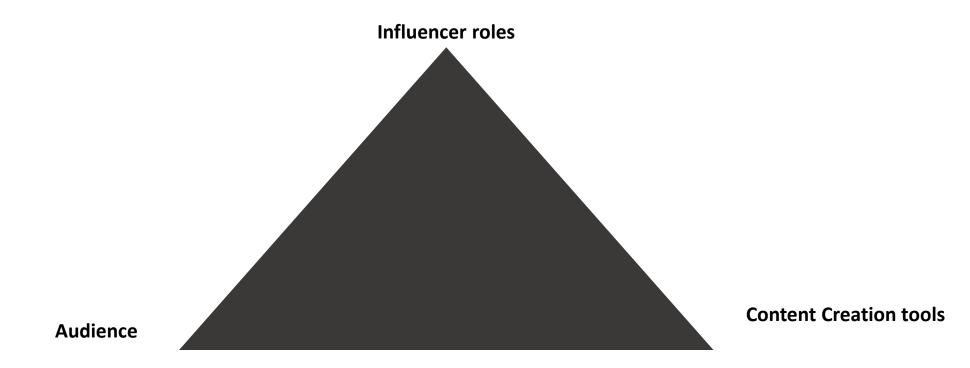
TOPICS TO ADDRESS

- The final session will focus on examples and scenarios to stimulate discussions, perspectives and
 recommendations centered on "cognitive warfare strategies", for the newly formed community of interest.
 Emphasis on managing the convolution of ideas, cognitive science, and technology resources operating across
 networks and social platforms to mitigate the emergence of threat actors and supporting entities.
 - Reviewing the Framework/Ecosystem discussed in Day 2's capabilities session
 - Changing Landscape beyond the trends
 - Current examples: Offensive vs. Defensive Capabilities
 - Future Scenarios: Possibilities with Future Technologies
 - Potential Effectiveness/Impact of applying Cognitive Warfare
 - Top-Down Perspective of Future Funding
 - Hear ideas from the audience

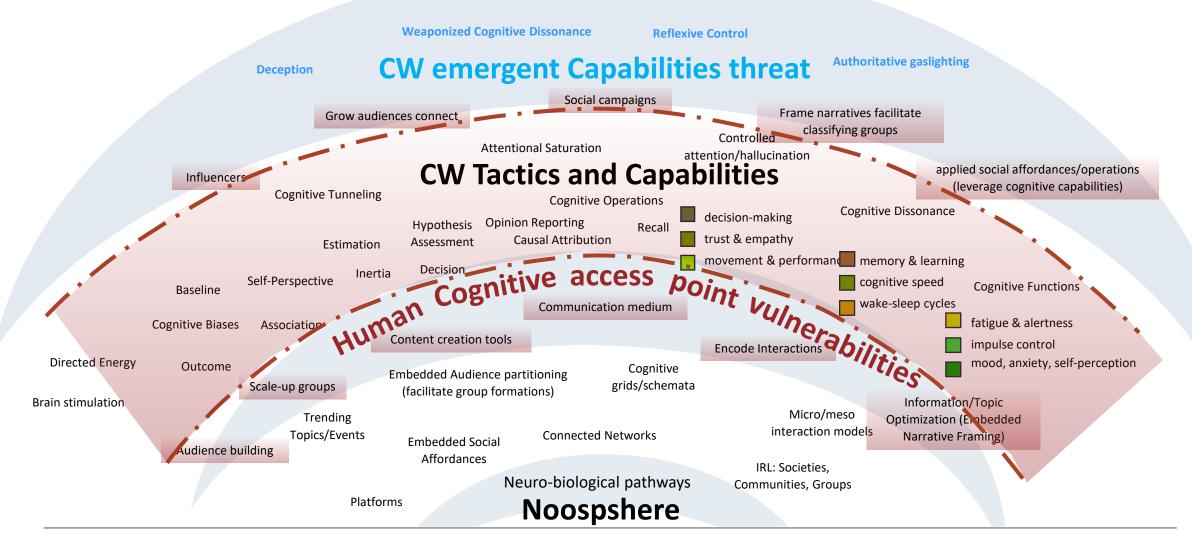
BEYOND THE TRENDS



Accessible content creation tools, Motivated influencer entities, Massive audience potential

• Introduces potential for weaponizing more content forms designed to exploit cognitive access points

