Deviant Mobs of the Internet
Bots, Trolls, and Misinformation

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The Crowd

• Gustav Le Bon (1895), *The Crowd: A Study of the Popular Mind*

• Expressed skepticism about the shift from an agrarian society to city living. Le Bon wrote, the urban crowd is marked by “impulsiveness, irritability, incapacity to reason” and “the exaggeration of the sentiments.” A man on his own “may be a cultivated individual,” but “in a crowd, he is a barbarian.”

• Now, we have “Twitter mobs”
Vicious “Online” Mobs

How WhatsApp Fuels Fake News and Violence in India

By the time police arrived in the hamlet of Rainpada on July 1, 2018, the village council office was the scene of a massacre.
Online Deviant Groups

- Terrorist & Extremist Groups (ISIS)
- Deviant Hackers Networks (DHNs)
- Anti-NATO Propagandist
- Internet Trolls
The 206 cases in January and February already surpass annual totals for most of the past decade.

IFRC Europe Regional Director, Simon Missiri said “vaccine refusal is an increasingly worrying trend worldwide.”
Health & Wellness Misinformation

“Statins cause Cancer!”

Pink salt will “regulate your blood sugar and sleep cycle.”
Misinformation in Agriculture

Numerous fake reports of contaminated turkey in Walmart before Thanksgiving 2015. Within hours several hundred claims were reported on Twitter. Walmart ignored it as a hoax. Many of the claims came from accounts linked to a pro-Kremlin propaganda agency charged by Special Counsel Robert Mueller’s office.
Misinformation in Disasters

During Hurricane Sandy in 2012, the following rumors were floating on social media.
- Sharks swimming through waterlogged suburban neighborhoods,
- Statue of Liberty engulfed in ominous clouds, and
- Floor of the New York Stock Exchange flooded.


During Hurricane Harvey in 2017, again the “shark on highway” hoax went viral.

“Shark on Highway” Hoax during Disasters

During crises events, misinformation is rampant. One of the most commonly spread hoaxes is “shark on highways”. Timeline below illustrates this hoax as it is propagated during various hurricanes in the U.S.

Original image was published in Africa Geographic magazine in September 2005.

Used as hoax during Hurricane Irene in 2011, Hurricane Sandy in 2012, Houston Flood in 2015, Hurricane Matthew in 2016, and finally in our collected datasets for Hurricane Harvey, Hurricane Irma, and Hurricane Maria in 2017.

A simple analysis about “shark on highways” using Google Trends shows the following... (next slide)
Shark Hoax over Time

Interest in the hoax, “shark on highways” has grown significantly over time. Illustrated below is the interest volume in the shark hoax over 2004 - 2017 period. Interestingly, spikes align with weather events, starting from Ernesto (2006) to Harvey (2017). Bigger spikes in the trend are observed in the recent years.
Computational (AI) Propaganda

Fake text: https://www.youtube.com/watch?v=XMJ8VxgUzTc
Fake images: https://thispersondoesnotexist.com/
Fake videos: https://www.youtube.com/watch?v=cQ54GDm1eL0
Many people trust news that comes from their friend circle on social media channels

- 34% Americans trust the information from social media (Pew Research Center, 2016).
- 14% Americans consider social media as the most important source of information (the National Bureau of Economic Research (NBER), 2017).
Manipulation & Monetization

• Running a fake-news campaign is cheap:
  o For $55,000 you could discredit a journalist;
  o For $200,000 you might instigate a street protest.
  o For $30 an 800-word fake news article, written by Chinese content marketer Xiezuobang
  o For $621 a video appears in YouTube’s main page for two minutes, created by Russian firm SMOService
  o For $25 to have 2,500 Twitter followers all retweet a link for you

Source: Cyber security firm Trend Micro, 2017
Hysteria Propagation

- Shawn Dawson, a prominent YouTuber released a 104-min documentary with bizarre hypotheses
  - Popular children’s TV shows contain subliminal messages urging children to commit suicide
  - Recent string of deadly wildfires in California was set on purpose – to collect insurance or to test “directed energy weapon” by the military
  - Chuck E. Cheese recycles customers’ uneaten pizza slices into new pizzas
- Over 30 million views in just one month
Radicalization and Recruitment

