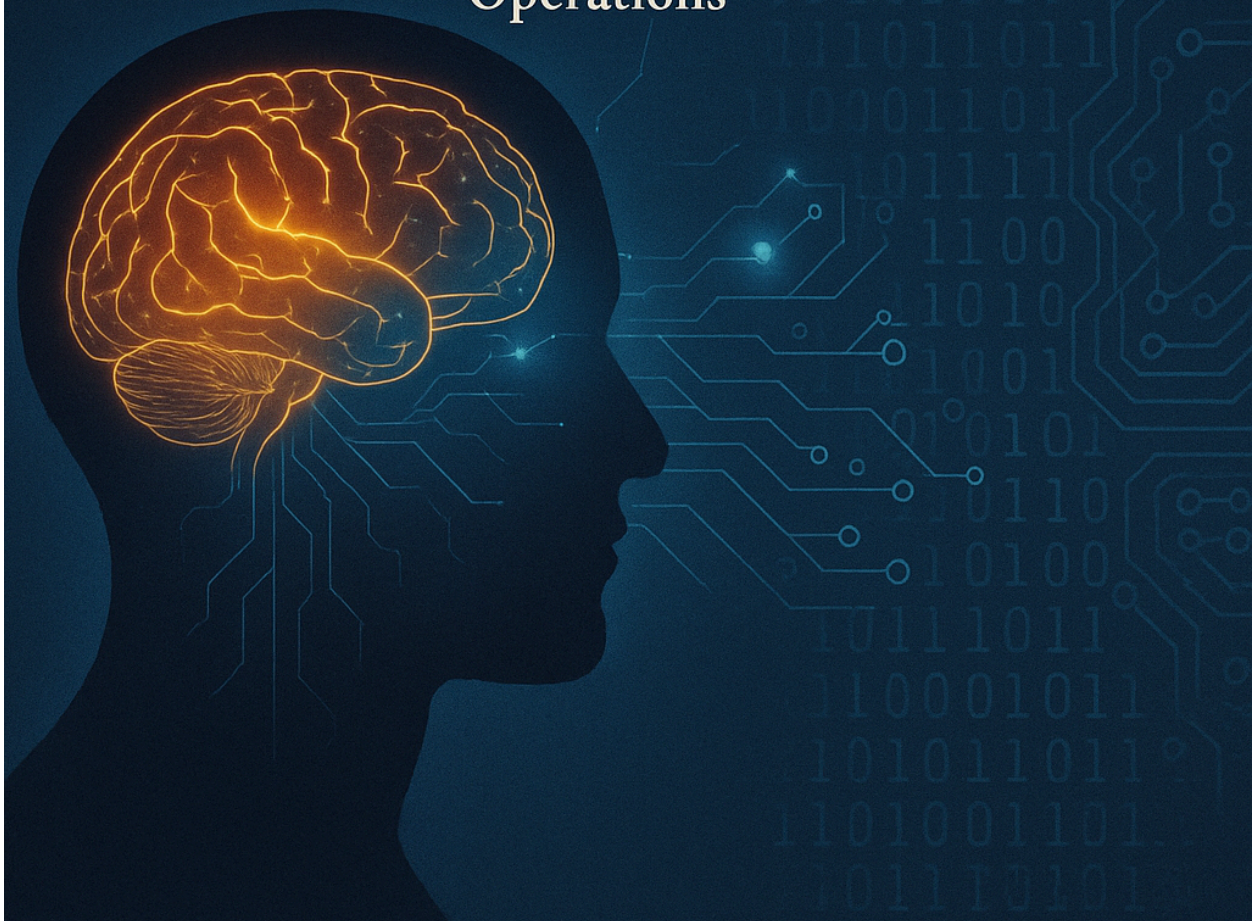
THE EMBODIED CONCEPTUALIZATION OF RISK

Applying Conceptual Metaphor Theory to Analyze and Mitigate Cognitive Manipulation in Cyber-Enabled Influence Operations



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Chapter 1: The Embodied Conceptualization of Risk: Introduction and Research Problem

1.1 Background and Context

The modern digital information environment has become a primary battlespace for cognitive influence. In this landscape, the manipulation of public perception represents a critical threat to open societies, making the study of cognitive security a strategic imperative. We have entered what has been described as a "post-truth" era, where public discourse is characterized by appeals to emotion and misleading arguments that frequently overshadow facts and logic. This environment is the ideal medium for sophisticated, cyber-enabled influence operations designed to systematically exploit the mechanics of human psychology. These operations leverage emotional contagion by designing and disseminating content calibrated to trigger strong responses such as anger and fear—the very emotions most likely to drive sharing and engagement. A key tactic in this domain is **outrage amplification**, whereby operators identify existing social tensions and methodically inflate them, distorting public perception and transforming minor disagreements into major societal conflicts.

The efficacy of these operations lies in their exploitation of fundamental psychological mechanisms. As described by Robert Cialdini, human cognition often relies on automatic, "click, whirr" response patterns—mental shortcuts and heuristics that enable rapid decision-making but also create vulnerabilities. Malicious actors weaponize these cognitive tendencies. Research by Nobel laureate Daniel Kahneman, for instance, demonstrates the power of **loss aversion**, a principle where the fear of losing something is twice as powerful a motivator as the prospect of an equivalent gain. A manipulator can frame a policy or event in terms of a potential loss, triggering a far more potent emotional response than a frame centered on potential gains. This represents the weaponization of "choice architecture," a concept developed by Richard Thaler and Cass Sunstein. The very presentation of information is engineered to steer individuals toward predetermined conclusions, not through coercion, but through the subtle manipulation of the context in which choices are made.

This weaponization of human cognition reveals a fundamental deficiency in existing security paradigms, which remain focused on technical exploits while ignoring the conceptual vectors through which influence operates.

1.2 Problem Statement

Existing risk management and cybersecurity frameworks are fundamentally inadequate for the contemporary threat landscape. Their intense focus on technical and procedural vulnerabilities has created a critical blind spot regarding the linguistic and conceptual vectors of attack, which target the human mind itself. This thesis argues that to secure the cognitive domain, we must first understand how language itself creates and exposes these vulnerabilities.

The primary deficiency in current risk and cognitive security models, including those that inform standards like ISO 31000, is their failure to account for the linguistic and conceptual dimensions of vulnerability. They are adept at identifying and mitigating technical cyber risks—flaws in code, weaknesses in network architecture, or failures in procedure—but they treat language as a transparent medium for information rather than a potent tool for shaping thought. According to cognitive linguistics, however, language is not a neutral carrier of meaning; it is a system that actively reflects and constructs our "patterns of conceptualization." This creates a profound linguistic vulnerability. Influence operators can "frame deception" not merely through overt fallacies and disinformation, but by manipulating the underlying conceptual structures that words and phrases evoke in the human mind.

This vulnerability is most potent at the level of **embodied cognition**, a core principle of cognitive linguistics which holds that our understanding of abstract concepts is grounded in concrete, physical experience. We comprehend abstract ideas through a vast, largely unconscious system of metaphors. For instance, we conceptualize abstract states in terms of `CONTAINMENT` (as in being *in* trouble) and quantities in terms of `VERTICAL ELEVATION` (prices have *gone up*). The concept of **risk**, one of the most critical abstractions in societal discourse, is no exception. Yet, current risk models have no mechanism for identifying or analyzing how these fundamental, embodied metaphors are exploited. This failure of imagination has left the security field uniquely unprepared for a threat that bypasses traditional defenses. Malicious actors can hijack these conceptual frames—for instance, by framing a rival policy as a `DISEASE` to be eradicated rather than a `JOURNEY` with a different destination—thereby manipulating how a population perceives, processes, and reacts to risk.

To address this critical gap, a new theoretical lens is required—one capable of deconstructing how language and metaphor shape our very understanding of risk.

1.3 Research Objectives and Questions

This section provides the formal blueprint for the investigation. The following research questions are designed to bridge the gap between the abstract principles of cognitive linguistics and the concrete problem of cognitive manipulation. They will guide the inquiry from theoretical analysis to practical application, with the ultimate goal of developing more robust defenses for the cognitive domain.

The three central research questions are:

1. **How can Conceptual Metaphor Theory (CMT) help identify and interpret the metaphorical frames that shape public risk perception?**
2. **How are these metaphors exploited by advanced persistent manipulators (APMs) to conduct cognitive manipulation?**
3. **How can a deeper understanding of these patterns inform the development of more resilient risk communication strategies and enrich existing frameworks like ISO 31000?**

Objective 1 will be to apply Conceptual Metaphor Theory (CMT), a framework pioneered by George Lakoff and Mark Johnson, to the domain of risk. CMT posits that abstract conceptual domains (the `target`, such as RISK) are comprehended via systematic mappings from more concrete, experiential domains (the `source`, such as A JOURNEY, A PHYSICAL FORCE, or A DISEASE). The objective is to demonstrate that CMT can serve as a powerful analytical tool to decode the often unconscious, embodied metaphors that govern public discourse and perception of risk, revealing the conceptual architecture that underpins societal beliefs and attitudes.

Objective 2 investigates how these metaphorical frames are weaponized. This inquiry defines Advanced Persistent Manipulators (APMs) as sophisticated state or non-state actors who engage in systematic, long-term influence operations designed to alter public perception and behavior. The analysis will explore how APMs hijack existing metaphors or introduce new ones (e.g., framing immigration as a `FLOOD` or an economic policy as a `POISON`) to trigger specific emotional responses and exploit cognitive biases, thereby manipulating public judgment and steering discourse toward a desired outcome.

The final objective articulates the prescriptive goal of this research, which aims to translate analytical insights into a paradigm shift for security studies. This research proposes not merely to enrich existing risk management frameworks like ISO 31000, but to redefine their core assumptions about human rationality and vulnerability. The goal is to introduce "conceptual risk" as a new layer of analysis, arguing it represents a fundamental re-evaluation of what constitutes "risk" in the 21st century. By providing a methodology for identifying and deconstructing manipulative metaphorical framing, this work will equip strategic communicators and policymakers with the tools to build more resilient communication strategies that can preempt or counter cognitive manipulation.

Answering these questions holds significant real-world value, offering a new vocabulary and a new set of analytical tools to defend open societies against one of the most pervasive threats of the 21st century.

1.4 Significance of the Study

The significance of this research lies not only in its theoretical contribution but in its direct applicability to practitioners and institutions responsible for maintaining societal stability and democratic integrity. Its central value is in providing a new framework for understanding and

countering a pervasive modern threat by illuminating the hidden cognitive structures that make societies vulnerable to manipulation.

Contribution to Policy and National Security

The findings of this study will provide policymakers and the national security community with a novel diagnostic tool for identifying, analyzing, and countering foreign-led cognitive influence operations. By moving beyond a narrow focus on "fake news," this framework allows for a deeper understanding of how adversarial narratives function at a conceptual level. This diagnostic tool directly supports the objectives of the **U.S. Global Fragility Act**, which seeks to prevent and reduce violent conflict and stabilize conflict-affected areas. By providing a method to identify and counter the cognitive manipulation that exacerbates instability, this research offers a critical component for stabilizing fragile social and political environments.

Contribution to Strategic Communication and Peacebuilding

For strategic communicators, public relations professionals, and peacebuilding organizations, this research offers a methodology for designing more effective and resilient communication. Instead of simply pushing messages, communicators can learn to identify the dominant metaphorical frames within a population and craft narratives that resonate authentically while "inoculating" audiences against manipulative frames. This approach directly contributes to the aims of the **Positive Peace framework**, which focuses on building the attitudes, institutions, and structures that create and sustain peaceful societies by fostering a communication environment less susceptible to the outrage amplification that fuels conflict.

Contribution to Theory

This study's primary academic contribution is forging a crucial interdisciplinary link between the fields of Cognitive Linguistics, Security Studies, and Risk Management. By applying Conceptual Metaphor Theory to the problem of cyber-enabled influence, the thesis offers a new, integrated model for the emerging field of Cognitive Security. It demonstrates the utility of linguistic theory as a practical analytical tool for addressing urgent, real-world security challenges, thereby enriching all three parent disciplines.

This work sets the stage for a more comprehensive approach to societal resilience, one that accounts for the conceptual foundations of public perception.

1.5 Structure of the Thesis

This final section provides a roadmap for the reader, outlining the logical progression of the thesis. Each subsequent chapter is designed to build upon the last, guiding the research from its theoretical underpinnings to its empirical analysis and, finally, to its practical conclusions and recommendations.

1. **Chapter 1: Introduction and Research Problem.** This chapter establishes the background of cognitive influence in the digital age, defines the critical gap in current risk frameworks, and outlines the research questions, objectives, and overall significance of the study.
2. **Chapter 2: Theoretical Foundations and Literature Review.** This chapter will conduct a deep-dive into the core theories underpinning the research. It will comprehensively review the literature on Conceptual Metaphor Theory, the principles of embodied cognition, the tactics of influence and cognitive manipulation, and the structure of conventional risk management frameworks like ISO 31000.
3. **Chapter 3: Research Methodology.** This chapter will detail the analytical approach of the study, explaining the methodology for collecting and analyzing data from sources such as political speeches, media reports, and social media campaigns. Furthermore, it details how Conceptual Metaphor Theory is operationalized as an analytical method for identifying and interpreting metaphorical frames related to risk.
4. **Chapter 4: Analysis of Metaphorical Framing in Influence Operations.** This chapter serves as the empirical core of the thesis. It will present a detailed analysis and the principal findings from the case studies, identifying the dominant metaphorical frames used to conceptualize risk and demonstrating with specific examples how these frames are deployed by APMs to manipulate public perception.
5. **Chapter 5: Discussion of Findings.** This chapter will interpret the results presented in Chapter 4. It will discuss the broader implications of the findings for understanding cognitive vulnerabilities, the strategic logic of APMs, and the measurable impact of metaphorical framing on public discourse and decision-making.
6. **Chapter 6: Conclusion and Recommendations.** The final chapter will synthesize the entire study. It will summarize the key findings, provide direct answers to the research questions posed in Chapter 1, and conclude by proposing a new, integrated model for incorporating conceptual risk analysis into strategic communication and societal resilience frameworks.

Chapter 2: Literature Review and Theoretical Framework

2.1 Cognitive Linguistics and Conceptual Metaphor Theory (CMT)

1. Introduction: Language as a Window to the Mind

Cognitive linguistics constitutes a paradigm shift away from the formalist traditions that dominated twentieth-century linguistics. It rejects the view of language as an autonomous, abstract system, positing instead that linguistic structure is a direct reflection of human cognition. This foundational premise reframes the study of language as an empirical window into the architecture of the mind itself (Evans & Green, 2006). By systematically analyzing linguistic patterns, scholars can formulate and test hypotheses about the conceptual system that language is thought to reflect, thereby providing profound insights into the fundamental properties of human thought.

This scholarly enterprise is defined by two guiding principles that establish its departure from prior approaches: the **Generalisation Commitment** and the **Cognitive Commitment**. The Generalisation Commitment mandates that linguistic theories account for all facets of language, from formal structure to communicative function. Critically, the Cognitive Commitment requires that such accounts be psychologically plausible, rooting the study of language in what is empirically known about the human mind and its cognitive architecture (Evans & Green, 2006). These commitments were necessary correctives to formalist models that often prioritized theoretical economy over psychological reality. This focus on psychological plausibility leads inexorably to an examination of the physical and experiential foundation for the conceptual systems language reveals: the embodied mind.

