The Need for Emotional Cues Analysis in OSINT in Countering Reflexive Control Information Warfare Campaigns: A Critical Review and Reconceptualization

Boyan Mitrakiev (✉) and Noncho Dimitrov

University of National and World Economy, Sofia, Bulgaria, https://unwe.bg/

ABSTRACT:

In the conflict with Ukraine, Russia has brought forth a modernized application of the reflexive control information warfare strategy developed during the USSR period with varying but notable effectiveness. Western allies of Ukraine have utilized open-source intelligence (OSINT) methods in attempts to counter Russian information warfare, but recent analyses have indicated a growing discontent with the results. A critical review of the literature indicates that (1) reflexive control operations have always been aimed to influence the emotions and psyche of its targets, be those high-level political decision-makers or masses of voters/citizens, (2) despite some gaps in research, there is a growing consensus that emotions have a substantial impact on political decision-making at both group and individual levels, and (3) the current OSINT approach combined with a reliance on fact-checking is missing on reflexive control methods using emotional cues due to gaps in both research and practice. The critical review suggests a reconceptualization of the reflexive control theoretical model to integrate the affective intelligence interpretation of how emotions influence political decision-making and integrate this into ongoing OSINT-based countermeasures.

✉ E-mail: bnmitrakiev@gmail.com

Introduction

Rooted in the abundancy of openly accessible information, open-source intelligence (OSINT) has emerged as a key instrument in combating hybrid warfare deployed by state and non-state actors in the changing landscape of 21st-century warfare. As misinformation and disinformation is disseminated in the form of data files, photos and/or videos, these files contain substantial information that can be analyzed to extract a wide range of data.

Over the course of nearly a century, OSINT has developed to the point where it takes center stage in the arsenal of investigative organizations concerning the verification, legalization, and instrumentalization of information obtained from other sources.[1] The weight of this type of intelligence is evident in its widespread use in the Russian-Ukrainian war by both sides – for instance, the Deputy Ukrainian Defense Minister Hanna Maliar (2021-2023) pointed out that 80% of all the intelligence obtained and processed by the Ukrainian forces is from open sources [2] which is generally in line with researchers' findings.[3] Using OSINT, however, has many practical challenges, one of which is the so-called "information explosion," which is a function of the widespread usage of publicly accessible online platforms and media but also necessitates the utilization of automated data analysis to optimize the processing of significant data sets (especially ones that are being expanded in real time) as pointed out by Putman.[4] Another challenge is OSINT being a double-edged sword in the hands of both parties during information warfare campaigns – as a defendant collects and processes large batches of information in order to model the attacker's behavior, the attacker is capable of transmitting its own pieces of information through the same channels. The rise of open-source intelligence has also given rise to information warfare theories, including "reflexive control" (RC), buried in the not-so-distant past.

The deployment of the reflexive control tool as a specialized form of information warfare [5] by Russia started at the onset of hybrid operations in Eastern Ukraine more than a decade ago and in the region almost two decades ago.[6] Reflexive control is a type of information warfare tool where the controlling organ transmits motives and reasons to the objective system in order to cause it to reach desired decisions – while it is similar in many ways to cognitive warfare, there are some differences in the first being more targeted at specific decisional outcomes, while the latter is often more disruptive and diffusive. However, despite the deployment of reflexive control being promptly detected,[7] it has continued to evade rigorous academic analysis. The challenge of countering contemporary reflexive control is that it goes beyond simple misinformation but interweaves emotional cues, insinuation, real and informational instruments, distorted truths, and deception to create a framework that aims to influence political decision-makers and voters beyond simple lies.

With OSINT narrative analysis and fact-checking becoming the official and widespread tools for countering disinformation and information warfare, multiple analysts have thrown doubt on their effectiveness. This is especially true among populations with strong predetermined opinions and beliefs [8] that

are too narrowly focused on debunking lies with rational arguments,[9] which are used as sole weapons of diminishing efficiency rather than as supportive measures to a wider array of public policies.[10] Thus, there is a substantial opportunity and need to augment and reconceptualize the scope of instruments countering warfare tools like RC. With the advancement of neuroscience, multiple academicians have reignited interest and debate centered on the weight and importance of emotions in making political decisions.[11] Taking into consideration the fact that disinformation campaigns target, on the one hand, political leaders and decision-makers and societies and voters on the other, it is important to distinguish between arguments targeting emotions and ones targeting rationality.

Hypothesis: Including emotional cue analysis in content analyses and having the corresponding knowledge to assess and counter counterfactual narratives and propaganda may improve the effectiveness of OSINT and the related tools.

