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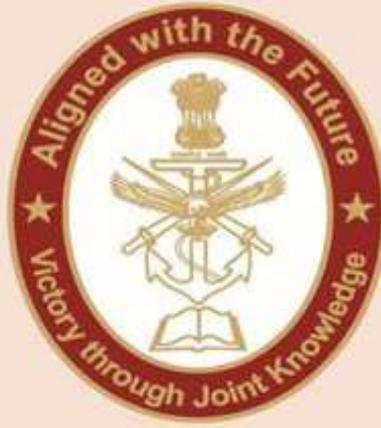# BEYOND INFORMATION WARFARE: INFLUENCE OPERATIONS AND COGNITIVE BATTLEFIELDS IN THE DIGITAL AGE

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Beyond Information Warfare: Influence Operations and Cognitive Battlefields in the Digital Age

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Abstract.

The contemporary information environment has transformed the character of conflict, rendering traditional conceptions of Information Warfare increasingly inadequate. In an era dominated by digital platforms, algorithmic curation, and fragmented attention, the strategic challenge is no longer limited to disseminating accurate information, but extends to shaping perception, cognition and behaviour across diverse audiences. This paper aims to derive a conceptual shift from "*Information Warfare*" to "*Influence Warfare*", in which communication is treated as a deliberate, audience centric and result oriented campaign rather than a reactive release of facts. It examines how audience selection, platform differentiation, repetition effects and algorithmic amplification interact with human cognitive processes to shape belief formation and decision making. The paper further situates influence operations within the broader framework of cognitive warfare, highlighting how sustained narrative conditioning can alter interpretive frameworks over time.

Introduction: The Changing Character of Conflict

The nature of conflict in the 21st century has expanded far beyond the traditional domains of land, sea, and air[1]. Contemporary military and strategic competition now unfold in an environment saturated with information, shaped by digital platforms and mediated by algorithms that curate what societies see, feel and believe. Every military action, diplomatic signal or internal security operation is accompanied by an immediate and parallel struggle over interpretation. In this setting, the contest is not limited to battlefield outcomes but extends to the cognitive space in which meaning, legitimacy, and intent are constructed. During "*Operation Sindoor*" the impact of contemporary IW as narrative building was experienced at all levels.

In the Indian context of "Information Warfare", the mechanism of releasing timely information rests on a fragile assumption that information, once disseminated will prevail through rational evaluation. The contemporary media ecosystem challenges this assumption at a fundamental level. Audiences today rarely consume information in a linear or deliberative manner[2]. Instead, they encounter fragmented narratives through mobile screens, short form videos and algorithmically curated feeds that prioritise engagement, emotion and repetition over completeness[3].

Thus, the determinant variable in the contemporary conflicts is not access to information anymore but the capacity to manipulate perception and behaviour among different audiences. The sphere of influence activities is an area that borders on psychology technology and strategy. These variables precondition the interpretation of events by individuals and groups attributing blame the perception of the danger and the evaluation of legitimacy. Such perceptions are of more importance than objective facts in defining the political pressure escalation processes and long-term strategic consequences.

Influence Warfare perceives perception as a battleground on its own and takes communication as a planned focused and reiterated campaign as opposed to a responsive promulgation of facts. It places the media narratives and algorithms in the general context of cognitive warfare. The end product is to shape the way in which the societies think rather than what they know. Based on the analysis of the operation of audience selection platform differentiation repetition effects and algorithmic mediation

this paper conceptualises the influence operations as a part of contemporary conflict. Also, it places the influence warfare in context of Multi Domain Operations.

Conceptual Shift: From IW to Influence Warfare

The term *Information Warfare* emerged in an era when control over information flow was limited to state broadcasters, print media and a small number of global news agencies. Within this paradigm, the primary objectives were to disseminate accurate information, deny adversary the same and counter misleading narratives. Information was treated as an asset to be protected or transmitted and audiences were implicitly assumed to be rational recipients capable of evaluating competing claims. However, the contemporary information environment is neither linear nor neutral. Information now circulates through complex digital ecosystems in which algorithms, platform incentives and user behaviour shape visibility far more than official authority[4].

