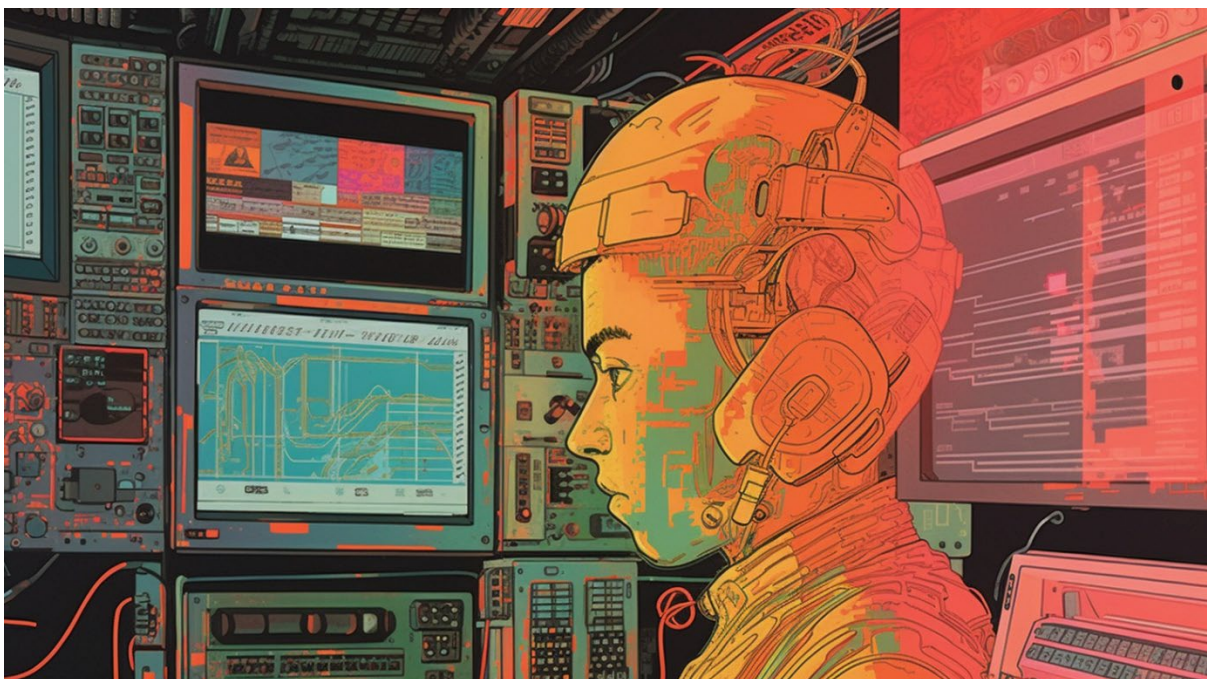# Precision Strike in Cognitive Domain Operations



A handy guide to Chinese military thinking on cognitive warfare…

.. and how to exercise for it.

*This document presents a series of tables that are intended as a kind of "how to" guide to cognitive warfare based on the paper presented in the China Military Network - PLA Daily and can be found here - http://www.81.cn/yw_208727/16209631.html*

# Contents

**About Conducttr**

*Conducttr is a high-fidelity synthetic information environment designed for a wide range of exercises involving hybrid warfare, information & media operations, StratCom, OSINT, cyber, CIMIC, homeland security, counter-terrorism, and humanitarian disaster relief.*

*www.conducttr.com*

# 1 Precision Strike in Cognitive Domain Operations

Simply put, the proposed Chinese procedure is designed to:

- ensure that the objectives of the operation are clear
- the information generated is personalized
- the delivery of information is precise.