Methods

The research is based on a critical review. Taking into consideration that the intersection between reflexive control, open-source intelligence, and the impact of emotional cues on political decision-making is relatively narrow and not deeply researched, the authors have carried out an extensive literature review and critically evaluated its quality, and analyzed the trends in scholarly thought. The research critically presents analyzes and synthesizes material from a range of sources in an attempt to produce an augmented mode of the reflexive control method that is based on the intersection of the three areas and possibly of direct practical applicability for OSINT practitioners. The collection of literature sources is purposefully not limited to recent ones but also looks back to the origins of the reflexive control theory during the USSR period in order to give a clearer context of the origins of this tool.

Limitations

Reflexive control is a type of information warfare theory/instrument that was developed by the USSR/ Russian military, political science, and intelligence scholars and practitioners. A substantial portion of the relevant literature is in the Russian language and hosted on Russian databases and websites, access to some of which, at the time of writing this article, is limited. As Grant and Booth[12] point out, an inherent weakness and limitation of a critical review is that it does not demonstrate an all-encompassing systematical review of all published literature on the topic but a more critical aggregation of literature with subjective analysis to produce a reconceptualization of the model.

Theory Review

Reflexive Control

Reflexive control has been studied in academia for more than 60 years, with Thomas[13] tracing its origins back to the Soviet Union. Being developed by USSR military scholars and practitioners, reflexive control has largely evaded rigorous

scrutiny in Western academic thought with the last two decades starting to see a shift towards greater interest, especially with several comprehensive studies such as the ones by Thomas[14] and Vasara.[15] Thomas[16] defines the concept as follows:

> reflexive control occurs when the controlling organ conveys (to the objective system) motives and reasons that cause it to reach the desired decision, the nature of which is maintained in strict secrecy. The decision itself must be made independently. A "reflex" itself involves the specific process of imitating the enemy's reasoning or imitating the enemy's possible behavior and causes him to make a decision unfavorable to himself.

Russian scholars have continued to refine the practice and theory of reflexive control in recent times, adapting its structure to be harmonized with contemporary information warfare and accentuating the decision-making process that both civilian and military opponents undertake, as Leonenko argues:[17]

> In fact, the enemy comes up with a decision based on the idea of the situation which he has formed, to include the disposition of our troops and installations and the command element's intentions known to him. Such an idea is shaped above all by intelligence and other factors, which rest on a stable set of concepts, knowledge, ideas and, finally, experience. This set usually is called the "filter," which helps a commander separate necessary from useless information, true data from false and so on.

The operators of the reflexive control campaign aim to identify the weak link of the filter and utilize this weakness to influence the decision-making process. This weak link may vary within a significant range of factors such as moral, psychological, emotional.

The Russian military scholars Bogdanov and Chekinov[18] put a specific emphasis on the information warfare component of the reflexive control theory, arguing that contemporary conflicts are fought on the information battlefield, "an entirely new theatre of war, which sets the scene for the struggle taking place in the human mind." The two go as far as to claim that with the evolution of new technologies, "destroying the minds and psyche of individuals capable of setting strategic goals" becomes possible through informational means, and it is expected that armed warfare, albeit insurmountable, will preferably and possibly be used on a more limited scale.[19] Kiselyov[20] (confirms this line of analysis, arguing that contemporary warfare should be aimed at influencing behavior as this will gradually become more effective due to the emerging methods of collecting and disseminating large amounts of data on human behavior. Kiselyov[21] alludes to the effectiveness of emotional cues and methods aimed at influencing the human subconscious, pointing out that human behavior is not only dependent on "ideas, values and beliefs," but also on "stereotypes, habits and behavioral models" with the scientific consensus forming that this takes place in "semi-automatic mode." Kiselyov and Vorobyov,[22] in another work, underline the integral part of information warfare in the general warfare doctrine, which should not be reviewed as a mere supplementary and auxiliary tool, arguing

that "achieving superiority in the information sphere, along with winning fire supremacy over the enemy and achieving dominance in the air, is getting to the forefront of the network-centric environment of combat actions."

Thomas[23] clarifies that the reflex refers to "the creation of certain model behaviors in the object system it seeks to control," but operators take into account that the opposing side also attempts to construct a framework of both sides' perceptions and ideas and is just as likely to attempt to defend against an information intrusion or also lead one. Logically, the side that has the higher degree of reflex, meaning it is most successful in replicating the other side's decision-making process and repeatedly forecasting how it will evolve in order to control it through information intrusion, will have the highest probability of winning. However, assuming that both sides model each other's behavior, the side that is able to forecast and model more effectively how the other side is replicating and taking assumptions will have a higher degree of reflex.

