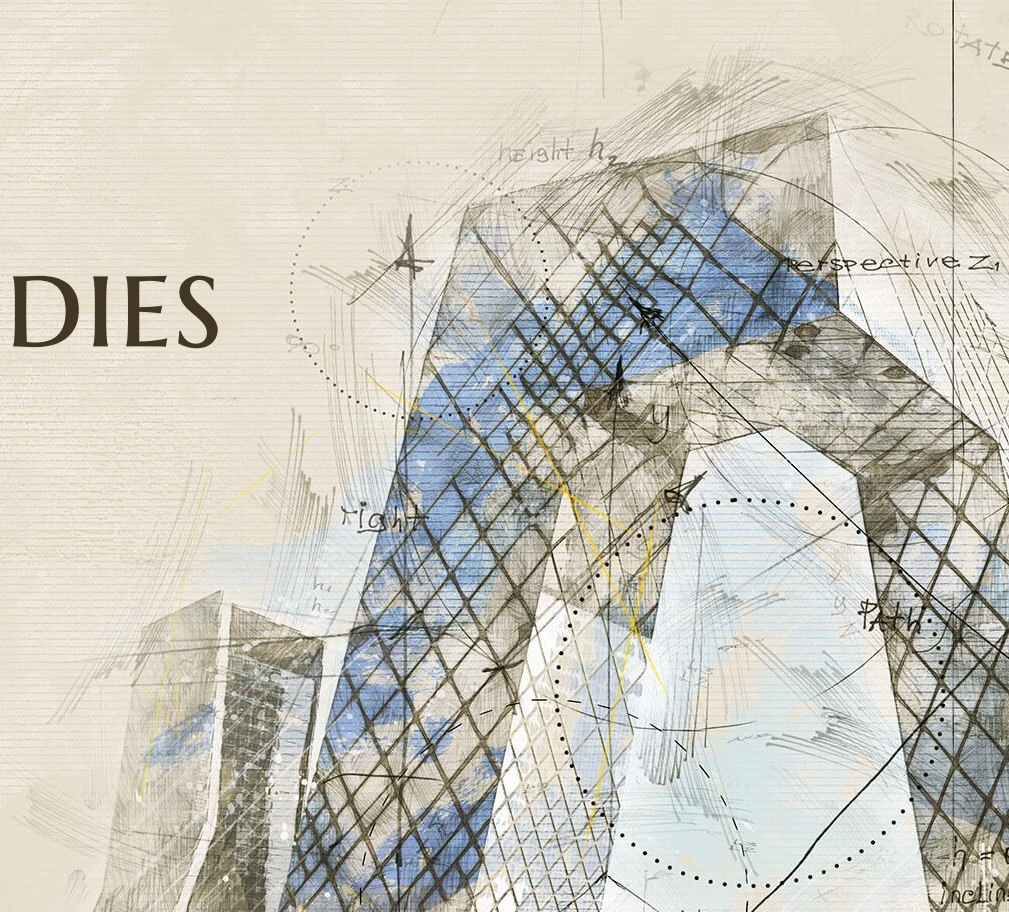


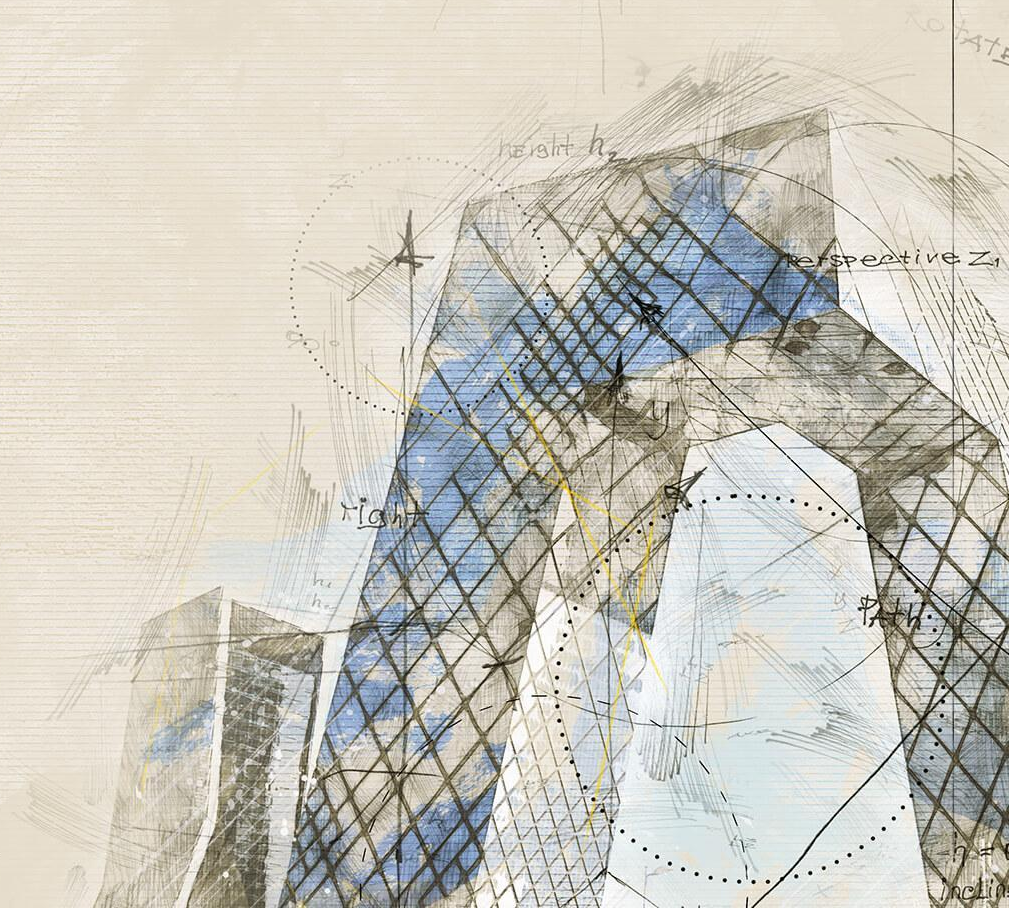
# MILITARY AND STRATEGIC STUDIES

ITSC 201 Winter 2021





“The most likely winner for the award  
because of his professional rigour, integrity  
- Nathaniel Borenstein



# CYBERSECURITY

A CRYPTO NERD'S  
IMAGINATION:

HIS LAPTOP'S ENCRYPTED.  
LET'S BUILD A MILLION-DOLLAR  
CLUSTER TO CRACK IT.

NO GOOD! IT'S  
4096-BIT RSA!

BLAST! OUR  
EVIL PLAN  
