others at our meetings... We welcome that kind of cooperation, because, truthfully, they have the gravitas. They are there for the long haul and are able to influence government policies with real scholarly work... We produce ideas and interaction and networks for these people to take and use as they need them.”

My repeated requests to O’Neill for information on his work at the Highlands Forum were ignored. The Department of Defense

also did not respond to multiple requests for information and comment on the Forum.

Information warfare

The Highlands Forum has served as a two-way ‘influence bridge’: on the one hand, for the shadow network of private contractors to influence the formulation of information operations policy across US military intelligence; and on the other, for the Pentagon to influence what is going on in the private sector. There is no clearer evidence of this than the truly instrumental role of the Forum in incubating the idea of mass surveillance as a mechanism to dominate information on a global scale.

In 1989, Richard O’Neill, then a US Navy cryptologist, wrote a paper for the US Naval War College, *‘Toward a methodology for perception management.’* In his book, *Future Wars*, Col. John Alexander, then a senior officer in the US Army’s Intelligence and Security Command (INSCOM), records that O’Neill’s paper for the first time outlined a strategy for “perception management” as part of information warfare (IW). O’Neill’s proposed strategy identified three categories of targets for IW: adversaries, so they believe they are vulnerable; potential partners, “so they perceive the cause [of war] as just”; and finally, civilian populations and the political leadership so they “perceive the cost as worth the effort.” A secret briefing based on O’Neill’s work “made its way to the top leadership” at DoD. “They acknowledged that O’Neill was right and told him to bury it.

Except the DoD didn’t bury it. Around 1994, the Highlands Group was founded by O’Neill as an official Pentagon project at the appointment of Bill Clinton’s then defense secretary William Perry—who went on to join SAIC’s board of directors after retiring from government in 2003.

In O’Neill’s own words, the group would function as the Pentagon’s ‘ideas lab’. According to *Government Executive*, military and information technology experts gathered at the first Forum meeting “to consider the impacts of IT and globalization on the United States and on warfare. How would the Internet and other emerging technologies change the

world?” The meeting helped plant the idea of “network-centric warfare” in the minds of “the nation’s top military thinkers.”

Excluding the public

Official Pentagon records confirm that the Highlands Forum’s primary goal was to support DoD policies on O’Neill’s specialism: information warfare. According to the Pentagon’s 1997 *Annual Report to the President and the Congress* under a section titled ‘Information Operations,’ (IO) the Office of the Secretary of Defense (OSD) had authorized the “establishment of the Highlands Group of key DoD, industry, and academic IO experts” to coordinate IO across federal military intelligence agencies.

The following year’s DoD annual report reiterated the Forum’s centrality to information operations: “To examine IO issues, DoD sponsors the Highlands Forum, which brings together government, industry, and academic professionals from various fields.”

Notice that in 1998, the Highlands ‘Group’ became a ‘Forum.’ According to O’Neill, this was to avoid subjecting Highlands Forums meetings to “bureaucratic restrictions.” What he was alluding to was the Federal Advisory Committee Act (FACA), which regulates the way the US government can formally solicit the advice of special interests.

Known as the ‘open government’ law, FACA requires that US government officials cannot hold closed-door or secret consultations with people outside government to develop policy. All such consultations should take place via federal advisory committees that permit public scrutiny. FACA requires that meetings be held in public, announced via the Federal Register, that advisory groups are registered with an office at the General Services Administration, among other requirements intended to maintain accountability to the public interest.

But *Government Executive* reported that “O’Neill and others believed” such regulatory issues “would quell the free flow of ideas and no-holds-barred discussions they sought.” Pentagon lawyers had warned that the word ‘group’ might necessitate certain obligations and advised running the whole thing

privately: “So O’Neill renamed it the Highlands Forum and moved into the private sector to manage it as a consultant to the Pentagon.” The Pentagon Highlands Forum thus runs under the mantle of O’Neill’s ‘intellectual capital venture firm,’ ‘Highlands Group Inc.’

In 1995, a year after William Perry appointed O’Neill to head up the Highlands Forum, SAIC—the Forum’s “partner” organization—launched a new Center for Information Strategy and Policy under the direction of “Jeffrey Cooper, a member of the Highlands Group who advises senior Defense Department officials on information warfare issues.” The Center had precisely the same objective as the Forum, to function as “a clearinghouse to bring together the best and brightest minds in information warfare by sponsoring a continuing series of seminars, papers and symposia which explore the implications of information warfare in depth.” The aim was to “enable leaders and policymakers from government, industry, and academia to address key issues surrounding information warfare to ensure that the United States retains its edge over any and all potential enemies.”

Despite FACA regulations, federal advisory committees are already heavily influenced, if not captured, by corporate power. So in bypassing FACA, the Pentagon overrode even the loose restrictions of FACA, by permanently excluding any possibility of public engagement.

O’Neill’s claim that there are no reports or recommendations is disingenuous. By his own admission, the secret Pentagon consultations with industry that have taken place through the Highlands Forum since 1994 have been accompanied by regular presentations of academic and policy papers, recordings and notes of meetings, and other forms of documentation that are locked behind a login only accessible by Forum delegates. This violates the spirit, if not the letter, of FACA—in a way that is patently intended to circumvent democratic accountability and the rule of law.

The Highlands Forum doesn’t need to produce consensus recommendations. Its purpose is to provide the Pentagon a shadow social networking mechanism to cement lasting relationships with corporate power, and to identify new talent,

that can be used to fine-tune information warfare strategies in absolute secrecy.

Total participants in the DoD's Highlands Forum number over a thousand, although sessions largely consist of small closed workshop style gatherings of maximum 25–30 people, bringing together experts and officials depending on the subject. Delegates have included senior personnel from SAIC and Booz Allen Hamilton, RAND Corp., Cisco, Human Genome Sciences, eBay, PayPal, IBM, Google, Microsoft, AT&T, the BBC, Disney, General Electric, Enron, among innumerable others; Democrat and Republican members of Congress and the Senate; senior executives from the US energy industry such as Daniel Yergin of IHS Cambridge Energy Research Associates; and key people involved in both sides of presidential campaigns.

Other participants have included senior media professionals: David Ignatius, associate editor of the *Washington Post* and at the time the executive editor of the *International Herald Tribune*; Thomas Friedman, long-time *New York Times* columnist; Arnaud de Borchgrave, an editor at *Washington Times* and *United Press International*; Steven Levy, a former *Newsweek* editor, senior writer for *Wired* and now chief tech editor at *Medium*; Lawrence Wright, staff writer at the *New Yorker*; Noah Shachtman, executive editor at the *Daily Beast*; Rebecca McKinnon, co-founder of *Global Voices Online*; Nik Gowing of the BBC; and John Markoff of the *New York Times*.

Due to its current sponsorship by the OSD's undersecretary of defense for intelligence, the Forum has inside access to the chiefs of the main US surveillance and reconnaissance agencies, as well as the directors and their assistants at DoD research agencies, from DARPA, to the ONA. This also means that the Forum is deeply plugged into the Pentagon's policy research task forces.

Google: seeded by the Pentagon

In 1994—the same year the Highlands Forum was founded under the stewardship of the Office of the Secretary of Defense, the ONA, and DARPA—two young PhD students at Stanford University, Sergey Brin and Larry Page, made their breakthrough on the first automated web crawling and page ranking application. That application remains the core

component of what eventually became Google's search service. Brin and Page had performed their work with funding from the Digital Library Initiative (DLI), a multi-agency programme of the National Science Foundation (NSF), NASA and DARPA.

But that's just one side of the story.

Throughout the development of the search engine, Sergey Brin reported regularly and directly to two people who were not Stanford faculty at all: Dr. Bhavani Thuraisingham and Dr. Rick Steinheiser. Both were representatives of a sensitive US intelligence community research programme on information security and data-mining.

Thuraisingham is currently the Louis A. Beecherl distinguished professor and executive director of the Cyber Security Research Institute at the University of Texas, Dallas, and a sought-after expert on data-mining, data management and information security issues. But in the 1990s, she worked for the MITRE Corp., a leading US defense contractor, where she managed the Massive Digital Data Systems initiative, a project sponsored by the NSA, CIA, and the Director of Central Intelligence, to foster innovative research in information technology.

"We funded Stanford University through the computer scientist Jeffrey Ullman, who had several promising graduate students working on many exciting areas," Prof. Thuraisingham told me. "One of them was Sergey Brin, the founder of Google. The intelligence community's MDDS program essentially provided Brin seed-funding, which was supplemented by many other sources, including the private sector."

This sort of funding is certainly not unusual, and Sergey Brin's being able to receive it by being a graduate student at Stanford appears to have been incidental. The Pentagon was all over computer science research at this time. But it illustrates how deeply entrenched the culture of Silicon Valley is in the values of the US intelligence community.

In an extraordinary document hosted by the website of the University of Texas, Thuraisingham recounts that from 1993 to 1999, "the Intelligence Community [IC] started a program called

Massive Digital Data Systems (MDDS) that I was managing for the Intelligence Community when I was at the MITRE Corporation.” The program funded 15 research efforts at various universities, including Stanford. Its goal was developing “data management technologies to manage several terabytes to petabytes of data,” including for “query processing, transaction management, metadata management, storage management, and data integration.”

At the time, Thuraisingham was chief scientist for data and information management at MITRE, where she led team research and development efforts for the NSA, CIA, US Air Force Research Laboratory, as well as the US Navy’s Space and Naval Warfare Systems Command (SPAWAR) and Communications and Electronic Command (CECOM). She went on to teach courses for US government officials and defense contractors on data-mining in counter-terrorism.

In her University of Texas article, she attaches the copy of an abstract of the US intelligence community’s MDDS program that had been presented to the “Annual Intelligence Community Symposium” in 1995. The abstract reveals that the primary sponsors of the MDDS programme were three agencies: the NSA, the CIA’s Office of Research & Development, and the intelligence community’s Community Management Staff (CMS) which operates under the Director of Central Intelligence. Administrators of the program, which provided funding of around 3–4 million dollars per year for 3–4 years, were identified as Hal Curran (NSA), Robert Kluttz (CMS), Dr. Claudia Pierce (NSA), Dr. Rick Steinheiser (ORD—standing for the CIA’s Office of Research and Devepment), and Dr. Thuraisingham herself.

Thuraisingham goes on in her article to reiterate that this joint CIA-NSA program partly funded Sergey Brin to develop the core of Google, through a grant to Stanford managed by Brin’s supervisor Prof. Jeffrey D. Ullman:

“In fact, the Google founder Mr. Sergey Brin was partly funded by this program while he was a PhD student at Stanford. He together with his advisor Prof. Jeffrey Ullman and my colleague at MITRE, Dr. Chris Clifton [Mitre’s chief scientist in IT], developed the Query Flocks System which produced solutions

for mining large amounts of data stored in databases. I remember visiting Stanford with Dr. Rick Steinheiser from the Intelligence Community and Mr. Brin would rush in on roller blades, give his presentation and rush out. In fact the last time we met in September 1998, Mr. Brin demonstrated to us his search engine which became Google soon after.”

Brin and Page officially incorporated Google as a company in September 1998, the very month they last reported to Thuraisingham and Steinheiser. ‘Query Flocks’ was also part of Google’s patented ‘PageRank’ search system, which Brin developed at Stanford under the CIA-NSA-MDDS programme, as well as with funding from the NSF, IBM and Hitachi. That year, MITRE’s Dr. Chris Clifton, who worked under Thuraisingham to develop the ‘Query Flocks’ system, co-authored a paper with Brin’s supervisor, Prof. Ullman, and the CIA’s Rick Steinheiser. Titled ‘Knowledge Discovery in Text,’ the paper was presented at an academic conference.

“The MDDS funding that supported Brin was significant as far as seed-funding goes, but it was probably outweighed by the other funding streams,” said Thuraisingham. “The duration of Brin’s funding was around two years or so. In that period, I and my colleagues from the MDDS would visit Stanford to see Brin and monitor his progress every three months or so. We didn’t supervise exactly, but we did want to check progress, point out potential problems and suggest ideas. In those briefings, Brin did present to us on the query flocks research, and also demonstrated to us versions of the Google search engine.”

Brin thus reported to Thuraisingham and Steinheiser regularly about his work developing Google.

UPDATE 2.05PM GMT [2nd Feb 2015]:

Since publication of this article, Prof. Thuraisingham has amended her article referenced above. The amended version includes a new modified statement, followed by a copy of the original version of her account of the MDDS. In this amended version, Thuraisingham rejects the idea that CIA funded Google, and says instead:

“In fact Prof. Jeffrey Ullman (at Stanford) and my colleague at MITRE Dr. Chris Clifton together with some others developed

the Query Flocks System, as part of MDDS, which produced solutions for mining large amounts of data stored in databases. Also, Mr. Sergey Brin, the cofounder of Google, was part of Prof. Ullman's research group at that time. I remember visiting Stanford with Dr. Rick Steinheiser from the Intelligence Community periodically and Mr. Brin would rush in on roller blades, give his presentation and rush out. During our last visit to Stanford in September 1998, Mr. Brin demonstrated to us his search engine which I believe became Google soon after...

There are also several inaccuracies in Dr. Ahmed's article (dated January 22, 2015). For example, the MDDS program was not a 'sensitive' program as stated by Dr. Ahmed; it was an Unclassified program that funded universities in the US. Furthermore, Sergey Brin never reported to me or to Dr. Rick Steinheiser; he only gave presentations to us during our visits to the Department of Computer Science at Stanford during the 1990s. Also, MDDS never funded Google; it funded Stanford University."

Here, there is no substantive factual difference in Thuraisingham's accounts, other than to assert that her statement associating Sergey Brin with the development of 'query flocks' is mistaken. Notably, this acknowledgement is derived not from her own knowledge, but from this very article quoting a comment from a Google spokesperson.

However, the bizarre attempt to disassociate Google from the MDDS program misses the mark. Firstly, the MDDS never funded Google, because during the development of the core components of the Google search engine, there was no company incorporated with that name. The grant was instead provided to Stanford University through Prof. Ullman, through whom some MDDS funding was used to support Brin who was co-developing Google at the time. Secondly, Thuraisingham then adds that Brin never "reported" to her or the CIA's Steinheiser, but admits he "gave presentations to us during our visits to the Department of Computer Science at Stanford during the 1990s." It is unclear, though, what the distinction is here between reporting, and delivering a detailed presentation—either way, Thuraisingham confirms that she and the CIA had taken a keen interest in Brin's development of Google. Thirdly, Thuraisingham describes the MDDS program

as “unclassified,” but this does not contradict its “sensitive” nature. As someone who has worked for decades as an intelligence contractor and advisor, Thuraisingham is surely aware that there are many ways of categorizing intelligence, including ‘sensitive but unclassified.’ A number of former US intelligence officials I spoke to said that the almost total lack of public information on the CIA and NSA’s MDDS initiative suggests that although the program was not classified, it is likely instead that its contents was considered sensitive, which would explain efforts to minimise transparency about the program and the way it fed back into developing tools for the US intelligence community. Fourthly, and finally, it is important to point out that the MDDS abstract which Thuraisingham includes in her University of Texas document states clearly not only that the Director of Central Intelligence’s CMS, CIA and NSA were the overseers of the MDDS initiative, but that the intended customers of the project were “DoD, IC, and other government organizations”: the Pentagon, the US intelligence community, and other relevant US government agencies.