Major-General Ionov[24] identifies four instruments for transferring information to the enemy as part of the reflexive control theory: (1) power pressure including threats, weapon tests, use of superior force, demonstrating superior force, demonstrating ruthless actions, public show of mercy to enemy forces that give up, etc., (2) measures to present false information about the situation including displays of weakness in strong spots or strength in weak spots, maintaining secrecy of new weapons, false images of bluff weapons, deliberately leaking critical plans and documents, etc., (3) influencing the enemy's decision-making algorithm, including publishing purposefully inaccurate or misleading plans, striking critical enemy figures and control infrastructures, disrupting enemy operational thinking, and (4) altering the decision-making time by means of promoting information about close alternatives that serves as a foundation for the enemy's incorrect assumptions, surprising attacks, etc.

Another prolific Russian scholar in the area of information warfare, Colonel Komov[25] uses the concept of "intellectual approach to information warfare" instead of reflexive control but builds on the theory suggesting the following instruments:

- Distraction: by creating a real or imaginary threat to one of the enemy's most vital locations (flanks, rear, etc.) during the preparatory stages of combat operations, thereby forcing him to reconsider the wisdom of his decisions to operate along this or that axis;
- Overload: by frequently sending the enemy a large amount of conflicting information;
- Paralysis: by creating the perception of a specific threat to a vital interest or weak spot;
- Exhaustion: by compelling the enemy to carry out useless operations, thereby entering combat with reduced resources;
- Deception: by forcing the enemy to reallocate forces to a threatened region during the preparatory stages of combat operations;

- Division: by convincing the enemy that he must operate in opposition to coalition interests;
- Pacification: by leading the enemy to believe that pre-planned operational training is occurring rather than offensive preparations, thus reducing his vigilance;
- Deterrence: by creating the perception of insurmountable superiority;
- Provocation: by forcing him [the enemy] into taking action advantageous to your side;
- Overload: by dispatching an excessively large number of messages to the enemy during the preparatory period;
- Suggestion: by offering information that affects the enemy legally, morally, ideologically, or in other areas; and
- Pressure: by offering information that discredits the government in the eyes of its population.

It is worthy of note that the potential of reflexive control to integrate and align with the advancement of contemporary hybrid warfare, misinformation and disinformation had been recognized by and developed in Russia at the very onset of the social media era, as Major General Turko [26] pointed out: "the most dangerous manifestation in the tendency to rely on military power relates more to the possible impact of the use of reflexive control by the opposing side through developments in the theory and practice of information war rather than to the direct use of the means of armed combat." This could be traced back to certain Russian beliefs that the Strategic defense initiative and the related propaganda undertaken by the USA during the Cold War had, in fact, been infused with information warfare purposes in order to lure the Soviet Union into an arms race and purposefully drain it of economic resources, ultimately leading to an economy-caused disintegration. Prokhozhev and Turko [27] have repeatedly elaborated on the capacity of reflexive control to achieve geopolitical and arms control objectives that go beyond tactical information and armed warfare confrontations.

Thomas [28] outlines the framework of reflexive control aimed at state actors as relying on formulating certain dis- or misinformation campaigns aimed at the state's information resources, with the latter being (1) information and transmitters of information in the sense of the technologies that are deployed to obtain, convey and analyze the information, (2) the infrastructure which automates and processes the information and the communication means that are used for transmitting, (3) mathematical and programming means for managing the information, and (4) the organizational institutions and units which manage the information.

Vasara [29] building on the works of Russian scholars originating the theory and Western ones who have interpreted it, developed a practical model differentiating between a destructive and creative method of reflexive control:

Table 1. Methods – destructive method.

Implementation of reflexive control	Type of model of reflexive control	Reflexive control inputs	Reflexive control methods
Destructive	Information (IO)	Real (RE)	1) Deceiving the enemy's reconnaissance systems by means of decoys and disguise
			2) Striking at command posts and commanders
			3) Forcing the enemy to react at the right moment or taking action to wear down the enemy
		Information (I)	4) Intimidation, sowing uncertainty, ruthlessness and mercy
			5) Discrediting the enemy using forged or distorted information
			6) Using disinformation and controlled leaks to influence the enemy's understanding of the situation and the way in which it forms its SA
			7) Overload the enemy's decision-making mechanisms with information, actions, doctrine or readiness
			8) Controlling the information sent by one's own troops or restricting the enemy's access to information
	Cognitive (CG)	Real (RE)	9) Building coalitions and attracting traitors
			10) Surprise attacks and using the element of surprise
		Information (I)	11) Exploiting the known doctrine of the enemy or the enemy's attempts to exert reflexive control or simulating past conflicts

Kazakov, Kiryushin and Lazukin[30, 31] outline a frame for using simultaneously the destructive and constructive methods of reflexive control to influence political leaders' decision-making process, as well as simultaneously using real-

Table 2. Targets – destructive method.

