THE STRATEGIC CITIZEN AS AN OXIPO-BASED HIP DEVELOPMENT FRAMEWORK: MENTAL FATIGUE, NIHILISM, AND AGAINST THE BENEFITS OF LIARS

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Abstract

The thesis of the study: the concept of the strategic citizen can be operationalized as an organization-level development target within the framework of Mező's OxIPO Model. Weapon-grade communication (WGC) does not only manipulate through content—the degradation chain (cognitive fatigue → nihilism → Liar's Dividend) systematically dismantles the human information processing (HIP) architecture. The study derives a diagnostic framework and proposes a three-dimensional HIP-level cognitive resilience criterion system for the strategic citizen.

Keywords: strategic citizen; OxIPO model; human information processing; cognitive resilience; weapon-grade communication

Disciplines: military science, psychology, communication and media studies

Absztrakt

A STRATÉGIAI POLGÁR MINT OxIPO-ALAPÚ HIP-FEJLESZTÉSI KERET: MENTÁLIS FÁRASZTÁS, NIHILIZMUS ÉS A HAZUGOK HASZNA ELLEN

Tézis: a stratégiai polgár (strategic citizen) fogalma a Mező-féle OxIPO-modell keretrendszerben Organizáció-szintű fejlesztési célpontként operacionalizálható. A fegyvernek minősülő kommunikáció (FMK) nem csupán tartalomban manipulál – a romlási lánc (mentális fárasztás → nihilizmus → hazugok haszna) az emberi információfeldolgozás (HIP) architektúráját rombolja le. A tanulmány diagnosztikai keretet vezet le, és háromdimenziós HIP-szintű kognitív reziliencia-kritériumrendszert javasol a stratégiai polgár fejlesztéséhez.

Kulcsszavak: stratégiai polgár; OxIPO-modell; humán információfeldolgozás; kognitív reziliencia; fegyvernek minősülő kommunikáció

Diszciplína: hadtudomány, pszichológia, kommunikáció- és médiatudomány

Introduction

Knowledge alone does not protect. Experiments by Fazio et al. (2015) have shown that those who know a statement is false but hear it often enough will gradually come to judge it as true. This is triggered not by persuasion, but by repetition. It is not the content, but the ease of processing, the receptivity.

The threat, therefore, is not a lack of information. It is the destruction of cognitive infrastructure.

From this follows the thesis of the study: the strategic citizen (Falk, 2020) is not a normative demand that we be more conscious, but a development target that can be operationalized within the framework of Mező's OxIPO Model (Mező és Mező, 2019). The citizen's cognitive preparedness influences the value of the Organization factor. If this is zero—meaning the recipient is unprepar-ed, lacks schemas, and operates within a disinformation ecosystem—then the performance of the entire processing chain will be zero. Regardless of how much information arrived or its quality. This is not a metaphor. It is the mathematical logic of the model.

In a previous study (Horváth, 2025a), Mező's OxIPO Model (Mező és Mező, 2019) was applied to the threat side and examined how weapon-grade communication (WGC) and generative artificial intelligence (GenAI) disrupt the Input–Process–Output chain. This study shifts to the response side. The question now is not what causes the cognitive damage trajectory, but where and how we can intervene.

Wardle and Derakhshan (2017) introduce a three-part typology as the conceptual foundation of the disinformation ecosystem: misinformation is unintentional deception; disinformation is deliberate falsification spread with the intent to

cause harm; and mal-information is the deliberate use of factual content to the detriment of the recipient. The common denominator of these three categories is that their most effective forms rely on emotional reactions—anger, fear, and identification—rather than rational persuasion.

Attempts to solve the problem so far, such as media literacy education, fact-checking, and platform moderation, are insufficient. Not because they are bad, but because the tools of the system—which involve slow, conscious, and effortful thought processes (Kahneman, 2013)—are ineffective against mechanisms that act before this system is activated. Lebrun's (2023) concept of cognitive intrusion highlights that manipulation does not operate at the level of critical evaluation; it targets the deeper layers of the brain. Hoogensen, Gjørv, and Jalonen (2023), meanwhile, empirically demonstrate that even media-literate audiences are susceptible to identity-based disinformation. Knowledge does not protect. This was proven by Fazio et al. (2015), so it is worth repeating.

This study seeks to answer the following question: what human information processing level (HIP-level) criteria describe the cognitive resilience of the strategic citizen, and can these be developed? The answer—based on a review of the literature and methodological analysis—is yes, they can be developed. But not ar-bitrarily, not content-specifically, and not sufficiently at the individual level. The study presents the OxIPO-based methodological framework for this development logic.

Structure of the study: Chapter 1 introduces the OxIPO framework as a bridge between security policy and psychology. Chapter 2 diagnoses the three stages of the degradation chain: mental fatigue, nihilism, and the Liar's Dividend. Chapter 3 discusses the concept of the strategic citizen and the OxIPO mapping, including why the existing toolkit of defenses is insufficient. Chapter 4 presents the criteria for cognitive resilience and its limitations. The Conclusions summarize the methodological findings, future research directions, and practical applicability.

1. The OxIPO Model as a Measuremen Bridge

Why is an interdisciplinary model rooted in pedagogy and psychology necessary for analyzing the cognitive battlefield? The answer is straightforward: while the existing terminology in security policy literature—such as hybrid warfare, information operations, and cognitive warfare—excellently describes what disinformation does, it does less to describe where and how the damage occurs. The OxIPO model fills precisely this gap, translating the strategic-level threat into a cognitive, measurable, and actionable level.

Structure of the OxIPO Model. For a detailed introduction to Mező's OxIPO Model of information processing (during learning, creative thinking, or other cognitive operations), see the article by Mező

and Mező (2019). The rows below show only a surface summarising of this model, and refer to its connection with other theories of cognitive working. According to Mező's OxIPO Model, four main components can be found in the background of the human information processing these are: Organizing (that can multiply the efficiency of the next three components), input, process, output.

The OxIPO "I–P–O" chain can be filled with precise psychological content from the aspects of learning and teaching, creativity, intelligence, and artificial intelligence. This Model can be fitted simply to the other theories of cognitive working.