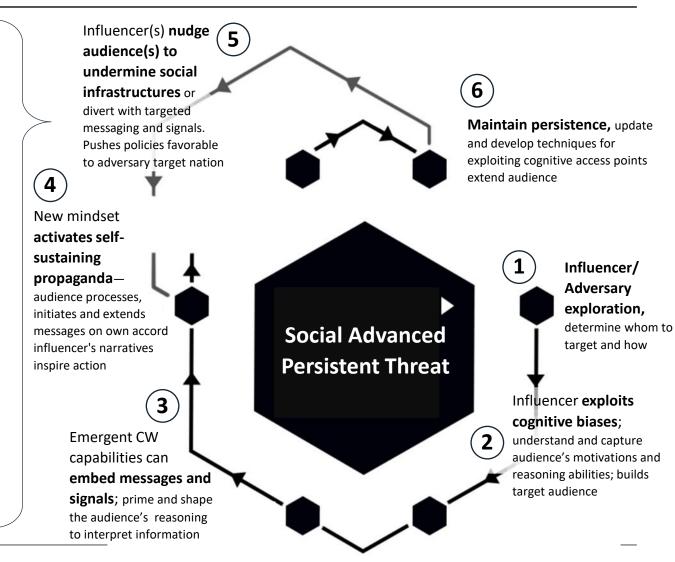
REVIEW: ECOSYSTEM OF COGNITIVE WARFARE CAPABILITIES



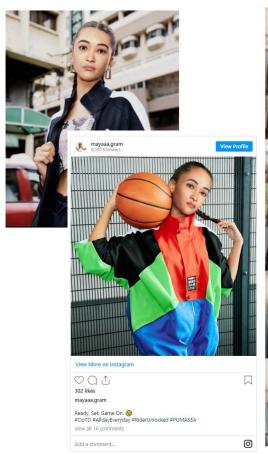
REVIEW: ADVANCED SOCIAL PERSISTENT THREAT

Future Capability Threat Scenarios

- The CW ecosystem enables self-sustaining cognitive and behavior propaganda mechanisms
- The groups act on ideas/opinions/realities/ presented to them
- On large scales when embedded this ecosystem facilitates ideological spread
- Ecosystem has all the components for adversaries compose complex scenarios---
 - chaining capabilities into hard to detect methodologies that plays people to great effect,
 - Future capabilities will blend psychological/ behavioral/ cognitive techniques to activate the addictive neuro chemicals behind the scenes
 - Keeping the audience coming back



Weaponizing the new Al-Driven Frontier of Influencer Marketing





Al-generated versions of Maya

Rationale

- complexity of the region (variance of unique perspectives, cultures and influencer markets)
- impossible to choose a single person to represent the
 region's overall diversity

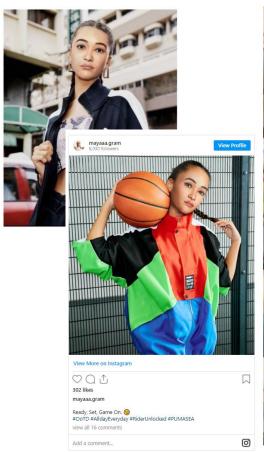
Content Creation: Persona Fusion == Maya

 SomLin fused unique features of each region into one character--mitigate fragmentation

Appearance

- Researched and mapped millions of Southeast Asian faces
- across regions, analyzed successful and attention getting lifestyle and fashion influencers
- applied Generalized Adversarial Neural Networks
- A targeted blend of all the unique regional idiosyncrasies found across Southeast Asia.

Weaponizing the new Al-Driven Frontier of Influencer Marketing





- Relatable; based on proprietary demographic studies on Southeast Asian psychographics;
- designed to evolve with time through social listening
 - Al algorithms studied Maya's interactions online and curated patterns for her to follow.

Goal

A Crafted Personality

- A persona that would portray Southeast Asian values
 - be as relatable to the audience as possible.