## 1.1 Overview of Key Stages

| Stage | Description |
|---|---|
| Establish Precise Combat Objectives | The first step is to establish clear objectives for cognitive warfare. This involves using technologies like AI and big data to collect cognitive data from different dimensions, levels, and modalities, and then identifying the weak points, sensitive points, and flashpoints of the opponent's cognitive system. |
| Generate Precise Information "Ammunition" | The next step is to design information "ammunition" that aligns with the target's thinking habits and perceptual style. This involves planning information themes based on the target's value orientation, designing information content based on the target's thinking style, and choosing information forms based on the target's perceptual characteristics. |
| Precise Information Delivery | The final step is to deliver the information precisely. This involves extracting cognitive features to select information delivery targets, matching information delivery channels according to social habits, and timing information delivery by tracking cognitive dynamics. |

## 1.2 Establish Precise Combat Objectives

| Step | Description | Examples/Additional Details |
|---|---|---|
| Collect Cognitive Data | This involves using technologies like AI and big data to collect cognitive data from different dimensions, levels, and modalities. | For example, one could use AI and big data to collect and analyze social media posts, online search behavior, and other digital footprints to gather cognitive data about the target audience. |
| Identify Weak Points | This step involves analyzing the collected cognitive data to identify the weak points, sensitive points, and flashpoints of the opponent's cognitive system. | For instance, if the collected data shows that the target audience has a strong concern about environmental issues, this could be identified as a sensitive point in their cognitive system. |
| Establish Combat Objectives | Based on the identified weak points, sensitive points, and flashpoints, clear objectives for the cognitive warfare operation are established. | For example, if the identified sensitive point is environmental concern, the objective of the operation could be to influence the target audience's perception of a particular environmental issue or policy. |

## 1.3    Generate Precise Information 'Ammunition'

| Step | Description | Examples/Additional Details |
|------|-------------|----------------------------|
| Plan Information Themes | This involves planning the central ideas of the information based on the target's value orientation. | For example, in a political campaign, different ad themes could be designed to resonate with voters who hold different values. Big data can be used to identify these values and design appropriate themes. |
| Design Information Content | This involves creating content that aligns with the target's thinking style. | For instance, in the era of the internet, the life trajectory, geographical location, hobbies, and social relationships of the target audience can all be recorded. With the help of big data technology, it's possible to create an "information cocoon" that aligns with the target's thinking style. This could involve generating information similar to what the target is used to, causing them to fall into an "information cocoon" where their range of accepted information narrows and their perception of the outside world gradually decreases. |
| Choose Information Forms | This involves selecting the form of the information based on the target's perceptual characteristics. | For example, by using big data technology, one can mine the target's ethnic emotions, customs, religious beliefs, personal preferences, etc., and scientifically judge their information acceptance habits and other perceptual characteristics. On this basis, one can use a combination of text, language, video, images, and other information carriers, incorporating elements such as color and layout, to create a strong sensory stimulus for the target. |

## 1.4    Precise Information Delivery

| Step | Description | Examples/Additional Details |
|------|-------------|----------------------------|
| Extract Cognitive Features | This involves using big data technologies to extract the cognitive features of the target audience. | For example, using machine learning methods, a company like Cambridge Analytica was able to classify Facebook users into five personality types: experience openness, conscientiousness, extraversion, agreeableness, and emotional instability. This allowed them to create linear regression models for five personality traits, setting up precise targets for campaign ads. |
| Match Information Delivery Channels | This step involves selecting the most effective channels for delivering the information, based on the target's social habits. | For instance, if the target audience is most active on Twitter, then Twitter would be the most effective channel for delivering the information. In some cases, different social media platforms may be used for different purposes. For example, Facebook might be used to set the agenda, Twitter to coordinate actions, and YouTube to spread the message widely. |
| Time Information Delivery | This involves tracking the cognitive dynamics of the target audience to determine the best time to deliver the information. | For example, if the target audience is most active on social media in the evening, that would be the best time to deliver the information. Additionally, it's important to consider the timing in relation to specific events. For instance, if the target audience has not yet formed an initial understanding of a particular event, it would be beneficial to seize the opportunity to be the first to provide information on that event. |