ISIS Twitter Recruitment Network

Top ISIS Twitter Actors’ Geolocation Map
Trends in Disinformation Campaigns

- Cross platform orchestration
  - Growing use of niche platforms
- Communities and coordination
  - Flash mob style coordination
  - Blogger communities
  - Blog farms (a.k.a. coordinated clickbait)
  - Computational (AI) propaganda – coordinated deep fakes
- Algorithmic manipulation
Ongoing Efforts

• Actively tracking anti-West, anti-EU, anti-NATO propaganda
• Participated in various NATO exercises to assist public affairs and social media monitoring

- Dragoon Ride 2015
- Trident Juncture 2015
- Brilliant Jump 2016
- Anakonda 2016
- Trident Juncture 2018
- Baltic Operations 2019

• Monitored groups like ISIS, deviant hacker networks
• Monitoring disinformation campaigns in the Asia Pacific region
• Monitoring 2019 Canadian Elections
Cross-Media Dissemination

A blog using YouTube video to spread anti-NATO propaganda suggesting NATO’s troops obstructing Russian operations in Syria thereby helping ISIS.

A blog using YouTube video to spread anti-NATO propaganda by suggesting NATO is waging war against Syrian refugees.

A YouTube channel with several Anti-NATO propaganda videos. The channel is called, “ANTI NATO”.

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[Images of various platforms like YouTube, Reddit, Twitter, Facebook, Discord, etc. are shown.]

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Why Blogs?

• Afford power and freedom to express opinion, frame narratives more effectively than any other social media platform
• No character limit
• No censorship
• Provide digital town halls
US will provide weapons to NATO Commandos to attack Ukrainian separatists.


Examining Strategic Integration of Social Media Platforms in Disinformation Campaign Coordination. NATO StratCom COE, July 2018.
Cross Media Campaign Network

- Founder of @nomilservice
- Founder of @warresistant
- Affiliated to No Military Service Facebook page
Social Cyber Forensics

Cyber forensic analysis helps extracting metadata, such as,
- Web traffic tracker codes (Google Analytics IDs)
- Email addresses
- IP address
- Contact details e.g., phone number
- Names under which the domain is registered
- Other digital/social presence e.g., Twitter handles, YouTube links, Facebook profile, other blogs, etc.
Norwegian Frigate Helge Ingstad collides with an oil tanker in Norwegian Sea. Nov. 8, 2018
**Helge Ingstad Collision – Cross Media Integration**

**Blog**

**The War Zone**

*Badly Damaged Norwegian Frigate Intentionally Ran Aground After Tanker Collision (Updated)*

Reports state that the ship was sinking and grounding it was the only chance the skipper had at saving it.

**Other News Media**

*Finland and Norway are telling airline pilots to be ready to fly without GPS, and some think Russia is up to something*
Cyber Forensic Analysis - The Drive Blog

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Social Media Footprint – The Warzone Blog

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<th>Social Media</th>
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Communities and Coordination

Focal Structure Analysis

Member Based Algorithms
Degree Centrality
Nodes Similarity

Focal Structure Analysis

Group Based Algorithms
Modularity Method
K-means clustering, K-cut, Cliques
Bi-level Optimization

Node-level optimization

\[
\begin{align*}
\max_{i=1}^{n} & \quad \delta_i \\
\text{Subject to} & \\
d_i = (d_{c_i} \leq d_{c_j} \leq d_{c_k} \leq \ldots \leq d_{c_l}) & \quad \forall i, j \\
d_i' = \sum_{j} m_{ij} & \quad \forall i \\
d_i' \geq 2 & \quad \forall i \\
D_i' = \frac{1}{n} \sum_{i=1}^{n} d_i' & \quad (\# \text{ of Triangles}) \times 3 \\
N_i' < D_i' \leq D_i'' & \quad \forall i \\
A_{C_i} = \frac{1}{n} \sum_{i=1}^{n} a_i' & \quad \forall i \\
A_{C_i}' \leq a_i' \leq A_{C_i}'' & \quad \forall i \\
F = \{c_1, c_2, c_3, \ldots, c_k\} & \quad \forall j, k
\end{align*}
\]