Reflexive control methods	Personal characteristics and behavior of the commander	Plans prepared by the commander and staff	Decision support systems	Command and control system	Operational environment
1		X	X		X
2		X	X	X	
3	X	X			
4	X	X		X	
5	X				X
6	X		X		
7	X	X	X	X	
8	X	X	X	X	
9		X			X
10		X			X
11		X	X	X	X

world and information inputs. According to them, the inputs should be transmitted via a multi-channel approach to specific reflexive control targets as per a predetermined plan.[32]

Emotional Cues Influencing Political Decision-making

A significant problem that has hypothetically held back scientific research on the impact of emotions on political decision-making is the lack of a consensual scholarly definition of emotion.[33] LeDoux[34] outlines this as follows:

> Controversy abounds over the definition of emotion, the number of emotions that exist, whether some emotions are more basic than others, the commonality of certain emotional response patterns across cultures and across species, whether different emotions have different physiological signatures, the extent to which emotional responses contribute to emotional experiences, the role of nature and nurture in emotion, the influence of emotion on cognitive processes, the dependence of emotion on cognition, the importance of conscience versus unconscious processes in emotion, and on and on.

The advances in neuroscience throughout recent decades have somewhat alleviated the gravity of these challenges. The article uses the following neurological definition of emotion, as described by Clore and Ortony.[35]

Table 3. Methods – constructive/creative method.

Implementation of reflexive control	Type of model of reflexive control	Reflexive control inputs	Reflexive control methods
Constructive / Creative	Information (IO)	Real (RE)	1) Pressure and threats (show of force)
			2) Provocations, troop movements and action
		Information (I)	3) Persuasion, suggestion and pacification
			4) Transferring the decision-making goals, motives or grounds to the controlled system
			5) Taking advantage of bilateral contracts between two parties
	Cognitive (CG)	Psychological (P)	6) Determining areas of interest and factors and reasons behind the interest

Table 4. Targets – constructive/creative method.

Reflexive control methods	Personal characteristics and behavior of the commander	Plans prepared by the commander and staff	Decision support systems	Command and control system	Operational environment
1	X				X
2	X				X
3	X		X		X
4			X		
5	X				X
6	X				

Emotion is one of a large set of differentiated biologically based complex conditions that are about something. Emotions in humans are normally characterized by the presence of four major components: a cognitive component, a motivational behavioral component, a somatic component, and a subjective-experiential component.

The mechanics of the influence of emotional cues on political decision-making have remained scarcely studied since the first systematic inception of the idea in the early days of psychoanalytic theory development until the late 20th and early 21st century, with this being especially true regarding data and messages transmitted through mass media. Certain advancements in the area were produced in the immediate post-war period in the area of healthcare and education by Hovland, Janis and Kelley[36] and Janis and Feshbach,[37] but these were mostly focused on specific policy messaging and have not taken a holistic approach to politics or policy messaging in general. With the rise of political TV advertising and campaigning in the 1960s, scholars moved towards research of how televised political ads influenced voter decision and started to establish not only a tendency of ads to target emotions rather than rational decision-making, but also some systematic cause-and-effect links.[38] The 1980s witnessed significant sophistication of sociological research methods and a shift towards more methodological, systematic and tech-savvy research into emotional cues influencing political decision-making.[39, 40] As Brader[41] points out, the two cornerstone studies that decisively turned the tide towards recognizing the importance of emotions in the decision-making process are the ones by Kern[42] who claimed that "emotional advertising is a basic part of the campaign advertising arsenal." Boiney and Paletz[43] compared the explicit models of the decision-making process in politics as outlined in political science to the implicit models applied by consultants, finding a substantial gap exactly in the use and effects of emotions and thus recommending further systematic research in this narrow direction. Yet scholars seem to have followed with research focused on images,[44] rhetoric and music[45] or the interrelationship between advertisement and news coverage activities[46][47] rather than on the significant gap in the impact of emotional cues and appeal.

The scholarly research that gave a renewed systematic push to investigating the impact of emotional cues on political decision-making was likely the one by Brader.[48] The research begins by acknowledging that politicians have long been blamed for manipulating emotions in order to sway voters, but there has been paradoxically little empirical and systematic research in the area. Brader[49] conducts two experiments during an ongoing election, showing that "cueing enthusiasm motivates participation and activates existing loyalties; and cueing fear stimulates vigilance, increases reliance on contemporary evaluation and facilitates persuasion," with the author pointing out that these processes should not be condemned as emotional appeals can stimulate "democratically desirable behavior." Brader[50] chooses the theory of affective intelligence developed by Marcus et al.,[51] in order to set up the method for the research while

basing the general assumption that emotions impact political decision-making on the works of Abelson et al.,[52] Conover and Feldman,[53] and Kinder.[54]