2. The Embodied Basis of Cognition and Meaning

A central tenet of cognitive linguistics is the principle of the embodied mind, which posits that meaning is not arbitrary or abstract but is fundamentally grounded in our physical, sensory, and motor experiences. Cognition arises from our bodily interactions with the world, and this interactional basis shapes the very structure of our conceptual system. As articulated by Mandler (1992, p. 591), this process involves a direct mapping where "spatial structure is

mapped into conceptual structure," meaning our understanding of concrete space provides the blueprint for abstract thought.

This mapping from the physical to the conceptual is facilitated by **image schemas**. These are recurring, pre-conceptual structures that emerge from our most basic bodily experiences, such as moving through space, manipulating objects, or perceiving containment (Evans & Green, 2006). These schemas are not rich, detailed images but rather abstract conceptual skeletons derived from physical interaction, which then form the foundation for more complex and abstract concepts.

- **CONTAINER:** Our daily experience with containers—putting things *in*, taking things *out*—provides a fundamental image schema of boundaries, enclosure, and interiority. This physical understanding is then projected onto abstract domains, allowing us to conceptualize non-physical states and situations as if they were containers. This is evident in expressions like being *in* love, falling *into* a depression, or getting *out of* a crisis (Evans & Green, 2006, p. 24, 46).
- **FORCE:** We constantly experience physical force, from pushing an object to being stopped by a barrier. This gives rise to image schemas of force vectors, blockage, and counterforce. These schemas structure our abstract understanding of causality, difficulties, and social dynamics. For example, we understand abstract difficulties as physical impediments to motion and causes as forces that bring about effects (Evans & Green, 2006, p. 187, 300).
- **VERTICAL ELEVATION:** Our embodied experience consistently correlates vertical height with increased quantity. Piling more oranges makes the pile higher; pouring more water into a glass makes the level rise. This ubiquitous physical correlation grounds our conceptualization of abstract QUANTITY, leading to expressions where "more" is understood as "up," such as when stock market shares have *gone up* (Evans & Green, 2006, p. 287).

These embodied image schemas, derived from direct physical experience, provide the concrete and structured knowledge—the source domains—that are essential for the cross-domain mappings at the heart of Conceptual Metaphor Theory.

3. Conceptual Metaphor Theory (CMT): The Foundational Work of Lakoff and Johnson

First proposed by George Lakoff and Mark Johnson in their seminal 1980 work *Metaphors We Live By*, Conceptual Metaphor Theory (CMT) revolutionized the study of figurative language (as cited in Evans & Green, 2006, p. 286). Its central and most striking claim is that metaphor is not merely a stylistic feature of language or a poetic flourish, but a fundamental cognitive mechanism. According to CMT, we pervasively and systematically use metaphor to conceptualize and structure abstract domains of reality by mapping them onto more concrete, physical experiences.

The mechanism of a conceptual metaphor involves a conceptual projection from a **source domain**—the more concrete, experiential concept (e.g., a journey, a building)—to a **target domain**—the more abstract concept being understood (e.g., life, an argument). This mapping is typically unidirectional; we use the familiar structure of the source domain to reason about and understand the target domain, but not the reverse (Evans & Green, 2006, p. 296). For example, we understand arguments in terms of buildings, but we do not understand buildings in terms of arguments. This process of metaphorical mapping is not arbitrary; rather, it is deeply motivated by our daily lives.

According to this view, conceptual metaphors are always at least partially motivated by and grounded in experience. (Evans & Green, 2006, p. 287)

This grounding in physical and social experience makes metaphor a cornerstone of human thought, allowing us to reason about complex abstractions using the logic of concrete, embodied reality. The pervasiveness of this cognitive mechanism is evident in everyday language, as illustrated in the following table.

Table 1: Examples of Conceptual Metaphors

Conceptual Metaphor (TARGET IS SOURCE)	Linguistic Example
QUANTITY IS VERTICAL ELEVATION	"The number of shares has *gone up*." (Evans & Green, 2006, p. 14)
TIME IS THE MOTION OF OBJECTS	"Christmas is *approaching*." (Evans & Green, 2006, p. 14)
THEORIES/ARGUMENTS ARE BUILDINGS	"Unfortunately, your argument lacks a solid *foundation*." (Evans & Green, 2006, p. 24)
STATES ARE CONTAINERS	"He fell *into* a deep depression." (Evans & Green, 2006, p. 24)

LONG-TERM PURPOSEFUL ACTIVITIES ARE JOURNEYS	"His life had been a rather strange *journey*." (Evans & Green, 2006, p. 300)

This theoretical framework provides a powerful analytical tool for revealing how abstract concepts, from social relationships and emotional states to intellectual theories and risk, are systematically structured and comprehended in human thought and action.

4. Structuring Abstract Concepts: How Metaphors Shape Thought and Action

Moving beyond linguistic expressions, the primary cognitive implication of Conceptual Metaphor Theory is that metaphors are not merely ways of speaking, but fundamental modes of thought. They systematically structure our reasoning, inferences, and even our actions concerning abstract domains. When we map a concrete source domain onto an abstract target domain, the target inherits the logical and inferential structure of the source. This allows us to navigate complex, non-physical realities with the conceptual tools provided by our concrete, physical world.

The following examples illustrate how this metaphorical structuring shapes our understanding and engagement with abstract concepts:

1. **Understanding Time:** The pervasive **TIME IS MOTION** metaphor allows us to conceptualize the abstract domain of time in concrete, spatial terms. We can frame time as an object moving toward us (e.g., "The end of term is *approaching*") or as a landscape that we move through. This mapping is not just linguistic; it enables us to reason about schedules, deadlines, and the passage of life using the logic of physical motion and space, rendering an intangible concept tangible and manageable (Evans & Green, 2006, p. 167).
2. **Evaluating Theories and Arguments:** Through the **ARGUMENTS ARE BUILDINGS** metaphor, we project our physical understanding of structures onto the abstract domain of intellectual discourse. This framework leads us to perceive arguments as entities that must have a solid *foundation*, be *constructed* from facts, be well-*supported*, and remain vulnerable to *collapse* if their premises are weak (Evans & Green, 2006, p. 24). This conceptualization directly shapes how we engage in debate, evaluate evidence, and pursue intellectual inquiry, guiding our actions toward "building" strong cases and "dismantling" weak ones.
3. **Conceptualizing Emotional States and Abstract Risk:** Cognitive linguistics demonstrates that abstract internal states are frequently understood as physical spaces or containers, as in being *in* love or *in* a depression (Evans & Green, 2006, p. 46). Applying the principles of CMT, we can hypothesize how a similarly abstract concept like 'risk' would be structured through analogous metaphorical mappings drawn from embodied experience.

- If risk is framed metaphorically as a **JOURNEY**, this mapping licenses a specific inferential logic centered on spatial navigation. It structures reasoning to focus on proactive planning (charting a course), identifying potential dangers as *obstacles* or *detours*, and evaluating progress in terms of *distance traveled* toward a goal. Actions are consequently oriented toward mitigation and course-correction.
- If risk is framed as a **FRAGILE OBJECT**, the metaphorical mapping highlights a different set of inferences. This frame foregrounds concepts of careful handling, protection, containment, and the potential for sudden, catastrophic failure. The corresponding actions are therefore oriented toward prevention and control—insulating the 'object' from external shocks or keeping it safely stored away.
- Each metaphorical frame, derived from a distinct physical experience, highlights certain aspects of the abstract concept while hiding others, thereby shaping our reasoning, emotional responses, and decisions regarding how to manage risk.

In summary, the work of Lakoff and Johnson reveals a system of thought in which the abstract is rendered comprehensible only by reference to the concrete, physical world. This process of metaphorical mapping is not an occasional linguistic device but a cornerstone of human cognition. It is a constant, dynamic process that shapes everything from our most common turns of phrase to our most complex and critical decision-making.

2.2 Conceptualizations of Risk and Uncertainty

Understanding and navigating risk and uncertainty represents a fundamental challenge in human decision-making. While often framed in economic or managerial terms, a deeper comprehension requires a multidisciplinary approach that examines the psychological, cognitive, and social mechanisms that shape how individuals perceive, evaluate, and respond to uncertain outcomes. Conventional models of rational choice frequently fail to capture the complex, and at times seemingly irrational, ways people behave when faced with incomplete information and unpredictable futures. This section explores these critical dimensions, drawing from cognitive psychology, behavioral economics, and the study of social influence to build a more holistic and psychologically grounded model of risk. By dissecting the internal heuristics, emotional responses, and external pressures that guide choice, we can move beyond a purely statistical view of risk toward one that acknowledges its profoundly subjective nature.

2.2.1 The Psychological and Cognitive Foundations of Uncertainty

Before we can analyze how people react to risk, we must first understand the underlying cognitive architecture they use to process an uncertain world. Human cognition has evolved to

make rapid, efficient judgments, often relying on mental shortcuts and intuitive feelings rather than on exhaustive, logical analysis. While these mechanisms are effective for navigating many everyday situations, they can produce systematic and predictable deviations from purely rational assessment when applied to complex problems involving probability and future outcomes. This section deconstructs the mental shortcuts and emotional responses that form the bedrock of the human perception of uncertainty, revealing the cognitive biases that distort how we evaluate potential dangers and opportunities.

The Availability Heuristic

A primary mechanism that distorts objective risk assessment is the availability heuristic, which describes the human tendency to assess the likelihood of an event based on the ease with which examples come to mind. If people can readily recall instances of a particular risk, they perceive it as more probable and more serious than a risk that is less vivid or familiar. Thaler and Sunstein (2008) illustrate this with the common perception of danger following the 9/11 attacks; because the event was so salient and easily recalled, people became more frightened by the familiar risk of terrorism than by less familiar but statistically more significant risks, such as those associated with hotter summers.

Unrealistic Optimism

Another powerful cognitive distortion is unrealistic optimism, the pervasive human tendency to believe that we are personally less vulnerable to risks than others. This bias persists even when individuals are fully aware of the relevant statistical probabilities. For example, while most people know that approximately 50 percent of marriages end in divorce, a survey of couples about to be married found that nearly all believed their personal chance of divorce was effectively zero (Thaler & Sunstein, 2008). This optimistic bias can lead individuals to inadequately prepare for potential negative outcomes, from financial hardship to health problems, because they systematically underestimate their personal exposure to risk.

Status Quo Bias

The status quo bias is the powerful and often unexamined inclination to stick with a current situation or default option. This tendency is driven by a combination of loss aversion and a simple lack of attention, leading people to avoid the cognitive effort required to make an active change. Thaler and Sunstein (2008) note that this bias has significant consequences in domains like retirement planning, where participants frequently select an asset allocation for their 401(k) plan upon enrollment and then rarely, if ever, make changes. Their initial, often uninformed, choice becomes the permanent status quo, regardless of how their financial situation or the market changes over time.

Beyond these specific heuristics, decision-making under uncertainty is profoundly influenced by the primacy of emotion. Rational analysis is often overridden by strong affective responses, a mechanism that is systematically exploited in modern influence operations. Rather than merely triggering emotion, these operations leverage **emotional contagion** by designing content that

elicits anger, fear, and disgust to drive viral sharing through social networks. This is frequently accomplished through **outrage amplification**, where operators identify existing social tensions and systematically inflate them, exploiting the human tendency for negative emotions to spread more rapidly than positive ones, thereby distorting public perception and overriding critical thought (Cognitive Security & Influence Operations).

These cognitive and emotional mechanisms reveal that the human mind does not process uncertainty through objective calculation, but rather through a set of deeply ingrained shortcuts that produce specific and predictable economic behaviors.

2.2.2 Behavioral Economic Perspectives on Asymmetrical Risk Perception

Behavioral economics provides a crucial lens for understanding how the psychological factors detailed above create asymmetrical perceptions of risk and value. This field challenges the classical economic assumption of the purely rational actor, demonstrating that the way a choice is framed can be far more influential than its objective reality. This section explores two key principles from behavioral economics—loss aversion and scarcity—that illustrate how human psychology systematically weights potential losses more heavily than equivalent gains and assigns greater value to opportunities that appear to be limited.

Loss Aversion

Drawing on the Nobel Prize-winning work of Daniel Kahneman, the concept of loss aversion posits that, psychologically, the pain of losing something is approximately twice as powerful as the pleasure of gaining the very same thing. This cognitive asymmetry has profound strategic implications for persuasion and decision-making. An appeal framed in terms of a potential gain (e.g., "acquire these new benefits") is significantly less motivating than one framed in terms of a potential loss (e.g., "advantages you don't want to lose"). The fear of forgoing a benefit or losing something one already possesses creates a more urgent impetus to act, making the avoidance of loss a more powerful motivator than the pursuit of an equivalent gain (Ethical Influence for Self Improvement).

The Scarcity Principle

The scarcity principle is another powerful driver of perceived value and risk-taking behavior, operating on the premise that opportunities seem more valuable to us when their availability is limited (Cialdini, 2007). This effect is driven by psychological reactance, wherein we respond to the loss of freedoms by wanting them more. A classic illustration is the "limited number" sales tactic, in which a customer is informed that a desired item is the last one in stock. The mere thought of its "lost availability" causes the item's attractiveness to "jump suddenly," prompting the customer to commit to a purchase at a moment of perceived scarcity (Cialdini, 2007, p. 180). This commitment often holds even if the salesperson subsequently "finds" another unit, demonstrating that the suggestion of scarcity can prompt an immediate decision to mitigate the risk of a lost opportunity.

While these principles of loss aversion and scarcity explain individual deviations from rationality, their true power becomes apparent when they are deployed within a social context, where the actions and assertions of others can validate or amplify these very biases.

2.2.3 Uncertainty in the Social Context: The Risks of Influence and Deception

Decisions under uncertainty are rarely made in a vacuum; they are profoundly shaped by the social environment. In situations where the correct course of action is unclear, individuals instinctively look to others for cues, guidance, and validation. This section evaluates how social pressures and strategic communication exploit our cognitive need for certainty, creating vulnerabilities that can lead to compliance, deference to authority, and manipulation through deceptive rhetoric.

Social Proof

When people are uncertain, they rely on social proof, a powerful heuristic where one assumes that the actions of others reflect the correct behavior in a given situation (Cialdini, 2007; Thaler & Sunstein, 2008). This shortcut allows individuals to navigate ambiguous circumstances with less cognitive effort by simply following the herd. However, this mechanism contains an inherent risk, as the crowd is not always wise. A chilling example of this is the phenomenon of bystander inaction, where individuals in a group fail to intervene in an emergency. Because everyone is looking to others for cues and sees no one acting, they collectively misinterpret the situation as a non-emergency. This demonstrates how "safety in numbers" can be dangerously wrong, as the collective inaction provides flawed social proof that no intervention is needed (Cialdini, 2007).

Authority

A related mechanism for outsourcing personal risk assessment is deference to authority. Individuals are often socialized to obey authority figures, and symbols of authority—such as titles, uniforms, or credentials—can trigger a form of automatic obedience that suspends independent judgment. This heuristic is typically efficient, but it also creates a vulnerability to exploitation. Cialdini (2007) references the landmark Milgram experiments, which revealed the "extreme willingness of adults to go to almost any lengths on the command of an authority" (p. 161). By deferring responsibility to an authority figure, individuals can absolve themselves of the need to evaluate the risks and moral consequences of their own actions.