In other words, the provision of MDDS funding to Brin through Ullman, under the oversight of Thuraisingham and Steinheiser, was fundamentally because they recognized the potential utility of Brin’s work developing Google to the Pentagon, intelligence community, and the federal government at large.

The MDDS programme is actually referenced in several papers co-authored by Brin and Page while at Stanford, specifically highlighting its role in financially sponsoring Brin in the development of Google. In their 1998 paper published in the *Bulletin of the IEEE Computer Society Technical Committee on Data Engineering*, they describe the automation of methods to extract information from the web via “Dual Iterative Pattern Relation Extraction,” the development of “a global ranking of Web pages called PageRank,” and the use of PageRank “to develop a novel search engine called Google.” Through an opening footnote, Sergey Brin confirms he was “Partially supported by the Community Management Staff’s Massive Digital Data Systems Program, NSF grant IRI-96-31952”—confirming that Brin’s work developing Google was indeed partly-funded by the CIA-NSA-MDDS program.

This NSF grant identified alongside the MDDS, whose project report lists Brin among the students supported (without mentioning the MDDS), was different to the NSF grant to Larry Page that included funding from DARPA and NASA. The project report, authored by Brin's supervisor Prof. Ullman, goes on to say under the section 'Indications of Success' that "there are some new stories of startups based on NSF-supported research." Under 'Project Impact,' the report remarks: "Finally, the google project has also gone commercial as Google.com."

Thuraisingham's account, including her new amended version, therefore demonstrates that the CIA-NSA-MDDS program was not only partly funding Brin throughout his work with Larry Page developing Google, but that senior US intelligence representatives including a CIA official oversaw the evolution of Google in this pre-launch phase, all the way until the company was ready to be officially founded. Google, then, had been enabled with a "significant" amount of seed-funding and oversight from the Pentagon: namely, the CIA, NSA, and DARPA.

The DoD could not be reached for comment.

When I asked Prof. Ullman to confirm whether or not Brin was partly funded under the intelligence community's MDDS program, and whether Ullman was aware that Brin was regularly briefing the CIA's Rick Steinheiser on his progress in developing the Google search engine, Ullman's responses were evasive: "May I know whom you represent and why you are interested in these issues? Who are your 'sources'?" He also denied that Brin played a significant role in developing the 'query flocks' system, although it is clear from Brin's papers that he did draw on that work in co-developing the PageRank system with Page.

When I asked Ullman whether he was denying the US intelligence community's role in supporting Brin during the development of Google, he said: "I am not going to dignify this nonsense with a denial. If you won't explain what your theory is, and what point you are trying to make, I am not going to help you in the slightest."

The MDDS abstract published online at the University of Texas confirms that the rationale for the CIA-NSA project was to

“provide seed money to develop data management technologies which are of high-risk and high-pay-off,” including techniques for “querying, browsing, and filtering; transaction processing; accesses methods and indexing; metadata management and data modelling; and integrating heterogeneous databases; as well as developing appropriate architectures.” The ultimate vision of the program was to “provide for the seamless access and fusion of massive amounts of data, information and knowledge in a heterogeneous, real-time environment” for use by the Pentagon, intelligence community and potentially across government.

These revelations corroborate the claims of Robert Steele, former senior CIA officer and a founding civilian deputy director of the Marine Corps Intelligence Activity, whom I interviewed for *The Guardian* last year on open source intelligence. Citing sources at the CIA, Steele had said in 2006 that Steinheiser, an old colleague of his, was the CIA’s main liaison at Google and had arranged early funding for the pioneering IT firm. At the time, *Wired* founder John Batelle managed to get this official denial from a Google spokesperson in response to Steele’s assertions:

“The statements related to Google are completely untrue.”

This time round, despite multiple requests and conversations, a Google spokesperson declined to comment.

UPDATE: As of 5.41PM GMT [22nd Jan 2015], Google’s director of corporate communication got in touch and asked me to include the following statement:

“Sergey Brin was not part of the Query Flocks Program at Stanford, nor were any of his projects funded by US Intelligence bodies.”

This is what I wrote back:

My response to that statement would be as follows: Brin himself in his own paper acknowledges funding from the Community Management Staff of the Massive Digital Data Systems (MDDS) initiative, which was supplied through the NSF. The MDDS was an intelligence community program set up

by the CIA and NSA. I also have it on record, as noted in the piece, from Prof. Thuraingham of University of Texas that she managed the MDDS program on behalf of the US intelligence community, and that her and the CIA's Rick Steinheiser met Brin every three months or so for two years to be briefed on his progress developing Google and PageRank. Whether Brin worked on query flocks or not is neither here nor there.

In that context, you might want to consider the following questions:

- 1) Does Google deny that Brin's work was part-funded by the MDDS via an NSF grant?
- 2) Does Google deny that Brin reported regularly to Thuraingham and Steinheiser from around 1996 to 1998 until September that year when he presented the Google search engine to them?

Total Information Awareness

A call for papers for the MDDS was sent out via email list on November 3rd 1993 from senior US intelligence official David Charvonia, director of the research and development coordination office of the intelligence community's CMS. The reaction from Tatu Ylonen (celebrated inventor of the widely used secure shell [SSH] data protection protocol) to his colleagues on the email list is telling: "Crypto relevance? Makes you think whether you should protect your data." The email also confirms that defense contractor and Highlands Forum partner, SAIC, was managing the MDDS submission process, with abstracts to be sent to Jackie Booth of the CIA's Office of Research and Development via a SAIC email address.

By 1997, Thuraingham reveals, shortly before Google became incorporated and while she was still overseeing the development of its search engine software at Stanford, her thoughts turned to the national security applications of the MDDS program. In the acknowledgements to her book, *Web Data Mining and Applications in Business Intelligence and Counter-Terrorism (2003)*, Thuraingham writes that she and "Dr. Rick Steinheiser of the CIA, began discussions with Defense Advanced Research Projects Agency on applying data-mining for counter-terrorism," an idea that resulted

directly from the MDDS program which partly funded Google. “These discussions eventually developed into the current EELD (Evidence Extraction and Link Detection) program at DARPA.”

So the very same senior CIA official and CIA-NSA contractor involved in providing the seed-funding for Google were simultaneously contemplating the role of data-mining for counter-terrorism purposes, and were developing ideas for tools actually advanced by DARPA.

Today, as illustrated by her recent oped in the *New York Times*, Thuraingham remains a staunch advocate of data-mining for counter-terrorism purposes, but also insists that these methods must be developed by government in cooperation with civil liberties lawyers and privacy advocates to ensure that robust procedures are in place to prevent potential abuse. She points out, damningly, that with the quantity of information being collected, there is a high risk of false positives.

In 1993, when the MDDS program was launched and managed by MITRE Corp. on behalf of the US intelligence community, University of Virginia computer scientist Dr. Anita K. Jones—a MITRE trustee—landed the job of DARPA director and head of research and engineering across the Pentagon. She had been on the board of MITRE since 1988. From 1987 to 1993, Jones simultaneously served on SAIC’s board of directors. As the new head of DARPA from 1993 to 1997, she also co-chaired the Pentagon’s Highlands Forum during the period of Google’s pre-launch development at Stanford under the MDSS.

Thus, when Thuraingham and Steinheiser were talking to DARPA about the counter-terrorism applications of MDDS research, Jones was DARPA director and Highlands Forum co-chair. That year, Jones left DARPA to return to her post at the University of Virginia. The following year, she joined the board of the National Science Foundation, which of course had also just funded Brin and Page, and also returned to the board of SAIC. When she left DoD, Senator Chuck Robb paid Jones the following tribute : “She brought the technology and operational military communities together to design detailed plans to sustain US dominance on the battlefield into the next century.”



Dr. Anita Jones, head of DARPA from 1993–1997, and co-chair of the Pentagon Highlands Forum from 1995–1997, during which officials in charge of the CIA-NSA-MDSS program were funding Google, and in communication with DARPA about data-mining for counterterrorism

On the board of the National Science Foundation from 1992 to 1998 (including a stint as chairman from 1996) was Richard N. Zare. This was the period in which the NSF sponsored Sergey Brin and Larry Page in association with DARPA. In June 1994, Prof. Zare, a chemist at Stanford, participated with Prof. Jeffrey Ullman (who supervised Sergey Brin's research), on a panel sponsored by Stanford and the National Research Council discussing the need for scientists to show how their work "ties to national needs." The panel brought together scientists and policymakers, including "Washington insiders."

DARPA's EELD program, inspired by the work of Thuraisingham and Steinheiser under Jones' watch, was rapidly adapted and integrated with a suite of tools to conduct comprehensive surveillance under the Bush administration.

According to DARPA official Ted Senator, who led the EELD program for the agency's short-lived Information Awareness Office, EELD was among a range of "promising techniques" being prepared for integration "into the prototype TIA system." TIA stood for Total Information Awareness, and was the main global electronic eavesdropping and data-mining program deployed by the Bush administration after 9/11. TIA had been set up by Iran-Contra conspirator Admiral John Poindexter, who was appointed in 2002 by Bush to lead DARPA's new Information Awareness Office.

The Xerox Palo Alto Research Center (PARC) was another contractor among 26 companies (also including SAIC) that received million dollar contracts from DARPA (the specific quantities remained classified) under Poindexter, to push forward the TIA surveillance program in 2002 onwards. The research included “behaviour-based profiling,” “automated detection, identification and tracking” of terrorist activity, among other data-analyzing projects. At this time, PARC’s director and chief scientist was John Seely Brown. Both Brown and Poindexter were Pentagon Highlands Forum participants—Brown on a regular basis until recently.

TIA was purportedly shut down in 2003 due to public opposition after the program was exposed in the media, but the following year Poindexter participated in a Pentagon Highlands Group session in Singapore, alongside defense and security officials from around the world. Meanwhile, Ted Senator continued to manage the EELD program among other data-mining and analysis projects at DARPA until 2006, when he left to become a vice president at SAIC. He is now a SAIC/Leidos technical fellow.

Google, DARPA and the money trail

Long before the appearance of Sergey Brin and Larry Page, Stanford University’s computer science department had a close working relationship with US military intelligence. A letter dated November 5th 1984 from the office of renowned artificial intelligence (AI) expert, Prof Edward Feigenbaum, addressed to Rick Steinheiser, gives the latter directions to Stanford’s Heuristic Programming Project, addressing Steinheiser as a member of the “AI Steering Committee.” A list of attendees at a contractor conference around that time, sponsored by the Pentagon’s Office of Naval Research (ONR), includes Steinheiser as a delegate under the designation “OPNAV Op-115”—which refers to the Office of the Chief of Naval Operations’ program on operational readiness, which played a major role in advancing digital systems for the military.

From the 1970s, Prof. Feigenbaum and his colleagues had been running Stanford’s Heuristic Programming Project under contract with DARPA, continuing through to the 1990s. Feigenbaum alone had received around over \$7 million in this

period for his work from DARPA, along with other funding from the NSF, NASA, and ONR.

Brin's supervisor at Stanford, Prof. Jeffrey Ullman, was in 1996 part of a joint funding project of DARPA's Intelligent Integration of Information program. That year, Ullman co-chaired DARPA-sponsored meetings on data exchange between multiple systems.

In September 1998, the same month that Sergey Brin briefed US intelligence representatives Steinheiser and Thuraisingham, tech entrepreneurs Andreas Bechtolsheim and David Cheriton invested \$100,000 each in Google. Both investors were connected to DARPA.

As a Stanford PhD student in electrical engineering in the 1980s, Bechtolsheim's pioneering SUN workstation project had been funded by DARPA and the Stanford computer science department—this research was the foundation of Bechtolsheim's establishment of Sun Microsystems, which he co-founded with William Joy.

As for Bechtolsheim's co-investor in Google, David Cheriton, the latter is a long-time Stanford computer science professor who has an even more entrenched relationship with DARPA. His bio at the University of Alberta, which in November 2014 awarded him an honorary science doctorate, says that Cheriton's "research has received the support of the US Defense Advanced Research Projects Agency (DARPA) for over 20 years."

In the meantime, Bechtolsheim left Sun Microsystems in 1995, co-founding Granite Systems with his fellow Google investor Cheriton as a partner. They sold Granite to Cisco Systems in 1996, retaining significant ownership of Granite, and becoming senior Cisco executives.

An email obtained from the Enron Corpus (a database of 600,000 emails acquired by the Federal Energy Regulatory Commission and later released to the public) from Richard O'Neill, inviting Enron executives to participate in the Highlands Forum, shows that Cisco and Granite executives are intimately connected to the Pentagon. The email reveals that in May 2000, Bechtolsheim's partner and Sun Microsystems co-

founder, William Joy—who was then chief scientist and corporate executive officer there—had attended the Forum to discuss nanotechnology and molecular computing.

In 1999, Joy had also co-chaired the President’s Information Technology Advisory Committee, overseeing a report acknowledging that DARPA had:

“... revised its priorities in the 90’s so that all information technology funding was judged in terms of its benefit to the warfighter.”

Throughout the 1990s, then, DARPA’s funding to Stanford, including Google, was explicitly about developing technologies that could augment the Pentagon’s military intelligence operations in war theatres.

The Joy report recommended more federal government funding from the Pentagon, NASA, and other agencies to the IT sector. Greg Papadopoulos, another of Bechtolsheim’s colleagues as then Sun Microsystems chief technology officer, also attended a Pentagon Highlands’ Forum meeting in September 2000.

In November, the Pentagon Highlands Forum hosted Sue Bostrom, who was vice president for the internet at Cisco, sitting on the company’s board alongside Google co-investors Bechtolsheim and Cheriton. The Forum also hosted Lawrence Zuriff, then a managing partner of Granite, which Bechtolsheim and Cheriton had sold to Cisco. Zuriff had previously been an SAIC contractor from 1993 to 1994, working with the Pentagon on national security issues, specifically for Marshall’s Office of Net Assessment. In 1994, both the SAIC and the ONA were, of course, involved in co-establishing the Pentagon Highlands Forum. Among Zuriff’s output during his SAIC tenure was a paper titled *‘Understanding Information War’*, delivered at a SAIC-sponsored US Army Roundtable on the Revolution in Military Affairs.

After Google’s incorporation, the company received \$25 million in equity funding in 1999 led by Sequoia Capital and Kleiner Perkins Caufield & Byers. According to *Homeland Security Today*, “A number of Sequoia-bankrolled start-ups have contracted with the Department of Defense, especially after 9/11 when Sequoia’s Mark Kvamme met with Defense Secretary

Donald Rumsfeld to discuss the application of emerging technologies to warfighting and intelligence collection.” Similarly, Kleiner Perkins had developed “a close relationship” with In-Q-Tel, the CIA venture capitalist firm that funds start-ups “to advance ‘priority’ technologies of value” to the intelligence community.

John Doerr, who led the Kleiner Perkins investment in Google obtaining a board position, was a major early investor in Becholshtein’s Sun Microsystems at its launch. He and his wife Anne are the main funders behind Rice University’s Center for Engineering Leadership (RCEL), which in 2009 received \$16 million from DARPA for its platform-aware-compilation-environment (PACE) ubiquitous computing R&D program. Doerr also has a close relationship with the Obama administration, which he advised shortly after it took power to ramp up Pentagon funding to the tech industry. In 2013, at the Fortune Brainstorm TECH conference, Doerr applauded “how the DoD’s DARPA funded GPS, CAD, most of the major computer science departments, and of course, the Internet.”