IS FOILED!



WHAT WOULD  
ACTUALLY HAPPEN:

HIS LAPTOP'S ENCRYPTED.  
DRUG HIM AND HIT HIM WITH  
THIS \$5 WRENCH UNTIL  
HE TELLS US THE PASSWORD.

GOT IT.



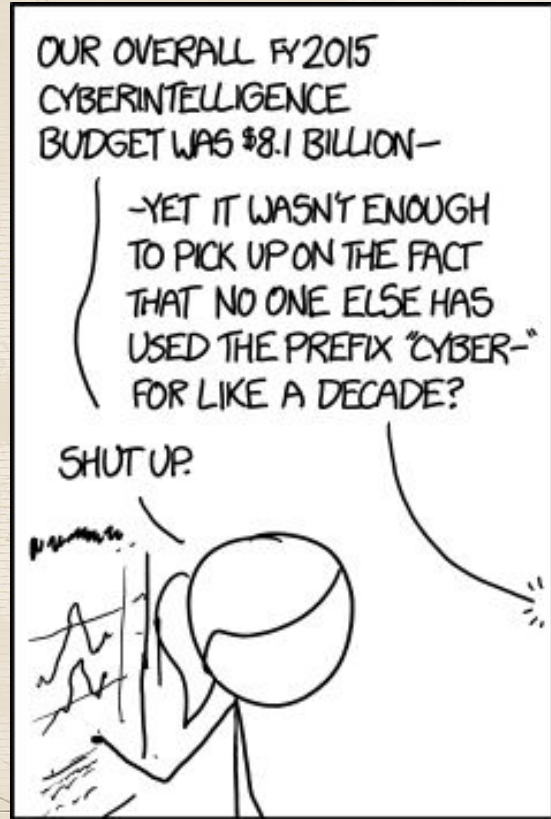
A modest proposal

Secretary Mattis  
issues a warning

A brief history



# THE CYBERSECURITY QUARTET



- ◆ Crime and financial meddling
- ◆ Information theft and misuse
- ◆ Infrastructure and physical harm
- ◆ Operational support

