



# Integrating Gender Perspective in Cognitive Warfare

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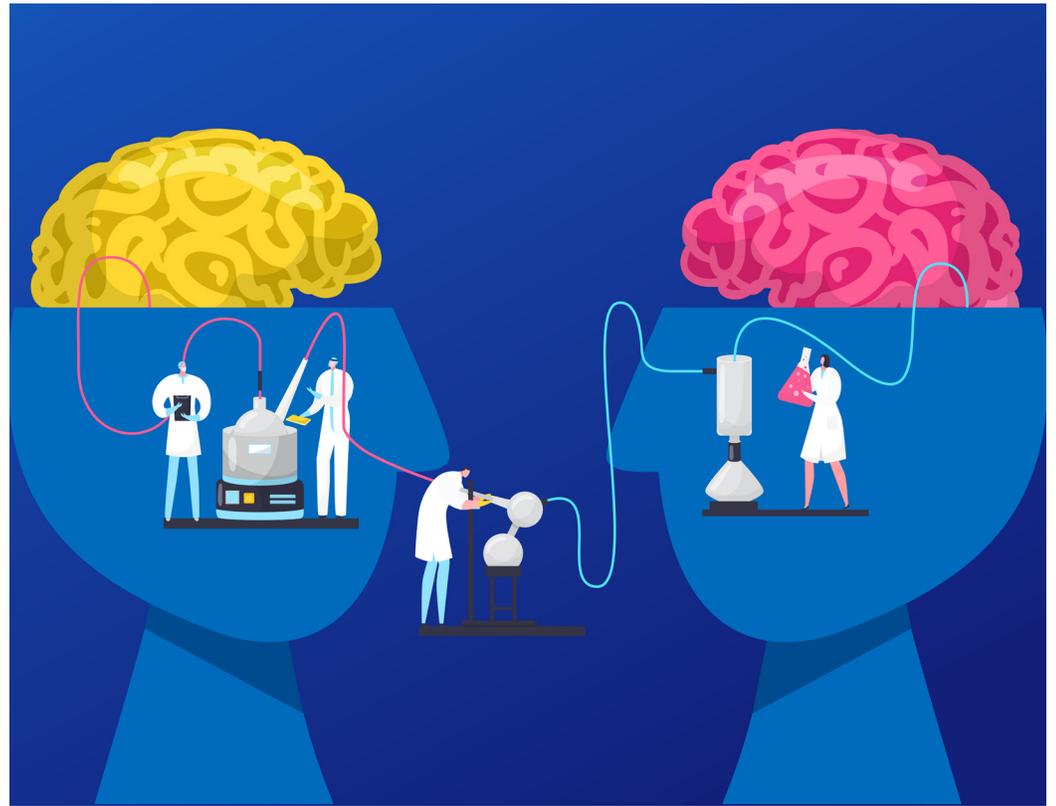
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# Integrating Gender Perspective in Cognitive Warfare

## Abstract

The main object of this paper is to explore the cognitive dimensions of the information environment and the extent to which gender is strategically employed in disseminating disinformation, shaping perceptions, and influencing decision-making. We argue that NATO member states must scrutinize the weaponization of gendered disinformation, a subset of misogynistic abuse employing false gender-based narratives to deter women from participating in the public sphere, and online gender-based violence, which disproportionately targets women. Next, we present three case studies – Russia, China, and ISIS/Daesh – to demonstrate how different actors seek to leverage the power of social media platforms and personalized algorithms to disseminate gendered messages with the goal of eroding the inclusiveness of democratic societies, fueling animosity towards gender equality, and exerting cognitive influence over domestic and foreign audiences. In doing so, we posit that there is an urgent need to integrate gender perspective into cognitive warfare analysis to gain a complete understanding of how these campaigns operate and affect diverse populations. We also present recommendations to improve strategic readiness, situational and cultural awareness, as well as enhance cognitive resilience in NATO member states.

## Key Words:

Gender perspective, gender, sex, gender equality, democratic values, stability, security, cognition, cognitive warfare, decision-making, influence, perception, behavior, beliefs, attitude, information environment, disinformation, manipulation, resilience, stereotype.

## Key Definitions:

### **Gender Perspective:**

The ability to detect if and when men, women, boys and girls are being affected differently by a situation due to their gender (NATOTerm, 2023).

### **Cognitive Warfare:**

Activities conducted in synchronization with other instruments of power, to affect attitudes and behaviour by influencing, protecting, or disrupting individual and group cognition to gain advantage over an adversary (NATO proposed definition, ACT 2023).

### **Gender:**

Refers to the social attributes associated with being male and female, learned through socialization, that determine a person's position and value in a given context including in the relationship between women and men and girls and boys, as well as in the relations between women and those between men (NATOTerm 2023).

### **Gendered Disinformation:**

Refers to the spread of false or misleading information online using sex and gender-based narratives for political, social, and economic objectives (authors proposed definition).

### **Online Gender-Based Violence:**

Refers to acts of violence targeting individuals based on their gender, sex, or sexual orientation using technology or digital platforms, which can include but is not limited to threats, harassment, cyberstalking, or the dissemination of degrading content (authors proposed definition).

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# EXECUTIVE SUMMARY

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This paper addresses a paradigm shift in modern warfare, where information technology, neurocognitive science, and AI play pivotal roles in manipulating human cognition as it relates to gender. The primary goal is to understand the nature of gendered cognitive warfare and examine its implications for democratic societies and national security interests. More specifically, we set out to examine how strategic competitors seek to exploit gender as a tool to meddle in democratic processes, subvert decision-making,

and undermine social cohesion, political stability, trust in government, inclusivity, and a sense of collective responsibility.

Divided into three sections, the paper first seeks to situate gender within the broader context of cognitive warfare. By drawing on the literature in cognitive psychology, neurobiology, gender and security studies, the first section provides an overview of the sex and gender-based differences



in cognition studies, and it reveals that cognitive differences between men and women are influenced by a complex interplay of biological, social, and experiential factors. However, the often-exaggerated focus on biological differences, particularly in the media and popular culture, not only creates misleading and factually incorrect gender stereotypes about men's and women's, boys' and girls' abilities and roles, but also limits their potential, hinders equality, and fuels inequality.

The second section highlights how these gender stereotypes impact cognitive development, distort public discourse, influence decision-making, and are weaponized against democratic societies. Gender stereotypes, whether explicit or implicit, play a pivotal role in shaping how individuals perceive and process information, reinforcing biased beliefs. Gender stereotypes should also matter well beyond individual development, as a growing body of scholarship points to the strategic exploitation of gender as a tool for disinformation dissemination, amplification of divisive narratives, and manipulation of gender stereotypes to achieve national security objectives.

The third section presents the conceptual and analytical framework to study the use of cyber tools to manipulate cognitive processes and exploit cognitive biases, particularly gendered disinformation and online gender-based violence as two related, and at times overlapping, operations of cognitive warfare. We argue that NATO member states must scrutinize these to gain a more nuanced understanding of the role that gender plays in contemporary cognitive warfare campaigns. We also underscore the risk of failing to grasp the implications of the use of gender in cognitive warfare for the stability and social cohesion of democratic societies, trust in institutions, inclusivity, and resilience.

Next, the paper offers an analysis of three case studies: Russia, China, and ISIS/Daesh. These case studies aim to illustrate how both state and non-state actors seek to advance their strategic objectives and interests by using gender in cognitive operations. We found that in all three cases there was a deliberate and strategic exploitation of gender stereotypes and disinformation in cognitive warfare operations, which posed a substantial challenge to the stability

and inclusiveness of democratic societies. The case studies demonstrate both the complexity of the informational environment, which is rife with gendered disinformation campaigns and online gender-based violence, and the potential to exacerbate societal divisions and undermine resilience.

In the last section, we present our recommendations to NATO in the following areas:

1. **Adopt** Women, Peace and Security (WPS) and integrate gender perspective into the NATO cognitive warfare concept.

2. **Shape** the Information Environment:

a. Strategic Communication and Information Operations.

b. Promote Gender-Sensitive Media/ Information Literacy.

c. Adapt Gender Mainstreaming Strategies.