From inception, in other words, Google was incubated, nurtured and financed by interests that were directly affiliated or closely aligned with the US military intelligence community: many of whom were embedded in the Pentagon Highlands Forum.

Google captures the Pentagon

In 2003, Google began customizing its search engine under special contract with the CIA for its Intelink Management Office, “overseeing top-secret, secret and sensitive but unclassified intranets for CIA and other IC agencies,” according to *Homeland Security Today*. That year, CIA funding was also being “quietly” funneled through the National Science Foundation to projects that might help create “new capabilities to combat terrorism through advanced technology.”

The following year, Google bought the firm Keyhole, which had originally been funded by In-Q-Tel. Using Keyhole, Google began developing the advanced satellite mapping software behind Google Earth. Former DARPA director and Highlands Forum co-chair Anita Jones had been on the board of In-Q-Tel at this time, and remains so today.

Then in November 2005, In-Q-Tel issued notices to sell \$2.2 million of Google stocks. Google's relationship with US intelligence was further brought to light when an IT contractor told a closed Washington DC conference of intelligence professionals on a not-for-attribution basis that at least one US intelligence agency was working to "leverage Google's [user] data monitoring" capability as part of an effort to acquire data of "national security intelligence interest."

A photo on Flickr dated March 2007 reveals that Google research director and AI expert Peter Norvig attended a Pentagon Highlands Forum meeting that year in Carmel, California. Norvig's intimate connection to the Forum as of that year is also corroborated by his role in quest editing the 2007 Forum reading list.

The photo below shows Norvig in conversation with Lewis Shepherd, who at that time was senior technology officer at the Defense Intelligence Agency, responsible for investigating, approving, and architecting "all new hardware/software systems and acquisitions for the Global Defense Intelligence IT Enterprise," including "big data technologies." Shepherd now works at Microsoft. Norvig was a computer research scientist at Stanford University in 1991 before joining Bechtolsheim's Sun Microsystems as senior scientist until 1994, and going on to head up NASA's computer science division.



Lewis Shepherd (left), then a senior technology officer at the Pentagon's Defense Intelligence Agency, talking to Peter Norvig (right), renowned expert in artificial intelligence expert and director of research at Google. This photo is from a Highlands Forum meeting in 2007.

Norvig shows up on O'Neill's Google Plus profile as one of his close connections. Scoping the rest of O'Neill's Google Plus connections illustrates that he is directly connected not just to a wide range of Google executives, but also to some of the biggest names in the US tech community.

Those connections include Michele Weslander Quaid, an ex-CIA contractor and former senior Pentagon intelligence official who is now Google's chief technology officer where she is developing programs to "best fit government agencies' needs"; Elizabeth Churchill, Google director of user experience; James Kuffner, a humanoid robotics expert who now heads up Google's robotics division and who introduced the term 'cloud robotics'; Mark Drapeau, director of innovation engagement for Microsoft's public sector business; Lili Cheng, general manager of Microsoft's Future Social Experiences (FUSE) Labs; Jon Udell, Microsoft 'evangelist'; Cory Ondrejka, vice president of engineering at Facebook; to name just a few.

In 2010, Google signed a multi-billion dollar no-bid contract with the NSA's sister agency, the National Geospatial-Intelligence Agency (NGA). The contract was to use Google Earth for visualization services for the NGA. Google had developed the software behind Google Earth by purchasing Keyhole from the CIA venture firm In-Q-Tel.

Then a year after, in 2011, another of O'Neill's Google Plus connections, Michele Quaid—who had served in executive positions at the NGA, National Reconnaissance Office and the Office of the Director of National Intelligence—left her government role to become Google 'innovation evangelist' and the point-person for seeking government contracts. Quaid's last role before her move to Google was as a senior representative of the Director of National Intelligence to the Intelligence, Surveillance, and Reconnaissance Task Force, and a senior advisor to the undersecretary of defense for intelligence's director of Joint and Coalition Warfighter Support (J&CWS). Both roles involved information operations at their core. Before her Google move, in other words, Quaid worked closely with the Office of the Undersecretary of Defense for Intelligence, to which the Pentagon's Highlands Forum is subordinate. Quaid has herself attended the Forum, though precisely when and how often I could not confirm.

In March 2012, then DARPA director Regina Dugan—who in that capacity was also co-chair of the Pentagon Highlands Forum—followed her colleague Quaid into Google to lead the company’s new Advanced Technology and Projects Group. During her Pentagon tenure, Dugan led on strategic cyber security and social media, among other initiatives. She was responsible for focusing “an increasing portion” of DARPA’s work “on the investigation of offensive capabilities to address military-specific needs,” securing \$500 million of government funding for DARPA cyber research from 2012 to 2017.



Regina Dugan, former head of DARPA and Highlands Forum co-chair, now a senior Google executive—trying her best to look the part

By November 2014, Google’s chief AI and robotics expert James Kuffner was a delegate alongside O’Neill at the Highlands Island Forum 2014 in Singapore, to explore ‘Advancement in Robotics and Artificial Intelligence: Implications for Society, Security and Conflict.’ The event included 26 delegates from Austria, Israel, Japan, Singapore, Sweden, Britain and the US, from both industry and government. Kuffner’s association with the Pentagon, however, began much earlier. In 1997, Kuffner was a researcher during his Stanford PhD for a Pentagon-funded project on networked autonomous mobile robots, sponsored by DARPA and the US Navy.

Rumsfeld and persistent surveillance

In sum, many of Google’s most senior executives are affiliated with the Pentagon Highlands Forum, which throughout the period of Google’s growth over the last decade, has surfaced

repeatedly as a connecting and convening force. The US intelligence community's incubation of Google from inception occurred through a combination of direct sponsorship and informal networks of financial influence, themselves closely aligned with Pentagon interests.

The Highlands Forum itself has used the informal relationship building of such private networks to bring together defense and industry sectors, enabling the fusion of corporate and military interests in expanding the covert surveillance apparatus in the name of national security. The power wielded by the shadow network represented in the Forum can, however, be gauged most clearly from its impact during the Bush administration, when it played a direct role in literally writing the strategies and doctrines behind US efforts to achieve 'information superiority.'

In December 2001, O'Neill confirmed that strategic discussions at the Highlands Forum were feeding directly into Andrew Marshall's DoD-wide strategic review ordered by President Bush and Donald Rumsfeld to upgrade the military, including the Quadrennial Defense Review—and that some of the earliest Forum meetings “resulted in the writing of a group of DoD policies, strategies, and doctrine for the services on information warfare.” That process of “writing” the Pentagon's information warfare policies “was done in conjunction with people who understood the environment differently—not only US citizens, but also foreign citizens, and people who were developing corporate IT.”

The Pentagon's post-9/11 information warfare doctrines were, then, written not just by national security officials from the US and abroad: but also by powerful corporate entities in the defense and technology sectors.

In April that year, Gen. James McCarthy had completed his defense transformation review ordered by Rumsfeld. His report repeatedly highlighted mass surveillance as integral to DoD transformation. As for Marshall, his follow-up report for Rumsfeld was going to develop a blueprint determining the Pentagon's future in the 'information age.'

O'Neill also affirmed that to develop information warfare doctrine, the Forum had held extensive discussions on electronic surveillance and “what constitutes an act of war in

an information environment.” Papers feeding into US defense policy written through the late 1990s by RAND consultants John Arquilla and David Rondfeldt, both longstanding Highlands Forum members, were produced “as a result of those meetings,” exploring policy dilemmas on how far to take the goal of ‘Information Superiority.’ “One of the things that was shocking to the American public was that we weren’t pilfering Milosevic’s accounts electronically when we in fact could,” commented O’Neill.

Although the R&D process around the Pentagon transformation strategy remains classified, a hint at the DoD discussions going on in this period can be gleaned from a 2005 US Army School of Advanced Military Studies research monograph in the DoD journal, *Military Review*, authored by an active Army intelligence officer.

“The idea of Persistent Surveillance as a transformational capability has circulated within the national Intelligence Community (IC) and the Department of Defense (DoD) for at least three years,” the paper said, referencing the Rumsfeld-commissioned transformation study.

The Army paper went on to review a range of high-level official military documents, including one from the Office of the Chairman of the Joint Chiefs of Staff, showing that “Persistent Surveillance” was a fundamental theme of the information-centric vision for defense policy across the Pentagon.

We now know that just two months before O’Neill’s address at Harvard in 2001, under the TIA program, President Bush had secretly authorized the NSA’s domestic surveillance of Americans without court-approved warrants, in what appears to have been an illegal modification of the ThinThread data-mining project—as later exposed by NSA whistleblowers William Binney and Thomas Drake.

The surveillance-startup nexus

From here on, Highlands Forum partner SAIC played a key role in the NSA roll out from inception. Shortly after 9/11, Brian Sharkey, chief technology officer of SAIC’s ELS3 Sector (focusing on IT systems for emergency responders), teamed up with John Poindexter to propose the TIA surveillance program.

SAIC's Sharkey had previously been deputy director of the Information Systems Office at DARPA through the 1990s.

Meanwhile, around the same time, SAIC vice president for corporate development, Samuel Visner, became head of the NSA's signals-intelligence programs. SAIC was then among a consortium receiving a \$280 million contract to develop one of the NSA's secret eavesdropping systems. By 2003, Visner returned to SAIC to become director of strategic planning and business development of the firm's intelligence group.

That year, the NSA consolidated its TIA programme of warrantless electronic surveillance, to keep "track of individuals" and understand "how they fit into models" through risk profiles of American citizens and foreigners. TIA was doing this by integrating databases on finance, travel, medical, educational and other records into a "virtual, centralized grand database."

This was also the year that the Bush administration drew up its notorious Information Operations Roadmap. Describing the internet as a "vulnerable weapons system," Rumsfeld's IO roadmap had advocated that Pentagon strategy "should be based on the premise that the Department [of Defense] will 'fight the net' as it would an enemy weapons system." The US should seek "maximum control" of the "full spectrum of globally emerging communications systems, sensors, and weapons systems," advocated the document.

The following year, John Poindexter, who had proposed and run the TIA surveillance program via his post at DARPA, was in Singapore participating in the Highlands 2004 Island Forum. Other delegates included then Highlands Forum co-chair and Pentagon CIO Linton Wells; president of notorious Pentagon information warfare contractor, John Rendon; Karl Lowe, director of the Joint Forces Command (JFCOM) Joint Advanced Warfighting Division; Air Vice Marshall Stephen Dalton, capability manager for information superiority at the UK Ministry of Defense; Lt. Gen. Johan Kihl, Swedish army Supreme Commander HQ's chief of staff; among others.

As of 2006, SAIC had been awarded a multi-million dollar NSA contract to develop a big data-mining project called ExecuteLocus, despite the colossal \$1 billion failure of its

preceding contract, known as 'Trailblazer.' Core components of TIA were being "quietly continued" under "new code names," according to *Foreign Policy's* Shane Harris, but had been concealed "behind the veil of the classified intelligence budget." The new surveillance program had by then been fully transitioned from DARPA's jurisdiction to the NSA.

This was also the year of yet another Singapore Island Forum led by Richard O'Neill on behalf of the Pentagon, which included senior defense and industry officials from the US, UK, Australia, France, India and Israel. Participants also included senior technologists from Microsoft, IBM, as well as Gilman Louie, partner at technology investment firm Alsop Louie Partners.

Gilman Louie is a former CEO of In-Q-Tel—the CIA firm investing especially in start-ups developing data mining technology. In-Q-Tel was founded in 1999 by the CIA's Directorate of Science and Technology, under which the Office of Research and Development (ORD)—which was part of the Google-funding MDSS program—had operated. The idea was to essentially replace the functions once performed by the ORD, by mobilizing the private sector to develop information technology solutions for the entire intelligence community.

Louie had led In-Q-Tel from 1999 until January 2006—including when Google bought Keyhole, the In-Q-Tel-funded satellite mapping software. Among his colleagues on In-Q-Tel's board in this period were former DARPA director and Highlands Forum co-chair Anita Jones (who is still there), as well as founding board member William Perry: the man who had appointed O'Neill to set-up the Highlands Forum in the first place. Joining Perry as a founding In-Q-Tel board member was John Seely Brown, then chief scientist at Xerox Corp and director of its Palo Alto Research Center (PARC) from 1990 to 2002, who is also a long-time senior Highlands Forum member since inception.

In addition to the CIA, In-Q-Tel has also been backed by the FBI, NGA, and Defense Intelligence Agency, among other agencies. More than 60 percent of In-Q-Tel's investments under Louie's watch were "in companies that specialize in automatically collecting, sifting through and understanding

oceans of information,” according to Medill School of Journalism’s News21, which also noted that Louie himself had acknowledged it was not clear “whether privacy and civil liberties will be protected” by government’s use of these technologies “for national security.”

The transcript of Richard O’Neill’s late 2001 seminar at Harvard shows that the Pentagon Highlands Forum had first engaged Gilman Louie long before the Island Forum, in fact, shortly after 9/11 to explore “what’s going on with In-Q-Tel.” That Forum session focused on how to “take advantage of the speed of the commercial market that wasn’t present inside the science and technology community of Washington” and to understand “the implications for the DoD in terms of the strategic review, the QDR, Hill action, and the stakeholders.” Participants of the meeting included “senior military people,” combatant commanders, “several of the senior flag officers,” some “defense industry people” and various US representatives including Republican Congressman William Mac Thornberry and Democrat Senator Joseph Lieberman.

Both Thornberry and Lieberman are staunch supporters of NSA surveillance, and have consistently acted to rally support for pro-war, pro-surveillance legislation. O’Neill’s comments indicate that the Forum’s role is not just to enable corporate contractors to write Pentagon policy, but to rally political support for government policies adopted through the Forum’s informal brand of shadow networking.

Repeatedly, O’Neill told his Harvard audience that his job as Forum president was to scope case studies from real companies across the private sector, like eBay and Human Genome Sciences, to figure out the basis of US ‘Information Superiority’—“how to dominate” the information market—and leverage this for “what the president and the secretary of defense wanted to do with regard to transformation of the DoD and the strategic review.”

By 2007, a year after the Island Forum meeting that included Gilman Louie, Facebook received its second round of \$12.7 million worth of funding from Accel Partners. Accel was headed up by James Breyer, former chair of the National Venture Capital Association (NVCA) where Louie also served on the

board while still CEO of In-Q-Tel. Both Louie and Breyer had previously served together on the board of BBN Technologies—which had recruited ex-DARPA chief and In-Q-Tel trustee Anita Jones.

Facebook's 2008 round of funding was led by Greylock Venture Capital, which invested \$27.5 million. The firm's senior partners include Howard Cox, another former NVCA chair who also sits on the board of In-Q-Tel. Apart from Breyer and Zuckerberg, Facebook's only other board member is Peter Thiel, co-founder of defense contractor Palantir which provides all sorts of data-mining and visualization technologies to US government, military and intelligence agencies, including the NSA and FBI, and which itself was nurtured to financial viability by Highlands Forum members.

Palantir co-founders Thiel and Alex Karp met with John Poindexter in 2004, according to *Wired*, the same year Poindexter had attended the Highlands Island Forum in Singapore. They met at the home of Richard Perle, another Andrew Marshall acolyte. Poindexter helped Palantir open doors, and to assemble "a legion of advocates from the most influential strata of government." Thiel had also met with Gilman Louie of In-Q-Tel, securing the backing of the CIA in this early phase.