Deceptive Rhetoric and the Manipulation of Uncertainty

Strategic communicators can also manipulate uncertainty by employing deceptive rhetoric and logical fallacies that present biased narratives by exploiting cognitive biases like confirmation bias and motivated reasoning (Framing Deception). A prominent example is Whataboutism, a form of the **tu quoque fallacy** used to deflect from a valid criticism by pointing to an alleged offense committed by the accuser. For instance, when accused of human rights abuses, state

actors may respond by highlighting U.S. domestic issues to dilute the criticism. Similarly, domestic partisan commentators use this tactic to dismiss scandals by pointing to the rivals' past wrongdoings, thereby strategically avoiding a substantive engagement with the risks or issues at hand (Framing Deception).

Integrating these distinct conceptualizations—from internal cognitive biases to external social pressures—is essential for forming a comprehensive understanding of risk.

2.2.4 Synthesis: A Cognitively-Grounded View of Risk

A comprehensive conceptualization of risk and uncertainty must extend beyond simple statistical models to account for the complex interplay of cognitive heuristics, asymmetrical value perceptions, and powerful social influences. This subjective experience is not merely a product of isolated cognitive errors. Social mechanisms like **social proof** (Cialdini, 2007) gain their power by exploiting the **availability heuristic** (Thaler & Sunstein, 2008); we follow the crowd because their actions are the most readily available evidence of the “correct” course. Similarly, deceptive rhetoric that employs the **tu quoque fallacy** (Framing Deception) often leverages **loss aversion** by framing political choices not as potential gains, but as the imminent loss of freedoms—a far more potent motivator (Ethical Influence for Self Improvement). These lenses reveal risk not as a purely objective phenomenon, but as a deeply subjective experience shaped by biases such as unrealistic optimism and a preference for the status quo (Thaler & Sunstein, 2008). Ultimately, this analysis reveals that the “effect of uncertainty on objectives” is not an external variable to be calculated, but an internal experience to be deconstructed—one mediated entirely through the predictable, and often exploitable, architecture of human psychology.

2.3 Influence Operations and Cognitive Manipulation

Modern information warfare is increasingly characterized by a shift from targeting physical infrastructure to targeting the cognitive domain of adversaries and populations. Influence operations, in this context, are not merely the dissemination of propaganda but sophisticated, psychologically-informed campaigns designed to shape perceptions, beliefs, and ultimately, behaviors. These operations succeed not by inventing novel human responses but by systematically exploiting the inherent vulnerabilities and pre-existing mechanisms of human psychology. This section deconstructs the foundational elements of these operations, beginning with an analysis of the cognitive biases and principles of persuasion that render individuals susceptible to manipulation. It will then examine the linguistic and communicative mechanics used to activate these vulnerabilities, followed by an exploration of how the digital information

ecosystem amplifies these effects through emotional contagion. Finally, this analysis will culminate in a profile of the actor responsible for such campaigns: the Advanced Persistent Manipulator (APM).

2.3.1. The Cognitive Battlefield: Exploiting Human Psychology

The primary battlespace for modern influence operations is not geographic territory but human cognition itself. Malign actors achieve their objectives by understanding and exploiting the universal psychological principles that govern human decision-making. The effectiveness of these campaigns stems from their ability to leverage cognitive shortcuts, biases, and deep-seated principles of persuasion that are integral to how individuals navigate a complex world. Rather than forcing compliance through overt coercion, manipulators guide their targets toward predetermined conclusions by triggering automatic, stereotyped behaviors. This section will deconstruct the core cognitive vulnerabilities and principles of persuasion that form the foundation of these sophisticated operations.

At the heart of this susceptibility lies the human brain's reliance on cognitive shortcuts and automatic processing. The sheer volume of information and decisions in modern life necessitates the use of heuristics—mental shortcuts that allow for efficient, if not always perfectly rational, judgments (Cialdini). Cialdini describes this as a "click, whirr" model of responding, where a specific trigger feature (the *click*) activates a standardized tape of behaviors (the *whirr*). A quintessential example is the "expensive = good" heuristic, where price alone becomes a trigger for perceptions of quality, a vulnerability demonstrated when vacationers purchased more turquoise jewelry only after its price was accidentally doubled (Cialdini). This reliance on automatic, stereotyped behavior creates predictable vulnerabilities that can be systematically exploited. Several key cognitive biases are particularly instrumental in influence campaigns:

- **Loss Aversion:** This principle, demonstrated by Daniel Kahneman, posits that the psychological pain of losing something is approximately twice as powerful as the pleasure of gaining an item of equal value. Influence campaigns leverage this by framing their objectives not in terms of potential gains, but as the avoidance of a loss. For instance, an advertising campaign for Bose sound systems that highlighted "new" features was unsuccessful, whereas a subsequent campaign framed around what customers were "missing" proved far more effective, tapping directly into the powerful fear of loss (Cialdini, n.d.).
- **Availability Heuristic:** Individuals tend to assess the likelihood and seriousness of a risk based on how readily examples come to mind (Thaler & Sunstein, 2008). Events that are recent, familiar, or emotionally charged are perceived as more probable than those that are not. Influence operations exploit this by repeatedly surfacing specific threats or narratives, making them cognitively "available" and thus artificially inflating their perceived importance in the minds of the target audience.
- **Confirmation Bias and Motivated Reasoning:** People are predisposed to accept arguments, even faulty ones, that confirm their pre-existing beliefs while applying far greater scrutiny to information that challenges them. This tendency can lead to a

"backfire effect," where attempts to correct misinformation with facts can, paradoxically, strengthen the original misperception among committed partisans (Tabor & Lodge, 2006). Manipulators exploit this by tailoring messages to align with a target group's identity and existing worldview, ensuring the information is accepted with minimal critical analysis.

- **Status Quo Bias:** This is a natural human preference for the current state of affairs (Thaler & Sunstein, 2008). This inertia is particularly powerful when an option is designated as the "default," as it often comes with an implicit endorsement from the choice architect. By setting a manipulative choice as the default, operators can leverage this bias to ensure a high rate of compliance through inaction.

Beyond exploiting these passive cognitive biases, influence operators actively deploy systematic principles of persuasion. The framework developed by Cialdini provides a model for understanding how these principles are operationalized. For instance, the principle of **Reciprocity**, the deeply ingrained cultural rule that a gift or favor must be repaid, is weaponized when an operator provides an unsolicited "gift"—such as the flowers offered by the Hare Krishna Society—to create a sense of indebtedness that makes refusing a subsequent request for a donation socially and psychologically difficult (Cialdini). Similarly, the principle of **Commitment and Consistency** is exploited through the "foot-in-the-door" technique. By securing a small, seemingly innocuous initial commitment (e.g., signing a petition), an operator can alter an individual's self-image, making them significantly more likely to comply with a much larger request later (e.g., placing a large billboard on their lawn) to remain consistent with their new self-perception (Freedman & Fraser, 1966). The power of this principle is amplified when commitments are made in writing, a technique effectively used in prisoner-of-war camps to turn trivial concessions into powerful tools of collaboration (Schein, cited in Cialdini). Finally, the principle of **Social Proof** dictates that individuals often determine correct behavior by observing the actions of similar others, a heuristic that becomes overwhelmingly powerful in situations of uncertainty. The mass compliance event at Jonestown was amplified by this principle; by relocating the community to an unfamiliar jungle environment in Guyana, the leadership ensured that members, stripped of their normal social contexts, would look to each other for cues, creating a feedback loop of pluralistic ignorance that culminated in tragedy (Cialdini).

These psychological vulnerabilities, from automatic heuristics to powerful principles of persuasion, represent the foundational terrain upon which influence campaigns are waged, a terrain that is activated through specific linguistic and communicative techniques.

2.3.2. The Mechanics of Manipulation: Language and Framing

While an understanding of human psychological vulnerabilities is foundational, these weaknesses are ultimately activated through the strategic use of language and communication. According to the central tenets of cognitive linguistics, language does not merely function as a passive conduit for information; it actively shapes and constructs meaning by prompting a range of conceptual operations in the mind of the hearer (Evans & Green, 2006). This makes language an exceptionally powerful tool for cognitive manipulation, allowing an operator to build

specific mental realities in a target audience by carefully designing the linguistic prompts they deploy.

From this perspective, linguistic units are not "containers" of meaning but rather triggers for conceptualization. When an individual processes a word or phrase, they engage in a dynamic process of meaning construction that recruits vast stores of encyclopaedic background knowledge (Fauconnier, 1994, 1997, cited in Evans & Green, 2006). Influence operators leverage this process by designing messages that function as prompts to build desired mental frameworks. This conceptual architecture is most effectively manipulated through the strategic use of conceptual metaphors and framing. Conceptual Metaphor Theory posits that much of abstract thought is structured and understood through metaphors grounded in concrete, physical experience (Lakoff & Johnson, 1980, cited in Evans & Green, 2006). Abstract concepts such as `TIME`, `LOVE`, or `CRISIS` are frequently conceptualized in terms of more tangible domains like `MOTION`, `JOURNEYS`, or `CONTAINMENT` (Evans & Green, 2006). Influence operators do not need to invent these mappings; they simply tap into these pre-existing Idealized Cognitive Models (ICMs) to frame their narratives. By framing a political opponent's policy as a `JOURNEY` with a disastrous destination or a social issue as a `DISEASE` threatening the body politic, they make their arguments feel intuitive, natural, and difficult to refute on purely logical grounds, as the frame itself does the persuasive work at a subconscious level.

Within these frames, disinformation ecosystems rely on a toolkit of deceptive arguments built upon logical fallacies, which serve as instruments of strategic communication ([Author], 2024). These fallacies exploit cognitive shortcuts to make biased or false narratives appear convincing. Common tactics include **Straw Man Attacks**, which misrepresent an opponent’s argument to make it easier to defeat, and **Slippery Slope** arguments, which contend that a minor action will inevitably cascade into major negative consequences without sufficient evidence. Another prevalent fallacy is **Whataboutism**, a technique used by state actors and partisan commentators to deflect criticism by pointing to the perceived hypocrisy of an accuser, thereby derailing substantive debate (Chow & Levin, 2024). Finally, the **Appeal to Popularity** (*ad populum*) leverages group consensus to validate a claim, effectively tapping into social identity biases and the desire for belonging.

By embedding these fallacious arguments within intuitively powerful conceptual frames, manipulators construct messages that are not only persuasive but resilient to logical challenge, ready for dissemination and amplification within the broader information environment.

2.3.3. The Disinformation Ecosystem and Emotional Amplification

In the contemporary strategic landscape, manipulative messages are not simply injected into the information environment; they are cultivated within a complex digital ecosystem designed to amplify and sustain them. This ecosystem operates primarily by hijacking and weaponizing human emotion, creating a feedback loop where messages that provoke strong affective responses are rewarded with greater visibility and reach. The core mechanism driving this

amplification is the systematic exploitation of emotional contagion, designed to override rational analysis and promote rapid, uncritical sharing of information.

Influence operations are engineered to trigger powerful emotional responses, with a particular focus on those most likely to drive engagement and viral transmission. Research shows that content provoking **anger, fear, and disgust** is shared more widely and rapidly than content associated with positive emotions (Defendi, n.d.). A key tactic in this domain is **outrage amplification**, where operators identify existing societal tensions or minor disagreements and systematically inflate them through coordinated messaging. This approach leverages the psychological tendency for negative emotions to propagate more quickly and extensively across social networks, transforming localized grievances into broad social conflicts and fundamentally distorting the public's perception of reality.

The cumulative effect of these emotionally charged, often fallacious, narratives is the cultivation of a "post-truth" environment. The strategic goal extends beyond the dissemination of a single falsehood; it is to erode the very foundations of shared reality, deepen partisan polarization, and establish self-reinforcing media loops where deceptive reasoning becomes normalized ([Author], 2024). In this environment, emotional resonance and group identity supplant factual accuracy as the primary criteria for belief, creating a population that is not only misinformed but also resistant to correction. This synthesis of psychological exploitation, linguistic manipulation, and ecosystem amplification provides the operational framework for a new and highly capable threat actor.

2.3.4. The Advanced Persistent Manipulator (APM)

The confluence of deep psychological understanding, sophisticated linguistic framing, and mastery of the digital ecosystem has given rise to a new class of threat actor: the Advanced Persistent Manipulator (APM). An APM is a state or non-state entity that operationalizes an integrated, scientific understanding of cognitive science, psychology, and information dynamics to conduct sustained, multi-faceted manipulation campaigns. These actors are distinguished not just by their intent to deceive, but by the persistent, adaptive, and systematic nature of their operations, which are designed to achieve long-term strategic objectives.

An APM is fundamentally different from a common liar or propagandist. While a simple liar aims to deceive on a specific fact, the APM functions as a malicious **"choice architect"** (Thaler & Sunstein, 2008), meticulously designing an entire information environment to nudge a target population toward predetermined cognitive and behavioral outcomes. Their manipulation is not a singular event but a persistent campaign that adapts to countermeasures and exploits the interconnectedness of the modern information ecosystem. Their methods are analogous to advanced interrogation techniques, which aim to create a **"cycle of dependence"** where the target becomes wholly reliant on the interrogator for guidance on correct responses, effectively removing their independent judgment (Hartley & Karinch). In this way, the APM cultivates a cognitive environment where their desired narrative becomes the default, seemingly organic conclusion.

The operational toolkit of the APM synthesizes the techniques discussed throughout this section. Their strategy is grounded in a deep understanding of cognitive biases such as **loss aversion** and **confirmation bias**, alongside an applied mastery of persuasion principles like **reciprocity**, **social proof**, and **authority**. They employ sophisticated tactics such as **rejection-then-retreat** to manufacture compliance while creating a false sense of agency in their targets (Cialdini). Linguistically, the APM frames narratives using powerful **conceptual metaphors** and constructs deceptive arguments with a range of **logical fallacies**. These carefully crafted messages are then propagated and amplified through the digital ecosystem using emotionally charged tactics like **outrage amplification**, ensuring maximum penetration and impact.

Understanding the methodologies of the Advanced Persistent Manipulator—from their exploitation of basic cognitive heuristics to their command of the emotional dynamics of information ecosystems—is critical for developing effective cognitive security and resilience. The ability to recognize and counter these integrated, scientifically-informed campaigns represents a central challenge for societies navigating the complexities of a contested information age.

2.4 Cognitive Biases and Metaphor in Propaganda and Risk Communication

2.4.1 Introduction: Framing Threats in a Post-Truth Environment

Public political discourse has entered a "post-truth" environment where appeals to emotion and deceptive arguments frequently overshadow objective facts ("Framing Deception," n.d.). This practice of presenting a biased or false narrative in a convincing manner, described as "framing deception," relies on an array of subtle rhetorical tactics ("Framing Deception," n.d.). This section will examine one of the most powerful and cognitively potent of these tools: metaphorical framing. Metaphorical frames are not merely stylistic linguistic devices; they are formidable cognitive instruments that structure abstract concepts and fundamentally influence how audiences perceive threats and make decisions. This section argues that their efficacy is not accidental but stems from their systematic capacity to target and exploit specific cognitive biases, thereby functioning as a powerful instrument of cognitive influence. The following analysis will first explore the cognitive foundations of metaphor as a system of thought. It will then detail how metaphorical frames strategically interact with specific cognitive biases such as the availability heuristic, loss aversion, and confirmation bias. Finally, it will illustrate these dynamics through applications in military information operations, partisan political rhetoric, and public health risk communication. Understanding the theoretical underpinnings of metaphorical thought is a necessary prerequisite for deconstructing its use as a tool of influence.