# THEFT & FINANCIAL MEDDLING



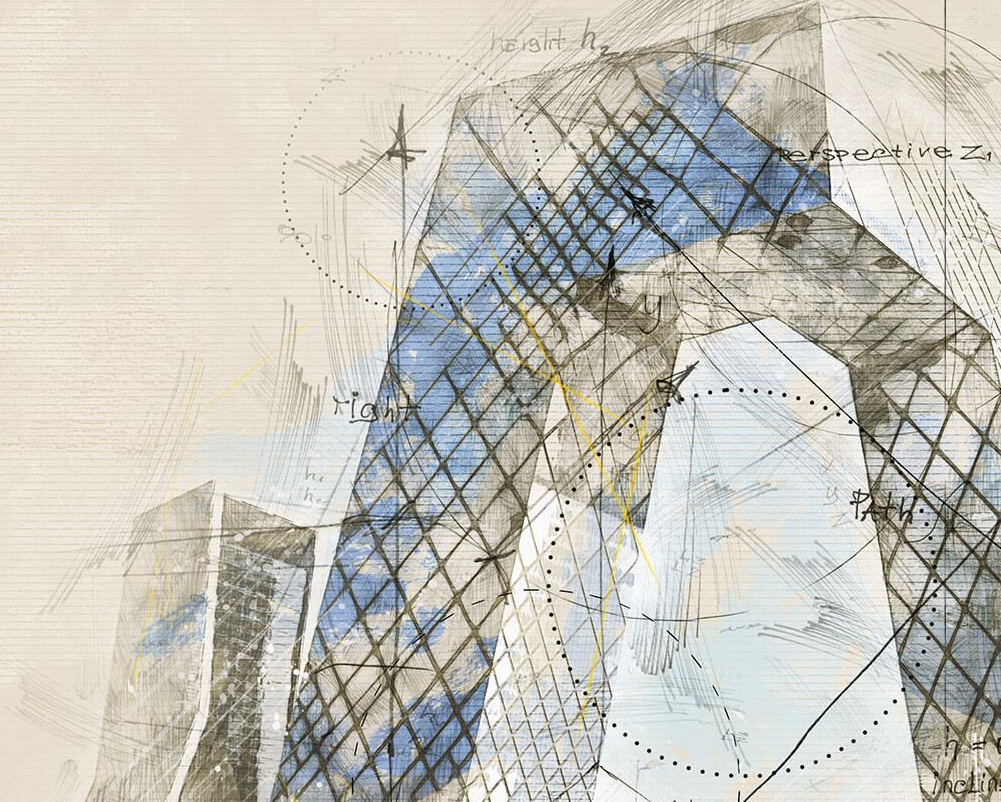
The uses of personal data

Ubiquitous

Foundational crimes



“Like Alhambra, it rotates and slides, and it is a machine that  
allows you to move very high, very high, very high.”  
- Arit Ferizi



# THEFT & FINANCIAL MEDDLING



The 2 bitcoin error

Adjacency threat

The perils of late  
night cybercafes



# CORPORATE ESPIONAGE

A different register  
“The biggest wealth  
transfer in history”  
Su Bin’s C-17 love