In Atkinson and Shiffrin's (1968) three-compartment memory model, Input corresponds to entry into sensory memory and short-term memory, Process corresponds to the level of working memory operations, and Output corresponds to consolidation into long-term memory and subsequent decision-making behavior.

Atkinson and Shiffrin's (1968) most important innovation is the concept of control processes. Memory is not a passive store but an actively controlled system. If these control processes are disrupted, for example in cases of emotional overload or divided attention, the quality of processing systematically deteriorates. The totality of control processes constitutes the psychological content of the Organization factor.

Miller's (1956) capacity limit—approximately 7 ± 2 units of processable stimuli—represents an invariant boundary of human cognitive architecture. If the input consistently exceeds this limit, the system cannot prioritize based on content. Everything appears equally noisy, and the first narrative that seems coherent enough occupies the decision-making space.

Wickens and colleagues' (2015) engineering model also highlights that cognitive capacity consists of resource systems distinct by modality—multimodal disinformation ties these up in parallel.

The Psychological Architecture of the HIP Chain. Within the OxIPO framework, the cognitive damage pathway can be measured at three mutually reinforcing levels, which are discussed in detail in Chapter 2. Overload is capacity saturation at the Input level, bias is a shift to heuristic mode at the Process level, and paralysis is decision paralysis at the Output level.

Simon (1990) formulates this invariant within the framework of bounded rationality. Humans do not optimize; rather, they seek satisfying solutions. They stop at the first option that seems acceptable. But not because they are lazy, but because this is biological resource management. The disinformation firehose targets precisely this mechanism. That is, it saturates the space of alternatives to such an extent that the search for a satisfactory solution stops prematurely at the first plausible, probable narrative.

Broadbent's (1958) filter model describes the human attentional system as a single-channel processor with limited capacity, which processes incoming stimuli not in parallel but selectively, one at a time—the Atkinson–Shiffrin model and

Miller's capacity limit measure two sides of this invariant. The fire hydrant logic sweeps away precisely this selection mechanism. It does not convince, but rather renders the filter inoperable by overloading it beyond its capacity.

Wickens and colleagues' (2015) engineering psychology model opens up an additional dimension: the Multiple Resources Model. Cognitive capacity does not draw from a single shared pool, but consists of distinct resource systems organized by modality, code, and processsing level. It follows that multimodal disinformation—that is, the simultaneous influx of text, images, audio, and video—places a different burden not only quantitatively but also qualitatively. It activates parallel resource systems simultaneously, thereby engaging the entire cognitive capacity in parallel. This is the cognitive rationale behind the distribution architecture.

The Three Levels of HIP Degradation and the OxIPO Mapping. Within the OxIPO framework, cognitive degradation can be measured at three distinct levels. These are not mutually exclusive but interrelated states. The degradation forms a linear chain, with each stage reinforcing the next. The first level is overload: the speed and volume of input exceed Miller's capacity limit. The system is unable to filter, so every incoming stimulus receives equal processing weight, regardless of content quality. Disinformation is effective not because it is more convincing than the truth, but because it is more abundant and spreads faster. The findings published by Vosoughi et al. (2018) in Science empirically document this. Fake news spreads 70% faster, deeper, and more widely than real news. The reason is not bots, but the human tendency to share. Novelty and emotional intensity automatically prompt sharing before the analytical filter of the system involving slow, conscious, and effortful thought processes (Kahneman, 2013) is activated.

The second level is bias: the persistently overloaded processing system switches to heuristic mode. The control processes of the Atkinson–Shiffrin model weaken, so source monitoring (Johnson, Hashtroudi, and Lindsay, 1993) becomes unreliable, emotions override deliberation, and repetition creates the appearance of truth. Fazio et al. (2015) demonstrated that the illusory truth effect does not spare prior knowledge. Even those who know a statement is false will gradually come to judge it as true if they hear it often. This is not a human weakness. It is the architecture, the capacity of our brain.

The third level is paralysis: the collapse of decision-making capacity and motivation to act at the output level. Chesney and Citron (2019) describe this state precisely—along with its systematic security implications—through the concept of the "Liar's Dividend." If the recipient can no longer distinguish genuine evidence from synthetic evidence—because the synthetic evidence is sufficiently plausible to justify doubt—then the decision-making process becomes para-

lyzed. Not because the false content prevails. But because the genuine and the false are assigned equal epistemic status.

Overload → Input-level capacity saturation → the Organization factor cannot counteract the noise

Distortion → Weakening of process-level control → heuristics override schemas

Paralysis → Output-level decision paralysis → action capacity collapses

Terminological note: this chapter introduced the OxIPO framework. A detailed diagnosis follows.

These three levels constitute the diagnostic triad of Chapter 2. Mental fatigue is the process-level consequence of overload, nihilism is the generalized end state of distortion, and the benefit to liars is the system-level manifestation of paralysis. The relationship is not symbolic but structurally derived.

The S–F–C grid as diagnostic logic. The diagnostic applicability of the OxIPO model is ensured by the Situation–Forecast–Control (S–F–C) grid, which was introduced in the study of Horváth (2025a) in the context of WGC and GenAI. The essence of the S–F–C framework is that it keeps diagnosis and intervention within the same coordinate system. It prevents the analysis from slipping between description and recommendation.

The Situation component records the initial state: the current organizational level, the types of vulnerabilities, and the load profile of the information ecosystem. The Forecast component describes the expected trajectory of damage. If the current state remains unchanged, it indicates the direction of degradation. The Management component identifies intervention points and available tools.

This logic is important for the strategic citizen development program because it shows that damage control is not sufficeent. Reactive debunking is structurally asymmetrical against the fire hydrant logic. The disinformer's production rate is always faster than the debunking rate (Paul and Matthews, 2016). In the Management component, the H–E–I framework asks: where can we intervene before intervention becomes necessary? The answer lies in developing the Organization factor, and this is precisely the methodological target of strategic citizen training.

Translated into practical terms, the H–E–I framework is not an abstract analytical tool. A communications, education, and national defense planner who thinks within the OxIPO framework will be able to distinguish between a lack of organizational readiness on the recipient's side (which must be developed), the distorting effect of platform ecology (which requires a response at the institutional level), and intentional WGC (which requires intervention at the security level). This distinction is not an administrative formality, but a prerequisite for the effectiveness of intervention.