'*Influence Warfare*' represents a fundamental shift in emphasis. Instead, it deals with influence as effect and not information as content. It is not the accuracy or completeness of a message that is of central concern but its capacity to influence the perceptions emotions and behaviour. Influence Warfare is not denying the fact that people do not process information based on rational consideration alone. Rather, they depend on emotional stimuli sense of identity and repetition[5]. In Influence Warfare the outcome of the war is gauged by terns of the sentiment in the people media framing diplomatic posture or enemy decision making.

Significantly Influence Warfare does not give up on truth being a principle. Instead, it acknowledges that the truth is straining to survive in the congested mental marketplace. Poorly framed, poorly timed or poorly distributed facts might not have an impact. Although emotionally appealing stories whether true or false may take hold and carry the day. The challenge posed by Influence Warfare is thus to strike a balance between the truth and the story between emotional appeal and the purposefulness of a story[6].

Communication should be viewed as a strategic act an element in the disputed battlefield. This cyber warfare zone crosses domestic regional and global audiences and engages at all times with political military and diplomatic activities. This is a shift

that is important in understanding how contemporary conflicts are carried out construed and eventually ended[7].

Selection and Direct Influence of Audience.

The main drawback of conventional Information Warfare is that, it assumes an audience that is not differentiated. In reality modern day conflicts comprise of a multitude of audiences that are distinctly different in terms of their cultural context, cognitive bias political interests and media consumption patterns. Influence Warfare starts with audience selection treatment. The first layer is domestic national audiences which are the most immediate. In the case of this group the major goal of influence operation is to maintain trust in institutions armed forces and avoiding panic false information or polarisation inside. Communication to domestic audiences should thus strike the right balance between clarity and discretion and shun both too much of technicality and rhetoric. In the plural societies disastrous calibration of narratives can lead to enhancing internal fault lines where the audience sensitivity is significant as the message content[8].

The existence of regional and local population creates a unique audience, especially those regions that are geographically close to the military action or politically sensitive states. Such audiences have more inclination towards proximity individual security and practical reassurance as opposed to abstract strategic narratives. Efforts of influence in this case should be based upon regional languages local media and intermediaries of trust. Messaging at the generic national level is not always going to strike at this level and can even create mistrust when seemingly not connected with the local realities.

The opponent audiences need the significantly different approach. The operations of influence targeting adversary military personnel and political elites are not as concerned with persuasion in traditional sense but signalling ability determination. Elite calculations can be modified through a careful exposure of credible information and strengthen deterrence and influence escalation without reaching levels that instigate retaliation. It is not aimed at emotional mobilisation but at cognitive caution.

Foreign governments as well as multilateral institutions the global media and diaspora constitute international audiences. In the case of this group the influence work should precede legality proportionality and international norms. Messaging that is emotional or triumphalist which might be effective domestically would be counterproductive abroad. It is very essential to be consistent moderate and evidence based in dealing with this audience. Not being directly engaged in a conflict Diaspora communities are nevertheless informal conduits of narrative in the host societies. They are impactful up to academic institutions professional networks and ecosystems of local media. Given credible and shareable content diaspora viewers can give desired narratives a natural push which might not be attained through conventional avenues which lends them some form of credibility[9].

Influence Warfare is thus effective and based on the harmonization of three factors. A well-defined set of audience a specific behavioural goal and platform tailored to media preferences of audience. The process of audience selection is not a pre-work but the basis on which all future narrative platform and algorithm choices are made.

The Attention Span and Media Platforms.

Any narrative is constituted by its content based on the medium through which it is conveyed and the circumstances under which it is consumed. The mobile devices and social media sites have fundamentally changed the traditional media like television and print etc[10]. Empirical data on media consumption has continuously shown that most news consumption is currently done on the mobile devices instead of the television or desktop platform. The smart phone has become a dominant platform through which people are exposed to news commentary and visual information[11]. This change has a great implication on the operations of influence. Short attention spans scrolling behaviour intermittent usage which are the hallmarks of mobile consumption are mostly done in distracted settings as opposed to attentive settings.

Consequently, the time frame of narrative on mobile platforms is very short. Studies in digital engagement have indicated that news related mobile content is most commonly retained during the first few seconds after which there is a sharp fall. Influence messages that do not create an immediate relevance or affect are not likely to be

cognitively registered. This gives a value to visual clarity brisk framing and instant narrative hints[12].