# PHISHING, FRAUD & EXTORTION

Grant McEwan's costly credulity

Twitter in the coalmine

Old faithful

The perils of emergencies



# INFORMATION LOSS

The Exchequer's  
horrifying confession

Yahoo indeed

Financial institutions  
bouncing security checks





# INFORMATION LOSS

Strava brings the heat

Compromising  
Information

Sextortion's chequered  
record



# RANSOMWARE

A rapidly maturing  
threat

Schools, hospitals, and  
fitness

Darkside Inc's polite  
brutality





# RANSOMWARE

School's in for ransom

Ransomware climbs the  
escalatory ladder

Persistent engagement  
and the securitization of  
crime



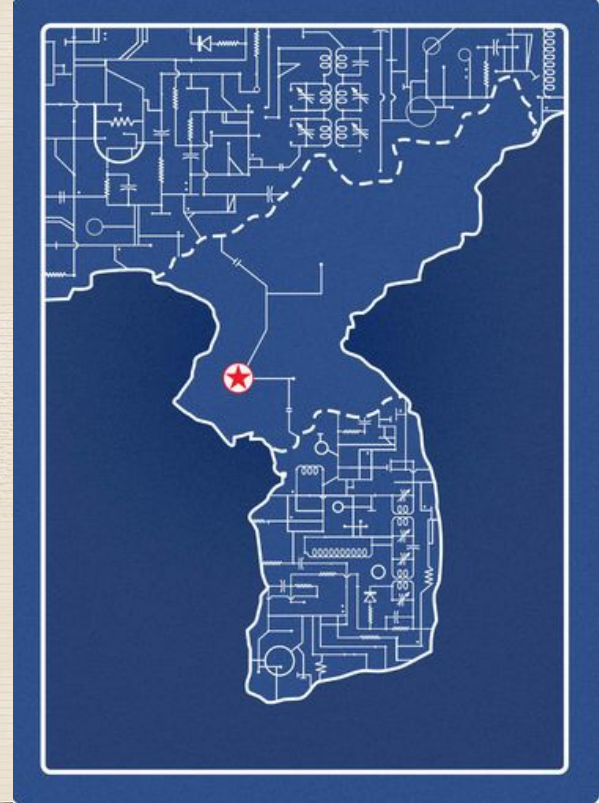
# AMBIGUOUS IDENTITIES

Multifaceted actors

Russian models

North Korea's  
innovation

Pyongyang's  
*chevauchee*





# SYSTEMIC FINANCIAL THREATS

## The four horsemen

- ◆ Lack of substitutability
- ◆ Loss of confidence
- ◆ Data integrity
- ◆ IT over-concentration