2.4.2 The Cognitive Architecture of Metaphorical Thought

A strategic analysis of persuasive communication requires a foundational understanding of Conceptual Metaphor Theory. From the perspective of cognitive linguistics, metaphor is not an embellishment of language but a fundamental component of thought itself (Evans & Green, 2006). Crucially, Conceptual Metaphor Theory posits that these metaphorical thought patterns are not hidden; rather, they are systematically revealed in everyday language. Linguistic expressions are not the metaphor itself but the evidence of it. Therefore, language provides a "window into cognitive function" by reflecting underlying patterns of conceptualization (Evans & Green, 2006, p. 5). This cognitive view of metaphor provides the necessary architecture for analyzing its role in shaping perception and judgment.

The core tenets of Conceptual Metaphor Theory center on the process of cross-domain mapping (Evans & Green, 2006). A conceptual metaphor is defined as a mapping from a concrete and experientially grounded **source domain**, such as a journey, a war, or a building, to an abstract **target domain**, such as life, an argument, or a theory. This process allows abstract concepts to be comprehended in terms of more fundamental, embodied experiences. This function reflects the central cognitive thesis that "abstract thought has a bodily basis" (Evans & Green, 2006, p. 190). For example, the conceptual metaphor `TIME IS THE MOTION OF OBJECTS` allows for expressions like "the end of term is approaching," while the `LIFE IS A JOURNEY` metaphor structures life events in terms of a purposeful path (Evans & Green, 2006, pp. 167, 300).

The concrete foundation for these metaphoric mappings is often provided by image schemas. These are abstract conceptual structures that derive directly from embodied experience, such as the `CONTAINER` schema (arising from experiences of being in a room or holding an object) or the `FORCE` schema (arising from experiences of physical compulsion and resistance) (Evans & Green, 2006, p. 190). These elemental schemas are mapped onto abstract domains, allowing us to conceptualize being "in trouble" or an argument "lacking a solid foundation." This grounding of abstract ideas in embodied experience is what makes metaphor not merely an explanatory device, but a powerful persuasive tool capable of activating an audience's most fundamental cognitive biases.

2.4.3 Exploiting Cognitive Biases through Metaphorical Framing

The persuasive efficacy of metaphorical framing in propaganda and risk communication derives from its capacity to activate and exploit the audience's cognitive shortcuts and biases. A carefully selected metaphor functions as a key element of "choice architecture," operating as a "nudge" that alters people's behavior in predictable ways without forbidding any options (Thaler & Sunstein, 2008, p. 5). By framing a complex issue in familiar, concrete, or emotionally charged terms, communicators can leverage innate mental processes to achieve specific persuasive goals.

Metaphorical frames interact with a range of specific cognitive biases to shape judgment and decision-making:

- **Availability Heuristic:** Metaphors make certain concepts more salient, memorable, and cognitively accessible. By framing a complex geopolitical situation as a "war on terror," communicators make the associated threat easier to recall and imagine. This heightened cognitive availability amplifies the perceived risk and can increase public support for aggressive policies, a dynamic consistent with the availability heuristic, which states that people assess risks based on how easily examples come to mind (Thaler & Sunstein, 2008, p. 25).
- **Loss Aversion:** Metaphorical frames can be constructed to emphasize potential losses over equivalent gains. Research demonstrates that the psychological pain of losing something is approximately twice as powerful as the pleasure of gaining the same thing ("Ethical Influence," n.d.). Consequently, a metaphor that frames a policy as necessary to prevent the "decay" or "collapse" of society leverages loss aversion to drive public compliance (Thaler & Sunstein, 2008). This framing transforms the status quo into a valued asset on the verge of being lost, making preventative policy action seem not like a choice for a potential future gain, but as a necessary defense against an imminent, tangible loss.
- **Confirmation Bias and Motivated Reasoning:** Audiences are predisposed to accept arguments and frames that align with their existing beliefs and partisan identities (Tabor & Lodge, 2006, as cited in "Framing Deception," n.d.). A metaphor that frames political opponents as "enemies" will be readily accepted by a partisan audience already primed to view them with suspicion. The metaphor does not need to be logically sound; it only needs to be cognitively consistent with the audience's motivated reasoning, thereby reinforcing in-group solidarity and out-group hostility.
- **Emotional Contagion:** Metaphors are potent vehicles for emotion, capable of packaging complex sentiments into simple, embodied concepts that bypass rational analysis. Frames designed to trigger strong emotional responses, such as fear, anger, or disgust, are central to modern influence operations ("Cognitive Security," n.d.). By overriding rational analysis, these emotionally resonant metaphors are more likely to drive sharing behavior across social networks. This process transforms a communicative act into a vector for emotional contagion, amplifying outrage and distorting public perception of social conflicts ("Cognitive Security," n.d.).

These cognitive mechanisms do not operate in isolation but are applied strategically in specific communication contexts to shape public opinion and behavior.

2.4.4 Applications in Strategic Communication

The theoretical intersection of metaphorical framing and cognitive bias is most clearly observed in its strategic deployment across military, political, and public health communications. In these domains, carefully selected metaphors are used to simplify complex realities, mobilize public support, and legitimize specific policy responses.

The `WAR` metaphor is a primary tool for framing national security and political challenges. The "war on terror," for instance, simplifies intricate geopolitical issues into a binary struggle between

good and evil. This frame has profound consequences: it legitimizes aggressive military interventions, justifies the potential erosion of civil liberties in the name of security, and mobilizes public support by appealing directly to fear ("Framing Deception," n.d.). The metaphor constrains the range of acceptable policy options, privileging confrontation over diplomacy and preemptive action over patient negotiation.

In partisan political discourse, `DISEASE` and `POLLUTION` metaphors are frequently employed to demonize opponents and their ideas. Terms like "political cancer" or "toxic ideas" are not neutral descriptors; they are frames designed to trigger feelings of disgust and threat. This framing promotes "outrage amplification," a process that transforms policy disagreements into existential conflicts by leveraging the rapid spread of negative emotion ("Cognitive Security," n.d.). Such metaphors justify extreme measures to "cleanse" the body politic, thereby dehumanizing opponents and polarizing the electorate.

The critical role of metaphorical framing is also evident in public health risk communication, where the chosen frame directly shapes public perception and behavior. A pandemic, for example, can be framed in competing ways with distinct policy implications.

- **Frame 1: `PANDEMIC AS WAR`**. Framing a public health crisis as a war, using language like "battling the virus" and celebrating "frontline heroes," creates a sense of urgency and national unity. This frame encourages collective sacrifice and can be used to justify restrictive public health measures, such as lockdowns and mandates, as necessary tactics in a fight for national survival.
- **Frame 2: `PANDEMIC AS A JOURNEY`**. Alternatively, framing the crisis as a journey, with phrases like "a long road ahead" or "navigating the crisis together," shifts the emphasis from confrontational victory to endurance and adaptation. This frame, derived from the `LIFE IS A JOURNEY` conceptual metaphor (Evans & Green, 2006, p. 300), may foster greater public resilience for a protracted crisis and support for adaptive, long-term strategies over aggressive, short-term interventions.

The choice between these frames is not merely stylistic. It is a strategic decision that directly influences public understanding of the risk and shapes popular support for vastly different government responses. These applications demonstrate that whether in the context of national security, political contests, or public health, the strategic selection of a metaphorical frame is a decisive act of communication that pre-structures public perception and policy debate, a finding which will be synthesized in the concluding analysis.

2.4.5 Conclusion: The Invisible Architecture of Influence

Metaphorical framing is a pervasive and powerful element of modern propaganda and risk communication, operating as a primary tool for constructing post-truth narratives. It functions not as a decorative feature of language but as a fundamental cognitive mechanism for structuring abstract concepts and exploiting deep-seated human biases. By mapping complex and often threatening situations onto simple, embodied source domains like war, disease, or a journey,

communicators can invisibly guide public perception, emotional response, and ultimately, policy acceptance. A critical awareness of this invisible architecture of influence is therefore not merely an academic exercise but a fundamental requirement for cognitive self-defense in an increasingly complex information environment and for upholding democratic accountability.

2.5 Theoretical Integration: Synthesizing Conceptual Metaphor Theory and Structured Analytic Techniques

2.5.1 Introduction: A Framework for Mitigating Cognitive Bias

To enhance the rigor of risk intelligence analysis, it is strategically important to integrate established theoretical frameworks that illuminate the cognitive underpinnings of analytical judgment. This section advances the argument that Conceptual Metaphor Theory (CMT) provides a powerful diagnostic tool for identifying the deep, metaphor-based cognitive frames that give rise to analytical bias. Once identified, these frames can be systematically challenged and mitigated using a suite of Structured Analytic Techniques (SATs). This integrated approach moves beyond mere bias awareness, offering a procedural method for deconstructing the cognitive mechanisms that produce biased assessments. In essence, CMT provides the diagnostic lens to understand *why* an assessment is vulnerable to bias, while SATs offer the procedural toolkit for *how* to dismantle it. This synthesis of a diagnostic cognitive theory with procedural analytic techniques yields a formidable defense against the persistent challenge of cognitive bias. This section will demonstrate how CMT synergizes with three key SATs—Key Assumptions Check, Analysis of Competing Hypotheses, and Analysis by Contrasting Narratives—to create a more cognitively-informed analytic methodology.

2.5.2 Conceptual Metaphor Theory as a Diagnostic Lens for Analysis

An analyst's worldview and fundamental understanding of abstract concepts are built upon a foundation of cognitive frameworks that often operate below the level of conscious awareness. These unexamined frameworks can invisibly shape the collection, interpretation, and assessment of intelligence, making it imperative to understand their origins and structure. Conceptual Metaphor Theory (CMT) offers a powerful lens for this purpose, revealing the systematic and often hidden ways in which we reason about the world.

The core tenet of CMT is that human thought is fundamentally metaphorical; we comprehend abstract concepts (the *target domain*) by mapping them onto more concrete, embodied experiences (the *source domain*), a process reflected ubiquitously in language (Evans & Green,

2006). This cognitive process is not merely a feature of poetic language but a fundamental characteristic of everyday thought. For example:

- The abstract concept of **QUANTITY** is understood through the concrete experience of **VERTICAL ELEVATION**. We say someone received a "*high mark*" on a test, mapping the concrete, physical dimension of height onto the abstract domain of academic achievement (Evans & Green, 2006, p. 295).
- The abstract concept of **TIME** is understood through the concrete experience of **MOTION**. An expression like "*The end of term is approaching*" frames a temporal event as an object moving through space, structuring our understanding of the abstract passage of time in terms of a physical journey (Evans & Green, 2006, p. 167).

By exposing these foundational mappings, CMT provides a diagnostic tool for uncovering the cognitive shortcuts (heuristics) and biases that affect analysis. The common heuristic that "expensive = good," as observed in the jewelry store example where sales increased only after the price was doubled, can be traced to an underlying conceptual metaphor such as **`VALUE IS PRICE`** (Cialdini). This metaphor provides a simple, but often flawed, rule for assessing quality. Similarly, influence operations are designed to exploit such cognitive structures. The tactic of "outrage amplification" works by crafting messages that trigger strong emotional responses, leveraging metaphors of threat and danger to activate fear and anger, which in turn override rational analysis (Defendi.md).

For the intelligence analyst, the primary utility of CMT is its ability to make these implicit, foundational metaphors explicit. By systematically examining the language used in an assessment, an analyst can identify the underlying source domains structuring their thought. This act of surfacing the metaphorical frames reveals the cognitive terrain on which biases operate, providing the necessary precursor to applying structured techniques designed to challenge and mitigate them.

2.5.3 Integration with Key Assumptions Check

The Key Assumptions Check is a foundational Structured Analytic Technique designed to enhance analytical rigor by forcing analysts to surface and challenge the foundational premises upon which their assessments are built. Its effectiveness, however, is significantly magnified when combined with CMT, as this pairing allows for a deeper examination of the cognitive framing that shapes those assumptions in the first place.

Many of an analyst's most critical and unexamined assumptions are not articulated as explicit propositions but are embedded within the conceptual metaphors that frame the analysis. For instance, an assessment of an international negotiation may be implicitly structured by the conceptual metaphor **`ARGUMENT IS WAR`** (see Lakoff & Johnson, 1980). CMT allows the analyst to make this frame explicit, thereby revealing a cluster of underlying assumptions that might otherwise remain hidden:

- The situation is zero-sum.

- There are only winners and losers.
- Aggressive tactics are required to "win" ground.
- The opposing side is an "adversary" to be "defeated."

By surfacing this metaphorical frame, the analyst can challenge these assumptions directly. Is this negotiation truly a WAR, or could it be more productively framed as a **JOURNEY** (implying a collaborative path toward a common destination) or the **CONSTRUCTION OF A BUILDING**? Framing the negotiation as the CONSTRUCTION OF A BUILDING implies a cooperative effort to create a durable, interlocking agreement, prompting the analyst to ask different questions: "What is the foundation of our common interests?" "Are we using the right materials (proposals) to build this structure?" The concept of compound metaphors, such as **THEORIES ARE BUILDINGS**, which relies on a foundation of evidence and logical structure, demonstrates how alternative frames can generate entirely different sets of assumptions and analytical pathways (Evans & Green, 2006, p. 306). Integrating CMT thus transforms the Key Assumptions Check from a simple checklist into a profound cognitive critique, enabling the analyst to detect biases rooted in the very structure of their thought and preparing them to consider alternative hypotheses.

2.5.4 Integration with Analysis of Competing Hypotheses (ACH)

The Analysis of Competing Hypotheses (ACH) is a cornerstone SAT valued for its systematic approach to combating confirmation bias. By forcing analysts to evaluate evidence against a range of plausible hypotheses, ACH prevents a premature convergence on the most intuitive or familiar explanation. The power of ACH is significantly strengthened by Conceptual Metaphor Theory, which provides a creative and cognitively grounded method for generating a truly diverse set of initial hypotheses.

The hypothesis-generation phase of ACH is arguably its most critical, yet it often relies on unstructured brainstorming. CMT supercharges this phase by enabling a more deliberate approach. By first identifying the dominant conceptual metaphor framing the primary hypothesis, an analyst can systematically generate alternatives by consciously "switching the metaphor."

- **Primary Hypothesis Frame:** An adversary's actions might be analyzed through the metaphor **A NATION IS A PERSON**. This frame encourages hypotheses centered on rational intent, consistent personality, and predictable, human-like motivations.
- **Alternative Hypothesis Frames:** By switching the metaphor, an analyst can generate fundamentally different hypotheses:
    - **A NATION IS A COMPLEX ECOSYSTEM**: This frame generates hypotheses focused on feedback loops, emergent behaviors, and unintended consequences. It prompts practical intelligence questions such as: "What are the potential second-order effects of sanctions that could disrupt the system?" or "Which internal political factions are in a symbiotic or parasitic relationship?"

    - **A NATION IS A MACHINE**: This frame generates hypotheses centered on rigid, predictable, but potentially brittle bureaucratic processes, standard operating procedures, and systemic vulnerabilities.

This method of metaphorical reframing directly counters the cognitive biases of confirmation bias and motivated reasoning, wherein analysts tend to seek out and favor information that supports their preexisting beliefs (Tabor & Lodge, 2006). Instead of testing minor variations of a single core idea, the analyst is compelled to generate and evaluate hypotheses that are structurally distinct at a deep conceptual level. Once these metaphorically-distinct hypotheses are generated, they can be more fully developed into contrasting narratives to be rigorously compared against the available evidence.

