

Introduction to Data Driven Propaganda

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U.S. Army propaganda leaflet used during the Korean War. (U.S. Army photo by Staff Sgt. Jason Ragucci)

We have an obligation as noncommissioned officers to keep our Soldiers informed while training them to become leaders. Soldiers need to understand how their mission fits into the bigger picture. As social media swamps them with fake news and advertisements, it can be hard for Soldiers to distinguish truth from fiction.

On top of this, propaganda further distorts Soldiers' understanding of the world. By educating them on information warfare and propaganda, we can prepare them to become better leaders who can make informed decisions.

Information War Overview

Information warfare has been part of military operations for thousands of years. In World War II, prior to the Normandy invasion, the Allies used a variety of deceptive informational tactics to make it seem that invasion forces would strike in locations other than the ones planned.¹ A more recent example is the infamous "Curveball" incident in which unverified claims of a single individual led to the U.S. invasion of Iraq.² Information warfare continues to be a driving factor in operations across the world.

Today, advertisers and political parties use data to optimize messages towards their target audience and persuade them to buy their products or political visions. Advertisers use data science principles called *preference ordering* and *clustering* to identify groups within populations that are susceptible to certain ideas. When foreign countries utilize these tactics, the resulting information campaigns can lead to poorly informed decisions.

Preferences Background

Individuals make decisions based on what they want, which we can model using preferences. We define an individual's preference ordering as (I_1, I_2, \dots, I_n) .³ For example, suppose there are two flavors of ice cream in the world: *Chocolate* and *Vanilla*. If we take Bob, whose ice cream preference order is $(Chocolate, Vanilla)$, we know that Bob prefers *Chocolate* to *Vanilla*. We can also use the same exercise with coffee flavors: *Mocha* and *Latte*. We can set Bob's coffee preference as $(Mocha, Latte)$.

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Clustering Background

Clustering is the technique of grouping together data points with similar properties.⁴ We can apply clustering to the preferences from the previous exercise, adding two additional people, Amy and Carl. Amy has an ice cream preference order of (*Vanilla, Chocolate*) and a coffee preference order of (*Latte, Mocha*). Carl has an ice cream preference of (*Chocolate, Vanilla*) and a coffee preference of (*Latte, Mocha*).

Preferences for Coffee and Ice Cream

	Coffee	Ice Cream
Amy	(<i>Latte, Mocha</i>)	(<i>Vanilla, Chocolate</i>)
Bob	(<i>Mocha, Latte</i>)	(<i>Chocolate, Vanilla</i>)
Carl	(<i>Latte, Mocha</i>)	(<i>Chocolate, Vanilla</i>)

We can cluster Amy, Bob, and Carl into various categories based on a function of their preferences. We can think of ice cream and coffee preferences as dimensions. When given one-dimensional options, the group will choose *Chocolate* ice cream and *Latte* coffee. But when given two-dimensional options, the behavior of the group will depend on the impact each dimension has on their preferences.

With more dimensions, the complexity of identifying clusters based on preferences increases.⁵ But with modern computer science, clustering an arbitrary number of groups is now a trivial computation. We can model a population (s) as a matrix, with each corresponding row as a person's preference (P) for each factor (F_x), resulting in something like the following:

$$\begin{matrix} P_1 \{F_1, F_2 \dots F_x\} \\ P_2 \{F_1, F_2 \dots F_x\} \\ \dots \\ P_s \{F_1, F_2 \dots F_x\} \end{matrix}$$

With this structure, we can cluster data to determine preferences shared by groups within a population. A single application of clustering identifies groups of common interests. Clustering applied a second time determines sub-group interests, which therefore exposing community fault lines.

Divisive propaganda exploits these fault lines. For instance, we can put out propaganda that *Chocolate* is the best ice cream flavor in an attempt to isolate Amy from Bob and Carl.

Many Groups Can Influence Perceptions

The Internet provides opportunities to gather, analyze, and disseminate information, making it easier than ever to target specific populations. This information allows companies to advertise their products based on web histories, political organizations to analyze voter behavior, and governments to collect citizen data.⁶

Much of this data ends up on unsecure information systems. For instance, the Republican National Committee collects information on Americans to sell their organization's message and attract voters. However, when the RNC sent the data for analysis, contractors left it unsecured on the internet, exposing the personal data of 2 million Americans in July 2017.⁷

In 2014, hackers accessed millions of security clearance records from the Office of Personnel Management.⁸ During the 2016 presidential campaign, perpetrators breached the Democratic National Convention's database and exposed internal emails.⁹ In March, the Justice Department charged two Russian intelligence officers with stealing data from 500 million Yahoo accounts in 2014.¹⁰ There have been countless other breaches within the last decade, resulting in very little uncompromised personal data.