# 2    Important Concepts



## 2.1    Weak Points, Sensitive Points, And Flashpoints

| Category | Description | Examples/Additional Details |
|---|---|---|
| Weak Points | Weak points refer to vulnerabilities or areas where the opponent's cognitive system is less robust or easily influenced. | Weak points could include gaps in knowledge, lack of critical thinking skills, or susceptibility to misinformation. Exploiting these weak points can help sway the target's perception and beliefs. |
| Sensitive Points | Sensitive points are specific topics, issues, or triggers that evoke strong emotional responses or have a significant impact on the target's cognitive system. | Sensitive points could include topics related to identity, religion, political affiliations, or personal values. Manipulating or addressing these sensitive points can generate heightened emotional reactions and influence the target's thoughts and behaviors. |
| Flashpoints | Flashpoints are critical moments or events that have the potential to significantly impact the target's cognitive system and trigger certain reactions or responses. | Flashpoints could include major political developments, social crises, or influential media coverage. Capitalizing on these flashpoints can create opportunities to shape the target's perceptions, attitudes, and actions. |

## 2.2 Information Cocoon

*Understanding the concept of the "information cocoon" is important in addressing the challenges associated with cognitive biases, filter bubbles, and the manipulation of the information space.*

| Aspect | Description |
|---|---|
| Definition | An information cocoon refers to an environment where individuals are surrounded by information that aligns with their existing beliefs, preferences, and perspectives, reinforcing their cognitive biases and narrowing their exposure to diverse viewpoints. |
| Characteristics | - Limited exposure: Individuals within an information cocoon tend to have limited exposure to alternative or conflicting information.<br><br> - Confirmation bias: People seek out and prioritize information that confirms their pre-existing beliefs and values.<br><br>- Filter bubble effect: Algorithms and personalized content delivery systems further contribute to the formation of information cocoons by selectively presenting content that aligns with users' preferences.<br><br>- Echo chambers: Information cocoons can foster echo chambers, where like-minded individuals reinforce and amplify each other's beliefs without critical examination. |
| Impact | - Polarization: Information cocoons can contribute to ideological polarization, as individuals become increasingly entrenched in their own echo chambers, reinforcing their existing beliefs and creating divisions between different groups.<br><br>- Cognitive bias reinforcement: The information cocoon reinforces cognitive biases by limiting exposure to diverse perspectives, hindering critical thinking, and reducing the willingness to consider alternative viewpoints.<br><br>- Manipulation: The controlled flow of information within an information cocoon can be exploited for manipulation and cognitive influence, as individuals are more susceptible to persuasive messaging that aligns with their existing beliefs.<br><br>- Threat to democracy: Information cocoons can undermine democratic processes by creating fragmented and isolated communities with limited exposure to diverse opinions and fostering an environment where misinformation and disinformation can thrive. |
| Countermeasures | - Promoting media literacy: Education and awareness programs can equip individuals with critical thinking skills, helping them recognize and navigate information cocoons.<br><br>- Diverse content exposure: Encouraging exposure to diverse viewpoints, fostering civil discourse, and promoting platforms that present a range of perspectives can mitigate the impact of information cocoons.<br><br>- Algorithm transparency: Enhancing transparency and accountability in algorithms used for content recommendation can help reduce the filter bubble effect and promote a more diverse information environment.<br><br>- Fact-checking and critical analysis: Promoting fact-checking initiatives and critical analysis of information can empower individuals to evaluate the credibility and reliability of sources within their information cocoon. |

## 2.3  Use of AI

*AI could play an important role in cognitive warfare, providing capabilities for data analysis, personalization, audience profiling, sentiment analysis, and content generation. Its importance lies in its ability to process and analyze vast amounts of data, uncover patterns, and deliver tailored information to influence perceptions, decisions, and behaviors.*