Al-generated versions of Maya

Weaponizing the new Al-Driven Frontier of Influencer Marketing: Affected Biases and CW goals

Reflexive Control &
Associated Operational
Biases and Cognitive Impacts

Operational Biases and Cognitive Impacts

Associated Operational

Biases and Cognitive Impacts

Gaslighting & Associated Operational Biases and Cognitive Impacts





Deception & Associated Operational Biases and Cognitive Impacts

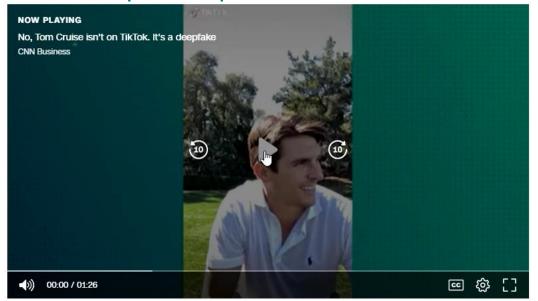
Concept illustration of the complexity for such future capabilities

Non-linear interactions between biases may have unintended effects--going beyond current psychological and behavioral theories

Attributes to Consider

- Status: Basic fake profiles
 exploited in the wild (lack AI tech
 infusion)
- Medium: All (Text, Audio, Video, or combinations of these)
- Potential Audience: Millions+ (cultural specific messages)
- Threat Potential: Targeted Reflexive Control; Cognitive Dissonance; Gaslighting; Deception
- Detection Strategy: Unknown
- Mitigation Strategy: Unknown

Weaponized Deepfakes





Chris Ume, the man behind a viral deepfake TikTok video featuring Tom Cruise, is launching a start-up called Metaphysic, which can create virtual celebrities

'DeepFake'

- a visual construct generated by AI, that swaps one face out for another at the behest of a human creator
- The technology is readily accessible
 - No need for any programming or special effects skills

Reflexive Control Enabler

- Potential to create damaging information
 - Pollute a mindset and bias an audience
 - Even if the truth eventually comes out.
- True when the timing of the reveal is strategic

Weaponized Deepfakes

The real danger of deepfake videos is that we may question everything













TECHNOLOGY | LEADER 29 August 2018



Exploit Cognitive Bias

 Provides the spark to confirm biases that may already be present

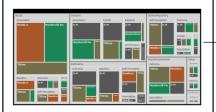
Goal

- The deepfake's context creates cognitive dissonance
 - frames certain topics and narratives compelling audiences to do their own (biased) research
 - Example: "Does Tom Cruise do impersonations?"
 - The researched topics are those the adversaries or opportunists want the audience to think about

Weaponized Deepfakes Affected Biases and CW goals

Cognitive Dissonance & Associated Operational Biases and Cognitive Impacts

Reflexive Control &
Associated Operational
Biases and Cognitive Impacts







Deception & Associated Operational Biases and Cognitive Impacts

Attributes to Consider

- Status: Basic fake profiles exploited in the wild (lack AI tech infusion)
- Medium: All (Text, Audio, Video, or combinations of these)
- Potential Audience: thousands to Millions+
- Threat Potential: Targeted Reflexive Control; Cognitive Dissonance; Deception
- Detection Strategy: Unknown
- Mitigation Strategy: Unknown

Exploiting Cognitive Tunneling in Doomscrolling

doomscrolling

When you **keep scrolling** through all of your social media feeds, looking for the most recent upsetting news about the latest **catastrophe**. The amount of time spent doing this is **directly proportional** to how much worse you're going to feel after you're done.

Dude! Stop doomscrolling, It's only going to make you feel worse!

I can't! The dopamine loop is too strong!

by PenelopePenguin March 24, 2020



PHOTOGRAPH: JOEL SORRELL/GETTY IMAGES

'Doomscrolling'

- Falling into deep, morbid rabbit holes
 - Emotion-charged content, agitating to the point of physical discomfort
 - Affecting restful sleep.

Resolving Uncertainty is Addictive

- Plays off:
 - Compulsive need to try and get answers to uncertainty or threats
 - Need for assessing new information
 - Evolutionary information and strategy gathering approach
 - Need for completeness and desire for order
 - the endless scrolling design feature contrasts the need to get to the end; get all the information

Exploiting Cognitive Tunneling in

You can thank your brain for looking for potential threats - but you shouldn't feed into it.