And so we come full circle. Data-mining programs like ExecuteLocus and projects linked to it, which were developed throughout this period, apparently laid the groundwork for the new NSA programmes eventually disclosed by Edward Snowden. By 2008, as Facebook received its next funding round from Greylock Venture Capital, documents and whistleblower testimony confirmed that the NSA was effectively resurrecting the TIA project with a focus on Internet data-mining via comprehensive monitoring of e-mail, text messages, and Web browsing.

We also now know thanks to Snowden that the NSA's XKeyscore 'Digital Network Intelligence' exploitation system was designed to allow analysts to search not just Internet databases like emails, online chats and browsing history, but also telephone services, mobile phone audio, financial transactions and global air transport communications—

essentially the entire global telecommunications grid. Highlands Forum partner SAIC played a key role, among other contractors, in producing and administering the NSA's XKeyscore, and was recently implicated in NSA hacking of the privacy network Tor.

The Pentagon Highlands Forum was therefore intimately involved in all this as a convening network—but also quite directly. Confirming his pivotal role in the expansion of the US-led global surveillance apparatus, then Forum co-chair, Pentagon CIO Linton Wells, told FedTech magazine in 2009 that he had overseen the NSA's roll out of “an impressive long-term architecture last summer that will provide increasingly sophisticated security until 2015 or so.”

The Goldman Sachs connection

When I asked Wells about the Forum's role in influencing US mass surveillance, he responded only to say he would prefer not to comment and that he no longer leads the group.

As Wells is no longer in government, this is to be expected—but he is still connected to Highlands. As of September 2014, after delivering his influential white paper on Pentagon transformation, he joined the Monterey Institute for International Studies (MIIS) Cyber Security Initiative (CySec) as a distinguished senior fellow.

Sadly, this was not a form of trying to keep busy in retirement. Wells' move underscored that the Pentagon's conception of information warfare is not just about surveillance, but about the exploitation of surveillance to influence both government and public opinion.

The MIIS CySec initiative is now formally partnered with the Pentagon Highlands Forum through a Memorandum of Understanding signed with MIIS provost Dr Amy Sands, who sits on the Secretary of State's International Security Advisory Board. The MIIS CySec website states that the MoU signed with Richard O'Neill:

“... paves the way for future joint MIIS CySec-Highlands Group sessions that will explore the impact of technology on security, peace and information engagement. For nearly 20 years the

Highlands Group has engaged private sector and government leaders, including the Director of National Intelligence, DARPA, Office of the Secretary of Defense, Office of the Secretary of Homeland Security and the Singaporean Minister of Defence, in creative conversations to frame policy and technology research areas.”

Who is the financial benefactor of the new Pentagon Highlands-partnered MIIS CySec initiative? According to the [MIIS CySec site](#), the initiative was launched “through a generous donation of seed funding from George Lee.” George C. Lee is a senior partner at Goldman Sachs, where he is chief information officer of the investment banking division, and chairman of the Global Technology, Media and Telecom (TMT) Group.

But here’s the kicker. In 2011, it was Lee who engineered Facebook’s \$50 billion valuation, and previously handled deals for other Highlands-connected tech giants like Google, Microsoft and eBay. Lee’s then boss, Stephen Friedman, a former CEO and chairman of Goldman Sachs, and later senior partner on the firm’s executive board, was a also founding board member of In-Q-Tel alongside Highlands Forum overlord William Perry and Forum member John Seely Brown.

In 2001, Bush appointed Stephen Friedman to the President’s Intelligence Advisory Board, and then to chair that board from 2005 to 2009. Friedman previously served alongside Paul Wolfowitz and others on the 1995–6 presidential commission of inquiry into US intelligence capabilities, and in 1996 on the Jeremiah Panel that produced a report to the Director of the National Reconnaissance Office (NRO)—one of the surveillance agencies plugged into the Highlands Forum. Friedman was on the Jeremiah Panel with Martin Faga, then senior vice president and general manager of MITRE Corp’s Center for Integrated Intelligence Systems—where Thuraisingham, who managed the CIA-NSA-MDDS program that inspired DARPA counter-terrorist data-mining, was also a lead engineer.

In the footnotes to a chapter for the book, *Cyberspace and National Security* (Georgetown University Press), SAIC/Leidos executive Jeff Cooper reveals that another Goldman Sachs senior partner Philip J. Venables—who as chief information risk officer leads the firm’s programs on information security—

delivered a Highlands Forum presentation in 2008 at what was called an 'Enrichment Session on Deterrence.' Cooper's chapter draws on Venables' presentation at Highlands "with permission." In 2010, Venables participated with his then boss Friedman at an Aspen Institute meeting on the world economy. For the last few years, Venables has also sat on various NSA cybersecurity award review boards.

In sum, the investment firm responsible for creating the billion dollar fortunes of the tech sensations of the 21st century, from Google to Facebook, is intimately linked to the US military intelligence community; with Venables, Lee and Friedman either directly connected to the Pentagon Highlands Forum, or to senior members of the Forum.

Fighting terror with terror

The convergence of these powerful financial and military interests around the Highlands Forum, through George Lee's sponsorship of the Forum's new partner, the MIIS Cysec initiative, is revealing in itself.

MIIS Cysec's director, Dr, Itamara Lochard, has long been embedded in Highlands. She regularly "presents current research on non-state groups, governance, technology and conflict to the US Office of the Secretary of Defense Highlands Forum," according to her Tufts University bio. She also, "regularly advises US combatant commanders" and specializes in studying the use of information technology by "violent and non-violent sub-state groups."



Dr Itamara Lochard is a senior Highlands Forum member and Pentagon information operations expert. She directs the MIIS CyberSec initiative that now supports the Pentagon Highlands Forum with funding from Goldman Sachs partner George Lee, who led the valuations of Facebook and Google.

Dr Lochard maintains a comprehensive database of 1,700 non-state groups including “insurgents, militias, terrorists, complex criminal organizations, organized gangs, malicious cyber actors and strategic non-violent actors,” to analyze their “organizational patterns, areas of cooperation, strategies and tactics.” Notice, here, the mention of “strategic non-violent actors”—which perhaps covers NGOs and other groups or organizations engaged in social political activity or campaigning, judging by the focus of other DoD research programs.

As of 2008, Lochard has been an adjunct professor at the US Joint Special Operations University where she teaches a top secret advanced course in ‘Irregular Warfare’ that she designed for senior US special forces officers. She has previously taught courses on ‘Internal War’ for senior “political-military officers” of various Gulf regimes.

Her views thus disclose much about what the Highlands Forum has been advocating all these years. In 2004, Lochard was co-author of a study for the US Air Force’s Institute for National Security Studies on US strategy toward ‘non-state armed groups.’ The study on the one hand argued that non-state armed groups should be urgently recognized as a ‘tier one security priority,’ and on the other that the proliferation of armed groups “provide strategic opportunities that can be exploited to help achieve policy goals. There have and will be instances where the United States may find collaborating with armed group is in its strategic interests.” But “sophisticated tools” must be developed to differentiate between different groups and understand their dynamics, to determine which groups should be countered, and which could be exploited for US interests. “Armed group profiles can likewise be employed to identify ways in which the United States may assist certain armed groups whose success will be advantageous to US foreign policy objectives.”

In 2008, Wikileaks published a leaked restricted US Army Special Operations field manual, which demonstrated that the sort of thinking advocated by the likes of Highlands expert Lochard had been explicitly adopted by US special forces.

Lochard's work thus demonstrates that the Highlands Forum sat at the intersection of advanced Pentagon strategy on surveillance, covert operations and irregular warfare: mobilizing mass surveillance to develop detailed information on violent and non-violent groups perceived as potentially threatening to US interests, or offering opportunities for exploitation, thus feeding directly into US covert operations.

That, ultimately, is why the CIA, the NSA, the Pentagon, spawned Google. So they could run their secret dirty wars with even greater efficiency than ever before.

Part 2

Mass surveillance is about control. It's promulgators may well claim, and even believe, that it is about control for the greater good, a control that is needed to keep a cap on disorder, to be fully vigilant to the next threat. But in a context of rampant political corruption, widening economic inequalities, and escalating resource stress due to climate change and energy volatility, mass surveillance can become a tool of power to merely perpetuate itself, at the public's expense.

A major function of mass surveillance that is often overlooked is that of knowing the adversary to such an extent that they can be manipulated into defeat. The problem is that the adversary is not just terrorists. It's you and me. To this day, the role of information warfare as propaganda has been in full swing, though systematically ignored by much of the media.

Here, *INSURGE INTELLIGENCE* exposes how the Pentagon Highlands Forum's co-optation of tech giants like Google to pursue mass surveillance, has played a key role in secret efforts to manipulate the media as part of an information war against the American government, the American people, and the rest of the world: to justify endless war, and ceaseless military expansionism.

The war machine

In September 2013, the website of the Monterey Institute for International Studies' Cyber Security Initiative (MIIS CySec) posted a final version of a paper on 'cyber-deterrence' by CIA consultant Jeffrey Cooper, vice president of the US defense

contractor SAIC and a founding member of the Pentagon's Highlands Forum. The paper was presented to then NSA director Gen. Keith Alexander at a Highlands Forum session titled 'Cyber Commons, Engagement and Deterrence' in 2010.



Gen. Keith Alexander (middle), who served as director of the NSA and chief of the Central Security Service from 2005 to 2014, as well as commander of the US Cyber Command from 2010 to 2014, at the 2010 Highlands Forum session on cyber-deterrence

MIIS CySec is formally partnered with the Pentagon's Highlands Forum through an MoU signed between the provost and Forum president Richard O'Neill, while the initiative itself is funded by George C. Lee: the Goldman Sachs executive who led the billion dollar valuations of Facebook, Google, eBay, and other tech companies.

Cooper's eye-opening paper is no longer available at the MIIS site, but a final version of it is available via the logs of a public national security conference hosted by the American Bar Association. Currently, Cooper is chief innovation officer at SAIC/Leidos, which is among a consortium of defense technology firms including Booz Allen Hamilton and others contracted to develop NSA surveillance capabilities.

The Highlands Forum briefing for the NSA chief was commissioned under contract by the undersecretary of defense for intelligence, and based on concepts developed at previous Forum meetings. It was presented to Gen. Alexander at a "closed session" of the Highlands Forum moderated by MIIS Cysec director, Dr. Itamara Lochard, at the Center for Strategic and International Studies (CSIS) in Washington DC.



SAIC/Leidos' Jeffrey Cooper (middle), a founding member of the Pentagon's Highlands Forum, listening to Phil Venables (right), senior partner at Goldman Sachs, at the 2010 Forum session on cyber-deterrence at the CSIS

Like Rumsfeld's IO roadmap, Cooper's NSA briefing described "digital information systems" as both a "great source of vulnerability" and "powerful tools and weapons" for "national security." He advocated the need for US cyber intelligence to maximize "in-depth knowledge" of potential and actual adversaries, so they can identify "every potential leverage point" that can be exploited for deterrence or retaliation. "Networked deterrence" requires the US intelligence community to develop "deep understanding and specific knowledge about the particular networks involved and their patterns of linkages, including types and strengths of bonds," as well as using cognitive and behavioural science to help predict patterns. His paper went on to essentially set out a theoretical architecture for modelling data obtained from surveillance and social media mining on potential "adversaries" and "counterparties."

A year after this briefing with the NSA chief, Michele Weslander Quaid—another Highlands Forum delegate—joined Google to become chief technology officer, leaving her senior role in the Pentagon advising the undersecretary of defense for intelligence. Two months earlier, the Defense Science Board (DSB) *Task Force on Defense Intelligence* published its report on Counterinsurgency (COIN), Intelligence, Surveillance and Reconnaissance (IRS) Operations. Quaid was among the government intelligence experts who advised and briefed the Defense Science Board Task Force in preparing the report. Another expert who briefed the Task Force was Highlands Forum veteran Linton Wells. The DSB report itself had been commissioned by Bush appointee James Clapper, then undersecretary of defense for intelligence—who had also

commissioned Cooper's Highlands Forum briefing to Gen. Alexander. Clapper is now Obama's Director of National Intelligence, in which capacity he lied under oath to Congress by claiming in March 2013 that the NSA does not collect any data at all on American citizens.

Michele Quaid's track record across the US military intelligence community was to transition agencies into using web tools and cloud technology. The imprint of her ideas are evident in key parts of the DSB Task Force report, which described its purpose as being to "influence investment decisions" at the Pentagon "by recommending appropriate intelligence capabilities to assess insurgencies, understand a population in their environment, and support COIN operations."

The report named 24 countries in South and Southeast Asia, North and West Africa, the Middle East and South America, which would pose "possible COIN challenges" for the US military in coming years. These included Pakistan, Mexico, Yemen, Nigeria, Guatemala, Gaza/West Bank, Egypt, Saudi Arabia, Lebanon, among other "autocratic regimes." The report argued that "economic crises, climate change, demographic pressures, resource scarcity, or poor governance could cause these states (or others) to fail or become so weak that they become targets for aggressors/insurgents." From there, the "global information infrastructure" and "social media" can rapidly "amplify the speed, intensity, and momentum of events" with regional implications. "Such areas could become sanctuaries from which to launch attacks on the US homeland, recruit personnel, and finance, train, and supply operations."

The imperative in this context is to increase the military's capacity for "left of bang" operations—before the need for a major armed forces commitment—to avoid insurgencies, or pre-empt them while still in incipient phase. The report goes on to conclude that "the Internet and social media are critical sources of social network analysis data in societies that are not only literate, but also connected to the Internet." This requires "monitoring the blogosphere and other social media across many different cultures and languages" to prepare for "population-centric operations."

The Pentagon must also increase its capacity for “behavioral modeling and simulation” to “better understand and anticipate the actions of a population” based on “foundation data on populations, human networks, geography, and other economic and social characteristics.” Such “population-centric operations” will also “increasingly” be needed in “nascent resource conflicts, whether based on water-crises, agricultural stress, environmental stress, or rents” from mineral resources. This must include monitoring “population demographics as an organic part of the natural resource framework.”

Other areas for augmentation are “overhead video surveillance,” “high resolution terrain data,” “cloud computing capability,” “data fusion” for all forms of intelligence in a “consistent spatio-temporal framework for organizing and indexing the data,” developing “social science frameworks” that can “support spatio-temporal encoding and analysis,” “distributing multi-form biometric authentication technologies [“such as fingerprints, retina scans and DNA samples”] to the point of service of the most basic administrative processes” in order to “tie identity to all an individual’s transactions.” In addition, the academy must be brought in to help the Pentagon develop “anthropological, socio-cultural, historical, human geographical, educational, public health, and many other types of social and behavioral science data and information” to develop “a deep understanding of populations.”

A few months after joining Google, Quaid represented the company in August 2011 at the Pentagon’s Defense Information Systems Agency (DISA) Customer and Industry Forum. The forum would provide “the Services, Combatant Commands, Agencies, coalition forces” the “opportunity to directly engage with industry on innovative technologies to enable and ensure capabilities in support of our Warfighters.” Participants in the event have been integral to efforts to create a “defense enterprise information environment,” defined as “an integrated platform which includes the network, computing, environment, services, information assurance, and NetOps capabilities,” enabling warfighters to “connect, identify themselves, discover and share information, and collaborate across the full spectrum of military operations.” Most of the forum panelists were DoD officials, except for just four industry panelists including Google’s Quaid.