Network-level optimization

\[
\begin{align*}
\max_{j=1}^{n} & \quad \phi_j \\
\text{Subject to} & \\
\phi_j = \{\phi_1, \phi_2, \phi_3, \ldots, \phi_j\} & \quad \forall j \\
\delta_j = [\bar{c}_{j1}, \bar{c}_{j2}, \bar{c}_{j3}, \ldots, \bar{c}_{jn}] - \bar{c}_j & \quad \forall j \\
B = A_{ij} - \frac{dd^T}{2m} & \quad \forall i, j \\
\xi_j = \{\bar{c}_j \cup \delta_j \} & \quad \forall j \\
\phi_j = \frac{1}{2m} Tr(\xi_j B \xi_j^T) & \quad \forall j \\
e' \leq \phi_j \leq e'' & \quad \forall j
\end{align*}
\]
Power of Key Coordination Structures

P1. \[
\text{Importance(Im)} \rightarrow \text{Interest(I)} \\
\text{Interest(I)} \rightarrow \text{Importance(Im)} \\
\therefore \text{Importance(Im)} \leftrightarrow \text{Interest(I)}
\]

P2. \[
\text{Utility(U)} \rightarrow \text{Interest(I)}
\]

P3. \[
\text{Utility(U)} \rightarrow \text{Power(P)}
\]

P4. \[
\text{Power(P)} \rightarrow \text{Importance(Im)} \\
\text{Importance(Im)} \rightarrow \text{Power(P)} \\
\therefore \text{Power(P)} \leftrightarrow \text{Importance(Im)}
\]

P5. \[
\text{Power(P)} \rightarrow \text{Control(C)} \\
\text{Control(C)} \rightarrow \text{Power(P)} \\
\therefore \text{Power(P)} \leftrightarrow \text{Control(C)}
\]

\[
\therefore \text{Power(P)} = f(C,\text{Im})
\]

\[
\therefore \text{Importance(Im)} = f(\text{Interest})
\]

\[
\therefore \text{Interest(I)} = |\text{Outcome}_1 - \text{Outcome}_0|
\]

\[
\therefore \text{Power(P)} = f(C, |\text{Outcome}_1 - \text{Outcome}_0|)
\]

Or

\[
\therefore \text{Power(P)} = f(C, I)
\]

Model showing all the factors that help in determining the outcome of a collective action, i.e., Success or Failure.

*Published in SBP, SNAM, AAAI, CASON*
Focal Structure Analysis

• Web-based application
• No installation needed
• Upload network in csv format
• Identifies focal structures and extract/export

http://blogtrackers.host.ualr.edu/fsa/
Key Coordinating Group of Actors during Ukraine-Russia Conflict

• Graham W. Phillips is a British journalist and blogger.
• He went to Ukraine to cover the voice of Ukrainians during Euromaidan.
• He reported that Ukrainians are “happy” with the previous pro-Russian government of Ukraine.
• He used Vlogging to cover the events.
• His Vlogs made him an influential blogger & an enemy to the current Ukrainian government so they banned him from entering Ukraine for three years.
• Once he was banned from entering Ukraine he went to Russia instead of going back to England.
Blogger Communities

Green – AsiaPacific Blog (357 Bloggers)
Blue – Mondalisation Blog (4320 Bloggers)
Red – GlobalResearch Blog (9219 Bloggers)

Common Bloggers from 3 communities - 98

Some of the APAC bloggers are also members of the GlobalResearch and Mondalisation blogging communities. These communities are known to espouse anti-West, anti-EU, anti-NATO viewpoints.
Communities & Coordination

Pro-Duterte blogging community

Coordination among bloggers detected

Suspicious sources referenced
Coordinated Clickbait (a.k.a. *Blog Farms*)

- Blog farms identified based on web traffic tracker codes
- Fabricate perception of a viral content
- Hypertargeting
- Search engine manipulation by traffic amplification
- Financing the operation

“At least six Swedish sites have received financial backing through advertising revenue from a Russian- and Ukrainian-owned auto-parts business based in Berlin, whose online sales network oddly contains buried digital links to a range of far-right and other socially divisive content.”