# SYSTEMIC FINANCIAL THREATS

The novel challenges  
of a *directed* threat

Cybercrime's  
evolution





# INTELLIGENCE

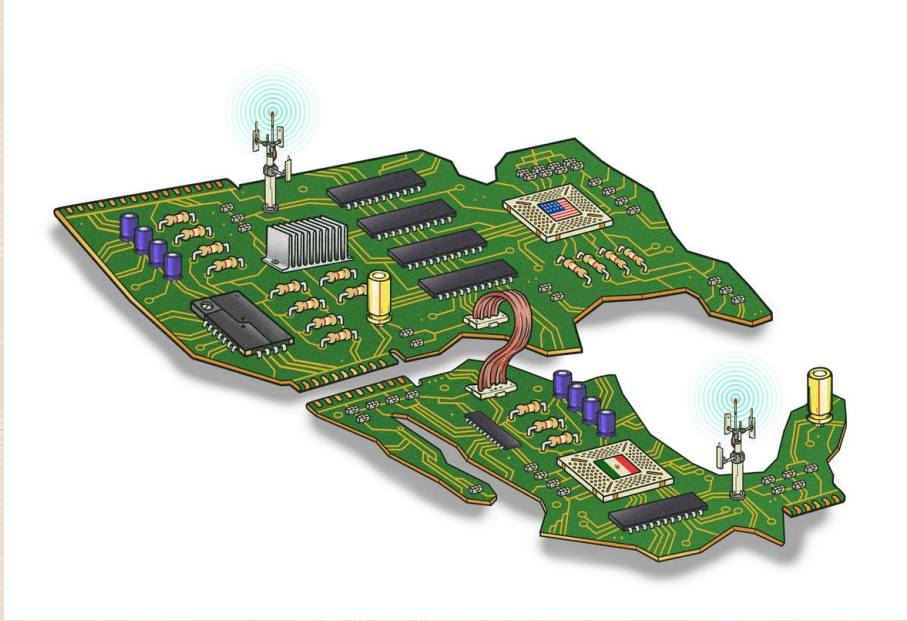
Scaling up

Modest beginnings in  
1998

The great superglue  
solution



# INTELLIGENCE



Continuing  
vulnerabilities at  
DoD

Systemic flaws

The shadowbrokers  
& the NSA's leaky  
seals



# INTELLIGENCE



China's APTs find  
backdoors

Clapper's gloomy  
silver lining

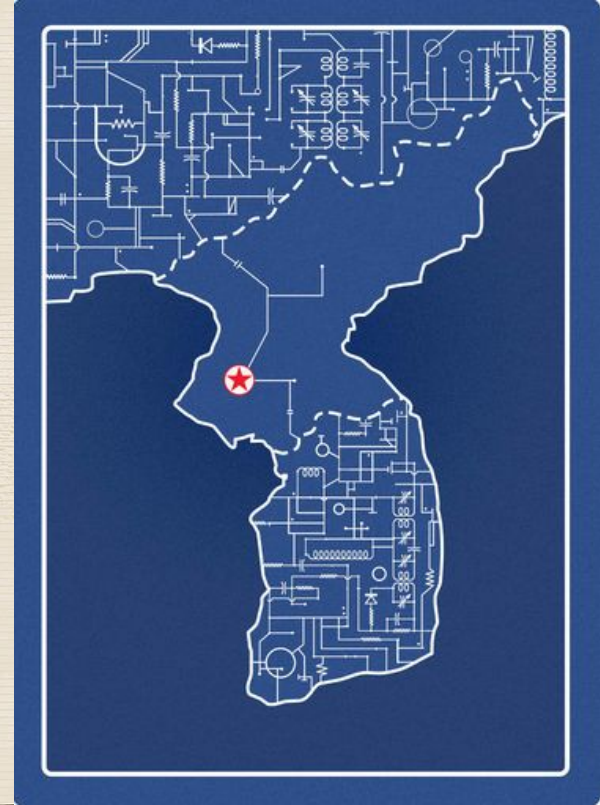
Boxing Rumble's  
painful rebuff

# DISINFORMATION

Seth Rogan & James  
Franco provide a *casus  
belli*

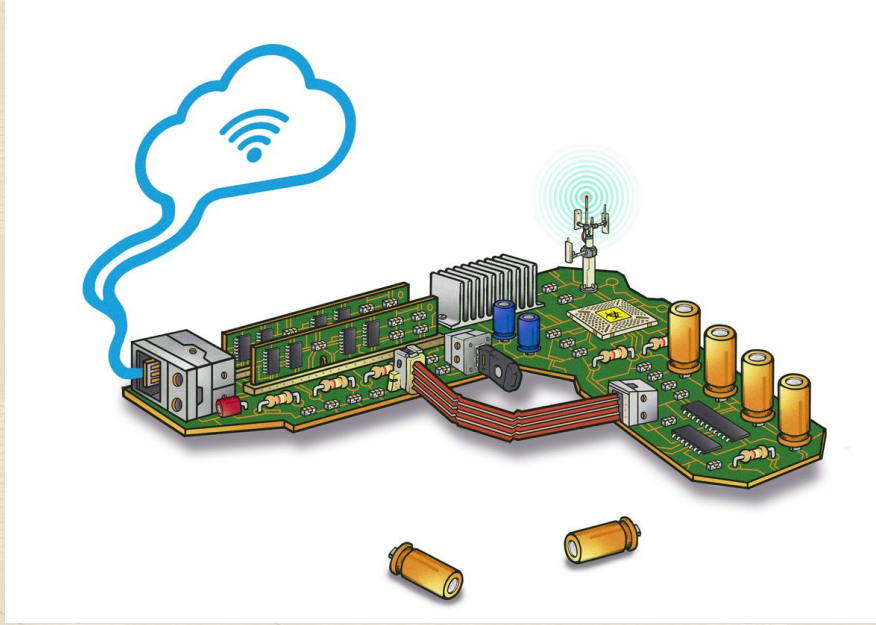
“Hacked by the #GOP”