Neuro and Biological Effects

- Demand on cognitive processing to resolve conflicting "facts" in a rapidly changing landscape
- Compounds the stress and anxiety the audience's already feeling
 - Could lead to depression
 - Affect cognitive potential

Weaponized Attention Diversion

- Exploit scrolling for content to dent focused attention to thoughts and feelings,
 - Degrade mental health.
- Long-term exposure to triggering content can lead to long-term effects on mental health
- Daily compulsion to sprint to the end of the feed has potential to cause burnout and a decline in mental health

Exploiting Cognitive Tunneling in Doomscrolling Affected Biases and CW goals

Cognitive Dissonance & Associated Operational Biases and Cognitive Impacts



Reflexive Control &

Gaslighting & Associated Operational Biases and Cognitive Impacts





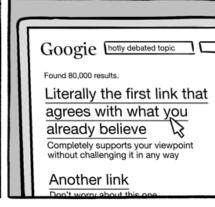
Deception & Associated Operational Biases and Cognitive Impacts

Attributes to Consider

- **Status:** Not currently exploited in the wild (lack AI tech infusion)
- **Medium:** All (Text, Audio, Video, or combinations of these)
- Potential Audience: Millions+ (cultural specific messages)
- Threat Potential: Tool in Reflexive Control (timed information releases); Cognitive Dissonance; Deception, Neurocognitive disruption
- Detection Strategy: Unknown
- Mitigation Strategy: Unknown

'Do Your Own Research' (DYOR) Honeypots







©RELIABLESOURCES

'DO YOUR OWN RESEARCH' IMPLIES YOU CAN'T TRUST ANYTHING

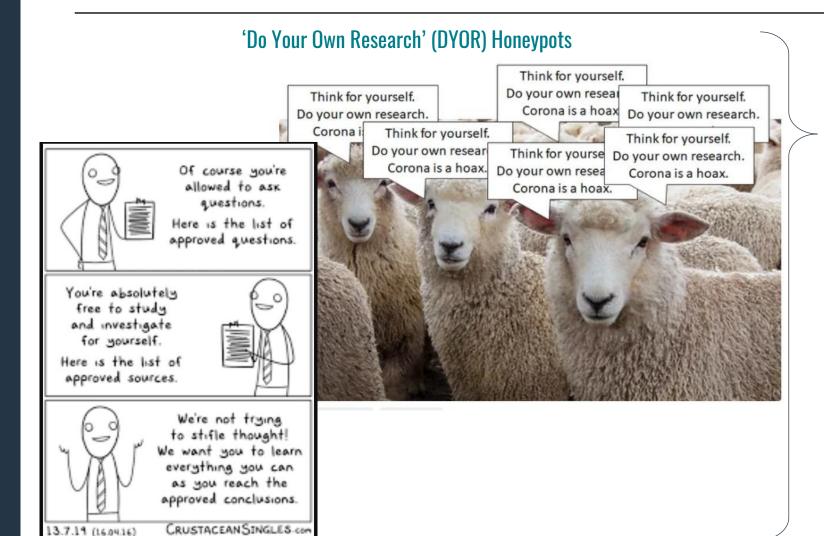
RELIABLE SOURCES

Exploit Biases to push narratives

- Navigating decisions in life:
 - gather information, evaluate based on what we know, choose a course of action
 - Shortcutting opinions/intuitions for data/facts can lead to reasoning failures

Can Exploit and Enable an Agenda

- Opportunities to flood platforms and connected networks with misinformation
 - Elements of Cognitive Dissonance and Authoritative Gaslighting
- An adversary acts as a contrarian expert:
 - overlooking, misinterpreting, or omitting when conveying insight and information
- Suggests audience to do the same
 - Strips agency for independent reasoning by holding opposing views in contempt



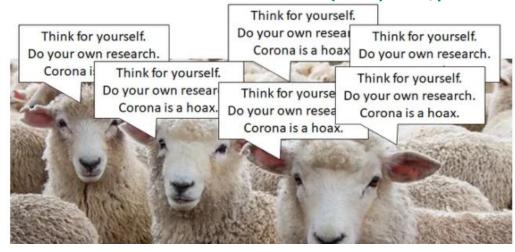
Potential for DYOR Honeypots

- Easy to embed mis/disinformation easter eggs ('honeypots') in the social platforms
 - The DYOR message implies audience seeks out certain topics then spread the same insight.

Enabler for Complex Cognitive Warfare Capabilities

- Capabilities
 Gaslighting: influencers suggests certain views are the only narratives that matter negating other views in contempt
 - Manipulation of followers pruning their ability to engage evidence with their own reasoning
- Reflexive Control: exploit predictable reaction when most will stop researching when their initial bias is confirmed

'Do Your Own Research' (DYOR) Honeypots



i've heard the rhetoric from both sides... time to do my own research on the real truth





CHAINSAWSUIT.COM

Image credit: Chainsawsuit.com

Cognitive Biases at Play with DYOR

Cognitive biases at play when doing your own research:

- Formulating an initial opinion the first time we hear about something,
- Evaluating everything we encounter after that through that lens of our intuitions,
- finding reasons to think positively about the portions of the narrative that support or justify our initial opinion,
- And finding reasons to discount or otherwise dismiss the portions that detract from it.