3. **Adapt** NATO Cyber and Intelligence Capabilities:

a. Leverage cyber and intelligence capabilities.

b. Utilize the Power of AI and Machine-Learning Tools.

4. **Collaborate & Protect:** International Law and International Partnerships.

5. **Educate:** Training and Education of NATO Allies and Partners.

# INTRODUCTION

*“Only by placing gendered disinformation at the center of policy agendas to reduce online harms can reform-minded governments score a victory for women’s rights, but also advance key national security and foreign policy objectives to prevent further democratic backsliding.”*

*Kristina Wilfore, 2022.*

Over the last two decades, major advancements in information technology, neurocognitive science, data analytics, and Artificial Intelligence (AI) have opened the door to novel and sophisticated methods of human cognition manipulation contributing to the changing character of warfare. Increasingly, strategic competitors actively “seek to exploit the openness, interconnectedness and digitalization” (NATO, 2022, pg. 3) by meddling in the democratic processes of NATO member states, and attempting to subvert individual and collective decision-making power, to influence, disrupt, and reshape how their targets view the world (Cluzel, 2020). Effectively operating across the continuum of competition<sup>1</sup> requires recognizing that the human brain is the new battlefield (Giordano, 2018). This involves understanding that warfare now has a new cognitive dimension—the psychological aspect of the information environment—which encompasses decision-making, perceptions, behavior, beliefs, and attitudes of populations.

Today, a rapidly growing body of evidence points to both state and non-state actors’ strategically exploiting gender as a tool to disseminate disinformation, amplify divisive narratives, and weaponize and manipulate gender stereotypes to achieve national security goals (Di Meco 2019; Judson et al 2020; Wilfore 2021). Facilitated by social media platforms and personalized algorithms, such cognitive operations aim to undermine the inclusivity of democratic nations, fuel hatred toward gender equality, and exclude specific gender and sexual identities from civic life -- all to influence targeted communities to take decisions that go against their own interests. As a



result, individuals and groups may find themselves under adversaries’ influence, existing within filter bubbles, echo chambers, and personalized information environments that reinforce their existing beliefs while limiting exposure to diverse perspectives (Pariser 2011; Dylko et al 2017; Spohr 2017; Susser et al 2019).

## Methodology and structure of the paper

By drawing on the literature in cognitive psychology, neurobiology<sup>2</sup>, gender and security studies, this paper seeks to situate gender within the broader context of cognitive warfare. We examine the scientific foundations of cognition as they relate to sex and gender, and their potential impact on our understanding of cognitive warfare strategies, decision-making processes, and resilience-building efforts.

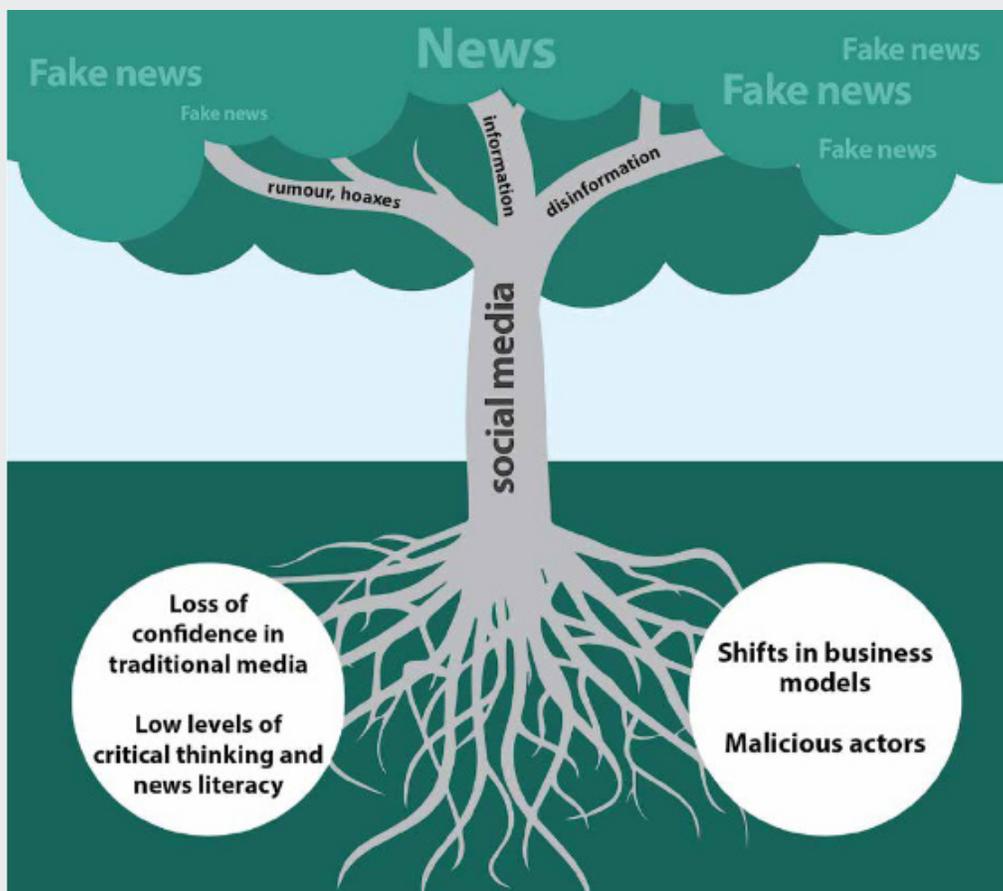
<sup>1</sup>The continuum of competition is a model depicting how attitudes and behaviours shape international relations. The continuum depicts four types of relationships between states/groups of people: cooperation, rivalry, confrontation and armed conflict. The boundaries between cooperation, rivalry and confrontation, and the threshold between confrontation and armed conflict, are complex and dynamic; the progression between each is neither linear nor easily defined. (AJP-01 2022, pg. 5)

<sup>2</sup>Neurobiology is the scientific study of the biology of the nervous system, especially in connection with behaviour (Oxford Dictionary 2023).

First, we provide an overview of the sex and gender-based differences in cognition studies and examine scholarly arguments regarding the factors influencing those differences. Second, we look at the arguments that solely focus on biological differences and the way they create and perpetuate rigid and often inaccurate beliefs about the abilities of men and women and their roles in societies. In doing so, we aim to highlight how gender stereotyping is contrary to the values of equality and inclusivity in democratic nations.

Next, we present the two main concepts: gendered disinformation and online gender-based violence. These allow us to study the manipulation of gender stereotypes in cyberspace and understand how they are intended to impact cognitive processes and biases and achieve certain strategic objectives. We then adapt and combine existing analytical frameworks to analyze the use of

gendered content in cognitive warfare, shedding light on the actors behind these campaigns, the specific messages conveyed, the modes of dissemination, and the interpretation of those messages by the targeted audience. By exploring the three case studies for Russia, China, and ISIS/Daesh<sup>3</sup>, we look at how state and non-state actors leverage gendered disinformation and online gender-based violence to exert cognitive influence over domestic and foreign audiences. We argue that failing to integrate gender perspective can affect diverse populations. Finally, we recommend strategies that protect NATO member societies from cognitive manipulation, safeguard democratic societies, and integrate gender perspective in the cognitive domain.



Picture extracted from: UNESCO - World trends in freedom of expression and media development: global report 2017/2018 (p. 86)

<sup>3</sup>The acronym "ISIS," stands for a fuller version of the violent extremist group's name in English. "Daesh" is an acronym created out of the group's full Arabic name, "al-Dawla al-Islamiya fi al-Iraq wa al-Sham". The word "Daesh" is also very similar to the Arabic word (Daes), meaning "the one who crushes (or tramples down) something underfoot".

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# SEX AND GENDER DIFFERENCES IN COGNITION

Derived from the Latin word “cognoscere”, meaning “to know,” cognition refers to a wide range of mental activities and aspects, including perception, attention, problem-solving, decision-making, language use and comprehension, and learning and memory (Neisser 1967; Solso et al 2005). It encompasses the set of mental processes and activities involved in acquiring, processing, understanding, storing, and using information. Simply put, cognition is about how we think, perceive, and interact with our environment.