It is necessary to note that there is a dangerous assumption that has been lurking in both academia and the general public, namely that highly-informed people are more likely to ignore emotional cues and base their decision-making predominantly on hard facts, thus targeting those with factual data and using them consequently as influencers as an effective method to combat disinformation. However, in his field experiments, Brader [55] finds exactly the opposite – emotional cues work more effectively with people with more political knowledge and several cues based on fear producing exceptionally strong results. The same author acknowledges this may collide with commonly made assumptions and refers to the fact that "psychologists argue that everyone's behavior is governed by emotional processes and caution against the well-worn separation between emotion and reason."[56] The reasons why this phenomenon persists are complex and need much more academic scrutiny and testing. On one hand, highly informed people are likely to show more interest in information, and politics and policy on average, thus they would be looking for and assimilating more of the transmitted cues; on the other hand, their knowledge and attention make them more equipped to process new data in a critical way and resist misinformation and disinformation (and conviction in general) as described by Zaller.[57] Brader[58] suggests that emotional cues that are of a continuous and subtle nature may partially evade an informed person's awareness of her changing inclinations.

As argued by Brader,[59] the theory of affective intelligence by Marcus, Neuman, and MacKuen [60] in political decision-making could be helpful in shedding more light on these processes as it puts a greater emphasis on emotional responses in shaping political decision-making that goes beyond the traditional rationalist perspectives which favor cognitive reasoning. This theory, based substantially on Gray's [61] neural-behavioral theories, suggests that the limbic system is partitioned into two sub-systems, relating to reward (behavioral approach system) and punishment (behavioral inhibition system).

According to Marcus, Neuman, and MacKuen,[62] individuals rely on two decision-making strategies, with one relying on emotional responses and the other being more deliberative and rational, but in juxtaposition to common knowledge, these authors do not assume that the one contradicts or excludes the other. On the contrary, individuals may switch between the two and consciously or subconsciously even fuse them together. Marcus, Neuman, and MacKuen [63] put a substantial emphasis on enthusiasm and fear (reflecting the behavioral approach system and the behavioral inhibition system), arguing that enthusiasm is often triggered by signs of success and it is likely to solidify the perceived positives of current habits and reinforce decisions in the same direction – for instance voters aligning with party loyalty and recommit to the same candidates or policies; on the other hand, fear may motivate individuals to look for additional information on a subject in order to counteract against a perceived threat, meaning fear may lead to a deviation from the current course

of decisions towards new options. Brader[64] comments on the fear aspect in affective intelligence by pointing out that "appeals to fear, cued with harsh images and music, help to pry open the door to attitude change and unexpected choices." Marcus, Wolak, Keele, and MacKuen[65] expand on the original theory to divide negative emotion into two dimensions – anxiety (afraid and worried, for instance) and aversion (angry and bitter, for instance). While anxiety remains closer to the original findings and assumptions about fear, aversion (anger) is found to be more related to broadcasting outwards and expressing one's views.[66] Pennington and Palagi[67] tested the affective intelligence theory as it pertains to shaping a response to cross-cutting political views on social media and empirically found evidence that emotional cues of enthusiasm, anger and anxiety indeed influence voter behavior without necessarily disjointing it from deliberation and rational decision-making. This corresponds with previously discussed findings and suggestions that informed individuals' decision-making process concerning politics and policies can indeed be strongly and predictably influenced by providing emotional cues through information warfare, such as reflexive control.

OSINT is Emerging as a Tool in the Fight against Information Warfare Techniques such as Reflexive Control

Open-source intelligence has become an instrument in the fight against information warfare due to the increasing accessibility and availability of information from "open sources." This may gradually become both a blessing and a curse as the online environment is transformed into "a place of confrontation between adversaries open to mass distortion and associated with various forms of cyber aggression."[68] However, as Barbulescu[69] points out, open-source intelligence's capacity to gather and process vast amounts of information is a weapon for the abuser just as much as it is for the defender, with information warfare dominance becoming dependent on which side is able to identify and differentiate truth from falsehood.

Barbulescu[70] also explicitly links the OSINT with reflexive control in the context of the Russia-Ukrainian war and Middle East conflicts, citing Snegovaya's[71] extensive research on the first. According to Barbulescu,[72] the goal of the Russian Federation's reflexive control operation was to dissuade Western actors from engaging and assisting Ukraine in defending itself militarily. Russian state and non-state actors have fed Western decision-makers and the general public a variety of messages aimed at exerting a reflex, ranging from a denial of the involvement of Russian military forces in Ukraine (little green men in Crimea)[73] to the fearmongering of Russian officials such as senior security official Medvedev concerning the usage of nuclear weapons.[74]