*NYTimes, August 10, 2019*
Coordinated ‘Fake’ Websites

**Canadian elections 2019** - 291 fake websites created using “Built with API” service with anti-Trudeau narrative.

One such fake website “weresorryindia.com” amplifies anti-Trudeau narrative suggesting he is not a friend of the Canadian-Indian community. The website tops the results in search engines.
Coordinated YouTube Campaigns

• These channels have similar/same video content
• Have similar/same robotic voice narration
• Appear in each others subscribed lists
• Suggested by YouTube as related channels
Coordinated YouTube Campaigns

- Videos belong to different channels
- Similar/Same titles
- Same/Similar audio
- Same/Similar Robotic narration
Color Theory Based Detection

Channels coordinate content amplification by repurposing portions of a video and producing multiple videos

**Video ID:** OM5vaF2kzPA  
**Title:** China vs US The War in the South China Sea already Start  
**Channel:** Breaking News TV

**Video ID:** GsCmudyXY2o  
**Title:** China vs US The War in the South China Sea already Start  
**Channel:** DOT COM US
YouTube ‘Commenter’ Flash Mobs

Comment mobs were observed indicating signs of algorithmic manipulation

Exploiting biases of the recommendation algorithms
Commenter Mobs Across Channels

- Hot news – 8,477 commenters
- US Military – 11,817 commenters
- DOT COM US – 2,340 commenters
- PH TV – 14,263 commenters
- Ultimate US Military – 5,369 commenters
- 104 core commenters
Youtubers Conducting Botnet Operated Twitter Campaigns

Pro-Russian YouTube channel named “Golden Tengu TV” also has a Twitter account. Tweets from its Twitter account are merely links to its YouTube videos, posted in a robotic style.

People who like these tweets (such as @Blackdo52395065, @nLqLGPh8F7JiHG9) are also robots.

It is a small botnet.
Botnets – Evolution and Dissemination

Mutual reciprocity. IFYFM & FMIFY

No mutual reciprocity. Coordination in information network

Organizational hierarchy. Core and peripheral bots

COORDINATION/BEHAVIOR COMPLEXITY

Crimean Invasion 2014
Dragoon Ride 2015
Trident Juncture 2015
ISIS Propaganda 2016

Mutual reciprocity.

No mutual reciprocity.
Coordination in information network
Organizational hierarchy.
Core and peripheral bots

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Mutual reciprocity.
Algorithmic Manipulation

“Hot News” a prominent channel disseminating videos related “South China Sea” conflict.

Videos have robotic voice/narration
Top Content

Top 10 most watched videos contain more adversarial content

Comments on most watched video contain anti-NATO sentiments

Boy I hope the Russians don't have any of those advanced Oil Tankers in their navy, or we're doomed.

The Russians did it. That will be the chorus in the west. LOL

It was so stealth the tanker never saw it

This is not funny at all. In my expert opinion, this is a very cunning norwegian plot to kill as many Russians as possible... by making them laugh to their deaths.

Competent NATO.
Influential Posts

NATO Exercise Trident Juncture and the Environment

October 6, 2018  NS322  Go to comments  Leave a comment

By Steinar Eriksen, Stop NATO

In these days, political parties, peace organizations and individuals are in full swing to focus on the forthcoming NATO Trident Juncture exercise (TRJ18). It will find a town in the period from 15 October to 7 November and will cover large parts of the Nordic region with main weight in Norway. A total of 40000 soldiers from all NATO countries and close Allies will participate.

There is resistance to this exercise. People are rightly afraid that, by virtue of their great play, it will increase excitement in our area and lead to additional upgrading.

There are many in the area of peacekeeping slavery that is occupied by the environmental aspect of this kind of military activity.

Our belief is that TRJ18 will lead to extensive damage to land, forests and pastures, and not least to land, air and water. Frederiksdal is afraid that the environmental issue will be glimpse of all logistics problems.

What we know is that 40000 soldiers will attend. It is a crowd of great size with Bodø city. 8000 racing animals are going out on the road. From experience, we know that it’s mostly lorries and heavy traffic noise that make large wounds in nature and not at least large emissions to air.

8000 kjøretøy is a 92km column, the distance Oslo – Kongsvinger.

So, use of large amounts of loose ammunition, which means heavy metal emissions to nature that nobody is in control of.

In these days, NATO drives what they call deployment - deployment of heavy equipment and machines.

The Alliance is a fuss on the environmental front. And with one state that has terminated the Paris agreement in the driver’s seat, it does not promise the best.