Considering gender perspective in cognition allows us to explore sex-based and gender-based differences between women, men, girls, and boys in the way they acquire, process, understand, store, and use information, shaping how we think and interact. Some cognitive sex differences

have been observed between biological males and females such as that males generally excel in mental rotation (Voyer et al 1995; Lauer et al 2015) and mathematical, spatial and navigational abilities (Bentbow and Stanley 1980; Royer et al 1999; Jones et al 2003; Wolbers & Hegarty 2010), while females tend to perform better in tasks requiring verbal skills and reading abilities (Weiss et al 2003; Lietz 2006). In wargames, males tend to exhibit overconfidence, focusing on offensive capabilities, while females emphasize defense and reconnaissance systems (Wasser 2019). Studies also suggest that overconfident males are more likely to initiate conflicts (Johnson et al 2006), and female scientists perceive higher risk from nuclear technologies regardless of scientific training or attitudes (Barke et al 1997). Gender variations in risk perception extend to the COVID-19 response,



where women understood the risk and complied with government directions more than men. However, it is unclear if this difference is biological because “gender structures, reflected in gendered ideology and gendered practice” also lead to differences in the perception of risk (Gustafsd 2006).

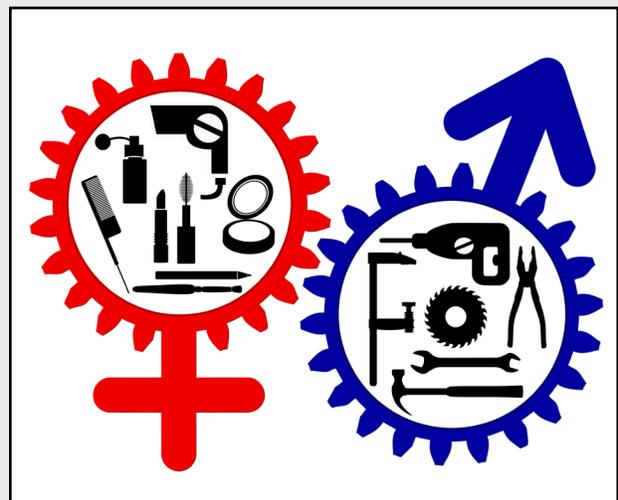
This suggests that differences should be considered within the broader context of individual, cultural, and psychological factors. The interplay of multiple social identities, such as age, ethnicity, socioeconomic and educational status, and cultural norms could all contribute to divergent patterns. While sex differences should refer to biological differences between women and men which are fixed and unchangeable, and do not vary across cultures or over time; gender differences should refer to socially constructed attributes and opportunities associated with being male and female that are learned through socialization processes. That distinction is not always clear in studies, and some of the sex-difference research suffers from conceptual, methodological, and statistical problems (Eliot 2019). Although studies have found little evidence for inherent biological cognitive abilities and cerebral lateralization (Fairweather 1976; Fairweather 1980; McGlone 1980), studies purporting girls’ lower math ability (Benbow & Benbow, 1987; Benbow & Stanley, 1980, 1983) were publicized by media “despite atypical population and using a single test” (Caplan and Caplan 2005, pg. 26). More recent research has suggested that cognitive similarities between a “female” and “male” brain outweigh differences (Hyde 2005; Zell et al 2015; Jäncke 2018).

Despite the underlying similarity of human brains, many studies of sex differences in cognition do not consider how external influences – such as social, cultural, and environmental – channel individuals toward distinct gender-specific trajectories, limiting their potential cognitive development. A 2018 study, which tested the spatial ability of more than 2.5 million people around the world, identifies that gender differences in spatial ability are reflective of gender inequality in a country. In countries with greater gender equality, the navigational abilities disparity between the sexes is shrinking (Coutrot et al. 2018). As Halpern points out, “even when differences are found, we cannot conclude that they are immutable because the continuous interplay of biological and environmental influences

can change the size and direction of the effects sometime in the future” (APA 2005). The concept of gender-based differences therefore allows us to examine the impact that gender stereotypes can have on cognitive processes as well as how these stereotypes can inadvertently reinforce and legitimize discriminatory actions against both sexes (Fiske 1998; Eliot 2011). Cognitively, gender categorizations are quickly detected, appear to be significant, seem relatively fixed, and are easily polarized, which contributes to the persistence, particularly, of male/female stereotypes (Ellemers 2018). Additionally, qualities attributed to men tend to be viewed as superior and dominant (Demetriou 2001).

These preconceived notions not only shape individuals’ self-perceptions but also affect their interactions with others. Spelke and Ellison warn us that “deep-rooted beliefs in psychological gender differences can become self-fulfilling prophecies.” (2009, pg.42). Gender difference stereotypes can serve as cognitive filters, affecting how people allocate their attention and process information. Indeed, people more easily recall information that aligns with stereotypes than information that challenges those stereotypes (Hilton & von Hippel 1996).

As the boundaries between factual information and disinformation become increasingly blurred in the cyber realm, it becomes crucial to critically assess and verify any claims related to sex and gender cognitive differences, and embrace the complexities of biological, social, and experiential influences on an individual’s cognitive abilities.



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# GENDER STEREOTYPING AND COGNITIVE DIFFERENCES



By reinforcing rigid and often inaccurate beliefs about the different capabilities of men and women and about gender roles, stereotypes can undermine and limit individuals' potential, hinder equal opportunities, and contribute to systemic inequality (Ridgeway 2021). Early conditioning has already been shown to affect cognitive development, as children are guided toward certain interests, activities, and even math and STEM skills based on the gender stereotypes of parents and teachers (Tiedemann 2000; Bian et al 2017; Master 2021). For example, the prohibition of cultural traditions and forced compliance on

Native children to European and Christian gender standards have had a lasting cognitive impact (Evans-Cambell et al 2012), just as Afghanistan's gender apartheid (OHCHR 2023) has on the cognitive development of women (Fish and Popal 2003). Russian re-education of abducted Ukrainian children is expected to reinforce gender stereotypes and harm their cognitive development, perception of the world, and decision-making abilities (Lunov 2023).

Studies show that gender stereotypes distort public discourse, skew decision-making processes, and impede the realization of a truly inclusive and just democratic society. The state's treatment of women and girls correlates to more peaceful state behavior and helps predict intrastate conflicts (Caprioli 2005; Hudson et al 2009). The worse the status of women and girls in a state, the more likely it is to be involved in intra- and interstate conflict, to be the first to resort to force and to have higher levels of violence.

Gender stereotypes have been found to play a significant socio-cultural role in influencing cognitive differences between sexes. When these stereotypes are triggered, they can lead to either negative or positive impacts on cognitive abilities in both men and women. Being aware and reminded of a negative stereotype, either directly or indirectly through situational cues, can impact one's cognitive performance in the area associated with that stereotype (Steele and Aronson 1995; Spencer et al 1999). In a military setting, for example, mandatory male conscription can reinforce hegemonic masculinity and promote gender stereotypes about who should serve in

certain military roles (Goldstein 2001; Obradovic 2014). Such gender role stereotypes reinforce a patriarchal social system where men are seen as dominant decision-makers and controllers of the vulnerable (Gilligan and Richards 2018). While most studies examine female stereotypes, the field of masculinity studies has explored the relational aspects of gender, including the processes through which boys learn about and learn to perform “manhood” through media messages. Survey data, often using undergraduate men as subjects, finds a positive association between the consumption of digital media and support for traditional masculinity or traditional sexual roles and scripts (Giaccardi et al. 2016; Scharrer & Blackburn 2018). Similarly, popular culture teaches boys key concepts of masculinity, such as being “tough” and “strong,” and studies show that this “tough guise” stance reinforces a culture of violent masculinity and normalizes violence (Katz

2000, 2013). Media’s reinforcement of stereotypes fosters the perception that these stereotypes are objective, true, and unchangeable, solidifying them as unquestionable and permanent. This emphasizes the significance of messages to consumers in cementing socially constructed beliefs (Martinez Alles, 2023).

Understanding gender stereotypes matters beyond individual development. NATO democracies need to grasp the implications: holding patriarchal views of relationships between men and women is contrary to their values of equality and inclusivity.