2. The Degradation Chain: Mental Fatigue, Nihilism, the Liar's Dividend

There are wars that are not won by weapons, but by the fact that the opponent stops thinking. This is not a metaphor. Pomerantsev and Weiss (2014) identified precisely this mechanism when examining Russian information strategy. In such cases, the goal is not for people to believe in something, but for them to believe in nothing. The most destructive form of disinformation is not the acceptance of a false narrative, but the induction of epistemic demotivation—that is, the state in which seeking information itself seems pointless.

Mental fatigue is therefore not a product of naivety, but a necessary consequence of cognitive architecture. According to the findings of Hertwig and colleagues (2004), a recipient who has never been the target of organized cognitive manipulation systematically underestimates the risk of this happening. Thus, the flood of disinformation strikes precisely where the gatekeeping is weakest. The danger lies not in persuasion, but in exhaustion.

The First Stage: Mental Fatigue. What is the true weapon of disinformation? Not the content. It is capacity.

Paul and Matthews (2016) dubbed the contemporary Russian propaganda model the "firehose of falsehood": not a single strong argument, but the continuous, massive release of contradictory messages across multiple channels, without pause. Its four characteristics are high volume, multi-channel dissemination, indifference to the truth, and inconsistency.

In their global survey conducted for the Oxford Internet Institute, Bradshaw and Howard (2019) document that by 2019, organized social media manipulation could be identified in 70 countries, state or party-political actors were actively producing disinformation content in 52 countries, and bots were being used in 50 countries. In 2017, this number was still 28 countries. The "fire hydrant" logic is therefore not unique to any single country; rather, it is backed by a globally organized, industrial-scale infrastructure.

Bakir et al. (2019) document that manipulative forms of Organized Persuasive Communication (OPC)—which combine deception, coercion, and incentives—constitute a blind spot in research on liberal democracies. Neither PR literature nor propaganda research has developed a conceptual framework for these in sufficient depth. It follows that variants of OPC based on organized, state, or parastatal infrastructure remain unidentified as long as the diagnosis is limited to the content level.

There is a psychological rationale for this. Miller's (1956) capacity limit, which I discussed in Chapter 1, states that short-term memory can handle approximately 7 ± 2 units at a time. The fire hydrant systematically exceeds this limit. The consequence is not that the recipient rejects the false message, but that they cannot prioritize. Every incoming stimulus is given equal processing weight; verifying

the source requires energy, energy is finite, and sooner or later the first narrative that seems coherent enough occupies the decision-making space.

The question is not which message is truer. The question is which message arrives first and which one we hear more often.

Vosoughi et al. (2018) confirmed, based on 126,000 Twitter feeds, that fake news spreads approximately 70% faster, deeper, and wider than real news. The reason is not bot activity, but the human tendency to share: novelty and emotional intensity encourage sharing before the analytical filter is activated.

Mental fatigue is therefore not a product of naivety. Within the OxIPO framework, it is a necessary consequence of input-level capacity saturation: if the distribution architecture consistently exceeds the processing system's capacity, the system cannot be forced to select. Noise and signal are given equal status. This is a structural vulnerability, not an individual shortcoming.

Hertwig and colleagues (2004) add an important additional dimension to this: in their decision-making models derived from experience, people systematically underweight rare but high-impact events. It follows that a recipient who has never been a direct target of organized cognitive manipulation navigates the disinformation ecosystem with a low risk assessment from the outset. They do not perceive the danger as real, so their "Organization factor"—that is, their preventive schemas and control routines—remains inactive. The fire breaks out precisely where the gatekeeping is weakest.

The Second Stage: Mental Nihilism. Frankfurt (2005) introduces a fundamental distinction: a lie exists within the dimension of truth (the liar knows the truth and intentionally says something else), whereas bullshit, by contrast, is indifferent to the truth—the goal is not a false statement, but the creation of the desired impression.

This is key because, within the disinformation ecosystem, bullshit is the more prevalent form. Pomerantsev and Weiss (2014) identify precisely this in relation to Russian information strategy: the goal is not to impose an alternative reality, but to render the perception of reality generally unreliable. If every source appears unreliable, if contradictory statements arrive through the same channels, if the rebuttal is structurally indistinguishable from the statement it refutes, then the recipient makes a rational decision when they stop trying to distinguish between them. Why invest energy in distinguishing between them if the act of distinguishing itself seems impossible?

This is mental nihilism. Not a denial of truth, but a surrender of the search for truth. Not conviction, but epistemic exhaustion.

The psychological mechanisms are well documented. Fazio et al. (2015) demonstrateed that the illusory truth effect holds true regardless of prior knowledge. Re-

petition increases the perception of truth because the ease of processing is interpreted as a sign of truth. Those who know a statement is false but hear it repeatedly will gradually judge it to be more true.

Johnson, Hashtroudi, and Lindsay (1993) documented another mechanism in their research on source monitoring: source amnesia. The content remains in memory, but contextual information regarding the source is lost. The recipient remembers the statement but has forgotten whether they heard it through a disinformation channel. As the source fades, the statement becomes linked in memory to a more reliable reference point. The disinformer does not ask to be believed, but rather that the statement be remembered and everything else forgotten.

In a Nature Reviews Psychology study summarizing the psychological drivers of misleading information, Ecker et al. (2022) note that in cases of prolonged exposure to disinformation, evidence-based belief updating gradually weakens. The system no longer optimizes but retreats into earlier, stable schemas or generally abandons updating altogether. From this perspective, nihilism is not irrational but a cognitive self-defense mechanism, one that however has systemic consequences.
Hoyle et al. (2023) empirically documented the "gray glasses" effect among Latvian audiences. Those who were persistently exposed to Sputnik Latvia's destructive narratives assessed Latvia's situation as significantly more pessimistic than the control group. The consequence is not the acceptance of individual false claims, but a lasting darkening of the overall perception of reality.