Pyongyang's failed  
coercion





# HACKS & DISINFORMATION

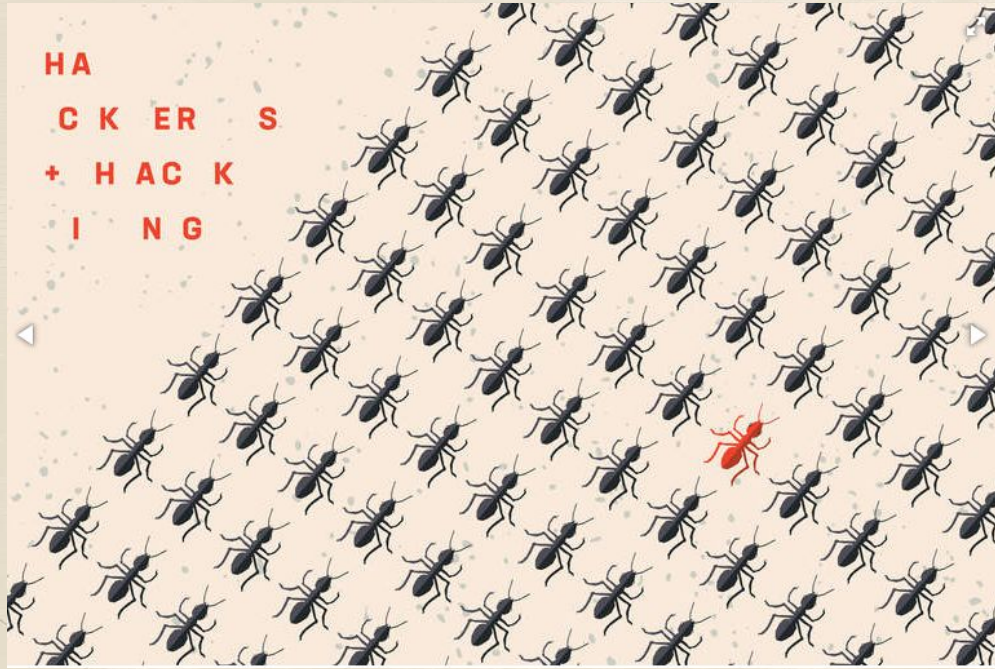


The limited success  
of cyber-coercion

Sending signals,  
disrupting operations

Targeting the  
enemy's coherence

# HACKS & DISINFORMATION



Snowden opens the door to data manipulation

Nuland's costly indiscretion



# ELECTION INTERFERENCE

Myriad Examples

Dutch lessons from the  
IRA

A plethora of American  
vulnerabilities



# ELECTION INTERFERENCE



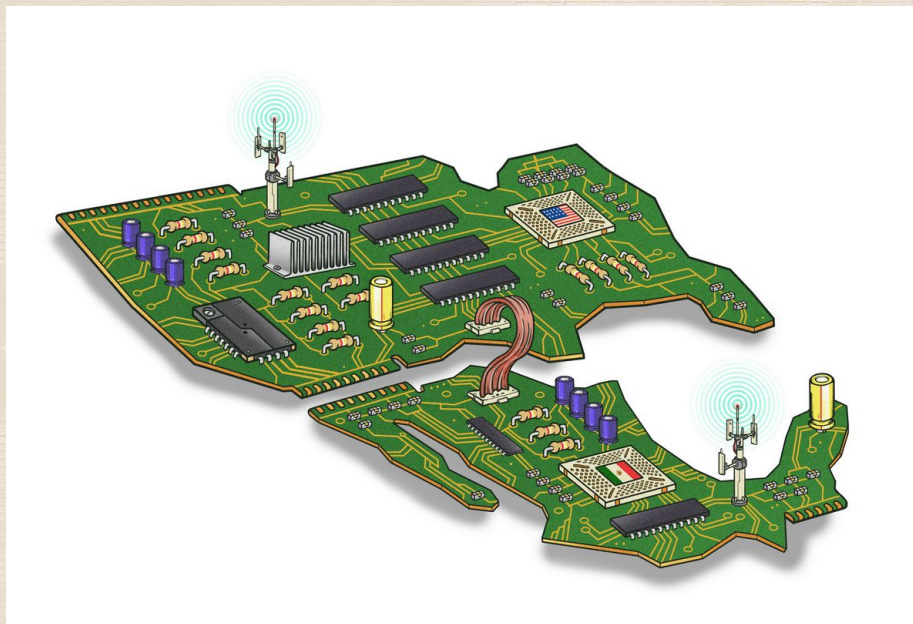
Social media  
manipulation

Jade Helm 15 provides  
a demonstration

Russia's objectives in  
2016



# ELECTION INTERFERENCE



The DNC's FBI  
problem

John Podesta takes  
the bait

Exacerbating  
division

# ELECTION INTERFERENCE

Approximate Date	Excerpt of Advertisement
April 6, 2016	"You know, a great number of black people support us saying that #HillaryClintonIsNotMyPresident"
April 7, 2016	"I say no to Hillary Clinton / I say no to manipulation"
April 19, 2016	"JOIN our #HillaryClintonForPrison2016"
May 10, 2016	"Donald wants to defeat terrorism . . . Hillary wants to sponsor it"
May 19, 2016	"Vote Republican, vote Trump, and support the Second Amendment!"
May 24, 2016	"Hillary Clinton Doesn't Deserve the Black Vote"
June 7, 2016	"Trump is our only hope for a better future!"
June 30, 2016	"#NeverHillary #HillaryForPrison #Hillary4Prison #HillaryForPrison2016 #Trump2016 #Trump #Trump4President"
July 20, 2016	"Ohio Wants Hillary 4 Prison"
August 4, 2016	"Hillary Clinton has already committed voter fraud during the Democrat Iowa Caucus."
August 10, 2016	"We cannot trust Hillary to take care of our veterans!"