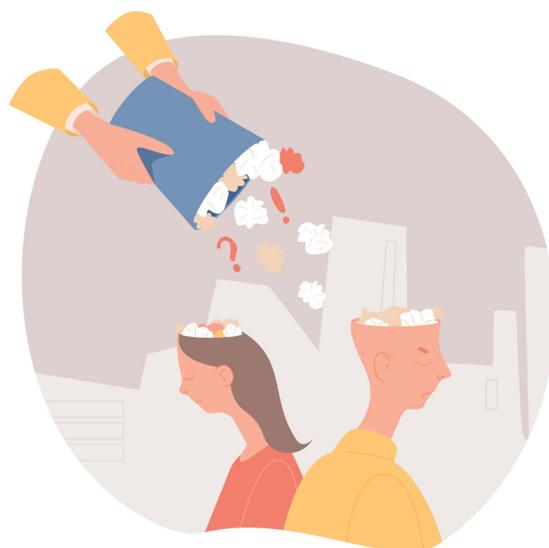


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# GENDER AND COGNITIVE WARFARE: CONCEPTS AND ANALYTICAL FRAMEWORK

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Cognitive warfare is waged “using cyber tools to alter enemy cognitive processes, exploit mental biases or reflexive thinking, and provoke thought distortions, influence decision making and hinder action, with negative effects, both at the individual and collective levels” (Clavarie and Cluzel 2020). Since the 2016 US national election, scholars have examined foreign interventions to spread fake news and disinformation via social media meant to distort perceptions, leverage cognitive biases, foster confusion, and exert influence on public opinion and societal cohesion (Benkler et al 2018; Howard et al 2018; Lazer et al 2018; Grinberg et al 2019; Jankowitz 2020). Lee (2019, 15) notes the “relentless targeting of hyper-partisan views” to manipulate people’s political behavior, by exploiting their fears and prejudices. Political campaigns increasingly mobilize gender norms and stereotypes, shaping the cognitive domain to create inequality and division in democratic societies (Stabile et al 2018; Bradshaw and Henle 2021). In fact, gendered cognitive warfare tactics have rapidly evolved into an essential component of the nonmilitary measures used in non-kinetic unconventional domains, by actors strategically employing sex and gender stereotypes to influence both their domestic population and foreign audiences. If we accept that gender or sex determine our cognition and behavior, deviating from norms has consequences. Framing informational and psychological campaigns with a gendered perspective can be mobilized to provoke emotional reactions in the audience, including fear and anger by presenting misleading content about gender-related topics that appears convincing and authentic (Tucker et al. 2018).



Integrating gender perspective can also help to better understand how men and women, in specific contexts, can be differently targeted by these informational and psychological campaigns, by using different approaches or means. For example, studies show that men tend to consume more disinformation on digital platforms while women seem more susceptible to misinformation<sup>4</sup> (Shu et al. 2018). This pattern is observed in Germany and the UK, where women detect fake news less frequently than men (Arin, Mazrekaj, and Thum 2023), and in Spain (Blanco-Herrero 2021) and Portugal (Morais and Cruz 2020), where women spend more time on social media seeking information. However, Portuguese women and men do not differ in their ability to discern credible vs. fake news.

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<sup>4</sup>Misinformation is false or inaccurate information—getting the facts wrong. Disinformation is false information which is deliberately intended to mislead—intentionally misstating the facts (American Psychological Association).

Here, we will primarily consider gendered disinformation and online gender-based violence as two related and at times overlapping operations of cognitive warfare. According to the U.S. State Department gendered disinformation is “a subset of misogynistic abuse and violence against women that uses false or misleading gender and sex-based narratives, often with some degree of coordination, to deter women from participating in the public sphere” (DoS 2023). Similarly, Di Meo (2023) defines it as “the spread of deceptive or inaccurate information and images against women political leaders, journalists and female public figures” that draws on gender stereotypes to distort the public perception of women politicians and to discourage women from pursuing public office. Jankovitz et al (2021, 7) suggest that this distinction has practical implications that could aid in identifying and addressing malicious or harmful content more effectively. Judson et al (2020) discuss “online activities which attack or undermine their targets based on their gender by weaponizing narratives for political, social or economic objectives.” Such a definition is broader, acknowledging that gender disinformation is not only targeting women, nor based on binary constructs. If we are to fully understand the scope of cognitive warfare operations, then gender disinformation ought to be “intersectional, globally relevant (not regionally biased), and inclusive of non-binary gender identities in addition to cis-gendered<sup>5</sup> (sic) women” (EUDisinfoLab 2021) and men. The concept of gendered disinformation must go beyond perpetrating direct attacks against specific female leaders, as it reinforces traditional gender roles to promote the dominance of cisgender heterosexual men and presents heterosexuality as the only normal or acceptable sexual orientation (Scott 2021). It not only plays into preexisting gender roles and stereotypes but may involve lionizing hypermasculine traits in political leaders to project strength, emasculating male opponents to undermine their credibility, and portraying women as inadequate leaders.

*Online gender-based violence*, also known as technology-facilitated gender-based violence, refers to “any form of violence that is enabled by or perpetrated by using technology or a digital interface – specifically the internet or smart devices. It can target one’s gender, sex, or sexual orientation” (UN Women Toolkit, 2022, 4). Adequate legal frameworks are lacking to protect

victims and women who are disproportionately victimized by certain types of cyberviolence (Simonovic, 2018; EIGE, 2017). In a survey of female parliamentarians around the world, 44.4% of the respondents indicated that they had encountered online threats of death, rape, physical assault, or abduction, while 41.8% had highly contemptuous or sexually charged images or content disseminated through social media platforms, such as Twitter, WhatsApp, Facebook (IPU 2018). Another study found that 96% of non-consensual ‘deep fakes’ were sexually explicit, with 99% targeting women, amassing 134 million views on four major hosting websites (Sensity AI, 2019; Romano 2019). These are frequently used to perpetrate gender-based violence by exploiting AI to demean, degrade, and harass women (Dunn 2021).

For gendered dimensions of cognitive warfare to be successful, these operations mobilize sustained, coordinated multi-platform social media campaigns to manipulate and amplify divisive messages (Lukito 2020). They involve the encouragement of offline violence and the impersonation of individuals, groups and social movements facilitated by the use of AI-generated content (Francois and Lin, 2021). Cognitive digital personalization allows adversaries to micro-target specific demographic groups with “content tailored to their interests and sensitivities” (Kreps 2020, 2), often to exploit existing public policy controversies.



Picture extracted from: UNESCO - World trends in freedom of expression and media development: global report 2017/2018 (p. 86)

<sup>5</sup>A person’s gender identity is one’s own internal sense of self and their gender, whether that is man, woman, neither or both. A person whose gender identity matches the sex assigned at birth is called cisgender.

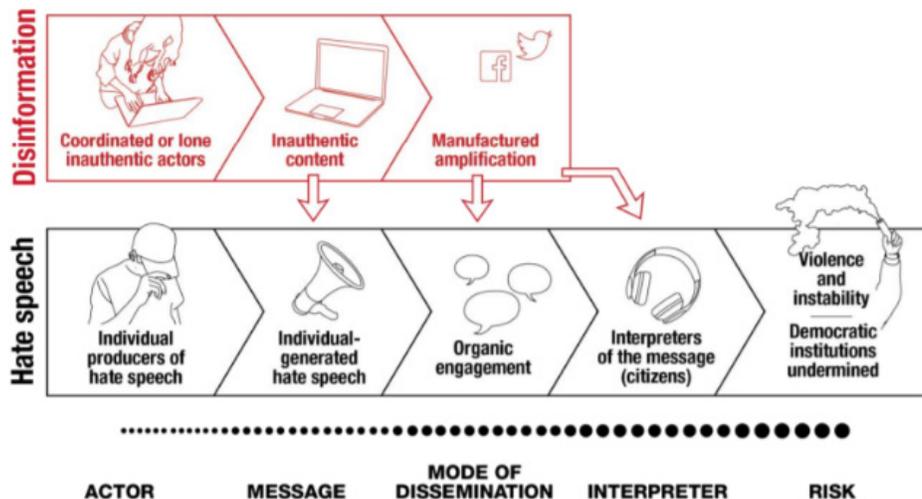
# CASE STUDIES

The selection of Russia, China, and ISIS/Daesh as case studies was based on their documented use of gendered content in cognitive warfare, which made them relevant examples for this research. However, we recognize that these cases are not exhaustive, and they do not represent all actors employing such strategies. While the following analysis and findings offer valuable insights, they are specific to the selected cases and should not be universally generalized. We acknowledge the need for further research to explore the potential use of similar strategies by other state and non-state actors, thus providing a more comprehensive understanding of this dynamic.

approach the analysis in a more granular manner. Adapting Wardle and Derakhshan’s “information disorder” framework as presented in their Council of Europe report (2017) and Scott’s (2021) “gendered disinformation” framework, we seek to answer the following four questions:

1. Actors. Who were the actors that created, produced and disseminated gendered content, and what was their motivation?
2. Message. What type of message was it? How does it meet the political needs of the actor?
3. Modes of Dissemination. How did they disseminate the message? What platforms were used?