Various platforms also develop different thinking environments. The television print and digital newspapers are still pertinent with the older groups of people who have space to explain in details and have authoritative information on what they are talking about. In comparison, social media platforms focus on immediacy shareability and emotional appeal. The information that has a potential of going viral can be ingested and spread quickly. The video formats that are short add more dynamics to them. Social media that are optimised to display short visual information promote narrative compression meaning that it is necessary to frame together complex situations with simplified information symbols or emotional stimuli. Although these platforms can be limited or prohibited, they can be used worldwide which guarantees that they will not lose their relevance in the competition of narrative on an international level[13].

War has a platform specific approach. Therefore, messages undergo no mechanical replication in media. But rather the same underlying narrative has to be transformed in accordance with the affordances and constraints of each platform so that there is coherence as opposed to uniformity. Within a thin environment, mostly lacking in attention, fitting narrative design turns out to be a determining factor in the perception.

Repetition Algorithms and the Psychology of Belief Formation

Influence Warfare has repetition as one of its basic mechanisms based not on the art of propaganda but on the time-tested principles of human cognition. Psychology studies have shown that the more a message is repeated in perception, the more credible a message can be. It is a process that is motivated by the familiarity and the diminished thinking instead of careful consideration. Easier to process information is more believable especially in a setting which is filled with uncertainty and time constraints[14].

This is enhanced in circumstances of conflict. Stress ambiguity and emotional arousal diminish ability of individuals to think analytically making them depend on familiarity. These repetitions turn into default interpretations as time goes by. This process is

mostly subconscious and comprises even well-informed audiences[15]. In digital platforms repetition is exaggerated by the engagement driven architecture. The content that fits the already existing interests and evokes emotional reaction has higher chances of being surfaced again and again leading to exposure cycles which support certain frames. Influence Warfare capitalises on this by focusing on thematic consistency as opposed to the same message[16]. Central stories are repeated through formats languages messengers and are saturated without redundancy.

Algorithms Mediation and Cognitive Penetration

Algorithms have become the main arbiters of attention in the information environment. In contrast to the classical editorial systems algorithmic design favours the engagement parameters including the velocity of interaction watch time and network spreading. Clusters of related content are normally presented to users as opposed to individual messages. This patterned exposure is faster in creating beliefs because it strengthens a single interpretive frame over a period of short time[17].

This is further facilitated by mobile centric consumption. Empirical research reveals that majority of the news is consumed on the smartphone where attention span is short and interaction is interrupted. Mobile news content retention is usually calculated in seconds. As a result, influence messaging needs to provide its main cognitive cue as quickly as possible but on the basis of visual clarity and emotional salience as opposed to lengthy exposition. The algorithmic systems also support the biases that are already present by showing the content that is in line with the previous interactions.

Operationally this requires algorithmic planning of influence. Rhythmic sequencing, cross platform reinforcement and engagement orchestration, selection of keywords, hashtags, tags are all strategic variables and not technical information. The aim is to have cognitive penetration where the major stories are repeated on platforms at a number of times until they are internalised in the habitual information landscape of the audience.

Cognitive Warfare: Attacking the Perception and the Decision Making

The cognitive warfare is the most profound tier of influence operations as it does not focus on opinion but the mental paradigms under which people and societies explain things. Instead of trying to be overtly persuasive, it tries to influence perceptions in the long term by conditioning information processing evaluation and memory processes. Interpretive representations are important in human cognition as they organise experience and direct judgement. Cognitive warfare takes advantage of this process and aims at strengthening certain frames until they become the standardised prism through which events should be perceived. At that stage other interpretations are not just refuted but depreciated as unrealistic or antagonistic. The key role in this process is played by emotion. Storytelling with an emotional charge is more likely to be memorised and remembered particularly in the state of uncertainty or stress[18]. Cognitive warfare imposes narratives on the pre-analytical level by connecting certain interpretations to affective cues e.g. fear pride or moral judgement. In the long term, these relationships define shared memory and anticipation which determine the impact on the interpretation of future events.

Cognitive warfare has long term and cumulative effects. It hardly shows itself in its effects. Rather, it slowly changes the cognitive climate to influence general acceptance of escalation views of legitimacy and trust in institutions. Because of this reason cognitive considerations should not be incorporated in strategic planning as reactive or as an auxiliary. *Operations of influence that do not consider the cognitive aspect might work at the tactical level but fail at the strategic one, because the opponent does not only oppose actions and results but also structures according to which reality is understood.*

War within MDO: Influence Warfare Ethics and Credibility

The Warfare of influence cannot be considered as isolated action of Multi Domain Operation. In modern war, physical domains produce instantly both cognitive and informational impacts and the stories being propagated in the information space precondition the formation of political limitations, the level of escalation and the

decisions taken in strategy[19]. Influence operations thus play the role of a layer of integration between military action and political impact.