Increased militarization will put more pressure on climate and the environment. And we know that the military is unnotice by the climate forces, because they are responsible for a good

Military exercises do not make peace

September 19, 2018  NS322  Go to comments  Leave a comment

By Ivar Jørden, Action Committee against Trident Juncture in Bergen

NATO has long had one policy to fight for its imperialist interests far beyond the NATO area. The out-of-area strategy (neither NATO doctrine of operating outside of its geographical area) came for the first time in practical use in the Kosovo war in 1999. This page then has this NATO’s main line. Warriors in Afghanistan, Iraq and Libya are typical deeds of this policy. These are real aggression warriors. Dei has nothing in defense of tf Norway to do. But it is this kind of business that is the backbone of Norway’s military doctrine. This and more is the “new-NATO” role.

A shocking and robust die on a NATO country such as Norway say participation in NATO’s out of area strategy to the bombing of Libya in 2011 (another death is the bombing of Serbia in 1999). From a UN resolution on airbase zone in northern Libya for full bombing and regime change tactics, the road was short. Unhappy card! When the stormy United States with Norway is changing its intention, “ever right” without enough debate in the whole of the Storting, our defense doctrine is hosted: from land defense to suppliers of lesson soldiers in imperialism si terete.

Great NATO Leila Military Exercises

Nor is there any big debate about the consequences of major military exercises in the mainstream media. In September 2017, the military force Aurora 17 was in Sweden, the largest Swedish military force since 1993. More than 19,000 Swedish soldiers practiced war with 2000 soldiers from the United States, Finland, France, Norway, Denmark, Lithuania and Latvia. Sweden has recently entered into official partner status with the NATO Alliance. Suddenly, Russia had practice Zapad, which had larger dimensions than the Swedish. Zapad (which indicates “West”) is a repetitive exercise with years of space. Here, Russiasanum simulates defense against a mild undertaking from the West against Russia or border states.

In October-November this year, a great practice, this middle-eastern gambler, may have as many as 40,000 soldiers and thousands of lykots and will operate 150 aircraft and 70 ships, land and water. This giant call called Trident Juncture 18 hosts the largest exercise in Central Norway in at least 15-20 years. One minor part of the exercise will be in Sweden, Finland, Iceland and in the Baltic Sea.

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Leading Anti-NATO Narratives

- Environmental Impact
- Disturbs Local Economy
- Mistreatment by NATO Troops
- Mocking/ridiculing NATO
- NATO is a joke – Not a real threat
- ‘Stop NATO’ Protests/Astroturfing
- Threatening Stability
- NATO poking ‘Russian Bear’
- NATO is aggressive
Anti-NATO Imagery
Technologies Used
YouTube Content – Location Analysis

- Most of the content was published from the United States.

- Russian hosted content was mostly hostile.
YouTube Content – Target Audience

Target audience
- English
- Norwegian
- Russian
- Spanish
- German speaking populations
Blog Analysis – Posting Trend
Blog Analysis – Keyword Trend

![Keyword Trend Chart]

The chart shows the trend of keywords 'NATO' and 'WAR' from January to November. The keyword 'WAR' shows a peak in June and a drop in October, while 'NATO' remains relatively stable throughout the period.
Resources

Resources


Resources


Social Media Training Course

- NATO Strategic Communications Center of Excellence. 25-29 March 2019.

- Marine Expeditionary Forces (2MEF). 28-31 August 2018 in CMU, Pittsburgh.

- NATO Strategic Communications Center of Excellence. 20-25 March 2017 in Riga, Latvia.

- US CyberCommand’s CyberSchool, 3-6 August 2016.
Social Cyber Security Research Infrastructure Development

• US Dept. of State (Global Engagement Center – GO2Tech Fighting Foreign Disinformation)
• American Cyber Alliance (AR-based)

- Supported by several other federal agencies.
Social Cyber Security Working Group

- Supported by NSF Big Data program
- Over 30 member institutions worldwide including researchers, policy makers, journalists, cyber security professionals
- Outcomes of the working group include
  - Policy briefs laying out the research agenda
  - Collective catalog of resources to spark innovation among researchers
Looking Ahead

• Develop publicly available technologies and solutions
• Social media companies need to be more proactive, Algotransparency.org
• Emerging technologies like blockchain for content validation, decentralized social media platforms
• Build collaborative networks of practitioners, researchers, policy makers to address this problem together
• Strengthen media literacy programs
• Need to advance the dialog on cyber security and cyber diplomacy
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• Department of State (DOS)
• Department of Homeland Security (DHS)
• Jerry L. Maulden/Entergy Endowment
• National Science Foundation (NSF)
• NATO
• Office of Naval Research (ONR)
Thank You!

http://cosmos.ualr.edu

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