To underscore both the severity of cognitive operations and their potential implications for democratic societies and international stability, we



Representation of the “information disorder” framework: amplification of viral misinformation and hate speech through individual or coordinated disinformation.<sup>6</sup>

<sup>6</sup>Graphic: visible in Scott, V. (2021) *Understanding the Gender Dimensions of Disinformation* (in para. 1.1) <https://counteringdisinformation.org/topics/gender/0-overview-gender-disinformation>

4. Interpreter. When the message was received by someone, how did they interpret the message? What action, if any, did they take?

These questions allow us to analyze the coordinated weaponization of gendered narratives (messages) to control both domestic and foreign audiences by Russia, China and ISIS/Daesh (actors), using digital platforms to share and amplify those messages (modes of dissemination<sup>7</sup>), while identifying domestic audience and consumers that were impacted by the message (interpreters).

## A. Russia

### **Actor**

There is overwhelming evidence that Russia is using manipulation and propaganda techniques to attack female politicians and candidates, as well as fracture and demobilize feminist movements with the aim of weakening civil society, shaping public opinion, and maintaining inequality and division within democratic societies (Bradshaw & Henle 2021). This is particularly the case following General Gerasimov's articulation of the new Russian strategic military thinking and modern warfare doctrine in which he emphasizes the importance of nonmilitary methods for achieving political and strategic objectives (2013).

### **Message**

The use and denigration of women and gender identities to present the new masculine Russia in a gendered "Russian world" to both internal and external audiences have become part of the government's narrative-shaping and maneuvering in the human domain (Voronova 2015). In 2022, Maria Zakharova, a spokesperson for the Russian Foreign Ministry, mocked the West by stating that "we do not accept a neutral gender for human beings" as "we call our sons and daughters boys and girls" (Tsargrad 2022). Such statements demonstrate how the government often connects Russia's aggressive anti-NATO stance to its revival of traditional gender roles and its open resentment toward women and Western equality (Romanets 2017; Kratochvil and O'Sullivan 2023). Similarly, Putin talks about Russia as a masculine

entity seeking control over Ukraine, "which he presents as feminine" to justify his annexation (Zimmerman 2023). Scholars highlight that gender has become a tool to maintain the legitimacy of President Putin's power and to shape Russian national identity and its perceptions of allies and foes. This "Putin-based nation-rebuilding scheme" (Johnson, 2014, 584) has resulted in actions and policies against feminism and anti-gender equality both at home and abroad.

The Kremlin has spent a considerable amount of energy portraying Putin as a "manly man" capable of saving Russian women in order "to emphasize that Putin was the correct man for the job of leading Russia out of its temporary sojourn in the post-Soviet doldrums and toward renewed glory" (Sperling 2016, pg. 4). This underscores the connection between his own machismo, the need to protect "vulnerable" Russia from Western aggression and the overall reassertion of Russia's power at home and abroad (Sperling 2015). His opponents, including Garry Kasparov, Mikhail Kasynov, and Eduard Limonov, are often portrayed in propaganda as weak women, dressed like prostitutes, "selling out" Russia to the West (Maksim Stribnyi, 2007). Russian women's and men's roles are not defined in isolation; they are part of Russian government's gendered nation-branding and nation-building strategies, particularly following the outbreak of conflict in Ukraine.

How the Russian leader uses dominance over women and hypermasculinity as strategies of power and legitimacy (Wood 2016) – sometimes by taking shirtless pictures through which the Russian political narrative is told (Foxhall 2013) – brings into sharper focus the need to also examine the use of gender in the Russian cognitive operations against foreign audiences. The eroticized image is presented to audiences to help establish Putin as an embodiment of national masculinity and heteronormativity (Riabov and Riabova 2014; Kondakov 2014), and in opposition to the weak image of European and American "deviant" and "degenerate" nations in decline, due to the prominence of groups like homosexuals and feminists, the acceptance of same-sex marriages, and changes in family structures, all alleged consequence of democratic values such as tolerance and secularism. In other words, gendered imagery, symbols, and metaphors

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<sup>7</sup>While dissemination techniques are discussed in this paper, the comprehensive analysis of their implications and mitigation strategies is beyond the scope of this study.

are both used to construct how Russians view Europeans and North Americans and contribute to shaping the gender dynamics within Russia (Riabova and Romanova 2012).

### ***Modes of Dissemination***

Functioning like an advanced marketing agency, the Internet Research Agency (IRA), or the Kremlin's "troll farm," employed and trained over a thousand individuals to work in their influence campaigns by posing as U.S. citizens and writing messages on U.S. social media platforms with the intent of sowing discord (United States v. Internet Research Agency LLC, 2018). Russia's cognitive campaigns were not uniquely targeted at the U.S. and there is evidence of such manipulation of other democratic processes including the French 2017 presidential election and the 2016 Brexit vote. There is a common misconception that the Russian cognitive campaign is about using automated bots, and yet, it was humans that engaged in real-time conversations, interacted with influencers and participated in the ideological clustering of social media. Although the IRA initially targeted citizens of Ukraine and Russia, it later expanded to target North Americans and Europeans around 2013. With a budget exceeding \$25 million, this "marketing" company launched an unprecedented cognitive campaign and reached massive audiences, "with 126 million people on Facebook, 20 million on Instagram, 1.4 million on Twitter, and over 1,000 YouTube videos uploaded" (DiResta et al 2019). These platforms lack robust regulation and oversight, and with no scrutiny or stringent identity verification and funding sources for social media platforms, Russia maintained these operations without being held accountable.



### ***Interpreters***

The IRA operatives created and shared gender-related content that focused on often taking extreme or controversial positions to provoke emotional responses. The gendered disinformation campaign is part of a meta-narrative, or one of the many distinct narratives that are meant to undermine democratic values, by sowing discord and motivating both real-world and online violence. The IRA's campaigns were characterized by digital personalization, identifying individuals' online preferences, connecting these behaviors with demographic data, and devising methods to reach specific groups that would strongly respond to content charged with gendered, racial, ethnic, or religious themes. By micro-targeting and infiltrating specific conservative or male-dominated spheres often referred to as the "manosphere," IRA sought to capitalize on deeply rooted beliefs regarding gender stereotypes and latent hostilities, weaving them into a cohesive narrative that resonated within these specific online subcultures. The personalized content included targeted advertising, fabricated news, memes, videos, and comments that played into existing gender stereotypes or public policy "hot button" conversations related to women's and men's traditional roles, feminism, and LGBTQI+ rights, among others.

Finnish Prime Minister Sanna Mari and female ministers were also disproportionately subjected to abusive messaging that questioned their values, decision-making abilities, and leadership skills (Van Sant et al 2021), eventually losing the election to conservatives. Russian state-backed media spread more disinformation and negative coverage about Annalena Baerbock, the Green Party's candidate for German Chancellor, compared to her male rivals (Wilfore 2021). During the 2020 U.S. elections, female candidates including Kamala Harris, faced up to three times more online attacks than male candidates, especially on Twitter (DiMeco 2023). Such gendered cognitive campaigns possess a subtlety that makes them resistant to conventional countermeasures as many repeat spreaders of false and misleading narratives were "long-time conservative political operatives, to self-described 'journalists' at hyper-partisan media outlets" (Starbird et al 2023).