Mis/Disinformation Amplifier

- Potential mis/disinformation amplifier
- Echo chambers pushing DYOR can function as mis/disinformation honeypots for others to fall into

'Do Your Own Research' (DYOR) Honeypots Affected Biases and CW goals

Cognitive Dissonance & Associated Operational Biases and Cognitive Impacts

Control Contro

Reflexive Control &

Associated Operational

Biases and Cognitive Impacts



Gaslighting & Associated Operational Biases and Cognitive Impacts





Deception & Associated Operational Biases and Cognitive Impacts

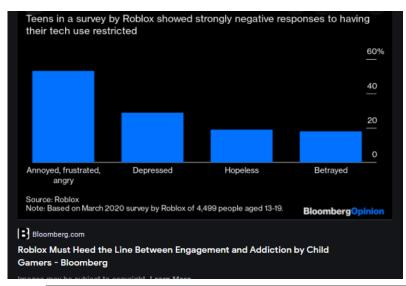
Attributes to Consider

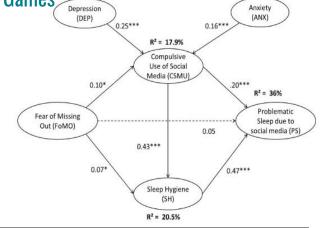
- **Status:** Currently exploited in the wild
- Medium: All (Text, Audio, Video, or combinations of these)
- Potential Audience: Millions+
- Threat Potential: Self-sustaining mechanism in Reflexive Control (predicable response to contrarian insight); Cognitive Dissonance; gaslighting; Deception
- Detection Strategy: Verification of sources
- Mitigation Strategy: Verification of sources; false flagging

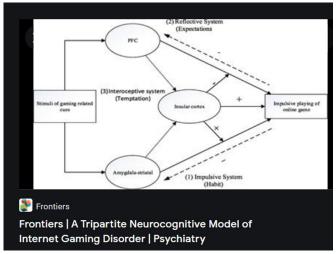
Weaponized Fear Of Missing Out (FOMO) and Never Ending Social Video Games

Anxiety, loneliness and Fear of Missing Out: The impact of social media on young people's mental health







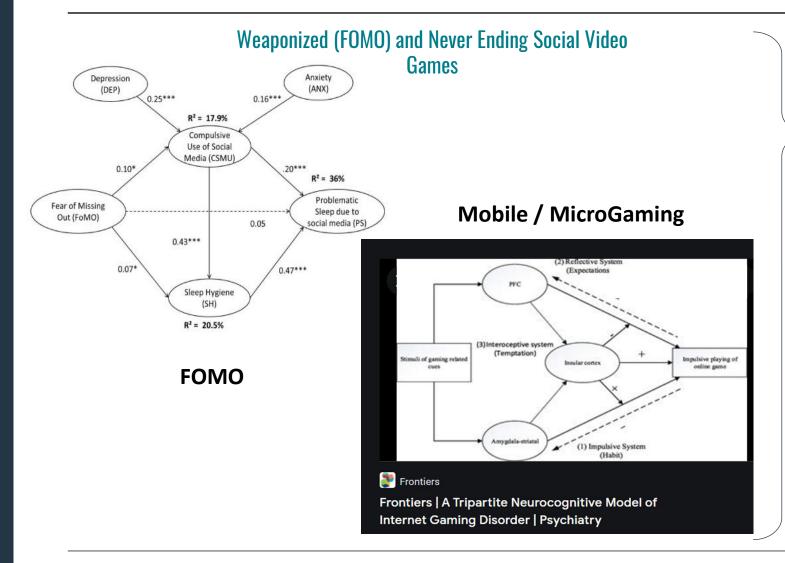


Highly addictive engaging social environments

- Games: constant hyperarousal state
 - fight-flight response frequently triggered by exposure to intense stimulation
 - Hyperarousal state looks different for everyone, can include
 - difficulties paying attention, managing emotions, controlling impulses, following directions,

Deny and Disrupt Society's Cognitive Potential

- Potential for affecting long-term cognitive and social potential
 - Also primes audiences' vulnerabilities for future exploits within the CW ecosystem (i.e., weaponized gamification)