The Mező's OxIPO Model mapping of the "gray glasses" effect is clear: this is a persistent distortion at the Process level. Control processes do not cease, but they systematically produce distorted outputs. The Organization factor is not zero, but its value has decreased. The recipient is not yet paralyzed, but the quality of processing is no longer sufficient for the decision-making output to be reliable.

Hoyle and Šlerka (2024) reach a similar conclusion when examining the sustained effectiveness of the Kremlin's disinformation campaigns. While countermeasures, fact-checking, platform moderation, and media literacy training have strengthened, the effectiveness of disinformation has not decreased. The authors identify organizational-level lag as the most important cause. This occurs when the cognitive preparedness of recipients has failed to keep pace with the sophistication of the disinformation ecosystem. This is precisely the systemic condition for the spread of nihilism.

Output degradation is not only a decline in the quality of individual decision-making but also the erosion of institutional accountability. The benefit to liars does not require the recipient to believe something. It is enough for them to stop making decisions.

The Third Stage: The Liar's Dividend. There is a point in the chain of degradation where the nature of the threat changes. Mental fatigue and nihilism are still essentially passive processes that take place within the recipient. The Liar's Dividend is an active strategic consequence; it is a tool that is consciously employed.

Chesney and Citron (2019) introduced this concept when analyzing the security policy implications of deepfake technology. Their thesis is that the danger of deepfakes lies not merely in what they produce—that is, the fake content. The benefit to those who lie is the strategic advantage they gain by casting doubt on the authenticity of genuine content. If the image and voice of a politician, leader, or institution can be synthetically produced, the genuine recording can also be called into question. The burden of proof is thus reversed; that is, one must not prove that the fake is fake, but that the genuine is genuine.

This is not a technological problem. It is the destruction of epistemic infrastructure. The mechanism operates at the OxIPO Output level. The recipient cannot decide because they are unable to authenticate the evidence necessary for their decision. This is not ignorance or nihilism, but a structured uncertainty that has been deliberately created. Chesney and Citron (2019) analyze this in three dimensions: the individual dimension, where the reputation of private individuals can be destroyed; the democratic dimension, where political accountability is eroded; and the security dimension, where military and intelligence decision-making processes are paralyzed. Schiff et al. (2024) demonstrated in five experiments involving a total of more than 15,000 American adults that deepfake allegations significantly reduce the extent of the recipient's loss of trust, even in the case of genuine content, on both sides of the political spectrum. Two mechanisms of action can be identified : the introduction of epistemic uncertainty and the mobilization of the opposition.

Vaccari and Chadwick (2020) experimentally demonstrated, using a representative British sample (N = 2,005), that exposure to deepfakes primarily causes uncertainty rather than deception: a higher proportion of participants expressed uncertainty (35–37%) than those who actually fell victim to deception (15–17%). This uncertainty significantly reduced general trust in news appearing on social media, even when the baseline level of trust was statistically controlled. The authors' conclusion is precisely an empirical mapping of the mechanism of the liars' advantage: deepfakes are not dangerous because they convince, but because they generate generalized uncertainty and cynicism—which in itself is sufficient to degrade the quality of democratic public discourse.

The benefit of lying is thus not merely a defensive tool. It is also an offensive strategy. It serves simultaneously as a means to evade real scandals and to discredit genuine evidence.

NATO StratCom COE (2024) documents how Russian propaganda integrates GenAI content into this strategy. The goal is not for people to believe the synthetic content en masse, but to increase general uncertainty surrounding real content—NATO StratCom COE (2024) calls this "hijacking reality." The Zelensky deepfake in 2022 was effective not because many people believed it, but because for a few minutes, everyone was left in doubt.

Byman and colleagues (2023) analyzed its military and geopolitical implications. They concluded that a well-timed, high-quality deepfake video is capable of disrupting decision-making processes by fostering general distrust in the authenticity of audiovisual evidence. This is not a hypothetical future, but a documented reality. The tsunami of disinformation—partly AI-generated—spread in the minutes following the 2024 terrorist attack on Crocus City Hall exhibited precisely this pattern. It did not replace reality, but rather called into question the knowability of reality.

In this case, the OxIPO mapping applies to the Output level. Output degradation is not merely a decline in the quality of individual decision-making, but also the erosion of institutional and political accountability mechanisms. Schiff et al. (2024) find that the benefits to liars subordinate the scandal-reaction mechanism—a fundamental condition of the democratic feedback system—to the disinformation strategy.

Summary of the Degradation Chain. The three stages are not parallel threats but an interlocking chain of damage. Fatigue weakens the control processes that would ensure source identification and critical filtering. Weakened control processes allow the illusory truth effect and source amnesia to prevail, which are the foundations of nihilism. The nihilistic recipient is particularly susceptible to the manipulation of liars, because deferring decisions is already a built-in reaction to stimuli of uncertainty.

Table 1 organizes the three stages of the degradation chain according to the OxIPO components.

Table 1: OxIPO mapping of the degradation chain (source: the Author)

Stage	OxIPO level	Primary mechanism	Evidence
Mental fatigue	Input + Process	Capacity saturation → heuristic decision	Paul–Matthews (2016); Vosoughi et al. (2018)
Mental nihilism	Process	Illusory truth effect; source amnesia	Fazio et al. (2015); Johnson et al. (1993)
The benefits of lying	Output	Erosion of evidence credibility; decision paralysis	Chesney–Citron (2019); Schiff et al. (2024)

Methodological note: This study is a conceptual-integrative framework synthesis, not an empirical investigation—the measurement approximations of the criterion system are hypotheses whose empirical validation is a task for the future. The degradation chain is structurally derived, but the weight of the stages may vary empirically. Hoyle et al. (2023) examined nihilism, while Schiff et al. (2024) examined the mechanism of the liar's advantage—longitudinal validation of the entire chain is a task for future research.

Swire and Ecker (2018) document the following regarding the continuous influence effect (CIE): refutation does not erase the original false representation but merely adds a rival version—the original continues to influence judgment. This is not a human error, but an architectural limitation: updating mental models is energy-intensive, and if the original was emotionally charged or leaves a narrative gap, the brain favors the familiar version.