Simply put, the effectiveness of these coordinated campaigns hinges on the interaction between carefully planned messaging at a strategic level by Russia and the active involvement of grassroots elements, often from the far right, within the democratic nations. Consumers exposed to Russian-aligned disinformation lose the ability to distinguish truth from falsehoods, weakening resilience and trust in the media (NATO ACT 2023). Consequently, these online campaigns culminate in motivating real physical violence. Jo Cox, a British Member of Parliament, was killed by a far-right activist after having been a victim of repeated online harassment and threats. Beyond the tangible impact of online attacks, these incidents contribute to a broader erosion of democratic participation as women and minorities become increasingly reluctant to engage in politics after witnessing online violence. This can undermine the inclusive foundation of democracy, create regional instability, malign national resiliency, and limit diverse voices and perspectives in the political arena.

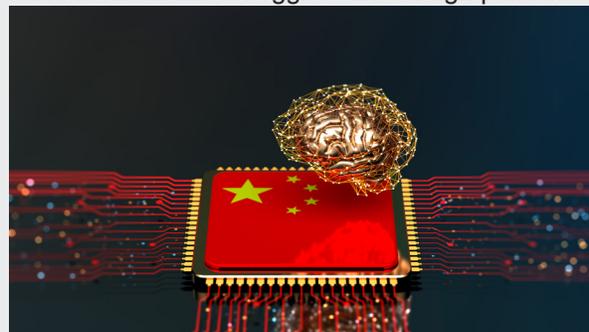
## B. China

### **Actor**

The “One Child” family planning policy in China and sex-selective abortions to support son preference have created a gender imbalance that will affect the country’s national security and stability as well as contribute to China’s increasing reliance on non-conventional warfare. With more than 50 million young adult women missing, China’s declining birth rates will negatively affect China’s economic growth and military budgets and shrink its labor and military talent pools just as it seeks to become a great power. Studies have already demonstrated that the Chinese People’s Liberation Army’s recruitment, retention, and even training are being hampered. The “only child” male soldiers are less cooperative in group settings, are high-risk averse, and are less likely to stay in the military beyond the conscription as private sector jobs allow them to support their parents, and so that they do not return home at an “unmarryable” age (Li 2007). China’s gendered demographic crisis may push it towards increased reliance on cognitive warfare as part of its novel warfare concept called “intelligentized warfare” which

centers on human cognition and aims to achieve strategic goals without conventional military engagement (Takagi 2022).

The U.S. Department of Commerce has already raised an alarm regarding China’s development of “brain-control” weaponry and utilization of technologies to exert control over its population and suppress various ethnic and religious minority communities (2019). In addition, China grapples with deeply ingrained systemic misogyny, and just like in Russia, its leadership is part of the gendered narrative. Studies have demonstrated that Xi Jinping’s family’s gender constructions and his own visions of masculinity can be useful in understanding the return to socialist authoritarianism and aggressive foreign politics.



### **Message**

In recent years, effeminate gender identity and the softening of masculinity in China have been perceived as a reminder of colonial conquest and Chinese powerlessness against Western invaders, and therefore strongly discouraged by the state (Zheng, 2015). The vision of traditional masculinity aligns with Confucian neo-familism in China, where women’s domestic responsibilities supersede career interests. Xi’s wife, Peng Liyuan, embodies this narrative as an exemplary wife and mother, symbolizing socialist family values for China’s development (Hird, 2017). Her role as “Mother Peng” bolsters the leadership’s “soft power” and reinforces women’s traditional roles, filial piety, and patriotism. This portrayal reinforces the Chinese Communist Party’s (CCP) control by perpetuating subservient female ideals, underlining how women’s subjugation forms the foundation of its authoritarian governance (Yuan, 2019).

This lingering presence of misogyny and the associated societal stigma is exacerbated by increasingly stringent authoritarian measures that exert control over various aspects of individuals' lives (Yana 2021). Amid the 2019 mass anti-government protests in Hong Kong that saw "an unprecedented participation of young women" (Kohn 2020), the Chinese government shifted its approach from near silence to active manipulation of public perception through state-controlled media, often using women as the targets of the online disinformation campaigns. Chinese state media, which previously ignored the protests or censored footage of them, actively pushed narratives that portray the demonstrators as "radicals" and "thugs" seeking to undermine the system. The Chinese government has accused foreign agents, particularly the US and its allies, of orchestrating the protests, a narrative embraced by both Chinese officials and pro-government figures in Hong Kong. Chinese authorities are actively engaged in reshaping their online media landscape to promote their propaganda and control narratives. These are meant to evoke nationalist sentiment and portray anyone protesting, particularly women, as a threat to stability and unity.



for these comments appear to be regular government employees, rather than independent contractors, indicating that they are part of official duties. Using statistical techniques, their study estimates that around 448 million government-sponsored comments are generated annually, with over half on government sites and the remainder on commercial sites, often disguised as ordinary users' comments. Other studies suggest that they participate part-time, often for supplementary income or party connections, and some are driven by nationalistic feelings (Repnikova 2018) often on platforms such as Weibo.

### ***Modes of Dissemination***

China has invested significantly in revitalizing official social media channels, integrating traditional media with online platforms, and creating new digital news outlets. The state uses young social media operators to make official accounts appealing to the youth by sharing human interest stories, entertaining videos, interactive content, and even romantic discussions. Additionally, the government deploys paid online commentators and cultivates patriotic bloggers to counter negative discourse with positive messages. Research by King, Pan, and Roberts (2017) sheds light on China's manipulation of online content, revealing the extent of government-sponsored commenting and the tactics used. The Chinese government heavily censors the internet but also employs individuals known as the "50 Cent Army" to write comments on online platforms. In contrast to the Russian approach of centralized troll farms, China's online commentators are decentralized, working for various agencies, and primarily using smartphones to engage on social media platforms. They discovered that the individuals responsible

Chinese military reports suggest a shift towards paralyzing and controlling minds in warfare against foreign adversaries, and scholars point to TikTok as a battleground platform for cognitive shaping and influencing. Owned by the Chinese company ByteDance, TikTok's audience of 1.5 billion mostly young people ages 18-24 raises questions about their susceptibility to influence from the CCP. TikTok shapes beliefs and preferences, collecting data and developing psychogenic profiles of users, compromising user privacy, and potentially sharing data with Chinese government entities (Sayegh 2022). Despite ByteDance's claims of serving a global audience, the CCP's control over the company raises doubts about its independence.

### ***Interpreters***

Women advocating for human rights, especially fighting against the extradition policies in Hong Kong or fighting for minorities like Uyghurs within China, are targets of online harassment, including doxing<sup>8</sup>, threats, accusations, and harassment of family members, originating from both regular citizens and government officials. This pattern

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<sup>8</sup>The action of finding or publishing private information about someone on the internet without their permission, especially in a way that reveals their name, address, etc... (Cambridge Dictionary)

of gender-based online violence appears to be linked to state media's amplification of nationalist ideologies as many have been accused of being unpatriotic (Davidson 2021). This has impacted women's voices by silencing them and by breaking down social movements, particularly of feminist groups.



When it comes to reaching out to foreign audiences, TikTok was initially interpreted as a place of self-expression that provided a sense of belongingness and togetherness during COVID-19 lockdowns. Increasingly, there are major concerns about the promotion of polarizing topics, including reaffirming gender stereotypes (Simões et al 2023). Research based on a sample of 1,030 videos found that TikTok is used to promote white supremacist conspiracy theories; produce weapons manufacturing advice; glorify extremists, terrorists, fascists, and dictators; target harassment against minorities and women; and produce content that denies that violent events like genocides ever happened (O'Connor 2021). The same study finds that accounts associated with the Men Going Their Own Way movement is a part of the broader 'manosphere' characterized by misogyny and the rejection of feminism, often combining it with white supremacy as well as critiques of the LGBTQ+ individuals and women who don't conform to traditional societal norms.