Highly addictive engaging social environments

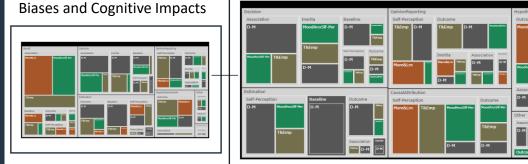
- FOMO: if gratification is not experienced, users may internalize distorting beliefs due to being 'unpopular', 'unfunny' etc.
- A lack of 'likes' on a status update may trigger negative self-reflection,
 - prompting continual 'refreshing' in the hope of seeing that another person has 'enjoyed' the post, looking for personal validation.

Vicious cycle of reinforcement and mental health;

- Loss of sleep from night time social media use can lead to poorer mental health,
 - Poor mental health can lead to intense night time use and sleep loss
- If weaponized to degrade mental health and cognitive potential of the target audience (of the future) the addictive qualities could be severe

Weaponized FOMO and Never Ending Social Video Affected Biases and CW goals

Cognitive Dissonance & Associated Operational Biases and Cognitive Impacts



Reflexive Control & Associated Operational

Transcrainial &
Associated Operational
Biases and Cognitive
Impacts

Gaslighting & Associated Operational Biases and Cognitive Impacts

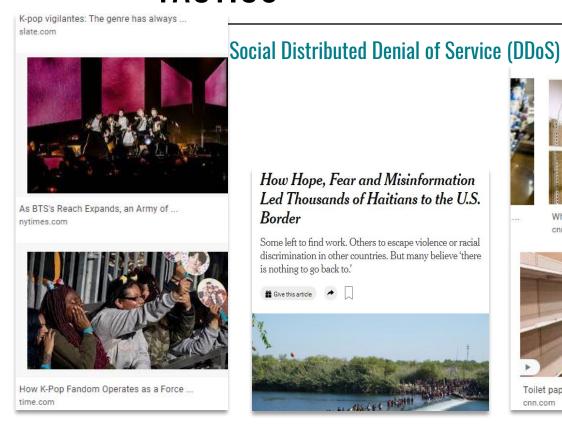




Deception & Associated Operational Biases and Cognitive Impacts

Attributes to Consider

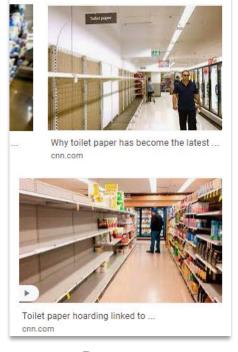
- Status: Exists but unknown if currently exploited in the wild
- Medium: All (Text, Audio, Video, or combinations of these)
- Potential Audience: Millions+
- Threat Potential: Priming for Reflexive Control; messaging through Cognitive Dissonance; gaslighting; Deception; Neurocognitive disruption/deterioration
- Detection Strategy: Verification of sources
- Mitigation Strategy: Verification of sources; false flagging



'STAN Armies'



Migrant Caravans



Resource **FOMO/Panic Buying**

Three types of potential Social DDoS attacks via reflexive control, weaponized by exploiting predictable response to strategic narrative

Cyber terminology to describe a potential

tactin Cyber: A distributed denial-of-service (DDoS) attack occurs when multiple systems flood the bandwidth or resources of a targeted system's infrastructure

- In the CW ecosystem: targeted groups have the potential to operate as affiliates, proxies, auxiliaries, or surrogates for their ideological matches when connected by their shared realities
 - a Social DDoS would see these proxies overwhelm or dominate resources to support an agenda

Disruptive Potential

- Politico-economic,
- socio-cultural and
- informational dimensions to the target nation

Social Distributed Denial of Service (DDoS)

'STAN Armies'



An Introduction to K-Pop Stan Power ...
amazon.com



K-Pop Fans Are Vanquishing Racist ... themarysue.com



K-Pop Fans Defuse Racist Hashtags | The ... newyorker.com



The Political Activism of K-pop Stans ... thediplomat.com



BTS, K-Pop Stans Are Fighting QAnon a... bloomberg.com



From K-Pop stan to keyboard warrior ... restofworld.org

A STAN?

 A mix of the words "Stalker" and "FAN," the slang STAN refers to an extremely or excessively enthusiastic and devoted fan

Musical Pop Groups?