3. The Strategic Citizen As An Organizational-Level Response

The diagnosis in Chapter 2 is structurally complete. The answer lies not in content, platforms, or regulation, but in the level of the recipient's cognitive preparedness—the "Organization" factor in Mező's OxIPO Model (Mező és Mező, 2019). Falk (2020) refers to this development target as the "strategic citizen".

This chapter proceeds in three steps. First, it introduces the concept of the strategic citizen and the military science context from which it originates. It then demonstrates why cognitive intrusion and identity-based disinformation undermine existing defense mechanisms. Finally, it reintegrates the strategic citizen into the OxIPO model and shows how it relates to the criteria system developed in Subsection 4.2.

The Concept of the Strategic Citizen and Its Military Context. Falk (2020) introduces the concept of the strategic citizen with a precise analogy. Just as the emergence of social media and the events of 9/11 necessitated thinking in terms of the "strategic corporal," today we must think in terms of the strategic citizen. To understand the analogy, it is worth returning to the source.

General Krulak (1999) described a reality of warfare in which every decision made by a low-ranking soldier can have strategic consequences. In a "three-block war," humanitarian aid is provided, peace is maintained, and combat operations are carried out all within the same city block. In this context, a single wrong decision by a corporal can trigger a diplomatic crisis, while a correct decision can mean the success of a mission. Krulak's conclusion is clear: training must develop not only tactical skills, but also decision-making

quality, contextual awareness, and ethical judgment. Decisions made at the individual level do not remain at the individual level.

Claverie and Du Cluzel (2022) define cognitive warfare as a distinct theater of operations whose direct target is the human mind, at both the individual and collective levels. Falk (2020) extends this logic to the civilian sphere. In the context of 21st-century hybrid warfare, citizens are part of the cognitive battlefield regardless of their intentions or knowledge. They share false content, vote in a context of limited information, and form opinions based on manipulated information. Falk's formulation is sharp: the citizen is either a conscious participant or an unwitting collaborator. There is no third option, because there is no standing on the sidelines in the information ecosystem.

The concept of the strategic citizen is therefore not an elitist demand. It is not about everyone becoming a media expert. It is about the citizen recognizing their own cognitive position on the battlefield and navigating with a level of preparedness commensurate with that position. Falk also highlights what the literature on resilience-building often overlooks: existing defense logic focuses on target hardening, not on increasing the preparedness of the host. This difference is not a technical detail, but a fundamental question regarding the effectiveness of the intervention.

Monaghan (2022) clarifies the institutional aspect within the framework of the fifth wave of deterrence against hybrid threats. The three pillars of effective deterrence are capability, credibility, and communication. These three Cs are not merely military categories. They can also be interpreted at the civilian level: capability is the ability of the recipient to recognize manipulation techniques; credibility is the fact that one's own opinion-forming is based on reliable sources; communication is the ability to participate in the public sphere accurately and reflectively. From this perspective, the strategic citizen is the civilian counterpart of Monaghan's 3C model.

Monaghan also points out that hybrid threats specifically target the dimensions of credibility and communication. Disinformation does not undermine military capacity, but rather the other two elements of the 3C chain. It follows that strengthening the civilian dimension of deterrence—that is, developing the strategic citizen—has operational relevance and is not merely a matter of civic education.

In the context of Hungarian military science, Horváth (2024) notes that fake news, as a WGC tactic, is a tactical tool targeting the decision-making architecture—the development of the strategic citizen is therefore a matter of national defense, not merely a matter of social pedagogy.

Allenby and Garreau (2017) define the concept of "weaponized narrative" as a strategic battlefield: its goal is not to gain acceptance for a specific claim, but to undermine the opponent's civilization,

identity, and will to act—through the deliberate generation of complexity, confusion, and social fault lines. This is not an attempt at influence. It is the destruction of decision-making infrastructure.

Translated into practical terms: the strategic citizen is not a citizen with greater knowledge. Rather, they are a more highly organized recipient. This difference can also be captured by the mathematics of the Mezo's OxIPO model. It is not the quality of the Input that increases, but the value of the Organization factor. It is the same information ecosystem, but with a different multiplier.

Why Is Media Literacy Not Enough? Media literacy education has taken center stage in all anti-disinformation strategies over the past decade. The problem is not that it is not useful, but that it is a tool for slow, conscious thinking—a mechanism that acts before this system is activated.

Swire and Ecker (2018) document this mechanism in their analysis of the continued influence effect (CIE). When people first encounter a piece of information, they construct a situation model in their memory. This model integrates all available elements, including the source, the emotional context, and the time. If it later turns out that the information is false, the refutation does not erase the situation model but adds a rival representation with which the original competes. The refuted misinformation therefore continues to influence the recipient's conclusions and decisions, even if the recipient knows it was false.

This is not human error. Updating mental models is cognitively demanding work. If the original information was emotionally charged, or if it leaves a narrative gap—that is, if the refutation does not offer a coherent alternative—the brain favors the familiar, existing version. Media literacy assumes that slow, conscious thinking can override this process. It can. But not unconditionally, and not always.

Lebrun (2023) identifies a deeper mechanism with the concept of "cognitive intrusion": manipulation does not target specific content, but rather the mental processes upon which political opinion formation is based. Anger and fear, as preparatory effects, effectively shut down the very thought system that media literacy seeks to activate—if the emotion arrives first, media literacy comes too late.

Hoogensen, Gjørv, and Jalonen (2023) demonstrate that the most effective form of disinformation campaigns is not changing individual opinions, but activating group identity. The content that has the deepest impact is that which reinforces existing fault lines—identity priming competes on the dimension of emotional group loyalty, where media literacy is a weak tool.

The authors demonstrate that more equal and cohesive societies are structurally more resilient to identity-based disinformation because the fault lines are less deep and harder to exploit. Where intergroup trust (bridging capital; Falk, 2020) is

strong, the effect of identity-based priming is weaker. It follows that resilience-building requires not only an individual dimension but also a community and structural dimension. Media literacy is an individual-level intervention against a community-level mechanism. This imbalance is not random. Resilience-building therefore requires a community dimension as well.

Roozenbeek and van der Linden (2021) identify five patterns of manipulation (emotional manipulation, false expert references, conspiracy thinking, leak tactics, personal attacks), each of which is linked to a specific stage in the degradation chain: emotional manipulation and the recognition of amplification protect against fatigue, false experts and leak tactics protect against nihilism, and conspiracy thinking and the artificial generation of uncertainty protect against the Liar's Dividend.