| Reference | Use of AI | Importance |
|---|---|---|
| Social Media Analysis | AI is used to analyze social media data, identify patterns, and extract insights. | AI enables the efficient processing of vast amounts of social media data, helping to understand public sentiment, detect trends, and target specific audiences with precision. |
| Big Data Analytics | AI algorithms are used to analyze large datasets and extract valuable information. | AI enables organizations to uncover patterns, correlations, and trends in complex and massive datasets, leading to data-driven decision-making and insights that would be challenging or impossible for humans alone. |
| Cognitive Data Collection | AI technologies facilitate the collection and analysis of cognitive data from various sources. | AI-powered tools and techniques streamline the collection and processing of cognitive data, allowing for a comprehensive understanding of target audiences and their cognitive behaviors. |
| Personalized Content Generation | AI is employed to generate customized content based on individual preferences and characteristics. | AI algorithms can analyze user data, including interests, behaviors, and demographics, to create personalized content that resonates with specific individuals, enhancing engagement and relevance. |
| Target Audience Profiling | AI is used to profile target audiences and identify cognitive features. | AI-powered profiling helps in segmenting audiences, understanding their cognitive traits, and tailoring information campaigns to maximize impact and effectiveness. |
| Information Recommendation | AI algorithms provide personalized information recommendations based on user preferences and behavior. | AI-driven recommendation systems analyze user data, past interactions, and preferences to suggest relevant information, thereby shaping cognitive perspectives and influencing decision-making. |
| Sentiment Analysis | AI techniques are utilized to analyze and understand sentiments expressed in textual data. | Sentiment analysis powered by AI enables the identification and interpretation of emotions, attitudes, and opinions, providing insights into public perception and sentiment towards specific topics or entities. |
| Natural Language Processing | AI enables the understanding and processing of human language, facilitating communication and analysis of textual data. | Natural Language Processing (NLP) algorithms enable machines to understand and interpret human language, aiding in tasks such as text analysis, sentiment analysis, and chatbot interactions. |
| Image and Video Analysis | AI-based computer vision technologies analyze images and videos to extract information and detect patterns. | AI-powered image and video analysis can recognize objects, faces, emotions, and scenes, enabling the extraction of valuable insights from visual content for cognitive warfare purposes. |

# 3   Cognitive Warfare Exercises with Conducttr

*Using Conducttr as a high-fidelity synthetic internet platform can enhance the realism and effectiveness of the cognitive warfare exercise, providing a dynamic and immersive simulation environment for participants to engage with and analyze.*

The table below sets out the stages for creating a cognitive warfare exercise.

| Stage | Description |
|---|---|
| Define Exercise Objectives | Clearly articulate the objectives and goals of the exercise, specifying the focus areas of cognitive warfare simulation. |
| Formulate Scenario | Develop a realistic scenario that reflects the context and setting for the cognitive warfare exercise, considering geopolitical factors, target audience, and specific tactics to be simulated. |
| Establish Exercise Parameters | Define the exercise scope, duration, available resources, and any constraints or limitations. |
| Gather Intelligence | Conduct research and gather intelligence on the target audience's cognitive characteristics, information consumption habits, and vulnerabilities, incorporating this data into Conducttr's simulation environment. |
| Training Audience Develops Information Strategies | Create tailored information strategies that align with the exercise objectives and the simulated information space, determining themes, narratives, and content for influencing the target audience. |
| Select Channels and Applications | Utilize Conducttr's features to develop and deploy the right channels and capabilities such as synthetic social media platforms, websites, news articles, social listening application, information maps, accurately replicating the simulated information space. |
| Conduct Pre-Exercise Testing | Test and evaluate the environment to ensure functionality, realism, and accuracy in replicating the desired information space.<br><br>Identify EXCON roles, role-players, pattern of life and impersonations.<br><br>Address any technical or operational issues before the exercise. |
| Execute the Exercise | Employ Conducttr's FIEMA approach (Framework for Information Environment Measurement and Analysis).<br><br>Monitor progress, collect data, and track participant actions and responses within Conducttr's simulated environment – using Pulse and for EXCON the COPIE (Conducttr's Common Operating Picture for Information Environment) |
| Evaluate and Analyze Results | Analyze the exercise data and outcomes, assessing the effectiveness of information strategies, tactics, and techniques employed. |
| Conduct After-Action Review | Facilitate an after-action review involving all participants to discuss lessons learned, insights gained, and recommendations for future cognitive warfare exercises. Document key findings and incorporate them into future training and planning. |

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