- The BTS STANS are fans of the Korean Pop group BTS, also known as ARMY,
 - Have nearly 18M+ members

Self-organizing strength

- BTS STANs coalesced to actively engage in narrative control,
 - Although members connected through the BTS pop group, the BTS STANs also shared (and acted on) ideological motivations, separate from the group

Social Distributed Denial of Service (DDoS)

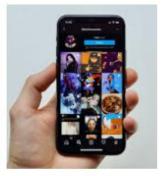
'STAN Armies'



TikTok Politics & Activism: How Gen-Z ... fanbytes.co.uk



K-Pop Fans Are Getting Involved in U.S ... theintercept.com



K-pop stans are flooding ri... theverge.com



How K-Pop Fan Communities Became Online ... mezzentertainment.com



K-Pop Stans Spam Polic... thecut.com



K-Pop Stans Become Effective Online ...
anews.se

Social DDoS

- Shear number of members exploited social platform algorithms, stan accounts co-opted:
 - hashtag, spamming specific hashtags to trend, amplifying their anti-racist messages and organizations
- Implemented a coordinated response in tactical deplatforming
 - Proactively neutralized certain hashtags, turned it against itself by promoting the contrasting narrative and messages.
- Interestingly censored mentions of their favorite idols on that day to keep them from trending like usual because, they wanted their tags to keep trending no. 1 [rather than the artists]."

platimens DoS aspect exploited the social affordances on various platforms through shear numbers, preventing other narratives and taking resources

Social Distributed Denial of Service (DDoS) Affected Biases and CW goals

'STAN Armies'

Cognitive Dissonance & Associated Operational Biases and Cognitive Impacts



Reflexive Control &





Gaslighting & Associated Operational Biases and Cognitive Impacts





Deception & Associated Operational Biases and Cognitive Impacts

Attributes to Consider

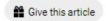
- Status: Currently exploited in the wild (Unknown if nation state
 driven)
- Medium: All (Text, Audio, Video, or combinations of these)
- Potential Audience: Millions+
- Threat Potential: Reflexive
 Control; messaging through
 Cognitive Dissonance;
 gaslighting; Deception; politico economic disruption
- Detection Strategy: ???
- Mitigation Strategy: Systematic changes to platform social infrastructures

Social Distributed Denial of Service (DDoS)

Migrant Caravan Manipulation'

How Hope, Fear and Misinformation Led Thousands of Haitians to the U.S. Border

Some left to find work. Others to escape violence or racial discrimination in other countries. But many believe 'there is nothing to go back to.'









Exploiting Desperation and Uncertainty

- Possibility exists of adversaries to strategically disrupt migration movements to a target nation to destabilize and divert resources or attention
- Thousands of displaced Haitian migrants (by disasters and political upheaval) quickly mobilized to the Texas Mexico border (an area where migration is controversial)
 - abruptly diverting resources to the regions
- False information, misinformation and misunderstanding spread on social platforms
 - Various narratives suggested families wouldn't be turned back after crossing
- Unclear where these narratives originated

Activated Social DDoS by an adversary

 Could exploit the cognitive state of migrants to mobilize at strategic times and places: on election cycles or disaster recovery efforts divert resources or attention) at a time of their choosing

Social Distributed Denial of Service (DDoS) Affected Biases and CW goals

Migrant Caravan Manipulation'

Cognitive Dissonance & Associated Operational Biases and Cognitive Impacts



Reflexive Control &

Associated Operational

Gaslighting & Associated Operational Biases and Cognitive Impacts





Deception & Associated Operational Biases and Cognitive Impacts

Attributes to Consider

- Status: Unknown if exploit used
- Medium: All (Text, Audio, Video, or combinations of these)
- Potential Audience: Thousands+
- Threat Potential: Reflexive Control; messaging through Cognitive Dissonance; Deception; politicoeconomic disruption
- Detection Strategy: ???
- Mitigation Strategy: monitoring of platforms; counter-messaging

Social Distributed Denial of Service (DDoS)

Resource FOMO/Panic Buying

How panicked drivers are making North Texas gas shortages worse

The D-FW area started experiencing shortages Thursday a. and it isn't clear when there will be relief.