In practice, therefore, the media-literate recipient who lacks attention gatekeeping skills, source-tracking routines, and tolerance for postponing decisions leaves open precisely the vulnerabilities targeted by the degradation chain in Chapter 2. Media literacy protects at the content level. The degradation chain operates at the architectural level. The two are not the same level.

In Chapter 1, we introduced Mező's OxIPO Organization factor as a multiplier, the value of which determines the performance capability of the entire HIP chain. The criteria system developed in subsection 4.2 operationalizes this Organization Factor at three levels, breaking it down into input-level attention gatekeeping, process-level resource tracking routines, and output-level tolerance for decision deferral. The concept of the strategic citizen is the conceptual framework that integrates these criteria into a single development target.

The mapping is precise. Attention gatekeeping is the Input-level component of the Organization factor—that is, the pre-existing schemas and deceleration routines that prevent the fire hydrant from causing capacity saturation. The source tracking routine is the Process-level component, that is, the control processes that, according to the Atkinson–Shiffrin model, maintain source identification even when automatic processing would bypass it. Tolerance for decision deferral is an output-level component, that is, the meta-skill by which the recipient resists the pressure to seek narrative closure without evidence in the mechanism of the liars' benefit.

Developing the strategic citizen does not mean that the truthfulness of every claim must be judged independently; it is not a one-time achievement and is not sufficient at the individual level. At the same time, it means three things simultaneously: the citizen recognizes their own cognitive position, possesses at least a basic awareness of the three criteria, and participates in maintaining community cohesion.

Falk's (2020) summary is most succinct here: civil society is not only a target of

hybrid threats but also one of the primary arenas for defending against them. The strategic citizen is therefore not a supporting actor in security policy. The strategic citizen is itself a fundamental unit of the defense infrastructure.

As a terminological note, this chapter has discussed the concept of the strategic citizen and its limitations in relation to the media awareness approach. It does not contain the detailed methodology of the development program, which is the subject of Chapter 4. The operationalized form of the development logic is presented in Subsection 4.2; Subsection 4.1 establishes the underlying inoculation theory, while Subsection 4.3 discusses the limitations of the system.

4. Cognitive Resilience as a Measurable and Developable HIP Skill

4.1 The Theoretical Basis of Cognitive Resilience: The Inoculation Model. The inoculation theory (Lewandowsky and van der Linden, 2021) is based on the analogy of a medical vaccine. Just as the body produces antibodies against a weakened pathogen, the recipient is exposed to the mechanism of the manipulation technique in a controlled, preliminary manner, enabling them to recognize the pattern when actual disinformation appears.

The theory consists of two mandatory elements. On the one hand, the warning—that is, the advance signal that a manipulation attempt is forthcoming—and, on the other hand, the preemptive refutation—that is, the description of the specific technique. Their combination produces a synergistic effect.

The decisive innovation of the inoculation model is its generalizability. Unlike issue-based prevention, the technique-based prevention approach protects not against individual statements, but against the logic behind manipulation. Anyone who recognizes the logic of emotional manipulation in one context can do the same in another context. Lewandowsky and van der Linden (2021) refer to this as "broad-spectrum immunity."

Roozenbeek and van der Linden (2021) identify five established technique-based manipulation patterns against which prevention programs can be designed: the logic of emotional manipulation, false expert references, conspiracy thinking, leak tactics, and personal attacks. Each pattern recurs in the criteria system of subsection 4.2 as a specific target for recognition.

A precise connection can be identified between inoculation theory and the degradation chain described in Chapter 2. Recognition of emotional manipulation and amplification protects against exhaustion, as these are the dissemination strategies that specifically induce capacity saturation. Recognizing false expert references and leak tactics works against nihilism, because these undermine source identification and credibility judgments. Recognizing conspiracy thinking and the artificial generation of uncertainty is most important against the Liar's Dividend,

because these are direct tools of decision paralysis at the output level.

However, the preventive effect is not automatically lasting. According to data from Roozenbeek et al. (2022), it lasts from a few weeks to a few months, depending on the type of intervention. The strategic citizen development program is therefore not a one-time event, but a sustained process—a dynamically maintained state of the Organization factor.

In other words, cognitive resilience can be developed because the model offers an empirically validated mechanism that is not content-specific, does not require media-expert-level knowledge, and is functional even in a platform environment. These three conditions together make it possible for increasing the Organization Factor to be a realistic target for education policy and national defense training.

4.2 The Criteria System: What Must the Strategic Citizen Know? This subsection constitutes the methodological core of the study: it defines what constitutes measurable cognitive resilience not as a normative requirement, but as operationalizable HIP-level criteria. For each of the three OxIPO levels of Mező, we assign a form of deterioration, a resilience criterion, a development tool, and a measurement approach (Table 2).

Table 2: The strategic citizen's cognitive resilience criteria system (source: the Author)

HIP level in the OxIPO model of Mező	**Form of deterioration**	**Resilience criterion**	**Development tool**	**Measurement approach**
Input	Fatigue / capacity saturation	Attention gatekeeping: recognizing emotional intensity and sharing rate as indicators of manipulation, not truthfulness	Go Viral! game; identifying emotional manipulation and artificial amplification (Roozenbeek – van der Linden, 2021)	Source verification rate; self-reported measurement of pre-decision waiting time
Process	Nihilism / source amnesia	Source-tracking routine: reflexive three questions – How do I know? When did I hear it? On which channel?	Bad News game; identifying leak tactics and false expert arguments (Roozenbeek – van der Linden, 2021)	Source recall accuracy; confidence calibration across different source types
Output	The benefits of liars / decision paralysis	Tolerance for decision postponement: in the face of uncertainty, not accepting the first plausible narrative, but postponing the decision until the evidence solidifies	RESIST 2 Situational Insight logic; identifying false dilemmas and evidence-credibility manipulation (Pamment, 2021)	Decision-postponement rate; measuring verbal tolerance of the "I don't know" position

The Multimodal Resilience Matrix (MRM) introduced in Horváth's (2025a) study serves as a modality-specific supplement to the criteria system: the MRM describes which modality causes a dominant burden at which HIP level—while the strategic citizen's criterion system describes which skill at which level counterbalances this.