DISA officials have attended the Highlands Forum, too—such as Paul Friedrichs, a technical director and chief engineer of DISA's Office of the Chief Information Assurance Executive.

Knowledge is Power

Given all this it is hardly surprising that in 2012, a few months after Highlands Forum co-chair Regina Dugan left DARPA to join Google as a senior executive, then NSA chief Gen. Keith Alexander was emailing Google's founding executive Sergey Brin to discuss information sharing for national security. In those emails, obtained under Freedom of Information by investigative journalist Jason Leopold, Gen. Alexander described Google as a "key member of [the US military's] Defense Industrial Base," a position Michele Quaid was apparently consolidating. Brin's jovial relationship with the former NSA chief now makes perfect sense given that Brin had been in contact with representatives of the CIA and NSA, who partly funded and oversaw his creation of the Google search engine, since the mid-1990s.

In July 2014, Quaid spoke at a US Army panel on the creation of a "rapid acquisition cell" to advance the US Army's "cyber capabilities" as part of the Force 2025 transformation initiative. She told Pentagon officials that "many of the Army's 2025 technology goals can be realized with commercial technology available or in development today," re-affirming that "industry is ready to partner with the Army in supporting the new paradigm." Around the same time, most of the media was trumpeting the idea that Google was trying to distance itself from Pentagon funding, but in reality, Google has switched tactics to independently develop commercial technologies which would have military applications the Pentagon's transformation goals.

Yet Quaid is hardly the only point-person in Google's relationship with the US military intelligence community.

One year after Google bought the satellite mapping software Keyhole from CIA venture capital firm In-Q-Tel in 2004, In-Q-Tel's director of technical assessment Rob Painter—who played a key role in In-Q-Tel's Keyhole investment in the first place—moved to Google. At In-Q-Tel, Painter's work focused on identifying, researching and evaluating "new start-up

technology firms that were believed to offer tremendous value to the CIA, the National Geospatial-Intelligence Agency, and the Defense Intelligence Agency.” Indeed, the NGA had confirmed that its intelligence obtained via Keyhole was used by the NSA to support US operations in Iraq from 2003 onwards.

A former US Army special operations intelligence officer, Painter’s new job at Google as of July 2005 was federal manager of what Keyhole was to become: Google Earth Enterprise. By 2007, Painter had become Google’s federal chief technologist.

That year, Painter told the *Washington Post* that Google was “in the beginning stages” of selling advanced secret versions of its products to the US government. “Google has ramped up its sales force in the Washington area in the past year to adapt its technology products to the needs of the military, civilian agencies and the intelligence community,” the *Post* reported. The Pentagon was already using a version of Google Earth developed in partnership with Lockheed Martin to “display information for the military on the ground in Iraq,” including “mapping out displays of key regions of the country” and outlining “Sunni and Shiite neighborhoods in Baghdad, as well as US and Iraqi military bases in the city. Neither Lockheed nor Google would say how the geospatial agency uses the data.” Google aimed to sell the government new “enhanced versions of Google Earth” and “search engines that can be used internally by agencies.”

White House records leaked in 2010 showed that Google executives had held several meetings with senior US National Security Council officials. Alan Davidson, Google’s government affairs director, had at least three meetings with officials of the National Security Council in 2009, including White House senior director for Russian affairs Mike McFaul and Middle East advisor Daniel Shapiro. It also emerged from a Google patent application that the company had deliberately been collecting ‘payload’ data from private wifi networks that would enable the identification of “geolocations.” In the same year, we now know, Google had signed an agreement with the NSA giving the agency open-ended access to the personal information of its users, and its hardware and software, in the name of cyber security—agreements that Gen. Alexander was busy

replicating with hundreds of telecoms CEOs around the country.

Thus, it is not just Google that is a key contributor and foundation of the US military-industrial complex: it is the entire Internet, and the wide range of private sector companies—many nurtured and funded under the mantle of the US intelligence community (or powerful financiers embedded in that community)—which sustain the Internet and the telecoms infrastructure; it is also the myriad of start-ups selling cutting edge technologies to the CIA's venture firm In-Q-Tel, where they can then be adapted and advanced for applications across the military intelligence community. Ultimately, the global surveillance apparatus and the classified tools used by agencies like the NSA to administer it, have been almost entirely made by external researchers and private contractors like Google, which operate outside the Pentagon.

This structure, mirrored in the workings of the Pentagon's Highlands Forum, allows the Pentagon to rapidly capitalize on technological innovations it would otherwise miss, while also keeping the private sector at arms length, at least ostensibly, to avoid uncomfortable questions about what such technology is actually being used for.

But isn't it obvious, really? The Pentagon is about war, whether overt or covert. By helping build the technological surveillance infrastructure of the NSA, firms like Google are complicit in what the military-industrial complex does best: kill for cash.

As the nature of mass surveillance suggests, its target is not merely terrorists, but by extension, 'terrorism suspects' and 'potential terrorists,' the upshot being that entire populations—especially political activists—must be targeted by US intelligence surveillance to identify active and future threats, and to be vigilant against hypothetical populist insurgencies both at home and abroad. Predictive analytics and behavioural profiles play a pivotal role here.

Mass surveillance and data-mining also now has a distinctive operational purpose in assisting with the lethal execution of special operations, selecting targets for the CIA's drone strike kill lists via dubious algorithms, for instance, along with providing geospatial and other information for combatant

commanders on land, air and sea, among many other functions. A single social media post on Twitter or Facebook is enough to trigger being placed on secret terrorism watch-lists solely due to a vaguely defined hunch or suspicion; and can potentially even land a suspect on a kill list.

The push for indiscriminate, comprehensive mass surveillance by the military-industrial complex—encompassing the Pentagon, intelligence agencies, defense contractors, and supposedly friendly tech giants like Google and Facebook—is therefore not an end in itself, but an instrument of power, whose goal is self-perpetuation. But there is also a self-rationalizing justification for this goal: while being great for the military-industrial complex, it is also, supposedly, great for everyone else.

The 'long war'

No better illustration of the truly chauvinistic, narcissistic, and self-congratulatory ideology of power at the heart of the military-industrial complex is a book by long-time Highlands Forum delegate, Dr. Thomas Barnett, *The Pentagon's New Map*. Barnett was assistant for strategic futures in the Pentagon's Office of Force Transformation from 2001 to 2003, and had been recommended to Richard O'Neill by his boss Vice Admiral Arthur Cebrowski. Apart from becoming a *New York Times* bestseller, Barnett's book had been read far and wide in the US military, by senior defense officials in Washington and combatant commanders operating on the ground in the Middle East.

Barnett first attended the Pentagon Highlands Forum in 1998, then was invited to deliver a briefing about his work at the Forum on December 7th 2004, which was attended by senior Pentagon officials, energy experts, internet entrepreneurs, and journalists. Barnett received a glowing review in the *Washington Post* from his Highlands Forum buddy David Ignatius a week later, and an endorsement from another Forum friend, Thomas Friedman, both of which helped massively boost his credibility and readership.

Barnett's vision is neoconservative to the root. He sees the world as divided into essentially two realms: The Core, which consists of advanced countries playing by the rules of

economic globalization (the US, Canada, UK, Europe and Japan) along with developing countries committed to getting there (Brazil, Russia, India, China, and some others); and the rest of the world, which is The Gap, a disparate wilderness of dangerous and lawless countries defined fundamentally by being “disconnected” from the wonders of globalization. This includes most of the Middle East and Africa, large swathes of South America, as well as much of Central Asia and Eastern Europe. It is the task of the United States to “shrink The Gap,” by spreading the cultural and economic “rule-set” of globalization that characterizes The Core, and by enforcing security worldwide to enable that “rule-set” to spread.

These two functions of US power are captured by Barnett’s concepts of “Leviathan” and “System Administrator.” The former is about rule-setting to facilitate the spread of capitalist markets, regulated via military and civilian law. The latter is about projecting military force into The Gap in an open-ended global mission to enforce security and engage in nation-building. Not “rebuilding,” he is keen to emphasize, but building “new nations.”

For Barnett, the Bush administration’s 2002 introduction of the Patriot Act at home, with its crushing of habeas corpus, and the National Security Strategy abroad, with its opening up of unilateral, pre-emptive war, represented the beginning of the necessary re-writing of rule-sets in The Core to embark on this noble mission. This is the *only* way for the US to achieve security, writes Barnett, because as long as The Gap exists, it will always be a source of lawless violence and disorder. One paragraph in particular sums up his vision:

“America as global cop creates security. Security creates common rules. Rules attract foreign investment. Investment creates infrastructure. Infrastructure creates access to natural resources. Resources create economic growth. Growth creates stability. Stability creates markets. And once you’re a growing, stable part of the global market, you’re part of the Core. Mission accomplished.”

Much of what Barnett predicted would need to happen to fulfill this vision, despite its neoconservative bent, is still being pursued under Obama. In the near future, Barnett had

predicted, US military forces will be dispatched beyond Iraq and Afghanistan to places like Uzbekistan, Djibouti, Azerbaijan, Northwest Africa, Southern Africa and South America.

Barnett's Pentagon briefing was greeted with near universal enthusiasm. The Forum had even purchased copies of his book and had them distributed to all Forum delegates, and in May 2005, Barnett was invited back to participate in an entire Forum themed around his "SysAdmin" concept.

The Highlands Forum has thus played a leading role in defining the Pentagon's entire conceptualization of the 'war on terror.' Irving Wladawsky-Berger, a retired IMB vice president who co-chaired the President's Information Technology Advisory Committee from 1997 to 2001, described his experience of one 2007 Forum meeting in telling terms:

"Then there is the War on Terror, which DoD has started to refer to as the Long War, a term that I first heard at the Forum. It seems very appropriate to describe the overall conflict in which we now find ourselves. This is a truly global conflict... the conflicts we are now in have much more of the feel of a battle of civilizations or cultures trying to destroy our very way of life and impose their own."

The problem is that outside this powerful Pentagon-hosted clique, not everyone else agrees. "I'm not convinced that Barnett's cure would be any better than the disease," wrote Dr. Karen Kwiatowski, a former senior Pentagon analyst in the Near East and South Asia section, who blew the whistle on how her department deliberately manufactured false information in the run-up to the Iraq War. "It would surely cost far more in American liberty, constitutional democracy and blood than it would be worth."

Yet the equation of "shrinking The Gap" with sustaining the national security of The Core leads to a slippery slope. It means that if the US is prevented from playing this leadership role as "global cop," The Gap will widen, The Core will shrink, and the entire global order could unravel. By this logic, the US simply cannot afford government or public opinion to reject the legitimacy of its mission. If it did so, it would allow The Gap to grow out of control, undermining The Core, and potentially destroying it, along with The Core's protector, America.

Therefore, “shrinking The Gap” is not just a security imperative: it is such an existential priority, that it must be backed up with information war to demonstrate to the world the legitimacy of the entire project.

Based on O’Neill’s principles of information warfare as articulated in his 1989 US Navy brief, the targets of information war are not just populations in The Gap, but domestic populations in The Core, and their governments: including the US government. That secret brief, which according to former senior US intelligence official John Alexander was read by the Pentagon’s top leadership, argued that information war must be targeted at: adversaries to convince them of their vulnerability; potential partners around the world so they accept “the cause as just”; and finally, civilian populations and the political leadership so they believe that “the cost” in blood and treasure is worth it.

Barnett’s work was plugged by the Pentagon’s Highlands Forum because it fit the bill, in providing a compelling ‘feel good’ ideology for the US military-industrial complex.

But neoconservative ideology, of course, hardly originated with Barnett, himself a relatively small player, even though his work was extremely influential throughout the Pentagon. The regressive thinking of senior officials involved in the Highlands Forum is visible from long before 9/11, which was ceased upon by actors linked to the Forum as a powerful enabling force that legitimized the increasingly aggressive direction of US foreign and intelligence policies.

Yoda and the Soviets

The ideology represented by the Highlands Forum can be gleaned from long before its establishment in 1994, at a time when Andrew ‘Yoda’ Marshall’s ONA was the primary locus of Pentagon activity on future planning.

A widely-held myth promulgated by national security journalists over the years is that the ONA’s reputation as the Pentagon’s resident oracle machine was down to the uncanny analytical foresight of its director Marshall. Supposedly, he was among the few who made the prescient recognition that the Soviet threat had been overblown by the US intelligence

community. He had, the story goes, been a lone, but relentless voice inside the Pentagon, calling on policymakers to re-evaluate their projections of the USSR's military might.

Except the story is not true. The ONA was not about sober threat analysis, but about paranoid threat projection justifying military expansionism. *Foreign Policy's* Jeffrey Lewis points out that far from offering a voice of reason calling for a more balanced assessment of Soviet military capabilities, Marshall tried to downplay ONA findings that rejected the hype around an imminent Soviet threat. Having commissioned a study concluding that the US had overestimated Soviet aggressiveness, Marshall circulated it with a cover note declaring himself “unpersuaded” by its findings. Lewis charts how Marshall's threat projection mind-set extended to commissioning absurd research supporting staple neocon narratives about the (non-existent) Saddam-al-Qaeda link, and even the notorious report by a RAND consultant calling for re-drawing the map of the Middle East, presented to the Pentagon's Defense Policy Board on the invitation of Richard Perle in 2002.

Investigative journalist Jason Vest similarly found from Pentagon sources that during the Cold War, Marshall had long hyped the Soviet threat, and played a key role in giving the neoconservative pressure group, the Committee on the Present Danger, access to classified CIA intelligence data to re-write the *National Intelligence Estimate on Soviet Military Intentions*. This was a precursor to the manipulation of intelligence after 9/11 to justify the invasion and occupation of Iraq. Former ONA staffers confirmed that Marshall had been belligerent about an imminent Soviet threat “until the very end.” Ex-CIA sovietologist Melvin Goodman, for instance, recalled that Marshall was also instrumental in pushing for the Afghan mujahideen to be provided with Stinger missiles—a move which made the war even more brutal, encouraging the Russians to use scorched earth tactics.

Enron, the Taliban and Iraq

The post-Cold War period saw the Pentagon's creation of the Highlands Forum in 1994 under the wing of former defense secretary William Perry—a former CIA director and early

advocate of neocon ideas like preventive war. Surprisingly, the Forum's dubious role as a government-industry bridge can be clearly discerned in relation to Enron's flirtations with the US government. Just as the Forum had crafted the Pentagon's intensifying policies on mass surveillance, it simultaneously fed directly into the strategic thinking that culminating in the wars in Afghanistan and Iraq.

On November 7th 2000, George W. Bush 'won' the US presidential elections. Enron and its employees had given over \$1 million to the Bush campaign in total. That included contributing \$10,500 to Bush's Florida recount committee, and a further \$300,000 for the inaugural celebrations afterwards. Enron also provided corporate jets to shuttle Republican lawyers around Florida and Washington lobbying on behalf of Bush for the December recount. Federal election documents later showed that since 1989, Enron had made a total of \$5.8 million in campaign donations, 73 percent to Republicans and 27 percent to Democrats—with as many as 15 senior Bush administration officials owning stock in Enron, including defense secretary Donald Rumsfeld, senior advisor Karl Rove, and army secretary Thomas White.