2.5.5 Integration with Analysis by Contrasting Narratives

In the field of intelligence, facts rarely speak for themselves; they are almost always embedded within persuasive narratives constructed by various actors to advance their goals. The Analysis by Contrasting Narratives technique is a powerful SAT that enables analysts to deconstruct these stories, identify their underlying assumptions, and assess their validity and persuasive power. Conceptual Metaphor Theory is an ideal tool for this task, as it moves beyond the surface claims of a narrative to reveal its *deep cognitive structure*.

By identifying the core metaphors a narrative employs, an analyst can understand *how* it is designed to influence an audience and exploit cognitive biases. This synthesis allows for a more sophisticated comparison of competing accounts of an event.

- **Narrative 1: The Predator Frame.** One actor might frame a situation by leveraging a **DANGER IS A PREDATOR** metaphor. This narrative would be populated with language of threats "lurking," "stalking," or "pouncing," designed to trigger primal fear and justify pre-emptive action. This framing exploits the human tendency to react emotionally and decisively to imminent threats, often bypassing rational deliberation (Defendi.md).
- **Narrative 2: The Justice Frame.** A competing actor, when criticized, might employ "Whataboutism" to deflect blame. This narrative tactic reframes the issue by invoking a **JUSTICE IS BALANCING SCALES** metaphor, implying that a rival's wrongdoing mitigates or excuses one's own (Chow & Levin, 2024). This deflects accountability by shifting the focus of judgment rather than addressing the substance of the original criticism.
- **Narrative 3: The Gift Exchange Frame.** Another narrative might be structured using a "rejection-then-retreat" strategy, in which an extreme initial proposal is followed by a more moderate one. This narrative tactic invokes a **NEGOTIATION IS A GIFT EXCHANGE** metaphor. The initial extreme demand is a non-starter, but the "retreat" to a more moderate proposal is framed as a "gift"—a concession—which leverages the reciprocity principle to pressure the target into offering a reciprocal gift: agreement (Cialdini).

By integrating CMT with narrative analysis, the analyst moves beyond simply comparing facts to comparing the underlying cognitive mechanisms of persuasion. This approach exposes how different narratives are engineered to exploit powerful biases like loss aversion, social proof, and reciprocity. It equips the analyst to not only identify which narrative is better supported by evidence but also to understand which is more likely to be psychologically compelling, regardless of its factual accuracy.

2.5.6 Conclusion: Toward a Cognitively-Informed Analytic Methodology

The integration of Conceptual Metaphor Theory with Structured Analytic Techniques provides a robust, multi-layered defense against cognitive bias in intelligence analysis. The synthesis moves tradecraft beyond simple checklists and awareness training into a more sophisticated, cognitively-informed discipline. CMT provides the diagnostic power to illuminate the deep conceptual structures that frame an analyst's thinking and produce bias—the "why." SATs, when informed by this diagnostic insight, provide the procedural rigor to systematically challenge, reframe, and mitigate those biases—the "how." By wedding a powerful cognitive theory with proven analytic procedures, this integrated methodology elevates the practice of intelligence analysis, enabling practitioners to more effectively navigate the complexities of both the world they seek to understand and the minds with which they understand it.

Chapter 3 Methodology for Research & Design

3.1 Research Paradigm

3.1.1 Introduction to the Integrated Paradigm

To adequately analyze the complexities of persuasion and meaning-making in modern discourse, this study adopts a constructivist-interpretivist paradigm. The strategic importance of this choice lies in the understanding that influence is not a static property of a message but a dynamic process of meaning construction that occurs within a specific cognitive and social context. Consequently, a multi-layered approach is required to deconstruct how influential messages are designed, disseminated, and interpreted. This paradigm therefore integrates a constructivist-interpretivist philosophical foundation with two synergistic methodologies: qualitative content analysis and applied systems modeling. The foundation of this paradigm rests on a specific understanding of the intricate relationship between language, cognition, and the construction of social reality.

3.1.2 The Constructivist-Interpretivist Foundation

This study is grounded in a constructivist-interpretivist philosophical stance, which assumes that language does not merely describe an objective reality but is the primary tool through which individuals construct and interpret their social world. A core tenet of cognitive linguistics, central to this paradigm, is that language serves as a "window" into cognitive function, reflecting underlying "patterns of thought" and providing "insights into the nature, structure and organisation of thoughts and ideas" (Evans & Green, 2006). Language, from this perspective, is not a simple code for pre-packaged information.

Instead, meaning construction is understood as a "dynamic process whereby linguistic units serve as prompts for an array of conceptual operations" and the recruitment of background knowledge (Evans & Green, 2006). This process is inherently interpretive and context-dependent, aligning with the research goal of understanding how the same message can be used to construct different—and sometimes conflicting—meanings for different audiences. This philosophical grounding necessitates the use of analytical methods capable of deconstructing these complex meaning-making processes, leading directly to the application of qualitative content analysis.

3.1.3 Methodological Integration: Qualitative Content Analysis

Qualitative content analysis serves as the primary tool for deconstructing influential discourse, moving beyond surface-level readings to identify the specific linguistic frames, rhetorical devices, and psychological triggers embedded within communications. This methodology allows for a systematic examination of the constituent mechanisms of influence.

Linguistic Framing and Conceptual Metaphors

The analysis will identify how abstract concepts are structured and understood through conceptual metaphors, which map knowledge from concrete, embodied experiences onto abstract domains. For example, language reveals the conceptualization of abstract domains like TIME in terms of physical MOTION or an ARGUMENT in terms of a physical JOURNEY (Evans & Green, 2006). The study will also examine the use of Idealized Cognitive Models (ICMs) and semantic frames, which are the cognitive structures that organize our encyclopedic knowledge and guide the interpretation of linguistic prompts (Evans & Green, 2006).

Rhetorical Devices and Logical Fallacies

Political actors frequently "frame deception" by employing logical fallacies that appear convincing by exploiting the cognitive biases of an audience (Framing Deception, n.d.). The analysis will identify and categorize these tactics. Specific fallacies to be examined include *Whataboutism*, a form of the *tu quoque* fallacy used to deflect criticism by pointing to the wrongdoings of an opponent, and *Slippery Slope* arguments, which are often used in debates about civil liberties to warn of a dire chain of events that will follow a particular action (Chow & Levin, 2024; Framing Deception, n.d.).

Psychological Principles of Influence

The analysis will also identify the use of established compliance principles, often employed by "influence professionals" to gain assent (Cialdini, n.d.). These principles function as psychological heuristics that can trigger automatic, unthinking compliance. Key principles to be identified include:

- **Reciprocity:** This principle is based on the powerful social norm that creates a sense of obligation to give back after receiving a gift or favor, even an unwanted one (Cialdini, n.d.).
- **Commitment and Consistency:** Once an individual makes a decision or takes a stand, they feel personal and interpersonal pressure to behave consistently with that commitment. This is often leveraged through techniques like the "foot-in-the-door" approach, where a small initial commitment paves the way for a larger one (Cialdini, n.d.).
- **Scarcity:** Items and opportunities become more desirable as they become less available. This principle leverages our fear of loss and is often used to create a sense of urgency (Cialdini, n.d.).

- **Authority:** People have a deep-seated tendency to obey figures who are perceived as credible experts or who hold positions of power. This defers decision-making to those seen as being in a better position to know (Cialdini, n.d.; Ethical Influence, n.d.).
- **Social Proof:** In situations of uncertainty, individuals often determine the correct course of action by observing what others are doing. This heuristic relies on the assumption that if many people are doing something, it must be right (Cialdini, n.d.).

Identifying these individual linguistic, rhetorical, and psychological components is the essential first step. The next is to model how they interact dynamically within a larger cognitive system to produce persuasive effects.

3.1.4 The Systems Modeling Framework

An applied systems modeling approach is necessary because influence tactics are not isolated events but are interacting components within a complex, dynamic system. This system is designed to leverage the inherent architecture of human cognition to produce predictable outcomes. A systems framework allows for an analysis of the interactive and emergent effects of these tactics, moving beyond a simple inventory of their parts.

Exploitation of Cognitive Architecture

The system of influence directly exploits inherent features and vulnerabilities within human cognition. The most significant of these are cognitive biases, which are systematic patterns of deviation from norm or rationality in judgment. The analysis will model how specific tactics trigger these biases:

- **Loss Aversion:** This bias is the cognitive engine that powers the **Scarcity** principle of influence. An influence agent frames a "limited-time offer" not as a potential gain but as an impending loss, activating the potent psychological pain that Kahneman identified, which is "twice as powerful" as the pleasure of gaining the equivalent item (Kahneman, as cited in Ethical Influence, n.d.).
- **Status Quo Bias:** This is the powerful and often mindless tendency to stick with the current state of affairs or a pre-selected "default" option, which is why the design of defaults is a potent tool in choice architecture (Thaler & Sunstein, 2008).
- **Availability Heuristic:** Individuals tend to assess the likelihood and risk of an event based on how easily examples come to mind. Vivid, recent, or emotionally charged examples can therefore distort risk perception and decision-making (Thaler & Sunstein, 2008).
- **Confirmation Bias:** This tendency explains why fallacies like *Whataboutism* are so effective in partisan contexts. The fallacy offers a cognitively easy path for partisans to reject criticism of their side by focusing on information that confirms their pre-existing negative beliefs about the opposition, a process of motivated reasoning where individuals accept arguments that confirm their "pre-existing beliefs" while counter-arguing discordant information (Tabor & Lodge, 2006, as cited in Framing Deception, n.d.).

Socio-Cognitive Dynamics and Emergent Effects

The systems model also evaluates how these individual cognitive vulnerabilities coalesce into large-scale social phenomena. "Social influences," or nudges, shape group behavior through the dissemination of information about what others are doing and through peer pressure (Thaler & Sunstein, 2008). These natural social dynamics can be deliberately weaponized. A key example is the process of systematic "outrage amplification," where operators leverage emotional contagion by designing content to trigger anger and fear—emotions known to spread more rapidly through social networks than positive ones. This transforms "minor disagreements into major social conflicts," distorting public perception and polarizing discourse (Cognitive Security, n.d.).

Conceptual Integration as a Micro-Model of Meaning Construction

At the micro-level of individual cognition, Conceptual Blending Theory provides a powerful model for how new, emergent meaning is constructed during discourse (Fauconnier & Turner, as cited in Evans & Green, 2006). This theory posits that meaning is not simply additive. Instead, it involves the dynamic integration of multiple "input spaces"—such as a linguistic frame, a personal memory, a cultural model, or an emotional state—into a novel "blended space." This blended space has an emergent structure and logic not present in any of the inputs alone (Evans & Green, 2006). This theory provides a formal micro-model for how a rhetorical statement, such as a *Slippery Slope* argument (Input Space 1), can combine with a listener's pre-existing anxiety about government overreach (Input Space 2: a culturally-ingrained ICM) to create a uniquely persuasive, and often fallacious, new understanding in the blended space—one where a minor policy change is perceived as an inevitable path to tyranny.

In summary, the proposed constructivist-interpretivist paradigm provides a robust and comprehensive framework for investigating the mechanisms of influence. By fusing detailed qualitative analysis of persuasive tactics with a systems-level model that explains how these tactics operate in concert, exploiting the architecture of human cognition to produce emergent social effects, this approach is uniquely equipped to deconstruct the complex and dynamic nature of persuasion in contemporary discourse.

3.2 Data Sources

The foundation of this study relies on a constructivist-interpretivist approach that integrates qualitative content analysis (QCA) with applied systems modeling (ASM), necessitating a diverse corpus of discourse samples and specialized datasets for both analytical rigor and contextual validation.[1] This dual methodological requirement mandates a data architecture that supports the subjective interpretation of meaning construction alongside the objective parameterization of dynamic feedback systems. The methodology relies upon three primary

categories of data sources, detailed below, chosen specifically to enable methodological triangulation and maximize both contextual validity and empirical rigor.[10]

3.2.1 Category I: Open-Source Discourse Samples

The first category of data provides the essential raw material for the constructivist-interpretivist component of the study. This corpus of open-source textual data is analyzed through QCA to map the domain of discourse, identify key variables, and deduce the core mental models and causal relationships held by stakeholders.[2]

This category encompasses various forms of published and public communication, beginning with formal policy papers, state narratives, and NGO reports. These documents constitute the established operational environment of the system being studied, serving as critical resources for identifying established policy variables, rhetorical framing strategies, and formal causal theories underpinning current institutional responses. Analysis of this material is necessary to define the *official* system boundaries for the subsequent applied systems model.[2]

In contrast, social media discourse samples are incorporated to introduce diverse, contemporary, and often grassroots-level perspectives. This inclusion is crucial for ensuring the research captures the **relativism** inherent in the constructivist ontology, where universal truth is considered unattainable and local meanings are prioritized.[3] Qualitative content analysis, whether thematic or inductive, is an established methodology for deriving substantive insights from platforms such as Twitter and Facebook.[11] These samples provide the contextual material necessary for identifying latent themes, coding patterns, and constructing a codebook for QCA, allowing the research to move beyond surface-level facts to interpret the processes of meaning construction.[11]

The outputs of this QCA phase are critically important for the subsequent Applied Systems Modeling. This data category is primarily responsible for identifying the **perceptual variables** and **feedback loops** that shape policy outcomes, moving the analysis into the realm of quantitative simulation. The key themes and perceived causal links derived from the QCA are translated directly into the qualitative stage of the systems modeling process, serving specifically to draft the initial Causal Loop Diagrams (CLDs) and define the model’s stocks and flows.[12] The constructivist paradigm centers on subjective reality, yet ASM requires quantifiable parameters.[3] The methodological bridge lies in treating specific thematic frequencies identified through QCA—for instance, the prevalence of terms like "distrust," "external threat," or "policy failure" within sampled narratives—as **proxies for collective perception**. These frequencies can then be quantified, transforming subjective perception into measurable non-linear input functions or driving variables within the ASM. This procedure justifies the modeling of intangible psychological or political factors, such as systemic trust or narrative strength, as measurable leverage points within the resulting policy simulation.

3.2.2 Category II: Specialized Archival and Structured Data

This category encompasses structured research products and archival datasets derived from major non-governmental organizations (NGOs) and leading policy think tanks, ensuring the core quantitative parameters of the systems model are grounded in vetted, high-quality, and objective analysis.

Specifically, research archives from institutions such as the RAND Corporation and the U.S. Institute of Peace (USIP) are selected. These organizations maintain high standards for methodological rigor, quality, and objectivity, specifically focusing on producing evidence-based decisionmaking tools (RAND Corporation, 2022 [4]). Accessing their archived studies and structured datasets provides validated historical policy parameters that have already undergone expert scrutiny. The utility of this data for rigor lies in its methodological robustness, as these analyses are often designed to account for potential confounding variables, state-specific differences, and national trends when evaluating policy effects.[13]

This data category acts as the **reliability standard** for model parameterization and historical context. For the QCA, it provides high-rigor policy context, enabling the researcher to compare the formal narratives identified in Category I (discourse) against historically verified outcomes and structured analytical conclusions derived by policy experts. For the Applied Systems Modeling component, these specialized archival datasets provide the necessary quantitative, structured input for calibrating variables within the simulation model.[14] This includes establishing baseline conditions, setting historical validation targets, and defining plausible ranges for exogenous policy shocks in the model architecture.