Furthermore, Barbulescu[75] sees open-source intelligence as gradually integrated on multiple levels in intelligence operations – tactical, operational, and strategic. At the tactical and operational levels, analysts, with the assistance of technology, will become specialized in niches in order to effectively gather and process publicly available data. A significant aspect of this specialization is

knowing not only where to look for information about a specific topic but also to have at least a general profile of the potential sources – or the means to create one in a timely manner in order to provide a defensive line against reflexive control and other information warfare campaigns. At the strategic level, decision-makers will gradually deploy emerging technology to construct foresight models, which will effectively enable decisions to be transformed into actions.[76] As technology improvement also increases the volume of OSINT to be both generated and collected, scholars have advanced, and practitioners have started to implement the outsourcing of OSINT to independent non-governmental organizations, academicians, consulting companies, and business intelligence, which have the capacity to collect, analyze and, in certain cases, disseminate conclusions based on data gathered from open sources.[77]

Barbulescu[78] accentuated on the assumption that in contemporary information conflicts with both sides deploying technologically amplified OSINT and hypothetically reflexive control aggressive and defensive measures, "the competitive advantage is obtained by the one who knows how to discern truth from falsehood and, more recently, possible from likely." However, as reflexive control is identified as a potential instrument to be leveraged in conflicts of geopolitical scale, the success depends on political decision making which in turn in democratic and semi-democratic regimes depends on popular vote or popular pressure, which in turn is significantly influenced not only by rational decision making by large groups of people but also by the sway that emotions may have on their collective opinions and moods as Brader[79] discusses in length in his book "Campaigning for hearts and minds: How emotional appeals in political ads work."

Analysis

The critical review of the literature indicates that for decades, the targeting of emotions in voters and political decision-makers has largely remained beyond systemic academic scrutiny, with the tide starting to turn with the advent of neuroscience in the last about thirty years and several foundational works have further strengthened research in the area. As information warfare picks up steam in contemporary conflicts and OSINT technological improvements make the practice a double-edged sword in the hands of both attackers and defenders, the intersectionality with reflexive control needs reconceptualization and theoretical development – especially as the Russian-Ukrainian conflict gives a plethora of evidence of RC leveraged for geopolitical means. Emotional cues are no longer used by political consultants to produce tailor-made TV ads but by geopolitical actors trying to gain reflex against their adversaries, with academia lagging behind this process even as we see the significant success of Russian reflexive control campaigns in Western societies and political decision-makers.

A critical point that is often overlooked in battling information warfare in contemporary conflicts (be it the Russian-Ukrainian war or several Middle-Eastern conflicts) is that it is often assumed that the adversary only or predominantly leverages misinformation and disinformation. However, history has indicated

that masterful propaganda tries not to go too deep into fake information – French sociologist Jacques Ellul[80] is famous for pointing out that both sides in WW2 tried to be as truthful as possible from their own ideological and existential frame, describing Nazi propaganda as:

> There remains the problem of Goebbels' reputation. He wore the title of Big Liar (bestowed by Anglo-Saxon propaganda) and yet he never stopped battling for propaganda to be as accurate as possible. He preferred being cynical and brutal to being caught in a lie. He used to say: "Everybody must know what the situation is." He was always the first to announce disastrous events or difficult situations, without hiding anything. The result was a general belief between 1939 and 1942 that German communiqués not only were more concise, clearer and less cluttered, but were more truthful than Allied communiqués (American and neutral opinion) -- and, furthermore, that the Germans published all the news two or three days before the Allies. All this is so true that pinning the title of Big Liar on Goebbels must be considered quite a propaganda success.

Skillful propagandists leading information warfare have based their campaigns on insinuation, truth spinning, half-told distorted truths, suggestions, symbols, rumors, and nudges, building an overall atmosphere and frame that subtly leads decision-makers and the public towards a self-evident conclusion, leaving them to believe they have reached it all by themselves. In this context, Teubner and Gleason[81] warn against over-reliance on pure fact-checking that has exploded in recent years:

> … fact-checking has some obvious weaknesses. First, since much of what skillful propagandists say will be true on a literal level, the fact-checker will be unable to refute them. Second, no matter how well-intentioned or convincing, the fact-check will also spread the initial claims further. Third, even if the fact-checker manages to catch a few inaccuracies, the larger picture and suggestion will remain in place, and it is this suggestion that moves minds and hearts, and eventually actions.

The Russia-Ukrainian conflict has in its timeline a number of examples of Russian reflexive control campaigns that have at least partially achieved their aims, with Western countries failing to counteract in an effective manner, exposing some weaknesses of currently deployed countermeasures such as OSINT, fact-checking, and regulatory push against misinformation and disinformation.