Yet just one day before that controversial election, Pentagon Highlands Forum founding president Richard O'Neill wrote to Enron CEO, Kenneth Lay, inviting him to give a presentation at the Forum on modernizing the Pentagon and the Army. The email from O'Neill to Lay was released as part of the Enron Corpus, the emails obtained by the Federal Energy Regulatory Commission, but has remained unknown until now.

The email began "On behalf of Assistant Secretary of Defense (C3I) and DoD CIO Arthur Money," and invited Lay "to participate in the Secretary of Defense's Highlands Forum," which O'Neill described as "a cross-disciplinary group of eminent scholars, researchers, CEO's/CIO's/CTO's from industry, and leaders from the media, the arts and the professions, who have met over the past six years to examine areas of emerging interest to all of us." He added that Forum sessions include "seniors from the White House, Defense, and other agencies of government (we limit government participation to about 25%)."

Here, O'Neill reveals that the Pentagon Highlands Forum was, fundamentally, about exploring not just the goals of government, but the interests of participating industry leaders like Enron. The Pentagon, O'Neill went on, wanted Lay to feed into "the search for information/ transformation strategies for the Department of Defense (and government in general)," particularly "from a business perspective (transformation, productivity, competitive advantage)." He offered high praise of Enron as "a remarkable example of transformation in a highly rigid, regulated industry, that has created a new model and new markets."

O'Neill made clear that the Pentagon wanted Enron to play a pivotal role in the DoD's future, not just in the creation of "an operational strategy which has information superiority," but also in relation to the DoD's "enormous global business enterprise which can benefit from many of the best practices and ideas from industry."

"ENRON is of great interest to us," he reaffirmed. "What we learn from you may help the Department of Defense a great deal as it works to build a new strategy. I hope that you have time on your busy schedule to join us for as much of the Highlands Forum as you can attend and speak with the group."

That Highlands Forum meeting was attended by senior White House and US intelligence officials, including CIA deputy director Joan A. Dempsey, who had previously served as assistant defense secretary for intelligence, and in 2003 was appointed by Bush as executive director of the President's Foreign Intelligence Advisory Board, in which capacity she praised extensive information sharing by the NSA and NGA after 9/11. She went on to become executive vice president at Booz Allen Hamilton, a major Pentagon contractor in Iraq and Afghanistan that, among other things, created the Coalition Provisional Authority's database to track what we now know were highly corrupt reconstruction projects in Iraq.

Enron's relationship with the Pentagon had already been in full swing the previous year. Thomas White, then vice chair of Enron energy services, had used his extensive US military connections to secure a prototype deal at Fort Hamilton to privatize the power supply of army bases. Enron was the only

bidder for the deal. The following year, after Enron's CEO was invited to the Highlands Forum, White gave his first speech in June just "two weeks after he became secretary of the Army," where he "vowed to speed up the awarding of such contracts," along with further "rapid privatization" of the Army's energy services. "Potentially, Enron could benefit from the speedup in awarding contracts, as could others seeking the business," observed *USA Today*.

That month, on the authority of defense secretary Donald Rumsfeld—who himself held significant shares in Enron—Bush's Pentagon invited another Enron executive and one of Enron's senior external financial advisors to attend a further secret Highlands Forum session.

An email from Richard O'Neill dated June 22nd, obtained via the Enron Corpus, showed that Steven Kean, then executive vice president and chief of staff of Enron, was due to give another Highlands presentation on Monday 25th. "We are approaching the Secretary of Defense-sponsored Highlands Forum and very much looking forward to your participation," wrote O'Neill, promising Kean that he would be "the centerpiece of discussion. Enron's experience is quite important to us as we seriously consider transformative change in the Department of Defense."

Steven Kean is now president and COO (and incoming CEO) of Kinder Morgan, one of the largest energy companies in North America, and a major supporter of the controversial Keystone XL pipeline project.

Due to attend the same Highlands Forum session with Kean was Richard Foster, then a senior partner at the financial consultancy McKinsey. "I have given copies of Dick Foster's new book, *Creative Destruction*, to the Deputy Secretary of Defense as well as the Assistant Secretary," said O'Neill in his email, "and the Enron case that he outlines makes for important discussion. We intend to hand out copies to the participants at the Forum."

Foster's firm, McKinsey, had provided strategic financial advice to Enron since the mid-1980s. Joe Skilling, who in February 2001 became Enron CEO while Kenneth Lay moved to chair,

had been head of McKinsey's energy consulting business before joining Enron in 1990.

McKinsey and then partner Richard Foster were intimately involved in crafting the core Enron financial management strategies responsible for the company's rapid, but fraudulent, growth. While McKinsey has always denied being aware of the dodgy accounting that led to Enron's demise, internal company documents showed that Foster had attended an Enron finance committee meeting a month before the Highlands Forum session to discuss the "need for outside private partnerships to help drive the company's explosive growth"—the very investment partnerships responsible for the collapse of Enron.

McKinsey documents showed that the firm was "fully aware of Enron's extensive use of off-balance-sheet funds." As *The Independent's* economics editor Ben Chu remarks, "McKinsey fully endorsed the dubious accounting methods," which led to the inflation of Enron's market valuation and "that caused the company to implode in 2001."

Indeed, Foster himself had personally attended six Enron board meetings from October 2000 to October 2001. That period roughly coincided with Enron's growing influence on the Bush administration's energy policies, and the Pentagon's planning for Afghanistan and Iraq.

But Foster was also a regular attendee at the Pentagon Highlands Forum—his LinkedIn profile describes him as member of the Forum since 2000, the year he ramped up engagement with Enron. He also delivered a presentation at the inaugural Island Forum in Singapore in 2002.

Enron's involvement in the Cheney Energy Task Force appears to have been linked to the Bush administration's 2001 planning for both the invasions of Afghanistan and Iraq, motivated by control of oil. As noted by Prof. Richard Falk, a former board member of Human Rights Watch and ex-UN investigator, Enron's Kenneth Lay "was the main confidential consultant relied upon by Vice President Dick Cheney during the highly secretive process of drafting a report outlining a national energy policy, widely regarded as a key element in the US approach to foreign policy generally and the Arab world in particular."

The intimate secret meetings between senior Enron executives and high-level US government officials via the Pentagon Highlands Forum, from November 2000 to June 2001, played a central role in establishing and cementing the increasingly symbiotic link between Enron and Pentagon planning. The Forum's role was, as O'Neill has always said, to function as an ideas lab to explore the mutual interests of industry and government.

Enron and Pentagon war planning

In February 2001, when Enron executives including Kenneth Lay began participating concertedly in the Cheney Energy Task Force, a classified National Security Council document instructed NSC staffers to work with the task force in "melding" previously separate issues: "operational policies towards rogue states" and "actions regarding the capture of new and existing oil and gas fields."

According to Bush's treasury secretary Paul O'Neill, as quoted by Ron Suskind in *The Price of Loyalty (2004)*, cabinet officials discussed an invasion of Iraq in their first NSC meeting, and had even prepared a map for a post-war occupation marking the carve-up of Iraq's oil fields. The message at that time from President Bush was that officials must "find a way to do this."

Cheney Energy Task Force documents obtained by Judicial Watch under Freedom of Information revealed that by March, with extensive industry input, the task force had prepared maps of Gulf state and especially Iraqi oilfields, pipelines, and refineries, along with a list titled 'Foreign Suitors for Iraqi Oilfield Contracts.' By April, a think-tank report commissioned by Cheney, overseen by former secretary of state James Baker, and put together by a committee of energy industry and national security experts, urged the US government "to conduct an immediate policy review toward Iraq including military, energy, economic and political/diplomatic assessments," to deal with Iraq's "destabilizing influence" on oil flows to global markets. The report included recommendations from Highlands Forum delegate and Enron chair, Kenneth Lay.

But Cheney's Energy Task Force was also busily pushing forward plans for Afghanistan involving Enron, that had been in

motion under Clinton. Through the late 1990s, Enron was working with California-based US energy company Unocal to develop an oil and gas pipeline that would tap Caspian basin reserves, and carry oil and gas across Afghanistan, supplying Pakistan, India and potentially other markets. The endeavor had the official blessing of the Clinton administration, and later the Bush administration, which held several meetings with Taliban representatives to negotiate terms for the pipeline deal throughout 2001. The Taliban, whose conquest of Afghanistan had received covert assistance under Clinton, was to receive formal recognition as the legitimate government of Afghanistan in return for permitting the installation of the pipeline. Enron paid \$400 million for a feasibility study for the pipeline, a large portion of which was siphoned off as bribes to Taliban leaders, and even hired CIA agents to help facilitate.

Then in summer 2001, while Enron officials were liaising with senior Pentagon officials at the Highlands Forum, the White House's National Security Council was running a cross-departmental 'working group' led by Rumsfeld and Cheney to help complete an ongoing Enron project in India, a \$3 billion power plant in Dabhol. The plant was slated to receive its energy from the Trans-Afghan pipeline. The NSC's 'Dabhol Working Group,' chaired by Bush's national security adviser Condoleeza Rice, generated a range of tactics to enhance US government pressure on India to complete the Dabhol plant—pressure that continued all the way to early November. The Dabhol project, and the Trans-Afghan pipeline, was by far Enron's most lucrative overseas deal.

Throughout 2001, Enron officials, including Ken Lay, participated in Cheney's Energy Task Force, along with representatives across the US energy industry. Starting from February, shortly after the Bush administration took office, Enron was involved in about half a dozen of these Energy Task Force meetings. After one of these secret meetings, a draft energy proposal was amended to include a new provision proposing to dramatically boost oil and natural gas production in India in a way that would apply only to Enron's Dabhol power plant. In other words, ensuring the flow of cheap gas to India via the Trans-Afghan pipeline was now a matter of US 'national security.'

A month or two after this, the Bush administration gave the Taliban \$43 million, justified by its crackdown on opium production, despite US-imposed UN sanctions preventing aid to the group for not handing over Osama bin Laden.

Then in June 2001, the same month that Enron's executive vice president Steve Kean attended the Pentagon Highlands Forum, the company's hopes for the Dabhol project were dashed when the Trans-Afghan pipeline failed to materialize, and as a consequence, construction on the Dabhol power plant was shut down. The failure of the \$3 billion project contributed to Enron's bankruptcy in December. That month, Enron officials met with Bush's commerce secretary, Donald Evans, about the plant, and Cheney lobbied India's main opposition party about the Dhabol project. Ken Lay had also reportedly contacted the Bush administration around this time to inform officials about the firm's financial troubles.

By August, desperate to pull off the deal, US officials threatened Taliban representatives with war if they refused to accept American terms: namely, to cease fighting and join in a federal alliance with the opposition Northern Alliance; and to give up demands for local consumption of the gas. On the 15th of that month, Enron lobbyist Pat Shortridge told then White House economic advisor Robert McNally that Enron was heading for a financial meltdown that could cripple the country's energy markets.

The Bush administration must have anticipated the Taliban's rejection of the deal, because they had planned a war on Afghanistan from as early as July. According to then Pakistani foreign minister Niaz Naik, who had participated in the US-Taliban negotiations, US officials told him they planned to invade Afghanistan in mid-October 2001. No sooner had the war commenced, Bush's ambassador to Pakistan, Wendy Chamberlain, called Pakistani's oil minister Usman Aminuddin to discuss "the proposed Turkmenistan-Afghanistan-Pakistan gas pipeline project," according to the *Frontier Post*, a Pakistani English-language broadsheet. They reportedly agreed that the "project opens up new avenues of multi-dimensional regional cooperation particularly in view of the recent geo-political developments in the region."

Two days before 9/11, Condoleeza Rice received the draft of a formal National Security Presidential Directive that Bush was expected to sign immediately. The directive contained a comprehensive plan to launch a global war on al-Qaeda, including an “imminent” invasion of Afghanistan to topple the Taliban. The directive was approved by the highest levels of the White House and officials of the National Security Council, including of course Rice and Rumsfeld. The same NSC officials were simultaneously running the Dhabol Working Group to secure the Indian power plant deal for Enron’s Trans-Afghan pipeline project. The next day, one day before 9/11, the Bush administration formally agreed on the plan to attack the Taliban.

The Pentagon Highlands Forum’s background link with the interests involved in all this, show they were not unique to the Bush administration—which is why, as Obama was preparing to pull troops out of Afghanistan, he re-affirmed his government’s support for the Trans-Afghan pipeline project, and his desire for a US firm to construct it.

The Pentagon’s propaganda fixer

Throughout this period, information war played a central role in drumming up public support for war—and the Highlands Forum led the way.

In December 2000, just under a year before 9/11 and shortly after George W. Bush’s election victory, key Forum members participated in an event at the Carnegie Endowment for International Peace to explore “the impact of the information revolution, globalization, and the end of the Cold War on the US foreign policy making process.” Rather than proposing “incremental reforms,” the meeting was for participants to “build from scratch a new model that is optimized to the specific properties of the new global environment.”

Among the issues flagged up in the meeting was the ‘Global Control Revolution’: the “distributed” nature of the information revolution was altering “key dynamics of world politics by challenging the primacy of states and inter-state relations.” This was “creating new challenges to national security, reducing the ability of leading states to control global policy

debates, challenging the efficacy of national economic policies, etc.”

In other words, how can the Pentagon find a way to exploit the information revolution to “control global policy debates,” particularly on “national economic policies”?

The meeting was co-hosted by Jamie MetzI, who at the time served on Bill Clinton’s National Security Council, where he had just led the drafting of Clinton’s Presidential Decision Directive 68 on International Public Information (IPI), a new multiagency plan to coordinate US public information dissemination abroad. MetzI went on to coordinate IPI at the State Department.

The preceding year, a senior Clinton official revealed to the Washington Times that Metz’s IPI was really aimed at “spinning the American public,” and had “emerged out of concern that the US public has refused to back President Clinton’s foreign policy.” The IPI would plant news stories favorable to US interests via TV, press, radio and other media based abroad, in hopes it would get picked up in American media. The pretext was that “news coverage is distorted at home and they need to fight it at all costs by using resources that are aimed at spinning the news.” MetzI ran the IPI’s overseas propaganda operations for Iraq and Kosovo.

Other participants of the Carnegie meeting in December 2000, included two founding members of the Highlands Forum, Richard O’Neill and SAIC’s Jeff Cooper—along with Paul Wolfowitz, another Andrew Marshall acolyte who was about to join the incoming Bush administration as Rumsfelds’ deputy defense secretary. Also present was a figure who soon became particularly notorious in the propaganda around Afghanistan and Iraq War 2003: John W. Rendon, Jr., founding president of The Rendon Group (TRG) and another longtime Pentagon Highlands Forum member.



John Rendon (right) at the Highlands Forum, accompanied by BBC anchor Nik Gowing (left) and Jeff Jonas, IBM Entity Analytics chief engineer (middle)

TRG is a notorious communications firm that has been a US government contractor for decades. Rendon played a pivotal role in running the State Department's propaganda campaigns in Iraq and Kosovo under Clinton and Metzl. That included receiving a Pentagon grant to run a news website, the Balkans Information Exchange, and a US Agency for International Development (USAID) contract to promote "privatization."

Rendon's central role in helping the Bush administration hype up the non-existent threat of weapons of mass destruction (WMD) to justify a US military invasion is now well-known. As James Bamford famously exposed in his seminal Rolling Stone investigation, Rendon played an instrumental role on behalf of the Bush administration in deploying "perception management" to "create the conditions for the removal of Hussein from power" under multi-million dollar CIA and Pentagon contracts.