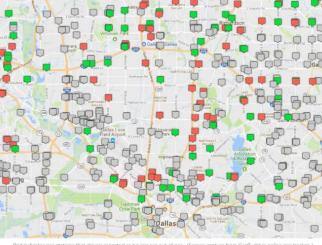
Bryant/The Dallas Morning News) (Vernon Bryant / Staff Photographer)

Hurricane Harvey: Social Media-**Driven Panic Leads To Mad Rush** For Gasoline In Texas

Perceived gas shortage after hurricane fuels mass hysteria, but it's just a delay in delivery after refineries' shutdown amid price hikes.

Texas faces fuel 'crisis' as depleted gasoline stations deal with panic buying

ursday morning, there were several locations in North Texas that were being flagged as having run



Possible Social DDoS

Adversaries could strategically induce panic buying or resource depletion to a target nation—Goal: destabilize and divert resources or attention

Example Scenario

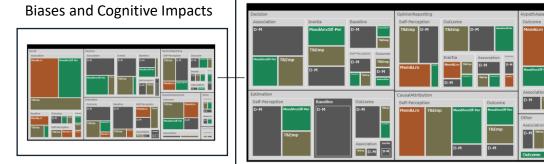
- 15 of the `30 refineries in Texas were out of commission or at diminished capacity because of Harvey.
 - But fuel was available at the stations, in line with scheduled future deliveries
- After Harvey hit, false information online spread through Texas cities that stations would out of fuel because of the disrupted refineries
- Within minutes to hours of seeing the SM posts, people rushed to get fuel at the stations draining their supply
 - An empty station will be without fuel until I its next scheduled delivery—further impacted by weather and road conditions
- Potential reflexive control exploit on a population to mobilize them at a strategic time or place

Social Distributed Denial of Service (DDoS)
Affected Biases and CW goals

Resource FOMO/Panic Buying

Migrant Caravan Manipulation'

Cognitive Dissonance & Associated Operational Biases and Cognitive Impacts



Reflexive Control &

Associated Operational

Gaslighting & Associated Operational Biases and Cognitive Impacts





Deception & Associated Operational Biases and Cognitive Impacts

Attributes to Consider

- Status: Unknown if exploit used
- Medium: All (Text, Audio, Video, or combinations of these)
- Potential Audience: Thousands+
- Threat Potential: Reflexive Control; messaging through Cognitive Dissonance; Deception; politicoeconomic disruption
- Detection Strategy: ???
- Mitigation Strategy: monitoring of platforms; counter-messaging

IRL: Weaponized Gamification



Gamification Approach

- What if the CW ecosystem and capabilities were as addictive as any social platform game or Doomscrolling rabbit holes?
- What if the weaponized STANs were gaslit?
 - Could no longer respond rationally to evidence but influenced by signals from a source.
 - Could these proxies participate in creating a self-sustaining shared reality to accomplish the goals of some adversary or opportunist?
- A Gamification approach to this CW capability ecosystem may function similarly to the Qanon Phenomena

IRL: Weaponized Gamification Affected Biases and CW goals

Attributes to Consider

Reflexive Control &

Associated Operational Biases and Cognitive Impacts



Cognitive Dissonance & Associated Operational Biases and Cognitive Impacts





Gaslighting & Associated Operational Biases and Cognitive Impacts

Deception & Associated Operational Biases and Cognitive Impacts

- Status: Currently exploited in the wild (Unknown by whom and to ultimate purpose)
- Medium: All (Text, Audio, Video, or combinations of these) IRL
- Potential Audience: Thousands+
- **Threat Potential:** Reflexive Control; messaging through Cognitive Dissonance; Deception; politicoeconomic disruption; gaslighting; Neurocognitive disruption/deterioration
- **Detection Strategy: ???**
- Mitigation Strategy: monitoring of platforms; counter-messaging



Transcranial & Associated Operational **Biases and Cognitive Impacts**

Booz Allen Hamilton, Inc. Restricted

29

TOP-DOWN PERSPECTIVE FOR FUTURE FUNDING

Offensive Maneuvers

- Engage the emergent Noosphere environment and disrupt the cycle of threat actors with counter-messaging
 - Apply cognitive capabilities to disrupt addictive and reactive cycles with counter-methods designed to enhance logic and mindfulness
 - Establish a desire to question and process evidence and details
 - Reward building empathy to understand why a diversity of narratives exist.
- Strategic placements of these 'voices'
 - Potentially reduce the number of groups and communities, that could be manipulated, radicalized and activated into action

Defensive Maneuvers

 Understand the unintended functions and capabilities of embedded affordances and managing algorithms within the social infrastructure of platforms