For instance, Kohalmi[82] identifies a reflexive control operation of the Russian Federation against the Romanian general public and political decision-makers that relied heavily on emotions, fear in particular – the deployment of the anti-missile shield from Deveselu to which the Russian Federation responded with a campaign which portrayed the defensive system as a (1) "flagrant violation" of the Intermediate-Range Nuclear Forces Treaty by the US, (2) an offensive system which is masqueraded as a defensive one, and (3) these two leaving no choice to Russia but to defend itself and innocent Romanian citizens potentially

becoming victims to Russian missiles. The reflexive control operation also aimed to exploit distrust among groups of poorer Eastern European NATO citizens (this has been recently leveraged with far greater success in Africa and the Middle East, as pointed out by Presl[83]), such as Romanians towards more affluent and more distanced NATO powerhouses such as USA, implying that the first are nudged to host offensive weaponry aimed at Russia and as they are closest to the Russian strategic installations they will also be the first in line to be targeted in response.[84] Kohalmi[85] notes that in certain disinformation pieces, such as the transfer of American B61 nuclear warhead aviation bombs to Incirlik and Deveselu, national institutions may be strikingly inefficient in defense as they are factually not responsible for activities in local American installations – an example of how inefficient in certain moments rational and factual arguments may become when confronted with elaborate and effective emotionally loaded reflexive control operations. Therefore, Kohalmi[86] also stresses the emotional aspect of information warfare, concluding that "the Deveselu argument, once included in a negative psychological, emotional and aspirational horizon, can be frequently used by the Kremlin for the mobilization of foreign and domestic publics against US and NATO."

Multiple elements of the typical reflexive control theory can be easily recognized in the Deveselu analysis. For example, working in Komov's framework and fusing in affective intelligence theory, it is easy to spot signs of the theoretical instruments and also to distinguish emotional cues that had been provided:

- Paralysis: the Russian side created a perception of threat to Romanian economically important black sea regions using fear.

- Division: The Russian side has repeatedly tried to convince eastern European NATO and EU states that due to their common borders and proximity to the Russian Federation, their geopolitical and economic interests do not fully align with those of the more aggressive Western allies. Taking into consideration the stark East-West economic divide, emotional cues of bitterness have been successfully leveraged by creating the perception of a specific threat to a vital interest or weak spot;

- Deterrence: by continuously spinning propaganda about the Russian Federation's nuclear superiority, wunderwaffe technologies (nuclear torpedoes capable of creating tsunamis, robo-dolphins guarding the Kerch bridge, etc.), significant portions of voters and political decision-makers in small, fragmented, and militarily weak eastern European countries have been convinced of Russian insurmountable superiority.

- Pressure: a recurring theme in the reflexive control campaign is that the government is betraying its own citizens and working to form a secret cabal with Western aggressive government and political factions who are interested in perpetual war but are geographically too far away to have a personal stake in contrast to the eastern EU and NATO nations.

The reflexive control in the Deveselu case has not been based predominantly on misinformation and disinformation but has created a framework of suspicion, distrust, and opaque decision-making, sowing discord between the Western allies. The campaign took advantage of the complex institutional decision-making behind this US-Romanian policy where fact-checking was bogged down in complex responsibility and authority distribution, highly technical data which is not understandable for most people and open to interpretations capability deployment which easily falls prey to a more straightforward, simplistic and emotional adversarial reflex building. A similar reflexive control operation has been arguably organized with more success, targeting Bulgaria's hypothetical opportunities to join or host common naval forces in the Black Sea during the very same time period.

Experiments and theories suggest that emotional cues are not only effective but comparatively even more effective on highly informed individuals in their political decision-making. They have a powerful impact on analyzing and deploying instruments to fight against information warfare, such as reflexive control. OSINT, which only gathers and processes data in order to find factual errors and trends and then relays these to fact-checkers and public figures to refute and fight against an ongoing reflexive control feed, might be ineffective over the medium- and long-term as malicious emotional cue feed would subtly and gradually sway the inclination of the public.

With this at hand, there seems to be a gap in the Western interpretation of the reflexive control theory regarding the role of emotions targeted in this information warfare strategy and, consequently, the effectiveness and process of these emotional influences. For example, in Vasara,[87] the role of emotions is briefly mentioned mostly as part of a review of the works of other scholars such as Lefebvre,[88] Chausov,[89] and Kiselyov.[90] Even though Vasara[91] points out that in the American interpretation of reflexive control (or whatever analogical Western concept of influencing decision-making in information warfare is used), steering and understanding emotions and motives is a central goal. However, there is little consequent analysis of how and why this information warfare targets emotions and how and why the counteracting mechanisms will defend and counteract in the same line.