Among Rendon's activities was the creation of Ahmed Chalabi's Iraqi National Congress (INC) on behalf of the CIA, a group of Iraqi exiles tasked with disseminating propaganda, including much of the false intelligence about WMD. That process had begun concertedly under the administration of George H W. Bush, then rumbled along under Clinton with little fanfare, before escalating after 9/11 under George W. Bush. Rendon thus played a large role in the manufacture of inaccurate and false news stories relating to Iraq under

lucrative CIA and Pentagon contracts—and he did so in the period running up to the 2003 invasion as an advisor to Bush’s National Security Council: the same NSC, of course, that planned the invasions of Afghanistan and Iraq, achieved with input from Enron executives who were simultaneously engaging the Pentagon Highlands Forum.

But that is the tip of iceberg. Declassified documents show that the Highlands Forum was intimately involved in the covert processes by which key officials engineered the road to war on Iraq, based on information warfare.

A redacted 2007 report by the DoD’s Inspector General reveals that one of the contractors used extensively by the Pentagon Highlands Forum during and after the Iraq War was none other than The Rendon Group. TRG was contracted by the Pentagon to organize Forum sessions, determine subjects for discussion, as well as to convene and coordinate Forum meetings. The Inspector General investigation had been prompted by accusations raised in Congress about Rendon’s role in manipulating information to justify the 2003 invasion and occupation of Iraq. According to the Inspector General report:

“... the Assistant Secretary of Defense for Networks and Information Integration/Chief Information Officer employed TRG to conduct forums that would appeal to a cross-disciplinary group of nationally regarded leaders. The forums were in small groups discussing information and technologies and their effects on science, organizational and business processes, international relations, economics, and national security. TRG also conducted a research program and interviews to formulate and develop topics for the Highlands Forum focus group. The Office of the Assistant Secretary of Defense for Networks and Information Integration would approve the subjects, and TRG would facilitate the meetings.”

TRG, the Pentagon’s private propaganda arm, thus played a central role in *literally running* the Pentagon Highlands Forum process that brought together senior government officials with industry executives to generate DoD information warfare strategy.

The Pentagon’s internal investigation absolved Rendon of any wrongdoing. But this is not surprising, given the conflict of

interest at stake: the Inspector General at the time was Claude M. Kicklighter, a Bush nominee who had directly overseen the administration's key military operations. In 2003, he was director of the Pentagon's Iraq Transition Team, and the following year he was appointed to the State Department as special advisor on stabilization and security operations in Iraq and Afghanistan.

The surveillance-propaganda nexus

Even more telling, Pentagon documents obtained by Bamford for his Rolling Stone story revealed that Rendon had been given access to the NSA's top-secret surveillance data to carry out its work on behalf of the Pentagon. TRG, the DoD documents said, is authorized "to research and analyze information classified up to Top Secret/SCI/SI/TK/G/HCS."

'SCI' means Sensitive Compartmented Information, data classified higher than Top Secret, while 'SI' designates Special Intelligence, that is, highly secret communications intercepted by the NSA. 'TK' refers to Talent/Keyhole, code names for imagery from reconnaissance aircraft and spy satellites, while 'G' stands for Gamma, encompassing communications intercepts from extremely sensitive sources, and 'HCS' means Humint Control System—information from a very sensitive human source. In Bamford's words:

"Taken together, the acronyms indicate that Rendon enjoys access to the most secret information from all three forms of intelligence collection: eavesdropping, imaging satellites and human spies."

So the Pentagon had:

1. contracted Rendon, a propaganda firm;
2. given Rendon access to the intelligence community's most classified information including data from NSA surveillance;
3. tasked Rendon to facilitating the DoD's development of information operations strategy by running the Highlands Forum process;

4. and further, tasked Rendon with overseeing the concrete execution of this strategy developed through the Highlands Forum process, in actual information operations around the world in Iraq, Afghanistan and beyond.

TRG chief executive John Rendon remains closely involved in the Pentagon Highlands Forum, and ongoing DoD information operations in the Muslim world. His November 2014 biography for the Harvard Kennedy School 'Emerging Leaders' course describes him as "a participant in forward-thinking organizations such as the Highlands Forum," "one of the first thought-leaders to harness the power of emerging technologies in support of real time information management," and an expert on "the impact of emerging information technologies on the way populations think and behave." Rendon's Harvard bio also credits him with designing and executing "strategic communications initiatives and information programs related to operations, Odyssey Dawn (Libya), Unified Protector (Libya), Global War on Terrorism (GWOT), Iraqi Freedom, Enduring Freedom (Afghanistan), Allied Force and Joint Guardian (Kosovo), Desert Shield, Desert Storm (Kuwait), Desert Fox (Iraq) and Just Cause (Panama), among others."

Rendon's work on perception management and information operations has also "assisted a number of US military interventions" elsewhere, as well as running US information operations in Argentina, Colombia, Haiti, and Zimbabwe—in fact, a total of 99 countries. As a former executive director and national political director of the Democratic Party, John Rendon remains a powerful figure in Washington under the Obama administration.

Pentagon records show that TRG has received over \$100 million from the DoD since 2000. In 2009, the US government cancelled a 'strategic communications' contract with TRG after revelations it was being used to weed out reporters who might write negative stories about the US military in Afghanistan, and to solely promote journalists supportive of US policy. Yet in 2010, the Obama administration re-contracted Rendon to supply services for "military deception" in Iraq.

Since then, TRG has provided advice to the US Army's Training and Doctrine Command, the Special Operations Command, and

is still contracted to the Office of the Secretary of Defense, the US Army's Communications Electronic Command, as well as providing "communications support" to the Pentagon and US embassies on counter-narcotics operations.

TRG also boasts on its website that it provides "Irregular Warfare Support," including "operational and planning support" that "assists our government and military clients in developing new approaches to countering and eroding an adversary's power, influence and will." Much of this support has itself been fine-tuned over the last decade or more inside the Pentagon Highlands Forum.

Irregular war and pseudo-terrorism

The Pentagon Highlands Forum's intimate link, via Rendon, to the propaganda operations pursued under Bush and Obama in support of the 'Long War,' demonstrate the integral role of mass surveillance in both irregular warfare and 'strategic communications.'

One of the major proponents of both is Prof John Arquilla of the Naval Postgraduate School, the renowned US defense analyst credited with developing the concept of 'netwar,' who today openly advocates the need for mass surveillance and big data mining to support pre-emptive operations to thwart terrorist plots. It so happens that Arquilla is another "founding member" of the Pentagon's Highlands Forum.

Much of his work on the idea of 'networked warfare,' 'networked deterrence,' 'information warfare,' and 'swarming,' largely produced for RAND under Pentagon contract, was incubated by the Forum during its early years and thus became integral to Pentagon strategy. For instance, in Arquilla's 1999 RAND study, *The Emergence of Noopolitik: Toward an American Information Strategy*, he and his co-author David Ronfeldt express their gratitude to Richard O'Neill "for his interest, support and guidance," and to "members of the Highlands Forum" for their advance comments on the study. Most of his RAND work credits the Highlands Forum and O'Neill for their support.



Prof. John Arquilla of the Naval Postgraduate School, and a founding member of the Pentagon Highlands Forum

Arquilla's work was cited in a 2006 National Academy of Sciences study on the future of network science commissioned by the US Army, which found based on his research that: "Advances in computer-based technologies and telecommunications are enabling social networks that facilitate group affiliations, including terrorist networks." The study conflated risks from terror and activist groups: "The implications of this fact for criminal, terror, protest and insurgency networks has been explored by Arquilla and Ronfeldt (2001) and are a common topic of discussion by groups like the Highlands Forum, which perceive that the United States is highly vulnerable to the interruption of critical networks." Arquilla went on to help develop information warfare strategies "for the military campaigns in Kosovo, Afghanistan and Iraq," according to military historian Benjamin Shearer in his biographical dictionary, *Home Front Heroes (2007)*—once again illustrating the direct role played by certain key Forum members in executing Pentagon information operations in war theatres.

In his 2005 *New Yorker* investigation, the Pulitzer Prize-winning Seymour Hersh referred to a series of articles by Arquilla elaborating on a new strategy of "countering terror" with pseudo-terror. "It takes a network to fight a network," said Arquilla, drawing on the thesis he had been promoting in the Pentagon through the Highlands Forum since its founding:

"When conventional military operations and bombing failed to defeat the Mau Mau insurgency in Kenya in the 1950s, the

British formed teams of friendly Kikuyu tribesmen who went about pretending to be terrorists. These ‘pseudo gangs’, as they were called, swiftly threw the Mau Mau on the defensive, either by befriending and then ambushing bands of fighters or by guiding bombers to the terrorists’ camps.”

Arquilla went on to advocate that western intelligence services should use the British case as a model for creating new “pseudo gang” terrorist groups, as a way of undermining “real” terror networks:

“What worked in Kenya a half-century ago has a wonderful chance of undermining trust and recruitment among today’s terror networks. Forming new pseudo gangs should not be difficult.”

Essentially, Arquilla’s argument was that as only networks can fight networks, the only way to defeat enemies conducting irregular warfare is to use techniques of irregular warfare against them. Ultimately, the determining factor in victory is not conventional military defeat *per se*, but the extent to which the direction of the conflict can be calibrated to influence the population and rally their opposition to the adversary. Arquilla’s ‘pseudo-gang’ strategy was, Hersh reported, already being implemented by the Pentagon:

“Under Rumsfeld’s new approach, I was told, US military operatives would be permitted to pose abroad as corrupt foreign businessmen seeking to buy contraband items that could be used in nuclear-weapons systems. In some cases, according to the Pentagon advisers, local citizens could be recruited and asked to join up with guerrillas or terrorists...

The new rules will enable the Special Forces community to set up what it calls ‘action teams’ in the target countries overseas which can be used to find and eliminate terrorist organizations. ‘Do you remember the right-wing execution squads in El Salvador?’ the former high-level intelligence official asked me, referring to the military-led gangs that committed atrocities in the early nineteen-eighties. ‘We founded them and we financed them,’ he said. ‘The objective now is to recruit locals in any area we want. And we aren’t going to tell Congress about it.’ A former military officer, who has knowledge of the Pentagon’s

commando capabilities, said, ‘We’re going to be riding with the bad boys.’”

Official corroboration that this strategy is now operational came with the leak of a 2008 US Army special operations field manual. The US military, the manual said, can conduct irregular and unconventional warfare by using surrogate non-state groups such as “paramilitary forces, individuals, businesses, foreign political organizations, resistant or insurgent organizations, expatriates, transnational terrorism adversaries, disillusioned transnational terrorism members, black marketers, and other social or political ‘undesirables.’” Shockingly, the manual specifically acknowledged that US special operations can involve both counterterrorism and “Terrorism,” as well as: “Transnational criminal activities, including narco-trafficking, illicit arms-dealing, and illegal financial transactions.” The purpose of such covert operations is, essentially, population control—they are “specifically focused on leveraging some portion of the indigenous population to accept the status quo,” or to accept “whatever political outcome” is being imposed or negotiated.

By this twisted logic, terrorism can in some cases be defined as a legitimate tool of US statecraft by which to influence populations into accepting a particular “political outcome”—all in the name fighting terrorism.

Is this what the Pentagon was doing by coordinating the nearly \$1 billion of funding from Gulf regimes to anti-Assad rebels, most of which according to the CIA’s own classified assessments ended up in the coffers of violent Islamist extremists linked to al-Qaeda, who went on to spawn the ‘Islamic State’?

The rationale for the new strategy was first officially set out in an August 2002 briefing for the Pentagon’s Defense Science Board, which advocated the creation of a ‘Proactive, Preemptive Operations Group’ (P2OG) within the National Security Council. P2OG, the Board proposed, must conduct clandestine operations to infiltrate and “stimulate reactions” among terrorist networks to provoke them into action, and thus facilitate targeting them.

The Defense Science Board is, like other Pentagon agencies, intimately related with the Highlands Forum, whose work feeds into the Board's research, which in turn is regularly presented at the Forum.

According to the US intelligence sources who spoke to Hersh, Rumsfeld had ensured that the new brand of black operations would be conducted entirely under Pentagon jurisdiction, firewalled off from the CIA and regional US military commanders, and executed by its own secret special operations command. That chain of command would include, apart from the defense secretary himself, two of his deputies including the undersecretary of defense for intelligence: the position overseeing the Highlands Forum.

Strategic communications: war propaganda at home and abroad

Within the Highlands Forum, the special operations techniques explored by Arquilla have been taken up by several others in directions focused increasingly on propaganda—among them, Dr. Lochard, as seen previously, and also Dr. Amy Zalman, who focuses particularly on the idea of the US military using 'strategic narratives' to influence public opinion and win wars.

Like her colleague, Highlands Forum founding member Jeff Cooper, Zalman was schooled in the bowels of SAIC/Leidos. From 2007 to 2012, she was a senior SAIC strategist, before becoming Department of Defense Information Integration Chair at the US Army's National War College, where she focused on how to fine-tune propaganda to elicit the precise responses desired from target groups, based on complete understanding of those groups. As of summer last year, she became CEO of the World Futures Society.



Dr. Amy Zalman, an ex-SAIC strategist, is CEO of the World Futures Society, and a long-time Pentagon Highlands Forum delegate consulting for the US government on strategic communications in irregular warfare

In 2005, the same year Hersh reported that the Pentagon strategy of “stimulating reactions” among terrorists by provoking them was underway, Zalman delivered a briefing to the Pentagon Highlands Forum titled, *‘In Support of a Narrative Theory Approach to US Strategic Communication.’* Since then, Zalman has been a long-time Highlands Forum delegate, and has presented her work on strategic communications to a range of US government agencies, NATO forums, as well as teaching courses in irregular warfare to soldiers at the US Joint Special Operations University. Her 2005 Highlands Forum briefing is not publicly available, but the thrust of Zalman’s input into the information component of Pentagon special operations strategies can be gleaned from some of her published work. In 2010, when she was still attached to SAIC, her NATO paper noted that a key component of irregular war is “winning some degree of emotional support from the population by influencing their subjective perceptions.” She advocated that the best way of achieving such influence goes far further than traditional propaganda and messaging techniques. Rather, analysts must “place themselves in the skins of the people under observation.”

Zalman released another paper the same year via the IO Journal, published by the Information Operations Institute, which describes itself as a “special interest group” of the Association of Old Crows. The latter is a professional association for theorists and practitioners of electronic warfare

and information operations, chaired by Kenneth Israel, vice president of Lockheed Martin, and vice chaired by David Himes, who retired last year from his position as senior advisor in electronic warfare at the US Air Force Research Laboratory.

In this paper, titled *'Narrative as an Influence Factor in Information Operations,'* Zalman laments that the US military has “found it difficult to create compelling narratives—or stories—either to express its strategic aims, or to communicate in discrete situations, such as civilian deaths.” By the end, she concludes that “the complex issue of civilian deaths” should be approached not just by “apologies and compensation”—which barely occurs anyway—but by propagating narratives that portray characters with whom the audience connects (in this case, ‘the audience’ being ‘populations in war zones’). This is to facilitate the audience resolving struggles in a “positive way,” defined, of course, by US military interests. Engaging emotionally in this way with “survivors of those dead” from US military action might “prove to be an empathetic form of influence.” Throughout, Zalman is incapable of questioning the legitimacy of US strategic aims, or acknowledging that the impact of those aims in the accumulation of civilian deaths, is precisely the problem that needs to change—as opposed to the way they are ideologically framed for populations subjected to military action.