### **C. Terrorist organization ISIS/Daesh**

#### **Actors**

Non-state terror groups have mobilized to recruit combatants and supporters in increasingly sophisticated ways. ISIS/Daesh presents an adept case study of a violent extremist group

imposing a political project via governance across territory seized and administered in Iraq and Syria between 2014 and 2019. The group developed sophisticated, distinct, and targeted gendered disinformation strategies as a means of recruitment, radicalization, and propaganda. Its social and political order subjugated women, imposed severe patriarchal social directives, and conducted sexual and gender-based violence (Speckhard and Ellenberg, 2021). Dier and Baldwin (2022) detail how violent extremist and terrorist groups across the ideological spectrum exploit masculinities and femininities in their efforts to recruit and retain members.

#### **Message**

ISIS/Daesh members and supporters explicitly oppose 'Western values' including feminism and gender equality, and in their governance project imposed harsh punishments on those who opposed this view: Heroic men reign supreme, fighting for and building a new caliphate. ISIS/Daesh appealed to male recruits in part by glorifying violence against certain women and offering sex slaves as "spoils of war" under strict rules set by the group's leadership (Revkin and Wood, 2020). In this way, the group tapped into male feelings of resentment and emasculation by constructing an idea of hyper-masculinity based on violence and the subjugation of women (CTED 2019). ISIS/Daesh shamed male recruits for not stepping up to protect women and children (Beutel and Perez 2016). Digital narratives glorify and romanticize extremist ideologies by portraying women's roles as essential to their vision of a "caliphate". Its sophisticated social media campaign promoted an emancipated role for women through a violent patriarchal political and social order. In contrast to the condemned Western women, the ideal caliphate woman remains pious and provides support and safety to her husband. Women are then relegated to the domestic sphere in a bid to save them from Western feminism that promotes licentious behavior and undermines the family unit (Speckhard and Ellenberg, 2021). ISIS/Daesh also indoctrinated children in their schools, using cognitive influence to shape a new generation to support the movement's goals (Arvisais et. al. 2021).

## ***Modes of Dissemination***

A decentralized digital marketing campaign has been waged by ISIS/Daesh to groom recruits and spread its radical message through social media, videos, and magazines. Key players in recruiting supporters to join the ISIS/Daesh movement consist of so-called “identity entrepreneurs” – social leaders who may not have great influence in political or economic institutions but can empathize and connect with ordinary members of their target society. They can target and recruit civilians to extremist ideologies by presenting a narrative in which constituents are designated as protagonists who will improve society (Bernal et. al 2020, 20). Deputy director of the U.S. National Counterterrorism Center John Mulligan noted, “What is really unique about ISIS/Daesh is the fact that they have a deep understanding of the linkage between the media world, particularly social media, and the operational world. They have very successfully been able to use media to amplify the effects of their operational activities” (Pomerleau, 2017). Mulligan pointed to the group’s dispersed structure and delegation of responsibility to individuals who show initiative, particularly in recruiting supporters online, and then personalizing their narratives by moving conversations to more secure messaging platforms.

By mobilizing gender norms, the group successfully executed an extensive social media propaganda campaign, primarily on Twitter and Facebook to lure, exploit, and traffic women and girls to support its war effort and to build a caliphate. Women supporting ISIS/Daesh maintained an extensive online presence, and many women specialized in the successful recruitment of women and girls (The Carter Center 2017).

## ***Interpreter***

Social media appeals idealized the need for devout women to help create a new society, and according to Sasha Havlicek, chief executive of the Institute for Strategic Dialogue, young women from across Western countries expressed their support

for and migrated to Syria in totally unprecedented numbers<sup>9</sup>. She explains that that phenomenon is a result “of an extremely sophisticated propaganda recruitment machinery that’s targeting young women very specifically” (Mullen 2015)”. The ideology appeals to women who hold traditional values and perceptions of gender norms. Some female foreign fighters joined ISIS/Daesh with an idealized vision of both romance and fulfillment of domestic responsibilities and raising children. The lure of the self-described caliphate’s state-building cause has held appeal for some, particularly one that paints itself in opposition to the “decadent and morally corrupt Western society, which has no respect for women” (Peresin 2015). Women on social media discussed joining the State, not a terrorist group, and expected to hold important roles in the utopian, ideologically-pure state where they could live honorably under a strict interpretation of Sharia law. In fact, ISIS/Daesh’s cognitive campaign focused largely on portraying women’s involvement in its mission under the guise of female empowerment and liberation. Through specific forms of propaganda and rhetoric, ISIS/Daesh transformed passive roles of women – staying at home, cooking, reproducing – into active roles integral to its sustainability. They have used multiple methods to create a “warped version of feminism”, where supportive and active roles are no longer mutually exclusive (Patel, 2017). In this way, women’s duties and responsibilities are portrayed as a critical component of building the State (for example, raising the next generation of male fighters).

There are also some women convinced to marry a heroic figure willing to sacrifice himself for a noble cause. In addition to getting a “brave and noble husband,” female recruits are promised a free house, equipped with top-of-the-line appliances and all expenses paid (Bloom 2015). ISIS/Daesh may be particularly astute at exploiting the personal identity battles some young girls experience, and these online recruiters offered them a “third way” that would free them from being caught between traditional structures imposed by their parents and the liberal expectations of the Western world and their school peers. This third way is framed as the commitment to a global cause, and the acceptance and stability of a group of pure believers (Malik 2015).

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<sup>9</sup>According to Europol’s estimates (2017), about 5.000 individuals from the European Union (EU) travelled to Syria and Iraq. Among them, the International Centre for Counter Terrorism (ICCT) indicates that 17% are believed to be women (around 550 Western women). Source : European Parliament. (2018). ‘Radicalisation and counter-radicalisation: a gender perspective’. European Parliament. [Online]. Available at: <https://www.europarl.europa.eu/EPRS/EPRS-Briefing-581955-Radicalisation-gender-perspective-rev-FINAL.pdf>

Many women have been mobilized to join by inequality, either their own or the perceived inequality of their faith tradition in the world. The terrorist organization exploited this through the development of groups such as the all-female al-Khansaa Brigade in support of ISIS/Daesh's moral cause. Some women expressed the belief that they need to protect their religion from the war they believe the West is waging on it. Some were motivated for political purposes and hoped to take part in humanitarian assistance to relieve the mistreated populations. Aqsa Mahmood, a young university student from Britain, was desperate to help suffering Syrians before she emigrated there (Peresin, 2015). Such suffering coupled with condemnation of the West's foreign policy may push some toward extremism. Feelings of alienation and persecution in the West by xenophobic populations may also be exploited by

ISIS/Daesh recruiters to promote migration to a more supportive environment for the devout.

Evidence suggests that ISIS/Daesh has incited and engaged in both gendered disinformation and gendered violence. Human rights advocates and scholars have documented the systematic persecution of persons by ISIS/Daesh based on gender, horrific accounts of their leaders enforcing strict gender regulations on social behavior for both women and men, and torturing and killing those who do not conform to the militia's rigid gender policies (Davis 2018). ISIS/Daesh fighters also beat men who were unable or unwilling to grow beards and killed youth for personal expression, including having Western haircuts or wearing Western skinny jeans (HRGJ Clinic, et. al. 2015; MADRE 2017; OHCHR 2015).

# CONCLUSION AND RECOMMENDATIONS TO NATO

## Conclusion

The primary goal of this paper is to start a conversation on the integration of gender perspective into the cognitive warfare concept. Our analysis emphasizes the need for critical evaluation when considering sex and gender-based cognitive differences. Furthermore, the three case studies highlight what the literature has already told us: gender stereotypes play a significant role in shaping cognitive processes and can be weaponized against societies that value gender equality. They also demonstrate that cognitive warfare operations are not only aimed at achieving specific national security objectives but also at undermining the stability and inclusivity of democratic societies. They present us with strong evidence that the strategic utilization of gendered disinformation campaigns and online gender-based violence can quickly and easily deepen divisions, foster hatred, and ultimately undermine social cohesion and impact stability and security. To address these threats effectively, it is essential to acknowledge the gender-related dimension of cognitive warfare and the need to develop robust countermeasures.