A crucial function of this category is to establish a 'ground truth' policy baseline. The primary challenge in modeling complex policy systems is distinguishing between true, objective outcomes and merely perceived outcomes derived from discourse analysis (Category I). The methodological standards employed by these organizations, such as RAND's emphasis on accountability for national trends and state-specific differences when analyzing policy outcomes [13], ensure that the data leveraged adheres to stringent rigor criteria.[5] By using this structured data [14], a reliable, validated historical baseline is established. The model's simulated historical runs can then be compared against this baseline, mitigating the risk of constructing a system based solely on internal theoretical coherence without robust external empirical validation. This integration directly enhances the defensibility of the model's parameter choices, addressing a common vulnerability in applied systems modeling that relies heavily on qualitative inputs.

3.2.3 Category III: OSINT and Contextual Validation Datasets

The final data category is dedicated to providing real-time, event-based, and geographically referenced data, which is essential for the contextual validation and rigorous testing of the applied systems model's dynamic outputs.

This category begins with Open-Source Intelligence (OSINT) products. OSINT is defined as the extraction of usable intelligence from publicly available and accessible data, including web archives and social networks, offering a pragmatic solution for gathering intelligence relevant to national security and political analysis (Yadav, Kumar, and Singh, 2023 [6]). However, intelligence derived from OSINT is not sufficient on its own and requires corroboration to ensure that the findings are relevant and actionable (Bernard et al., 2018 [7]). This critical need for corroboration necessitates the inclusion of structured event data, specifically from the Armed Conflict Location & Event Data (ACLED) Project.

ACLED operates as an independent, impartial monitor, providing standardized data on violent conflict and protests globally.[15] The structured event data provided by ACLED is essential for contextual validation, particularly in studies focused on instability and policy outcomes (Raleigh, Kishi, and Linke, 2023 [8]). This dataset provides the observable, temporal realization of instability patterns, allowing the researcher to quantitatively test the degree to which the systems model simulations accurately predict or explain historical conflict dynamics.[8]

Furthermore, datasets and technical reports from the United Nations (UN) system are included to benchmark the study's findings against internationally recognized policy indicators (United Nations, Department of Economics and Social Affairs, Population Division and International Organization for Migration, 2019 [9]). The methodological rigor inherent in UN data is notable; for instance, organizations like UN DESA and the International Organization for Migration (IOM) employ inclusive approaches—such as organizing consultations with government representatives and conducting pilot studies—to develop and validate methodologies for tracking complex policy outcomes.[9] This offers a highly credible external framework for validation. Moreover, UN research is often designated as a "global public good" and adheres to principles of open access, facilitating transparent analysis and external verification.[16]

This combined dataset performs the crucial function of closing the validation loop. While the QCA (Category I) informs the *causes* (perception and discourse) and the NGO data (Category II) provides the *parameters* (historical outcomes), the OSINT/ACLED data furnishes the *effect* (observable events). By using ACLED data to test the quantitative output of the systems model (Raleigh, Kishi, and Linke, 2023 [8]), the researcher directly evaluates the model's predictive capability against real-world event frequency. The UN data, having been validated through rigorous international consultation [9], acts as a stable policy benchmark, ensuring that the model's simulated policy interventions lead to outcomes aligned with internationally agreed-upon, validated indicators (United Nations, Department of Economics and Social Affairs, Population Division and International Organization for Migration, 2019 [9]). This comprehensive triangulation among all three data categories provides a maximal degree of empirical and theoretical rigor for the mixed-methods architecture.

3.2.4 Data Integration Framework and Triangulation

The successful integration of these three disparate data categories is the cornerstone of this hybrid methodology. This strategic diversity is necessary to mitigate the limitations inherent in relying solely on either purely interpretive or purely structured data, fulfilling the complex demands of the constructivist-interpretivist systems modeling approach.[1] The integration framework ensures that the interpretive findings drive the model structure, while the objective event data validates the model's performance.

The functional integration framework, detailing the role of each source in supporting the distinct methodological components of the thesis, is summarized below.

Table 3.2.1
Categorization of Data Sources and Their Role in the Mixed-Methods Design

Data Category	**Primary Source Types**	**Role in Qualitative Content Analysis (QCA)**	**Role in Applied Systems Modeling (ASM)**
I. Open-source Discourse Samples	Policy papers, State narratives, Social media, NGO reports	Defining the domain of discourse and subjective realities; identifying key stakeholders, emergent themes, and latent system variables.[11]	Inputting qualitative hypotheses, initial causal relationships (CLDs), and defining the range for perceptual variables.
II. Specialized NGO/Think Tank Archives	RAND/USIP archives, structured policy records, expert consensus reports	Providing rigorous, vetted historical policy context and outcome evaluations for contextualizing the discourse.[4]	Parameterization of model variables, setting baseline conditions, and calibration using historically analyzed, structured data.[14]
III. Contextual Validation Data	OSINT products, ACLED event data,	Corroborating discourse claims	External validation of model outputs

	UN technical reports	and model inputs with observable, verifiable, temporal events.[7]	(e.g., event frequency), statistical calibration of model coefficients, and benchmarking against established policy indicators (Raleigh, Kishi, and Linke, 2023; United Nations, Department of Economics and Social Affairs, Population Division and International Organization for Migration, 2019 [8]).

A core challenge of this research design relates to the philosophical divergence between interpretive and positivist goals. Interpretive analysis, aligning with constructivism, aims only for *coherence* in the findings, not absolute prediction.[17] However, a policy-focused systems model must generate predictions and actionable results.[16] The integration framework is designed to bridge this gap by using Category I data to define *coherence* (what makes contextual sense) and Categories II and III to establish *validity of application* and *empirical correspondence*.[3] By triangulating a coherent narrative derived through QCA with objective parameters from Category II (RAND) and structured event data from Category III (ACLED), the researcher justifies the pragmatic utility of the model outputs for policy recommendation. This sophisticated linking of data types ensures that the research maintains its constructivist integrity—analyzing how reality is perceived and constructed—while simultaneously generating the empirically testable and policy-relevant results required for a rigorous think tank policy paper.

3.3 Analytical Framework

This chapter details the two-part analytical framework designed for this thesis. The framework consists of a linguistic analysis phase, which employs established cognitive linguistic procedures to identify and categorize the conceptual structures within the data corpus, followed by an integration phase. In this second phase, the linguistic findings are systematically mapped onto a novel risk assessment model. This dual approach is designed to create a rigorous,

replicable methodology for connecting observable patterns in public discourse to underlying, often unstated, risks in governance, social cohesion, and stability.

3.3.1 Conceptual Metaphor Identification Procedure (MIPVU)

This study's linguistic analysis is anchored by the Conceptual Metaphor Identification Procedure (MIPVU), a tool selected for its strategic capacity to move analysis beyond the surface meaning of text to uncover the underlying conceptual systems that structure how individuals and groups understand the world and, consequently, how they behave within it. This procedure provides a systematic method for identifying the cognitive architecture that shapes perception and decision-making on critical issues of security and governance.

The Conceptual Metaphor Identification Procedure is a methodology for the systematic identification and analysis of conceptual metaphors within a text corpus. Its theoretical foundations are grounded in a synthesis of core cognitive linguistic principles. The central tenet of Conceptual Metaphor Theory is that much of abstract human thought is structured via metaphor systems, which are not mere literary devices but fundamental cognitive mechanisms defined by mappings between a concrete **source domain** and an abstract **target domain** (Lakoff & Johnson, 1980). This process is made possible by the embodied basis of cognition; recurring structures of understanding rooted in bodily experience, known as image schemas, provide the concrete foundation for these metaphoric mappings, grounding abstract concepts like time or risk in sensory and motor perception. The motivation for these fundamental mappings, or "primary metaphors," often arises from experiential correlation, where two distinct domains are regularly experienced together. Some cognitive semanticists argue that this correlational basis is fundamentally metonymic, suggesting that metaphor itself is frequently motivated by a prior metonymic mapping (Radden, 2003b; Taylor, 2003).

The core procedural steps of the MIPVU, based on these principles, are as follows:

1. **Identify Metaphorical Linguistic Expressions:** The first step involves a close reading of the text corpus to locate specific words and phrases that are used in a non-literal or figurative sense. This requires differentiating between a word's basic, contextual meaning and its use to refer to a concept from a different conceptual domain.
2. **Determine Source and Target Domains:** For each identified metaphorical expression, the analysis proceeds by identifying the concrete source domain from which the linguistic expression is drawn (e.g., physical objects, journeys, warfare, containers) and the abstract target domain that the expression describes (e.g., political processes, social stability, information, time).
3. **Analyze Conceptual Mappings:** This step involves a detailed analysis of the specific entailments and associations that are mapped from the source domain to the target domain. For example, if governance is framed as a journey, the analysis examines mappings such as leaders as guides, policies as paths, and national goals as destinations.

4. **Connect to Underlying Cognitive Models:** Finally, related sets of metaphors are grouped and analyzed to reveal the broader, underlying cognitive models that structure thought about a given topic. These shared cultural understandings, termed "idealised cognitive models" (ICMs) by Lakoff (n.d.), represent the default frameworks through which individuals interpret complex social and political realities.

By systematically applying this procedure, it becomes possible to move from discrete linguistic expressions to a robust map of the conceptual systems at play, providing the foundation for interpreting their significance within a risk context.

3.3.2 The Cognitive Risk Mapping Framework (CRM-F)

To bridge the gap between linguistic analysis and security assessment, this thesis introduces the Cognitive Risk Mapping Framework (CRM-F), a novel construct designed to integrate the linguistic findings derived from the MIPVU into a structured model for identifying and evaluating cognitive-level risks. The framework is designed to translate patterns of metaphorical language into tangible indicators of societal vulnerabilities and resiliencies.

The central premise of the CRM-F is that the prevalence, type, and interaction of specific conceptual metaphors within a discourse corpus can serve as reliable indicators of underlying strengths and weaknesses related to social cohesion, governance, and stability. In this model, language is not merely a reflection of reality but a constitutive element that actively shapes perception and frames potential courses of action, thereby creating or mitigating risk.

To ensure its applicability and relevance, the CRM-F is conceptually aligned with the principles of established international standards. Its approach to translating cognitive patterns into actionable insights enhances the foundational logic of risk management (identify, analyze, evaluate) codified by ISO 31000, while its focus on societal stability is oriented by the core tenets of the Positive Peace Pillars. This alignment allows the novel cognitive indicators generated by the framework to inform and strengthen existing models of risk and peacebuilding.

The key components of the CRM-F are outlined below:

Component	Description	Theoretical Grounding (Source)
Metaphorical Framing Analysis	The systematic evaluation of how dominant conceptual metaphors frame issues, events, and actors, thereby shaping perception and meaning construction.	Conceptual Semantics (Jackendoff, 1983, 1990); Framing (Barsalou, 1992a); Mental Spaces Theory (Fauconnier, 1997).

Cognitive Model Assessment	The identification of shared, competing, or conflicting idealized cognitive models (ICMs) that underpin public discourse on critical topics.	Idealised Cognitive Models (Lakoff, n.d.); Cross-linguistic variation and conceptual systems (Whorf, 1956).
Vulnerability & Resilience Indicators	The analysis of metaphorical language to identify signs of cognitive rigidity (vulnerability) versus cognitive flexibility and adaptability (resilience).	Conceptual Blending Theory (Fauconnier & Turner, 2002); Polysemy as a conceptual phenomenon.

The following section details the specific application of the CRM-F components to designated pillars of peace and governance.

3.3.3 CRM-F Alignment with Risk and Peace Pillars

To operationalize the Cognitive Risk Mapping Framework, its analytical outputs will be systematically mapped against three key pillars derived from the Positive Peace framework: Information Flow, Good Governance, and Resilience. This structured alignment allows for the translation of micro-level linguistic data into macro-level insights that can inform established models of societal risk and stability. Each pillar represents a critical dimension of a functioning society, and the CRM-F provides a method for assessing the cognitive health of that dimension.

3.3.3.1 Pillar 1: Information Flow

The CRM-F will be used to analyze the cognitive dimension of information flow by examining the conceptual metaphors that structure how information is produced, disseminated, and understood. In cognitive semantics, meaning construction is not a simple decoding of words but is guided by discourse context and the vast network of encyclopaedic knowledge that speakers bring to an interaction. Conceptual metaphors function as powerful frames within this process, filtering information by making certain aspects of a topic more salient while obscuring others. The power of these frames lies in their ability to exploit this encyclopaedic knowledge; malign actors succeed not by inventing new realities, but by using metaphors like **CONSPIRACY IS A HIDDEN OBJECT** to activate and restructure pre-existing cultural anxieties, beliefs, and knowledge within an audience.

By analyzing dominant metaphor systems, this framework can identify vulnerabilities in the information ecosystem. For instance, the prevalence of metaphors such as **CONSPIRACY IS A HIDDEN OBJECT** (implying truth must be uncovered from a deceptive surface) or **INFORMATION IS A WEAPON** can be used to detect the narrative signatures of "malign and subversive information efforts" targeting U.S. audiences (RAND, 2021). These frames

predispose audiences to distrust official sources and view public discourse as a conflict zone, thereby eroding the shared understanding necessary for a healthy society.

3.3.3.2 Pillar 2: Good Governance

The CRM-F provides a methodology for mapping the conceptual metaphors related to governance, political leadership, and civic processes. The analysis of different linguistic framings can reveal the public's underlying cognitive models of authority, trust, and legitimacy. These models shape expectations and evaluations of government performance, directly impacting the stability of the Good Governance pillar.

Applying principles from Cognitive Grammar, the framework can analyze how specific linguistic constructions assign agency or passivity to political actors. In a relational predication, the choice of which participant is profiled as the trajector (TR)—the primary figure of focus—and which is the landmark (LM)—the secondary figure of reference—subtly shapes perceptions of causality and effectiveness. For instance, analyzing news coverage of the Trump-backed peace plan reveals stark differences in agency assignment. Framing Netanyahu as the TR in the clause, *'Netanyahu unveiled the peace plan,'* foregrounds his role as the primary agent. In contrast, a passive construction like, *'The peace plan was unveiled at the White House,'* profiles the plan itself as the TR, backgrounding Netanyahu's agency and presenting the event as a fait accompli. Systematically tracking these profiling choices reveals underlying cognitive models of leadership and accountability.

3.3.3.3 Pillar 3: Resilience

The CRM-F assesses the cognitive resilience of a society by analyzing the diversity and flexibility of its repertoire of conceptual metaphors. A society's ability to adapt to new challenges and navigate complex crises is linked to its capacity for cognitive flexibility—the ability to view a problem from multiple perspectives and generate novel solutions. This capacity is reflected in the linguistic and conceptual resources available within its public discourse.

For example, the existence of multiple, distinct cognitive models for a single abstract concept, such as the ego-based and temporal-sequence models for the concept of TIME, indicates a high capacity for perspectival flexibility. In contrast, the overwhelming dominance of a single, restrictive metaphor system for a critical topic (e.g., framing all economic challenges solely through a WAR metaphor) can be an indicator of cognitive rigidity and societal vulnerability. Furthermore, the theory of conceptual blending posits that novel ideas and creative solutions arise from the integration of elements from disparate mental spaces (Fauconnier & Turner, 2002). An analysis of the discourse for evidence of complex conceptual blends can therefore serve as an indicator of a society's adaptive capacity. This framework thus provides a robust, integrated methodology for linking micro-level linguistic choices—such as specific metaphorical framings and grammatical profiling—to macro-level assessments of societal risk across the critical pillars of information flow, governance, and cognitive resilience.