Some of the relatively scarce analyses that have mentioned reflexive control initiatives leveraging specifically emotional cues are Marahrens and Schrofl.[92] The two authors claimed that the highly effective reflexive control campaign targeted at the Baltic states, Sweden and Finland instilled fear and triggered survival instincts in the decision-making processes in these countries with "legal, information, disinformation, and diplomatic means" accompanied with "lengthy military show of force around Ukraine" with this sowing critical uncertainty among allies concerning whether and how they ought to support Ukraine's defensive capabilities. Jakubczak[93] does not explicitly review Russian cognitive warfare in Ukraine as reflexive control campaigns, but reviewing the various local genocidal crimes committed, he acknowledges that "emotions are engaged, the more damage can be done since the emotions can be incited to

change perceptual and cognitive content to control masses." The same analysis outlines a complicated Russian cognitive campaign, which at certain parts is self-contradictory but is capable of producing emotional cues to a set of different targets and achieving complex, lasting goals, for instance, using (1) false accusations that Ukraine is committing genocide and false flag operations, (2) west supporting genocide against Russians, (3) graphic broadcasting of war crimes committed, and (4) bombarding Ukrainian and neighboring countries' populations that this may happen anytime against them.

Taking into consideration the above, we propose the following augmented reflexive control models suitable for OSINT application and consequent analysis:

Table 5. Emotional cues of reflexive control – destructive method.

Reflexive control methods	Targets	Emotional cue / Emotion trigger aim				
		Enthusiasm	Anxiety		Aversion	
			Afraid	Worried	Angry	Bitter
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						

Based on additional research, the emotional cue classification can be modified and expanded. For instance, according to the affective intelligence theory expanded by Marcus, MacKuen, Wolak, and Keele,[94] the positive factor of enthusiasm has been observed to branch into categories identified as "proud" and "hopeful," while aversion has been observed to go beyond anger and bitterness into disgust, hatred, contempt, etc.

Conclusion

Comprehensive works such as those by Vasara[95] and Thomas[96] have laid the groundwork for deeper academic scrutiny of Russian reflexive control campaigns with an intersection with emotional cue impact on political decision[97, 98]

Table 6. Emotional cues of reflexive control – constructive/creative method.

Reflexive control methods	Targets	Emotional cue / Emotion trigger aim				
		Enthusiasm	Anxiety		Aversion	
			Afraid	Worried	Angry	Bitter
1						
2						
3						
4						
5						
6						

being a prospective area for reconceptualizing and remodeling Western tools for counteracting information warfare. There is little doubt that isolated open-source intelligence and fact-checking have been unable to stem the tide of effectively carried out reflexive control operations, and this is acknowledged not only in the academic area [99] but also in popular media and specialized editions.[100, 101]

A deeper look at the reflexive control toolbox shows that neither excessive trust in fact-checking and OSINT nor growingly desperate calls for all-encompassing censorship will be effective in counteracting the impact of this type of information warfare. Reflexive control in its contemporary form is not solely based on lies spread through social media or official press releases that are easily fact-checked for errors. Quite on the contrary, fusing the old USSR concept of reflexive control—in essence, a multi-method, multi-channel, and multi-target attempt at creating a distorted interpretation of a real-life bubble—with modern information and media technologies is a potent weapon to exploit the inherent differences and naturally floating allegiances and opinions in a democratic society.

This article brings to our attention that reflexive control operations have always been aimed at influencing the emotions and psyche of their targets, be those high-level political decision-makers or masses of voters/citizens. Rather than ignore the role of emotions in individual and collective democratic decision-making as something conspiratorial or undesirable, scholars and practitioners should embrace this as a fact and integrate it in both practical countermeasures and theoretical reconceptualization of information warfare.

Hence, the critical review suggests a reconceptualization of the reflexive control theoretical model to integrate the affective intelligence interpretation of how emotions influence political decision-making and integrate this into ongoing open-source intelligence countermeasures.

Further Research

With scholarly research in both reflexive control and the influence of emotion in political decision-making gaining intensity in recent years, there are multiple models for both that can be fused into intersectional reconceptualization. The ongoing Russia-Ukraine war and several conflicts in the Middle East have fully engaged institutions, non-governmental actors, and private sector players in OSINT-based countermeasures, thus providing the necessary ground for empirically testing the produced models.

Moreover, there is a gap in the research on how to build defensive measures against reflexive control. It is possible to lay out further hypotheses that measures improving the knowledge of democracies themselves, including institutional decision-making processes and emotional portraits, could improve resilience. This would be a challenging task for sociological research and political analysis as in order for such a framework to be useful in practice, it has to be depoliticized, and weaknesses detached from current political trends must be objectively measured.

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About the Authors

Boyan **Mitrakiev** holds a PhD in Public communications from New Bulgarian University (NBU) and has worked as a consultant in the area of communications and public affairs for more than a decade. Boyan is currently a lecturer at the University of National and World Economy and NBU, as well as an advisor to the President of Irish American University and to the Chairman of the Confederation of Employers and Industrialists in Bulgaria (CEIBG). https://orcid.org/0000-0001-7215-201X

Noncho **Dimitrov** holds a PhD in Economics and Management from the Univer-sity of National and World Economy (UNWE). He is currently an associate professor and the head of the National and Regional Security department in the UNWE. https://orcid.org/0000-0003-0606-1499