As outlined above, clustering stolen data allows perpetrators to target groups susceptible to propaganda and influence people's views. Differentiating intentionally hostile acts from non-hostile ones can be difficult.

Propaganda is a significant threat to counter-insurgency operations. When NCOs train host nation forces or deal with local communities, there is an assumption that they recognize the Army's efforts as assistance. Locals may be appreciative of their efforts; however, hostile perpetrators can use data from the local community to find fault lines and override U.S. policy.

NCOs need to know the local communities to prevent propaganda from creating discord. Likewise, we need to recognize the locals' preferences and focus efforts on creating desirable impacts without intensifying differences.

Russian Use of Preferences in the Pacific

Russia has taken advantage of the United States' lack of understanding concerning local preferences. While the world was looking at the overt Russian actions in Ukraine and the Middle East, Russia was busy in the Pacific. During this time, Russia used the Democratic People's Republic of Korea to undermine American influence in the Russian periphery. To discern how this happened, we need to look at how North Korea's current relations developed.

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During the Cold war, the Soviet Union and the People's Republic of China competed with each other for influence over North Korea. When the Soviet Union collapsed in the early 1990s, China became North Korea's primary benefactor for the next two decades.¹¹ If the West had a problem with North Korea, they would ask China to intervene with the expectation that they would do something.¹²

The status quo changed in 2011. During the Arab Spring, transition forces killed Libyan leader Moammar Gadhafi.¹³ Gadhafi had begun to comply with United Nations guidelines on chemical weapon disarmament and Vladimir Putin, the prime minister of Russia, accused the U.S. of killing Gadhafi.¹⁴

Later in 2011, the U.S. announced a "Pivot to Asia" strategy, which would refocus American military efforts into Russia's backyard.¹⁵ This strategy provided stability in the South China Sea as a response to Chinese aggression. The death of Gadhafi sent an inadvertent and hostile message to Russia: if we have the opportunity, we will overthrow your government. There is inconclusive evidence as to when Russia reacted, but the intent appears to be removing U.S. influence from their periphery.

By September 2012, the Russians began rebuilding North Korean relations by writing off billions of dollars in existing debt.¹⁶ In 2013, Chinese influence over North Korea declined when Kim Jong-un executed his uncle, Jang Song-thaek, the Chief of the Central Administrative Department of the Workers' Party of Korea, thus severing an important link to China.¹⁷

Meanwhile, Russia continued building influence, and by 2017 North Korea considered Russia a stronger ally than China.¹⁸ Despite this shift, many analysts and news organizations still perceived China as the primary influence on North Korea's acts rather than Russia.¹⁹

Russia appears to be using its influence over North Korea as a psychological fulcrum to undermine the "Pivot to Asia" strategy, while also weakening U.S. ties in the Pacific. As the U.S. continues to pressure China to control North Korea, they build tension between the China and themselves, relieving the pressure on Russia.²⁰ In the meantime, Russia is expanding its influence across the Pacific from the Philippines to Vietnam, Japan, and even South Korea.²¹

There is no clear way for either side to back down. Both the U.S. and Russia pose significant threats to each other's interests and security.

Therefore, how can Soldiers distinguish coordinated information campaigns from legitimate disagreements? By discerning how perpetrators use information warfare to influence beliefs, Soldiers can stay informed and recognize flaws in their understanding and the views of others.

The U.S. has multiple mechanisms to handle information warfare trends. One of our strongest is the longstanding establishment of a free and independent press. However, the press does not immediately ensure that we have a clear perception of what is going on in the world; it merely provides information.

Conclusion

The impact of data-driven propaganda is gaining visibility. Hostile actors already have rich sets of population data to fuel propaganda campaigns and create frictions both at home and abroad. NCOs need to recognize that hostile perpetrators can find dimensions of discourse to neutralize the Army's efforts, even without using preference data.

NCOs can mitigate this by recognizing the concerns of locals and educating their Soldiers on how hostile perpetrators use clustered data to shape beliefs and views with misleading propaganda.

Notes

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