3.4 Analytical Tools and Models

To effectively analyze and counter modern influence campaigns, a multi-faceted methodological approach is required. The complexity of the contemporary information environment—characterized by sophisticated narratives, rapid dissemination, and culturally-specific targeting—demands more than a single mode of analysis. This section details three complementary analytical tools: qualitative thematic coding to deconstruct narratives, computational mapping to quantify and visualize conceptual patterns, and strategic scenario analysis to test the robustness of policy responses. Together, these tools provide a comprehensive framework for moving from an initial understanding of adversary messaging to the development of resilient, forward-looking counter-strategies.

3.4.1 Thematic Coding for Influence Analysis

Thematic coding is a foundational qualitative research method used to systematically identify, analyze, and report patterns (themes) within textual and multimedia data. Facilitated by software such as NVivo or Atlas.ti, this method holds significant strategic importance for information operations. It allows analysts to deconstruct adversary propaganda by moving beyond surface-level content to uncover the underlying conceptual structures that shape audience perception. This approach is essential for understanding the mechanics of influence, as seen in detailed analyses of Russian "active measures" or ISIS propaganda techniques, where the goal is to alter what an adversary's leaders or population believe and thereby influence their attitudes and actions (Information Operations and Cultural Intelligence, n.d.).

Thematic coding in influence analysis targets a hierarchy of conceptual units identified by cognitive linguistics. At the most granular level, analysts code for **Semantic Frames** to see how individual words activate specific narratives. At a broader level, they identify the **Idealised Cognitive Models (ICMs)** these frames collectively build, revealing the simplified worldview the adversary promotes. Finally, they track **Symbolic Assemblies**—recurring images, slogans, or memes—that serve as the propaganda's connective tissue, linking frames and ICMs into a cohesive and resilient ideological system.

- **Semantic Frames:** Coding identifies how specific words and phrases are used to evoke larger knowledge structures, or "frames" (Vyvyan Evans, 2007). A frame is a conceptual structure that provides a background of knowledge for understanding language. For example, an adversary can frame a military intervention as a *"liberation"* using terms like *'freedom fighters,' 'rescue,'* and *'restoring order.'* Conversely, a counter-narrative could frame the same event as an *"invasion"* using words like *'aggressors,' 'occupation,'* and *'violation of sovereignty.'* Coding for these lexical choices reveals which frame the adversary is attempting to activate in the target audience's mind.
- **Idealised Cognitive Models (ICMs):** This level of coding seeks to identify the simplified, culturally-specific models of reality that an adversary promotes to make their narrative coherent and persuasive. An ICM is a cognitive representation of a concept that structures our knowledge and allows for inference (Vyvyan Evans, 2007, citing Lakoff).

For instance, an influence campaign might consistently promote an ICM of *the ideal citizen* as one who is unconditionally loyal to the state, suspicious of foreign ideas, and willing to sacrifice individual liberty for national security. By identifying the attributes consistently associated with this model, analysts can understand the worldview the adversary is attempting to normalize.

- **Symbolic Assemblies:** This involves coding for the conventional pairings of form and meaning—such as an image, a slogan, or a specific phrase—that are repeatedly used to build a cohesive propaganda system. Language itself is viewed as a system of these "symbolic assemblies" (Vyvyan Evans, 2007). An example would be the consistent use of a specific flag emoji, a historical photograph, or a recurring slogan like *"Restoring Historical Justice"* across thousands of social media posts to create an associative link between a contemporary political goal and a deeply felt cultural or historical identity.

To illustrate, an analyst applying this methodology to "The Conversation Dataset" would code for the consistent framing of Venezuelan leader Nicolás Maduro as a "dictator" who presides over "repression, human rights violations and increasing poverty." This would be contrasted with thematic coding of pro-Kremlin influence in the Sahel, which might frame foreign military presence not as stabilization but as a neo-colonial enterprise, a narrative designed to exploit existing cultural grievances.

This qualitative process of identifying and categorizing core themes provides the foundational understanding necessary for the next step: quantitatively analyzing their prevalence and interconnectedness within the broader information ecosystem.

3.4.2 Frequency and Network Mapping of Metaphorical Patterns

Frequency and network mapping is a computational and quantitative extension of thematic analysis. Its strategic value lies in revealing which conceptual metaphors are most central to an adversary's worldview and how they systematically structure abstract ideas—such as time, social institutions, or conflict—for a target audience. This method moves beyond identifying *what* themes are present to quantifying *how often* they appear and *how they are connected*, exposing the cognitive backbone of a propaganda system.

This analysis is grounded in Conceptual Metaphor Theory, originated by George Lakoff and Mark Johnson (1980). The theory's core premise is that abstract concepts are primarily understood through mappings from more concrete, experiential domains. For example, we conventionally understand an abstract concept like `TIME` in terms of a more concrete one like `MOTION` (e.g., "The end of term is *approaching*") (Vyvyan Evans, 2007, p. 153). Influence campaigns exploit these pre-existing cognitive pathways to make their arguments feel intuitive and natural.

The analytical process involves two primary steps:

1. **Frequency Analysis:** This step involves systematically counting the occurrences of specific metaphorical expressions within a large data corpus. This process quantifies the

prominence of certain conceptual frames and reveals an adversary's preferred ways of structuring reality. For instance, an analysis of state communications could count the frequency of expressions that frame `SOCIAL INSTITUTIONS` as `HIERARCHICAL STRUCTURES` (e.g., describing the nation with terms like "at the highest point," "lower points," "upwards on the vertical axis") to demonstrate an emphasis on top-down authority and control (Vyvyan Evans, 2007, p. 302).

2. **Network Mapping:** This step moves beyond simple counts to visualize the relationships *between* different concepts. It reveals the "related sets of conventional associations or mappings" that link various ideas to create a cohesive ideology (Vyvyan Evans, 2007, p. 182). For example, a network map could show how a central concept like *'National Security'* is consistently linked through metaphorical language to other concepts such as *'A Fortress Under Siege,' 'A Body Fighting Disease,'* and *'A Family Protecting Its Children.'* Visualizing these connections exposes the underlying logic of the propaganda and identifies which concepts serve as central nodes in the adversary's narrative architecture.

By mapping the frequency and structure of these metaphorical patterns, analysts can identify the most critical and resilient components of an adversary's messaging, setting the stage for developing targeted counter-narratives and testing their potential effectiveness in future scenarios.

3.4.3 Scenario Analysis for Policy Response Sensitivity Testing

Scenario analysis is a strategic foresight method, heavily utilized by policy research institutions like the RAND Corporation, designed to move beyond reactive analysis. Its purpose is to proactively test the effectiveness and resilience of friendly policies against a range of plausible future conditions and adversary actions. Rather than attempting to predict a single outcome, this method helps policymakers understand the dynamics of a complex system and identify strategies that are robust across multiple potential futures.

In the context of information warfare and strategic competition, scenario analysis serves several core functions:

- **Exploring Policy Alternatives:** The method is used to rigorously assess "grand strategies and policy alternatives" by modeling how different actors—including allies, neutral parties, and adversaries—might respond to them (RAND Corporation, 2025). For instance, a scenario could explore the likely second- and third-order effects of imposing economic sanctions on an adversary, modeling not only the target state's economic response but also its information response aimed at domestic and international audiences.
- **Simulating Adversary Behavior:** Scenario analysis provides a structured environment to anticipate hostile actions and identify friendly vulnerabilities. In one notable example, RAND researchers conducted an experiment where participants were asked to "role-play bad guys planning a biological attack" to better understand potential pathways and weak

points in national biodefense (RAND Corporation, 2024). A similar approach can be used to simulate an adversary's information attack, with a "red team" tasked with developing a disinformation campaign to disrupt a U.S. alliance or undermine public trust during a crisis.

- **Conducting Sensitivity Testing:** This is the process of altering key variables within a scenario to determine how sensitive a policy's outcome is to changing conditions. Analysts can adjust factors such as an adversary's political will, domestic economic stability, the technological capabilities available, or the success of a specific information campaign to see how these changes impact the overall strategic landscape. This testing helps identify which factors are most critical to a policy's success and which strategies are most adaptable to the uncertainties inherent in challenges like great-power competition or climate-induced conflict (RAND Corporation, 2024).

The ultimate goal of this analytical method is not to predict the future with certainty but to craft policies that are resilient and adaptive. Ultimately, by stress-testing strategies against a variety of challenging scenarios, this method enables policymakers to better anticipate adversary moves, mitigate unintended consequences, and develop more robust and effective responses to complex national security challenges.

3.5 Limitations and Ethical Considerations

Any analysis leveraging computational methods to examine complex social and political phenomena must engage in critical methodological reflexivity. Research into propaganda, influence operations, and geopolitical conflict is not a sterile, mechanical process; it is an interpretive act constrained by available data and shaped by the analyst. To ensure the credibility and integrity of its findings, this thesis must therefore transparently acknowledge its inherent limitations and ethical boundaries. This section outlines the principal constraints related to data access and provenance, the challenges of interpretive subjectivity, and the ethical responsibilities that attend this field of study.

3.5.1 Limitations in Data Access and Provenance

The validity of any data-driven analysis is fundamentally constrained by the nature, scope, and accessibility of its underlying datasets. The IGRIS Risk Intelligence System, which underpins this research, ingests information from a variety of authoritative sources, but the characteristics of this data introduce specific limitations that must be carefully considered. This section critically evaluates these constraints as they apply to the research methodology of this thesis.

- **Reliance on Open-Source Intelligence (OSINT):** The research methodology relies exclusively on publicly accessible datasets. These include RSS feeds from organizations

like the RAND Corporation and ReliefWeb, declassified reports from entities such as AFRICOM, and large-scale media aggregators like the GDELT project. The primary limitation of this OSINT-based approach is that such data primarily captures public discourse, official narratives, and media reporting. This information may not reflect covert actions, classified intelligence, or unmediated ground truth. Consequently, this analysis is a study of the *information environment* surrounding geopolitical events, rather than an analysis of the direct, unmediated events themselves.

- **Data as a Curated Representation:** Each dataset, while authoritative in its domain, represents a curated view of the world shaped by the collecting organization's specific mandate and focus. This inherent framing introduces a layer of pre-analysis before the data is ingested. For example, the ReliefWeb dataset, managed by the UN Office for the Coordination of Humanitarian Affairs (OCHA), frames events through a distinctly humanitarian lens. Crucially, as this dataset is used to train and benchmark the IGRIS event classification model, the system may develop a bias toward interpreting ambiguous events through a humanitarian framework, potentially under-weighting security or governance signals from the same region. Similarly, the AFRICOM data provides a U.S. strategic military perspective. As this dataset provides longitudinal data for stress-testing the system's risk fusion model, the model's validation may be skewed toward security-centric threat perceptions, limiting its applicability in contexts where non-military risks are paramount.
- **Abstraction in Aggregated Datasets:** The use of highly aggregated data sources, particularly the GDELT Global Knowledge Graph, presents a trade-off between scale and specificity. While GDELT enables powerful, large-scale trend analysis invaluable for detecting sentiment shifts, its proprietary collection and processing methods create a layer of abstraction between the raw event and the researcher. This opacity poses a direct challenge to the research methodology, as GDELT data is a primary input for the IGRIS system's Monte Carlo and Bayesian simulations. Any unexamined biases within GDELT's event coding algorithm are therefore inherited and potentially amplified by these probabilistic risk models, making it difficult to fully audit the provenance of the system's scenario generation.

These limitations on what data can be accessed transition logically into the challenges of how that data is interpreted.

3.5.2 The Challenge of Interpretive Subjectivity

Moving from data collection to insight generation is not a purely objective process, especially when the object of analysis is content expressly designed to manipulate human cognition. The analysis of propaganda and influence operations necessarily involves an interpretive leap from observable patterns to inferred intent. This section deconstructs the key areas where researcher subjectivity can influence the findings.

- **Theories of Meaning Construction:** Cognitive linguistics demonstrates that meaning is not a fixed property of words but is actively constructed through cognitive frames, metaphors, and context (Fillmore, 1982; Lakoff & Johnson, 1980). A propaganda

message is effective not because of its literal content, but because of the underlying cognitive model it seeks to activate in a target audience. Analyzing such messages therefore requires the researcher to subjectively interpret the intended framing and its desired cognitive effect, a process that moves beyond simple content analysis into the realm of cognitive modeling.

- **Inferring Intent from Patterns:** The identification of "coordinated inauthentic behavior," a hallmark of modern influence operations, is fundamentally an act of inference. As the source material on cognitive security notes, this process requires the "systematic analysis of communication patterns, content themes, and network structures that collectively suggest organized manipulation efforts." An analyst infers coordinated intent from these patterns. This interpretive burden is heightened by the tactical complexity of modern campaigns. Research shows that 92.5% of documented influence operations employ multi-strategy approaches rather than a single tactic (Norwegian Defense Research Establishment, n.d.). These multi-strategy operations often blend overt propaganda with covert tactics such as sophisticated botnet deployment to manufacture the illusion of grassroots support and algorithmic exploitation to leverage a platform's own recommendation systems as unwitting accomplices in a campaign. This tactical complexity complicates clear attribution and demands a more holistic, and therefore more subjective, interpretation from the analyst.
- **The Analyst's Role and Potential Bias:** In this mode of analysis, the researcher is the primary analytical instrument. This necessitates a rigorous commitment to self-awareness and methodological discipline. As one guide to analysis emphasizes, it is crucial to stay "objective in your analysis, neutral, and not twist any information" (Covert, 2022, p. X). The researcher’s own "preconceived notions" or cognitive biases could inadvertently shape the interpretation of sophisticated influence tactics, such as the manufacturing of artificial social proof or the weaponization of appeals to authority (Cialdini, 2009). A conscious effort is required to recognize and mitigate these potential biases throughout the research process.

The subjective challenges of interpretation give rise to a distinct set of ethical responsibilities in handling such sensitive material.

3.5.3 Ethical Considerations and Content Sensitivity

Research into online manipulation, propaganda, and geopolitical conflict carries a significant ethical weight. The subject matter is not abstract; it involves real-world harm, human suffering, and the subversion of public discourse. This section addresses the duties related to the responsible handling of sensitive content, the risk of amplifying harmful narratives, and the importance of acknowledging researcher positionality.

- **Handling Sensitive Humanitarian and Conflict Data:** The datasets used in this thesis, particularly those from ReliefWeb, UN News, and The New Humanitarian, contain descriptions of profound human suffering. The source feeds detail humanitarian crises in Haiti and Ukraine, mass displacement in the Sahel, and ongoing conflict in the Occupied Palestinian Territory. Analyzing such content requires a rigorous commitment to

dispassionate, respectful, and ethically grounded handling. The goal is to understand the dynamics of the information environment in these contexts, not to sensationalize or instrumentalize the pain of the individuals and communities affected.

- **The Risk of Unintentional Amplification:** A core ethical dilemma in disinformation research is that, in the process of studying and quoting propaganda, a researcher risks inadvertently providing it with a wider audience or lending it a veneer of academic legitimacy. This is particularly salient given the volume and danger of modern propaganda, with one RAND Corporation report noting that "AI has opened a potential propaganda gold mine" (2024). The mitigation strategy employed throughout this thesis is to strictly contextualize any analyzed manipulative content. The focus is placed on exposing the mechanics of the manipulation—the narrative frames, the delivery mechanisms, the intended cognitive effects—rather than merely repeating its message.
- **Researcher Positionality:** Finally, it is an ethical necessity to acknowledge the researcher's own positionality. The analysis of politically and culturally charged information is inevitably shaped by the researcher's background, experiences, and worldview. This does not invalidate the research, but it does require a commitment to transparency and self-reflection. In line with the principles of interpretive neutrality discussed previously, this thesis maintains a conscious and continuous effort to identify and overcome inherent biases to produce the most objective analysis possible.