October 14, 2016	"Among all the candidates Donald Trump is the one and only who can defend the police from terrorists."
October 19, 2016	"Hillary is a Satan, and her crimes and lies had proved just how evil she is."

Examples from the  
IRA

Macedonian teens  
make the news

Discouraging  
Clinton's vote



# SOCIAL MEDIA



Trusting Jill Stein

Coordinating chaos  
in Nairobi and  
Mumbai

# INFRASTRUCTURE

Operation Olympic Games

Israeli desperation

Dark days at Symantec

Wiper's sequel





# INFRASTRUCTURE

Iran's Ramadan riposte

The Bowman Dam  
enigma

Russia's innovations

Lee makes the case for  
cyberwar



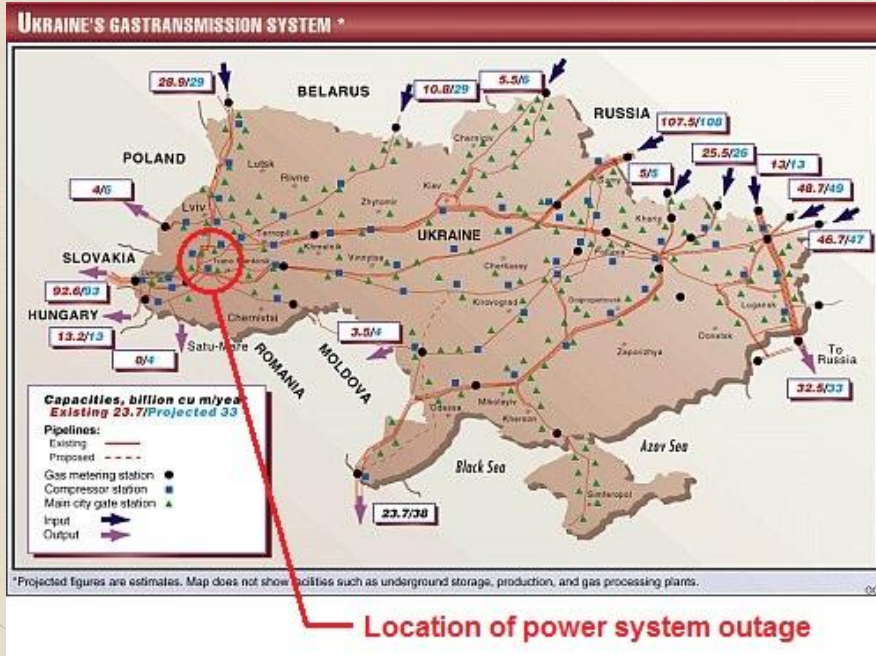
# INFRASTRUCTURE

Russia's classroom

Multiple goals

The fatal error

Threshold risks





# SUPPORTING MILITARY OPERATIONS



A traditional  
concern, with new  
means

A flood of threats

The extant dangers  
of nuclear systems

# NUCLEAR INSTABILITY



Three issues

- ◆ System age
- ◆ Two kinds of control
- ◆ An opposed problem



# NUCLEAR INSTABILITY



The supply chain threat

The communication triad

- ◆ Partial or false information
- ◆ Failing to work as intended
- ◆ Failing to work at all

# NUCLEAR INSTABILITY



Positive and negative  
control

The sextet of disasters

Espionage's  
demonstrated danger



# COMMUNICATIONS & COMMAND



Singer and Cole and systems destruction warfare

Old techniques and explosive results in Ukraine

# COMMUNICATIONS & COMMAND



Russia demonstrates  
precision

Blinding the  
response

Israel's Syria  
corridor



# DISRUPTION

Nitro Zeus

Not-Petya's nuclear  
attack

The edge of  
conventional war





# REFERENCES

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