The key to input-level application: it is not about recognizing individual false statements, but rather the patterns of emotional manipulation and artificial amplification that are specifically designed to induce cognitive overload. The Go Viral! game (Roozenbeek and van der Linden, 2021) focuses precisely on this: the participant learns that emotional intensity and sharing speed are not indicators of truth, but rather dissemination strategies.

A study by Szicherle and Krekó (2020) in Hungary confirms that disinformation spreading during the COVID-19 pandemic exploited fear-based amplification—reinforcing that input-level gatekeeping is a documented need in the domestic context as well.

The measurement approach is based on two proxy indicators: the source-checking rate (how often a source is checked before a decision) and the pre-decision waiting time (whether there is a pause between the stimulus and sharing).

Recognizing cherry-picking and false expert arguments most directly reinforces the source-tracking routine, as both create the appearance of credibility and reduce the energy required for source identification. Roozenbeek et al. (2022) demonstrated in Science Advances that technology-based inoculation interventions significantly increase disinformation detection ability in real-world platform environments, and this effect transfers to other content (transfer effect).

Measurement approach: source recall accuracy (ability to accurately recall the channel and time) and confidence calibration (whether appropriately differentiated by source type, neither nihilistic nor uncritical) can be approximated using questionnaire-based and experimental methods.

Pamment's (2021) RESIST 2 toolkit operationalizes at the institutional level what the strategic citizen learns at the individual level. The logic of the toolkit's Situational Insight module specifically recommends deferring decisions—that is, a structured analytical process rather than a quick reaction. This parallel indicates that the proposed criterion is not a speculative innovation, but rather the adaptation of proven institutional logic to the individual level. It is not proposed because it is theoretically appealing, but because it has been validated through the training of thousands of government communicators. Within the institutional assessment framework for disinformation resilience, Pamment (2022) identifies public resilience as a distinct capability category, the goal of which is not the ex post correction of false content, but the proactive strengthening of audience schemas—through the tools of preventive media literacy, source

evaluation, and prebunking. This logic precisely mirrors the institutional mapping of the Organization factor's development: it targets not the quality of the Input, but the preparedness of the recipient's processing system.

The criteria system can be directly applied in three areas: national defense and public service training (Go Viral!, Bad News, RESIST 2 within the NKE resilience framework); in higher education media literacy training (prebunking logic, with HIP-level proxy measurements); and in communication planning (H–E–I grid for distinguishing between organization-level development, platform-ecological intervention, and security responses against WGC).

The Multimodal Resilience Matrix (MRM) introduced in the study by Horváth (2025a) breaks down damage pathways by modality: text, image, audio, and video. The present criteria system is complementary to this; it does not replace it. The MRM describes which modality causes dominant stress at which HIP level. The strategic citizen criteria system describes which skill at which level counterbalances this stress. Together, the two provide the complete developmental logic of WGC resilience.

The integration of the three criteria at the individual level is operationalized by the SCV protocol (Stop–Check–Confirm), introduced in Horváth's (2025a) dissertation. The Stop step is the direct behavioral form of tolerating decision deferral. Artificially slowing down the reaction time prevents the emotional pressure generated by the disinformer from immediately turning into sharing behavior. The Check step involves activating the source-tracking routine; the recipient becomes aware of the content's modality and the credibility of its source. The Verify step is triangulation, the final gate of attention gatekeeping, which already operates using the tools of the slow, conscious processing system. The AEI protocol is therefore not a supplement to the criteria system, but rather its form of implementation at the individual level.

4.3 Limitations of Measurability and Scalability.

The first is the limitation of the continued influence effect (CIE; Lewandowsky et al., 2012; Swire and Ecker, 2018). Even if the recipient accepts that a piece of information was false, the original false representation continues to influence their conclusions because the situational model is not erased, but merely supplemented by a rival representation. The three levels of the criteria system reduce the likelihood of CIE by strengthening source identification and decision deferral. But it does not eliminate it, because CIE operates at the level of automatic memory processes, which conscious critical thinking can only partially override. The hypothesis, therefore, is that the criterion system reduces the degree of decision-making bias caused by CIE, but complete protection cannot be guaranteed.

The second is the limitation of the illusory truth effect (Fazio et al., 2015): repetition increases the perception of truth regardless of prior knowledge, because ease of processing is interpreted as a sign of truth. This is an automatic-level effect that conscious critical thinking can only partially override.

The third is the limitation of identity-based mechanisms. Hoogensen, Gjørv, and Jalonen (2023) demonstrated that identity-based disinformation activates group loyalty, and individual critical thinking is overridden by the forces of emotional group identity. The three criteria of the framework constitute interventions at the individual level. They are effective but insufficient to prevent the erosion of bridging capital, which requires measures at the community and structural levels. The strategic citizen development program therefore requires community and education policy supplements, which this study did not discuss in detail.

The fourth limitation concerns the measurement proxies. I based the measurability of the three criteria on a proxy measurement logic built on two behavioral indicators each. Ecker et al. (2022) point out that the direct measurement of susceptibility to misleading information also depends on the recipient's cognitive style, current emotional state, political identity, and motivational structure. These moderating variables cannot be incorporated into proxy measures, or can only be incorporated partially. The measurement recommendations of the criteria system must therefore be combined with qualitative methods, in-depth interviews, and experimental designs, which the study identifies as future research directions.

Ecker et al. (2022) provide the most accurate framing: complete protection is not possible because the psychological drivers of susceptibility are deeply rooted in cognitive architecture. The question is whether resilience can be significantly increased. This study's claim is: yes—and this is supported by the empirical literature on inoculation theory.

Translated into practical terms: a citizen who learns to recognize emotional manipulation, investigate its source, and tolerate decision-making uncertainty does not become invulnerable. Rather, they become a structurally more difficult target. This is not perfect protection. But it is the only defensible and measurable line of defense supported by the current literature.