## Recommendations to NATO

At its 2022 Summit, NATO reaffirmed its commitment to continue advancing gender equality and to integrate human security and the Women, Peace and Security agenda across NATO's core tasks. It has become clear that better understanding women's status in society improves our "ability to maneuver in the narrative, cognitive or, all inclusively, the human space... [and] gives commanders the ability to see, sense, anticipate, and maneuver through the complexity of peoples" (DeGennaro, 2017). In fact, as this

paper demonstrates, understanding women's status in society is essential as it relates to the protection of societal cohesion and resilience, which gendered cognitive operations target. The goal of such operations is to erode a fundamental pillar of our democratic societies: gender equality. More specifically, such operations aim to shape narratives, influence perceptions and exploit or exacerbate societal divisions that can affect political stability. As NATO member states seek to boost resilience as agreed at the 2016 Summit in Warsaw, we suggest considering different ways in which NATO can counter this threat by leveraging its instruments of power and capabilities across various domains.

### 1) Adopt Women, Peace and Security (WPS) and integrate gender perspective into the NATO cognitive warfare concept

Integrating gender perspective into the understanding and awareness of the conceptual component of cognitive warfare will improve strategic readiness. It will enhance situational and cultural awareness, as it provides more complete information and allows democratic nations to tailor their response options in a way that supports WPS and reinforces national and collective resilience.

### 2) Shape the Information Environment:

#### a. Strategic Communication and Information Operations

NATO can employ strategic communication and information operations to counter gendered cognitive warfare. This involves crafting targeted messages and narratives that challenge disinformation while emphasizing

the importance of gender equality and women's rights. These operations can aim to disrupt the spread of false information and promote accurate and positive narratives related to gender equality in democratic states.

#### **b. Promote Gender-Sensitive Media/ Information Literacy**

NATO can contribute to enhancing societal resilience by promoting media and information literacy programs that specifically address gendered disinformation while also considering potential barriers that specific groups might face in accessing and utilizing certain technologies, particularly due to educational limitations or gender-related disparities. Educating the public about recognizing and critically evaluating biased or misleading content on gender can empower individuals to make informed decisions.

#### **c. Adapt Gender Mainstreaming Strategies**

1. Be more active/pro-active in gender mainstreaming in general. This can involve ensuring women's presence in leadership roles in both the political and military structures of NATO, showcasing their achievements and points of view, as well as highlighting the diversity within NATO member states to undermine attempts to marginalize or stereotype certain groups.

2. Consider the extension of scope in the NATO gender-related definitions, and adopt a conceptual framework which is inclusive of those who fall outside the binary male/female categories. NATO should actively support and amplify the voices of diverse individuals, assessing the implications of planned policies for all genders and making it and its member states more resilient against attempts to manipulate gender-related narratives and stereotypes (Erickson-Schroth and Davis, 2021).

### **3) Adapt NATO Cyber and Intelligence Capabilities**

#### **a. Leverage cyber and intelligence capabilities**

NATO can actively monitor and respond to gendered disinformation and online gender-based violence campaigns. This may involve identifying sources of disinformation, tracking its spread, and implementing countermeasures to prevent its negative impact. Incorporating gender-sensitive indicators into the intelligence collection could allow the detection of previously overlooked signs of cognitive warfare.

#### **b. Utilize the power of AI and machine-learning tools**

NATO and its members should seek to utilize new technologies to detect and track gendered disinformation and online gender-based violence. These tools could enable proactive responses to pre-empt the spread of disinformation across various channels, platforms, and media outlets, preventing their reach to wider audiences. It is important to consider generational differences that can influence how individuals approach online environments, which in turn can impact their willingness and ability to interact with AI-based solutions and machine-learning tools.

### **4) Collaborate & Protect: International Law and International Partnerships**

NATO should actively engage international partners to monitor gendered aspects of cognitive warfare, share best practices, coordinate responses to disinformation campaigns, and incorporate legal and ethical guidelines, particularly in the area of regulation of social media platforms, neurotechnology, neuroweapons and cognitive liberty. It is important to recognize that adversaries with differing ethical standards might exploit these principles as vulnerabilities.

### **5) Educate: Training and Education of NATO Allies and Partners**

Integrate gender perspective into existing and future NATO Education and Training solutions on cognitive warfare. This integration should be supported by the relevant subject matter experts as part of a wider mainstreaming strategy. Doing so can enhance the organization's resilience and ability to recognize, counter, and respond effectively to gendered disinformation and online gender-based violence.

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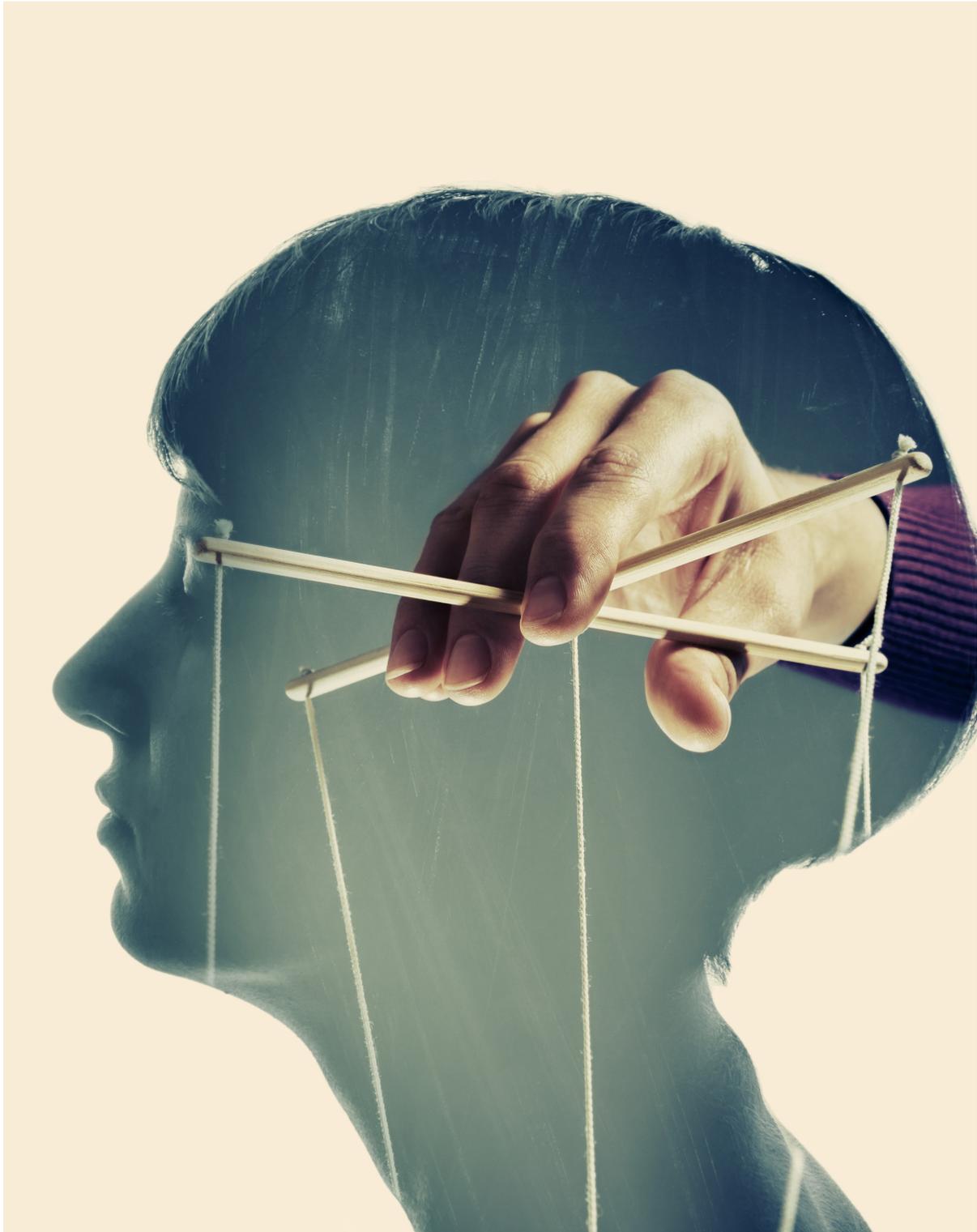
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