‘Empathy,’ here, is merely an instrument by which to manipulate. In 2012, Zalman wrote an article for *The Globalist* seeking to demonstrate how the rigid delineation of ‘hard power’ and ‘soft power’ needed to be overcome, to recognize that the use of force requires the right symbolic and cultural effect to guarantee success:

“As long as defense and economic diplomacy remain in a box labeled ‘hard power,’ we fail to see how much their success relies on their symbolic effects as well as their material ones. As long as diplomatic and cultural efforts are stored in a box marked ‘soft power,’ we fail to see the ways in which they can be used coercively or produce effects that are like those produced by violence.” Given SAIC’s deep involvement in the Pentagon Highlands Forum, and through it the development of information strategies on surveillance, irregular warfare, and propaganda, it is hardly surprising that SAIC was the other key

private defense firm contracted to generate propaganda in the run up to Iraq War 2003, alongside TRG.

“SAIC executives have been involved at every stage... of the war in Iraq,” reported *Vanity Fair*, ironically, in terms of deliberately disseminating false claims about WMD, and then investigating the ‘intelligence failure’ around false WMD claims. David Kay, for instance, who had been hired by the CIA in 2003 to hunt for Saddam’s WMD as head of the Iraq Survey Group, was until October 2002 a senior SAIC vice president hammering away “at the threat posed by Iraq” under Pentagon contract. When WMD failed to emerge, President Bush’s commission to investigate this US ‘intelligence failure’ included three SAIC executives, among them Highlands Forum founding member Jeffrey Cooper. The very year of Kay’s appointment to the Iraq Survey Group, Clinton’s defense secretary William Perry—the man under whose orders the Highlands Forum was set-up—joined the board of SAIC. The investigation by Cooper and all let the Bush administration off the hook for manufacturing propaganda to legitimize war—unsurprisingly, given Cooper’s integral role in the very Pentagon network that manufactured that propaganda. SAIC was also among the many contractors that profited handsomely from Iraqi reconstruction deals, and was re-contracted after the war to promote pro-US narratives abroad. In the same vein as Rendon’s work, the idea was that stories planted abroad would be picked up by US media for domestic consumption.



*Delegates at the Pentagon’s 46th Highlands Forum in December 2011, from right to left: John Seely Brown, chief scientist/director at Xerox PARC from 1990–2002 and an early board member of In-Q-Tel; Ann Pendleton-Jullian, co-author with Brown of a manuscript, *Design Unbound*; Antonio and Hanna Damasio, a neurologist and neurobiologist respectively who are part of a DARPA-funded project on propaganda*

But the Pentagon Highlands Forum's promotion of advanced propaganda techniques is not exclusive to core, longstanding delegates like Rendon and Zalman. In 2011, the Forum hosted two DARPA-funded scientists, Antonio and Hanna Damasio, who are principal investigators in the 'Neurobiology of Narrative Framing' project at the University of Southern California. Evoking Zalman's emphasis on the need for Pentagon psychological operations to deploy "empathetic influence," the new DARPA-backed project aims to investigate how narratives often appeal "to strong, sacred values in order to evoke an emotional response," but in different ways across different cultures. The most disturbing element of the research is its focus on trying to understand how to increase the Pentagon's capacity to deploy narratives that influence listeners in a way that overrides conventional reasoning in the context of morally-questionable actions.

The project description explains that the psychological reaction to narrated events is "influenced by how the narrator frames the events, appealing to different values, knowledge, and experiences of the listener." Narrative framing that "targets the sacred values of the listener, including core personal, nationalistic, and/or religious values, is particularly effective at influencing the listener's interpretation of narrated events," because such "sacred values" are closely tied with "the psychology of identity, emotion, moral decision making, and social cognition." By applying sacred framing to even mundane issues, such issues "can gain properties of sacred values and result in a strong aversion to using conventional reasoning to interpret them." The two Damasios and their team are exploring what role "linguistic and neuropsychological mechanisms" play in determining "the effectiveness of narrative framing using sacred values in influencing a listener's interpretation of events."

The research is based on extracting narratives from millions of American, Iranian and Chinese weblogs, and subjecting them to automated discourse analysis to compare them quantitatively across the three languages. The investigators then follow up using behavioral experiments with readers/listeners from different cultures to gauge their reaction different narratives "where each story makes an appeal to a sacred value to explain or justify a morally-questionable

behavior of the author.” Finally, the scientists apply neurobiological fMRI scanning to correlate the reactions and personal characteristics of subjects with their brain responses.

Why is the Pentagon funding research investigating how to exploit people’s “sacred values” to extinguish their capacity for logical reasoning, and enhance their emotional openness to “morally-questionable behavior”?

The focus on English, Farsi and Chinese may also reveal that the Pentagon’s current concerns are overwhelmingly about developing information operations against two key adversaries, Iran and China, which fits into longstanding ambitions to project strategic influence in the Middle East, Central Asia and Southeast Asia. Equally, the emphasis on English language, specifically from American weblogs, further suggests the Pentagon is concerned about projecting propaganda to influence public opinion at home.



Rosemary Wenchel (left) of the US Department of Homeland Security with Jeff 'Skunk' Baxter, a former musician and now US defense consultant who has worked for contractors like SAIC and Northrup Grumman. SAIC/Leidos executive Jeff Cooper is behind them

Lest one presume that DARPA’s desire to mine millions of American weblogs as part of its ‘neurobiology of narrative framing’ research is a mere case of random selection, an additional co-chair of the Pentagon Highlands Forum in recent years is Rosemary Wenchel, former director of cyber capabilities and operations support at the Office of the Secretary of Defense. Since 2012, Wenchel has been deputy assistant secretary for strategy and policy in the Department of Homeland Security.

As the Pentagon's extensive funding of propaganda on Iraq and Afghanistan demonstrates, population influence and propaganda is critical not just in far-flung theatres abroad in strategic regions, but also at home, to quell the risk of domestic public opinion undermining the legitimacy of Pentagon policy. In the photo above, Wenchel is talking to Jeff Baxter, a long-time US defense and intelligence consultant. In September 2005, Baxter was part of a supposedly "independent" study group (chaired by NSA-contractor Booz Allen Hamilton) commissioned by the Department of Homeland Security, which recommended a greater role for US spy satellites in monitoring the domestic population.

Meanwhile, Zalman and Rendon, while both remaining closely involved in the Pentagon Highlands Forum, continue to be courted by the US military for their expertise on information operations. In October 2014, both participated in a major Strategic Multi-Layer Assessment conference sponsored by the US Department of Defense and the Joint Chiefs of Staff, titled '*A New Information Paradigm? From Genes to "Big Data" and Instagram to Persistent Surveillance... Implications for National Security.*' Other delegates represented senior US military officials, defense industry executives, intelligence community officials, Washington think-tanks, and academics.



John Rendon, CEO of The Rendon Group, at a Highlands Forum session in 2010

Rendon and SAIC/Leidos, two firms that have been central to the very evolution of Pentagon information operations strategy through their pivotal involvement in the Highlands Forum, continue to be contracted for key operations under the Obama administration. A US General Services Administration

document, for instance, shows that Rendon was granted a major 2010–2015 contract providing general media and communications support services across federal agencies. Similarly, SAIC/Leidos has a \$400 million 2010–2015 contract with the US Army Research Laboratory for “Expeditionary Warfare; Irregular Warfare; Special Operations; Stabilization and Reconstruction Operations”—a contract which is “being prepared now for recomplete.”

The empire strikes back

Under Obama, the nexus of corporate, industry, and financial power represented by the interests that participate in the Pentagon Highlands Forum has consolidated itself to an unprecedented degree.

Coincidentally, the very day Obama announced Hagel’s resignation, the DoD issued a media release highlighting how Robert O. Work, Hagel’s deputy defense secretary appointed by Obama in 2013, planned to take forward the Defense Innovation Initiative that Hagel had just announced a week earlier. The new initiative was focused on ensuring that the Pentagon would undergo a long-term transformation to keep up with leading edge disruptive technologies across information operations.

Whatever the real reasons for Hagel’s ejection, this was a symbolic and tangible victory for Marshall and the Highlands Forum vision. Highlands Forum co-chair Andrew Marshall, head of the ONA, may indeed be retiring. But the post-Hagel Pentagon is now staffed with his followers.

Robert Work, who now presides over the new DoD transformation scheme, is a loyal Marshall acolyte who had previously directed and analyzed war games for the Office of Net Assessment. Like Marshall, Wells, O’Neill and other Highlands Forum members, Work is also a robot fantasist who lead authored the study, *Preparing for War in the Robotic Age*, published early last year by the Center for a New American Security (CNAS).

Work is also pitched to determine the future of the ONA, assisted by his strategist Tom Ehrhard and DoD undersecretary for intelligence Michael G. Vickers, under whose authority the Highlands Forum currently runs. Ehrhard, an advocate of

“integrating disruptive technologies in DoD,” previously served as Marshall’s military assistant in the ONA, while Mike Vickers—who oversees surveillance agencies like the NSA—was also previously hired by Marshall to consult for the Pentagon.

Vickers is also a leading proponent of irregular warfare. As assistant defense secretary for special operations and low intensity conflict under former defense secretary Robert Gates in both the Bush and Obama administrations, Vickers’s irregular warfare vision pushed for “distributed operations across the world,” including “in scores of countries with which the US is not at war,” as part of a program of “counter network warfare” using a “network to fight a network”—a strategy which of course has the Highlands Forum all over it. In his previous role under Gates, Vickers increased the budget for special operations including psychological operations, stealth transport, Predator drone deployment and “using high-tech surveillance and reconnaissance to track and target terrorists and insurgents.”

To replace Hagel, Obama nominated Ashton Carter, former deputy defense secretary from 2009 to 2013, whose expertise in budgets and procurement according to the Wall Street Journal is “expected to boost some of the initiatives championed by the current Pentagon deputy, Robert Work, including an effort to develop new strategies and technologies to preserve the US advantage on the battlefield.”

Back in 1999, after three years as Clinton’s assistant defense secretary, Carter co-authored a study with former defense secretary William J. Perry advocating a new form of ‘war by remote control’ facilitated by “digital technology and the constant flow of information.” One of Carter’s colleagues in the Pentagon during his tenure at that time was Highlands Forum co-chair Linton Wells; and it was Perry of course that as then-defense secretary appointed Richard O’Neill to set-up the Highlands Forum as the Pentagon’s IO think-tank back in 1994.

Highlands Forum overlord Perry went on to join the board of SAIC, before eventually becoming chairman of another giant defense contractor, Global Technology Partners (GTP). And Ashton Carter was on GTP’s board under Perry, before being

nominated to defense secretary by Obama. During Carter's previous Pentagon stint under Obama, he worked closely with Work and current undersecretary of defense Frank Kendall. Defense industry sources rejoice that the new Pentagon team will "dramatically improve" chances to "push major reform projects" at the Pentagon "across the finish line."

Indeed, Carter's priority as defense chief nominee is identifying and acquiring new commercial "disruptive technology" to enhance US military strategy—in other words, executing the DoD Skynet plan.

The origins of the Pentagon's new innovation initiative can thus be traced back to ideas that were widely circulated inside the Pentagon decades ago, but which failed to take root fully until now. Between 2006 and 2010, the same period in which such ideas were being developed by Highlands Forum experts like Lochard, Zalman and Rendon, among many others, the Office of Net Assessment provided a direct mechanism to channel these ideas into concrete strategy and policy development through the Quadrennial Defense Reviews, where Marshall's input was primarily responsible for the expansion of the "black" world: "special operations," "electronic warfare" and "information operations."



Andrew Marshall, now retired head of the DoD's Office of Net Assessment and Highlands Forum co-chair, at a Forum session in 2008

Marshall's pre-9/11 vision of a fully networked and automated military system found its fruition in the Pentagon's Skynet study released by the National Defense University in September 2014, which was co-authored by Marshall's colleague at the Highlands Forum, Linton Wells. Many of Wells'

recommendations are now to be executed via the new Defense Innovation Initiative by veterans and affiliates of the ONA and Highlands Forum.

Given that Wells' white paper highlighted the Pentagon's keen interest in monopolizing AI research to monopolize autonomous networked robot warfare, it is not entirely surprising that the Forum's sponsoring partners at SAIC/Leidos display a bizarre sensitivity about public use of the word 'Skynet.'

On a Wikipedia entry titled 'Skynet (fictional)', people using SAIC computers deleted several paragraphs under the 'Trivia' section pointing out real-world 'Skynets', such as the British military satellite system, and various information technology projects.

Hagel's departure paved the way for Pentagon officials linked to the Highlands Forum to consolidate government influence. These officials are embedded in a longstanding shadow network of political, industry, media and corporate officials that sit invisibly behind the seat of government, yet literally write its foreign and domestic national security policies whether the administration is Democrat or Republican, by contributing 'ideas' and forging government-industry relationships.

It is this sort of closed-door networking that has rendered the American vote pointless. Far from protecting the public interest or helping to combat terrorism, the comprehensive monitoring of electronic communications has been systematically abused to empower vested interests in the energy, defense, and IT industries.

The state of permanent global warfare that has resulted from the Pentagon's alliances with private contractors and unaccountable harnessing of information expertise, is not making anyone safer, but has spawned a new generation of terrorists in the form of the so-called 'Islamic State'—itself a Frankenstein by-product of the putrid combination of Assad's brutality and longstanding US covert operations in the region. This Frankenstein's existence is now being cynically exploited by private contractors seeking to profit exponentially from expanding the national security apparatus, at a time when

economic volatility has pressured governments to slash defense spending.

According to the Securities and Exchange Commission, from 2008 to 2013, the five largest US defense contractors lost 14 percent of their employees, as the winding down of US wars in Iraq and Afghanistan led to lack of business and squeezed revenues. The continuation of the 'Long War' triggered by ISIS has, for now, reversed their fortunes. Companies profiting from the new war include many connected to the Highlands Forum, such as Leidos, Lockheed Martin, Northrup Grumman, and Boeing. War is, indeed, a racket.

No more shadows

Yet in the long-run, the information imperialists have already failed. This investigation is based entirely on open source techniques, made viable largely in the context of the same information revolution that enabled Google. The investigation has been funded entirely by members of the public, through crowd-funding. And the investigation has been published and distributed outside the circuits of traditional media, precisely to make the point that in this new digital age, centralized top-down concentrations of power cannot overcome the power of people, their love of truth and justice, and their desire to share.

What are the lessons of this irony? Simple, really: The information revolution is inherently decentralized, and decentralizing. It cannot be controlled and co-opted by Big Brother. Efforts to do so will in the end invariably fail, in a way that is ultimately self-defeating.

The latest mad-cap Pentagon initiative to dominate the world through control of information and information technologies, is not a sign of the all-powerful nature of the shadow network, but rather a symptom of its deluded desperation as it attempts to ward off the acceleration of its hegemonic decline.

But the decline is well on its way. And this story, like so many before it, is one small sign that the opportunities to mobilize the information revolution for the benefit of all, despite the efforts of power to hide in the shadows, are stronger than ever.