Conclusions

The study began with a paradox: knowledge alone does not protect (Fazio et al., 2015). Chapter 1 introduced Mező's OxIPO model (Mező and Mező, 2019) as a measurement bridge. According to the OxIPO Model, the Human information processing = Organization × (Input + Process + Output). It follows from the logic of the Organization Multiplier that developing recipient readiness is not a task of expanding knowledge, but of improving organizational readiness.

Chapter 2 diagnosed the three stages of the degradation chain. Mental fatigue is a consequence of capacity saturation at the Input level, which is specifically induced by the fire hydrant logic (Paul and Matthews, 2016) and is also supported by measurable evidence of amplification asymmetry, as empirically documented by Vosoughi et al. (2018). Mental nihilism is the end state of process-level distortion, to which the mechanisms of the illusory truth effect (Fazio et al., 2015), source amnesia (Johnson et al., 1993), and the gray-glasses effect (Hoyle et al., 2023) collectively lead. The benefit to liars is a system-level form of Output-level decision paralysis, defined by Chesney and Citron (2019), operationalized experimentally by Schiff et al. (2024), and updated by Fredheim (2024) in the GenAI context. The three stages are not parallel but cumulative: each reinforces the others.

Chapter 3 demonstrated why media literacy alone is insufficient. Swire and Ecker's (2018) concept of continuous influence, Lebrun's (2023) concept of cognitive intrusion, and Hoogensen, Gjørv, and Jalonen's (2023) analysis of identity-based disinformation coalesced into three mutually reinforcing arguments: media literacy is a reactive, individual, and content-level tool against a proactive, organized, and architecture-level threat. The concept of the strategic citizen (Falk, 2020) and its embedding in military science (Krulak, 1999; Monaghan, 2022; Horváth, 2024) demonstrates that an individual's cognitive preparedness is not a private matter but an organization-level variable with operational relevance.

Chapter 4 established the claim regarding trainability based on inoculation theory (Lewandowsky and van der Linden, 2021; Roozenbeek et al., 2022), and then developed the three-dimensional criteria system. Attention gatekeeping works against input-level fatigue, source-tracking routines against process-level nihilism, and tolerance of decision-making delay against the Liar's Dividend at the output level. Pamment's (2021) RESIST 2 toolkit serves as the institutional analogy for the criteria system. The discussion of limitations (CIE, illusory truth effect, identity-based mechanisms, proxy measurement limitation) does not refute the proposed system but clarifies its boundaries of validity.

First Conclusion – The Study's Main Thesis and Methodological Contribution. The main thesis of the study can be reasonably proposed based on the literature: the concept of the strategic citizen can be operationalized as an organization-level development target within Mező's OxIPO framework. This is not a rhetorical statement. It is grounded in three steps: the structured diagnosis of the degradation chain, the methodological analysis of the limitations of the media awareness approach, and the derivation of the three-dimensional criteria system based on inoculation logic.

The methodological contribution consists, at the conceptual level, of integrating the OxIPO model into a security policy context, and at the operational level, of

deriving the strategic citizen development criteria system at the HIP level.

Second Conclusion – Future Research Directions. Three research directions can be identified that can build directly on this study.

The first is empirical validation in the Hungarian context. The proposed proxy measures for the criteria system must be adapted to the domestic context documented by Szicherle and Krekó (2020): It is necessary to measure, through questionnaire-based and experimental designs, to what organizational level attention gatekeeping, source-tracking routines, and tolerance for decision-making deferral correspond among domestic audiences, and where the focus of development deficits lies. Without this empirical foundation, the criteria system remains a methodological proposal, not a diagnostic tool.

The COVID-19 infodemic can be viewed as the first real, large-scale stress test of the strategic citizen development logic. Horváth (2025a) notes that the pandemic simultaneously increased society's demand for information and the rate of disinformation production—the cognitive capacity of recipients was maximally strained from both directions. Data from Szicherle and Krekó (2020) in Hungary show that this dual burden breached defenses precisely due to the absence of input-level attention gatekeeping and process-level source-tracking routines. The COVID period therefore not only validates the empirical necessity of the criteria system but also offers a natural experimental framework for domestic validation.

The second is the adaptation of inoculation protocols. Roozenbeek et al. (2022) demonstrated the effectiveness of technique-based prebunking in a real-world platform environment in their Science Advances study, but these results were primarily validated in an English-language, Western European, and North American context. Adapting the Bad News and Go Viral! games into Hungarian, as well as developing local versions calibrated to the domestic disinformation ecosystem, is a necessary research step.

The third is the examination of the community dimension. Hoogensen, Gjørv, and Jalonen (2023) demonstrated that identity-based disinformation requires community-level intervention. This study focused on the individual HIP-level criteria system. However, it is necessary to examine how bridging capital can be measured within the OxIPO framework as a community-level organizational factor, and what institutional programs can effectively strengthen it. This question is relevant to the design of national defense education, public service training, and media literacy curricula alike.

Third Conclusion – Practical Applicability. The direct applicability of the criteria system can be identified in three areas.

National defense and public service training: the strategic citizen development program can be integrated into the

National University of Public Service's national defense education and public service training frameworks. For each of the three criteria identified in subsection 4.2, there are proven inoculation tools (Go Viral!, Bad News, RESIST 2) that can be adapted for military, law enforcement, and public administration target groups. The criteria system, interpreted as a civilian adaptation of Monaghan's (2022) 3C model, aligns directly with resilience-building strategies against hybrid threats.

Higher education media literacy training: a curriculum-integrated version of the prebunking-based criteria system was elaborated in detail in the NATO STRATCOM COE publication by Roozenbeek and van der Linden (2021). Integration with the OxIPO framework enables media literacy education to set goals at the architectural level rather than the content level, and to make these measurable using HIP-level proxy measurement logic.

Communication Planning: A communication, education, and national defense planner who thinks within the OxIPO H–E–I diagnostic framework is able to distinguish between organizational-level development needs, platform-ecological interventions, and security responses to intentional WGC. This distinction is not an administrative formality, but a prerequisite for the effectiveness of interventions.

In closing, I will repeat what this study began with: knowledge alone does not protect. But the right architecture does. Not perfectly, but measurably and with room for improvement. Even within this limitation lies the promise.

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