In MDO framework, there are three roles Influence Warfare. Narrative conditioning leads to the development of legitimacy intent and acceptable limits of action to prepare domestic and international audiences before operations. In the course of operations, synchronised messaging puts military action into context avoiding misunderstanding and minimising the adversarial narrative benefit during the early decisive stages of a crisis. In the post-operative phase, influence interventions affect notions of proportionality success and restraint that lead to stabilisation and end of conflict.

Influence Warfare can also be used in escalation management. Deliberately attuned stories are capable of indicating resolve without provocation and restraint without weakness. These provide flexibility of decisions makers in the high-risk environment. Perception management is as consequential as operational success in wars where there are intense international scrutiny or nuclear equipped enemies. Nonetheless the introduction of "Influence Warfare" into MDOs is accompanied with huge risks. Breach in frame of narrative can produce domestic excitement and decrease international credibility. Internal crafted messages can seem inflammatory or irresponsible to external users and this is constraining diplomatic space. Further, narratives are also multiplied by the velocity and the quantity of digital distribution, since false or overstated assertions, when compounded algorithmically become challenging to rectify[20].

Effective Influence Warfare, of course, should also be based on ethical restrictions and management of credibility. Intentional lying exploitation of guard groups or disconnect between story and actual behaviour is corrosive to trust and undermines strategic location in the long term. In a democratic system in particular, confidence of the people is a resource that is limited. After being exhausted, even a correct messaging loses its persuasive power. Influence Warfare which matches the stories told with the actions taken, incorporates legal and ethical protections and has an understanding of diversity in the audience makes strategic operations effective. Influence Warfare enhances deterrence and stability by embedding it wisely in multi domain planning.

Conclusion: Influence as a Decisive Instrument of Power

The evolution from "Information Warfare" to "Influence Warfare" reflects a deeper transformation in the nature of conflict itself. In an era of digital platforms, algorithmic mediation and cognitive vulnerability, the mere availability of information no longer determines strategic outcomes. What matters is how information is perceived, repeated and internalised across diverse audiences operating under conditions of uncertainty and emotional stress.

There are gaps in our campaign which are very relevant in present context. We focus a lot on putting out facts and official updates and not on how people would react to the information. Different audiences domestic, regional, adversary and international often receive almost the same message. But since their concerns, exposure are different, they perceive the same message differently. We assume that simply putting information out is the only responsibility. To narrow these gaps, a few practical ways can be implemented. The approach is to be more explicit about the behavioural outcome we seek for each audience. Accordingly, each messages need to be designed with respect to narrative, tone and also the choice of medium around that end state. To achieve that, specialised teams are required to be built that understand this phenomenon. The task of the specialised team would be to design movement of narrative across platforms over time, planning of sequencing, formats and reinforcement to achieve the desired end state. Finally, there is also a need for clear ethical guardrails and independent "red teams" that can test major campaigns in advance, so that short term influence gains do not come at the cost of long-term credibility.

This paper has attempted to highlight that the Influence Warfare must be understood as a deliberate, audience centric and behaviour-oriented activity, grounded in an appreciation of psychology, media ecology and algorithmic logic. By examining audience selection, platform differentiation, repetition effects and cognitive conditioning, it highlights how narratives operate not as supplementary tools but as central instruments of power. Influence Warfare plays a great role in shaping cognitive environment. Therefore, Influence Warfare within the framework of MDOs has its strategic relevance. Further, the outcome of cognitive domain helps in political decision taken for military action, escalation management. As the physical battlefield

cannot be insulated from digital impact, the Influence Warfare has become an important tool for shaping the environment during any conflict.

DISCLAIMER

The paper is the author's individual scholastic articulation and does not necessarily reflect the views of CENJOWS, the Defence forces, or the Government of India. The author certifies that the article is original in content, unpublished, and it has not been submitted for publication/ web upload elsewhere and that the facts and figures quoted are duly referenced, as needed and are believed to be correct.

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