A transparent acknowledgment of these limitations is not a weakness but a prerequisite for producing robust, credible, and responsible research. The constraints on data access, the inherent subjectivity of interpretation, and the profound ethical responsibilities of working in this domain are integral features of the research landscape. By explicitly addressing these challenges, this thesis aims to contribute findings that are not only analytically sound but also methodologically and ethically defensible.

4.1 Overview of Collected Data

This section provides a comprehensive overview of the research corpus, detailing its composition, parameters, and dominant thematic structures. The analysis deconstructs the collection by source type, temporal scope, and geographic focus, establishing a clear framework for the data under examination. Furthermore, it identifies the primary conceptual clusters that form the intellectual core of the corpus. This foundational summary is crucial for contextualizing the subsequent findings of this report and understanding the analytical lens through which they were derived.

1.0 Corpus Composition and Parameters

1.1 Introduction to Corpus Composition

Understanding the composition of the research corpus is of strategic importance for a robust analysis. By systematically deconstructing the data into its constituent parts, we can appreciate the breadth and depth of the information landscape being investigated. This section details the source typology, the temporal and linguistic scope, and the geographic focus of the collected documents, providing a clear and transparent framework for the analysis that follows. This detailed deconstruction is not merely a cataloging exercise; it reveals the methodological choices that shape the corpus, highlighting its strengths in capturing both foundational theories and their real-world applications.

1.2 Source Typology and Format

The research corpus is characterized by a rich diversity of document types, reflecting a multi-faceted approach to data collection. The sources range from foundational academic works to real-time institutional reporting, providing a layered and comprehensive information base. The primary categories include:

- **Academic and Scholarly Texts:** This category forms a significant part of the corpus, with extensive excerpts from books on cognitive linguistics (Vyvyan), persuasion and influence (Cialdini), and behavioral economics (Thaler & Sunstein). It also includes a detailed study on the use of logical fallacies in political discourse (*Framing Deception*).
- **Professional and Instructional Guides:** The collection contains practical manuals focused on human behavior analysis. These include guides on deception detection (Hartley & Karinch; Covert) and a specialized text on the techniques of mentalism (Corinda).
- **Grey Literature and Institutional Reports:** Reports and press releases from think tanks and non-governmental organizations are a key component. This includes

numerous publications from the RAND Corporation and humanitarian updates from ReliefWeb.
- **Media and News Feeds:** The corpus is updated with current events through datasets from news outlets such as "The Conversation" and "UN News," covering a wide array of global topics.
- **Transcripts:** Verbatim records of spoken content provide direct insight into communication styles. The collection features a lecture transcript on "Behavioral Magnetics" and a detailed interview with Dr. Robert Cialdini on the principles of influence.
- **Raw Data Files:** A file titled "Dataset for Thesis Research" serves as a container for various data streams, primarily from news and media sources.

The documents are present in a variety of digital formats, including PDF excerpts from published books, raw text files from RSS feeds, and structured markdown files containing scholarly analysis.

1.3 Temporal and Linguistic Scope

The temporal range of the documents is extensive, ensuring both historical depth and contemporary relevance. Publication dates span from 1968 (*Thirteen Steps to Mentalism*) to 2025 (evident in numerous news feeds and RAND reports). Foundational academic texts, such as the work on cognitive linguistics, reference research from as early as the late 19th and early 20th centuries, particularly the principles of Gestalt psychology.

The corpus is predominantly in English. However, it is not exclusively monolingual; at least one Spanish-language document from ReliefWeb is present, focusing on disaster preparedness in Latin America.

1.4 Geographic Focus

The geographic scope of the corpus is global, with a notable concentration on specific regions undergoing significant political, social, or humanitarian events. While many documents address universal principles of human behavior, the news and institutional reports provide a distinct geographic footprint. Key areas of focus include:

- **North America:** The corpus contains substantial material on U.S. domestic policy, including healthcare issues like Medicaid and opioid treatment (RAND, 2025), national politics (*Framing Deception*), and pressing social issues such as homelessness in Los Angeles (RAND, 2025).
- **Europe:** There is significant coverage of the conflict in Ukraine, with reports detailing its regional impact on Russia and Poland (UN News, 2025).
- **Middle East & North Africa:** The collection extensively covers ongoing conflicts and political dynamics in Israel, Palestine, and Syria, as well as the humanitarian crisis in the Sahel region (The Conversation, 2025; UN News, 2025).

- **Asia:** Content includes analysis of geopolitical tensions involving China and North Korea (The Conversation, 2025) and reports on humanitarian situations in Myanmar and Afghanistan (UN News, 2025).
- **Latin America & Caribbean:** The corpus features news on political and economic issues in Venezuela and Cuba (The Conversation, 2025) and the severe humanitarian displacement crisis in Haiti (ReliefWeb, 2025).

This wide-ranging data provides the foundation for the corpus's overarching thematic structure, which organizes these diverse sources into coherent conceptual categories.

2.0 Primary Thematic Structure

A thematic analysis was conducted to identify the core conceptual clusters that unify the diverse documents within the corpus. Using a grounded theory approach, recurring keywords, concepts, and semantic domains were inductively coded to reveal four primary, interlinked themes that represent the central pillars of the collected data. These themes serve as the primary lens through which the information landscape can be organized and interpreted, highlighting the key areas of inquiry that the corpus supports. The interplay between these themes underscores the interdisciplinary nature of the research, positioning the corpus as a unique resource for examining the feedback loop between cognitive theory and global events.

2.1 Theme 1: Human Cognition, Behavior, and Decision-Making

A dominant theme within the corpus is the exploration of the internal mechanisms governing human thought and action. This cluster of documents delves into the psychological, cognitive, and economic models that explain why individuals behave and make decisions as they do. Key sub-themes include:

- **Cognitive Frameworks:** The corpus contains a deep analysis of fundamental cognitive structures, including image schemas, mental spaces, and categorization theory, which explain how humans conceptualize the world (Vyvyan, n.d.).
- **Behavioral Economics:** A central topic is the distinction between the idealized, rational "Econ" and the biased, predictable "Human." This sub-theme examines how cognitive biases and mental shortcuts systematically shape economic decision-making (Thaler & Sunstein, n.d.).
- **Social and Emotional Psychology:** The collection explores the powerful role of emotion and past experience in shaping behavior. This includes concepts such as "emotional gravity" and trauma-informed patterns of attraction (Behavioral Magnetics, n.d.), as well as the foundational psychological principles of persuasion and motivation (Cialdini, n.d.).

2.2 Theme 2: Influence, Persuasion, and Deception

Building upon the foundations of human cognition, a second major theme focuses on the application and analysis of influence. The documents in this cluster examine a spectrum of techniques ranging from ethical persuasion to covert manipulation and outright deception. The key concepts are:

- **Ethical Influence:** The corpus details the seven universal principles of ethical persuasion: reciprocity, commitment and consistency, social proof, liking, authority, scarcity, and the concept of unity, which fosters a sense of shared identity (Cialdini, n.d.).
- **Deception and Analysis:** Several professional guides provide frameworks for detecting dishonesty through the analysis of nonverbal cues, body language, and verbal patterns (Hartley & Karinch, n.d.; Covert, n.d.).
- **Strategic and Covert Influence:** This sub-theme addresses the use of influence in high-stakes environments, covering information operations, propaganda, and political rhetoric. It includes specific analysis of logical fallacies such as Whataboutism and False Dilemmas, which are used to deflect criticism and manipulate public perception (RAND Corporation, n.d.; *Framing Deception*, n.d.).
- **Illusory Influence:** The corpus also includes material from the domain of mentalism, which details techniques for creating the illusion of psychic ability through psychological manipulation, misdirection, and tools like the Swami Gimmick (Corinda, 1968).

2.3 Theme 3: Global Affairs and Security

The principles of cognition and influence detailed in the preceding themes find their practical application in the corpus's extensive coverage of global affairs and security, which is primarily supported by real-time data from news feeds and institutional reports. The specific sub-topics include:

- **International Conflict:** There is a significant focus on active war zones, with articles and reports covering the conflicts in Ukraine and Gaza, as well as political instability and violence in Syria and Myanmar.
- **Geopolitical Dynamics:** The data addresses high-level international relations, including interactions between the United States, China, Russia, and North Korea. It also covers political and economic developments in regions such as Latin America.
- **Humanitarian Crises:** The corpus highlights urgent humanitarian situations worldwide, with reports on mass population displacement in Haiti, the crisis in Africa's Sahel region, and the ongoing challenges faced by refugees in various conflict zones.
- **National and Climate Security:** A number of RAND reports focus on security issues, including military personnel readiness and the strategic framing of climate change as a "threat multiplier" that exacerbates existing security vulnerabilities (RAND Corporation, 2024).

2.4 Theme 4: Domestic Policy and Social Issues

Complementing the global perspective, a final thematic cluster concentrates on domestic affairs, with a primary emphasis on policy debates and social issues within the United States.

Supported heavily by reports from the RAND Corporation and articles from "The Conversation," this theme covers a range of critical topics:

- **Healthcare Policy:** The corpus includes numerous reports analyzing aspects of the U.S. healthcare system, such as the impacts of changes to Medicaid and Medicare, policies related to opioid treatment, and the provision of mental health services.
- **Technology and Society:** This sub-theme examines the intersection of technological advancement and societal change, with discussions on the economic potential of Artificial Intelligence, the risks of social media manipulation, and emerging cybersecurity threats.
- **Social Welfare and Education:** The collection addresses key social challenges and policy responses, with articles on homelessness, state-level vaccination policies, and debates over public school curricula.

Together, these four themes demonstrate the multi-thematic and interdisciplinary nature of the research corpus, providing a rich and layered foundation for more granular analysis.

4.2 Dominant Conceptual Metaphors in Risk Discourse

This analysis deconstructs how risk is framed in modern discourse by applying the principles of Conceptual Metaphor Theory (CMT), as outlined by scholars like Lakoff and Johnson (cited in Evans & Green, 2006). This theory posits that humans comprehend abstract concepts by mapping them onto more concrete, embodied experiences, a cognitive process that is fundamental to structuring thought by grounding abstract logic in embodied, sensorimotor experience. For example, the common metaphor ARGUMENT IS WAR leads us to use language like "defending a position," "attacking a weak point," or "winning" an argument (Evans & Green, 2006). Our examination focuses on three prevalent conceptual metaphors—RISK IS A JOURNEY, UNCERTAINTY IS DARKNESS, and INFORMATION IS A WEAPON. We will analyze how these frames are strategically employed by a range of actors, including states, non-governmental organizations (NGOs), media outlets, and adversaries, to shape perception, manage expectations, and ultimately influence behavior in a contested information environment.

4.2.1 The RISK IS A JOURNEY Metaphor

The RISK IS A JOURNEY metaphor is a powerful cognitive frame that maps the abstract, often non-linear process of navigating risk onto the concrete, embodied experience of a physical journey (Evans & Green, 2006). This conceptual mapping structures risk as a linear progression with a starting point (the current state), a path (a strategy or policy), potential obstacles

("stumbling blocks"), and a destination (a desired outcome). This mapping leverages our ingrained neural schemas for spatial navigation, making the abstract problem of risk something we feel we can physically traverse and overcome. The strategic importance of this metaphor lies in its ability to render complex, multifaceted challenges into something that appears more structured, sequential, and manageable. This simplification is cognitively efficient, reducing cognitive load and making the proposed policy feel intuitive and actionable, even if the underlying details are profoundly complex.

State and intergovernmental actors frequently employ this metaphor to frame policy initiatives and manage public perception. For example, a peace plan for Gaza is described as an "effective road-map," immediately framing a complex diplomatic effort as a charted course with clear directions (Dataset for Thesis Research). Similarly, Bhutan's climate policy is presented as a "journey to carbon markets," casting a long-term economic and environmental transition as a purposeful expedition (Dataset for Thesis Research). This framing serves state interests by portraying complex policies as well-defined, goal-oriented processes. It also provides a ready-made narrative for managing setbacks; challenges become predictable "stumbling blocks" on the "long, bumpy road," and moments of indecision are simply a "crossroads" requiring a choice, rather than a fundamental policy failure (Lakoff & Johnson, 1980, as cited in Evans & Green, 2006).

NGOs and media outlets likewise utilize the RISK IS A JOURNEY metaphor to narrate their work and mobilize support. An organization like the U.S. Institute of Peace (USIP) discusses the "path forward" for resolving military coups in the Sahel, framing conflict resolution not as a static state but as a continuous, forward-moving effort (U.S. Institute of Peace, n.d.). Humanitarian organizations on platforms like ReliefWeb describe their projects as improving resilience and promoting "pathways to employment," which helps contextualize their interventions within a longer narrative of recovery and progress (ReliefWeb, n.d.). For these organizations, the journey metaphor is a critical storytelling tool. It allows them to articulate long-term struggles, build constituencies for sustained engagement, and solicit support by portraying a clear, albeit challenging, direction toward a better future.

By framing risk navigation as a journey, communicators across all sectors simplify complexity and foster a sense of shared purpose and direction. This metaphor's persuasive function is to make an abstract goal feel attainable by laying out a conceptual path, thereby encouraging stakeholders to commit to the proposed course of action. In doing so, it acts as a powerful tool of influence, leveraging the principle of commitment and consistency to encourage adherence to a pre-defined path while potentially discouraging the exploration of alternative routes (Cialdini, 2007). While the journey metaphor attempts to chart a clear path, it often contends with the challenge of navigating an unclear and ambiguous environment.

4.2.2 The UNCERTAINTY IS DARKNESS Metaphor

The UNCERTAINTY IS DARKNESS metaphor is grounded in a universal human experience: light enables vision, knowledge, and safety, while darkness obscures perception and conceals danger. This cognitive link is strategically potent because it allows communicators to frame

ambiguity, complexity, and a lack of information not just as a challenge, but as an inherent threat. By casting a situation as murky, foggy, or dark, an actor can generate anxiety and a corresponding desire for clarity. This positions the communicator as a vital source of "light"—the one entity capable of providing the insight and guidance needed to navigate the peril of the unknown.

State and adversary actors adeptly employ this metaphor to justify action and control narratives. States often describe threats that operate in ambiguous, non-traditional domains as existing in "gray zones," a framing that implicitly calls for new methods to "shed light" on these dangers (RAND Corporation, 2017). Adversaries, conversely, seek to create and exploit darkness. Russia's disinformation campaigns, for instance, are designed to generate a "fog of war" in the cognitive space, leading to a "deterioration in their ability to identify fact from fiction" among target populations (InfoLab). This manufactured darkness creates a perceived need for "cognitive security," a term used to justify state-led efforts to illuminate and counter hidden informational threats ("Embodied Risk"; RAND Corporation, 2017).

Media outlets and NGOs also use this metaphor to convey the severity of a crisis and the urgency of their mission. A UN News report, for example, describes Afghanistan as confronting "a perfect storm" of overlapping crises, a metaphor that evokes a chaotic, dark, and disorienting environment where visibility is zero and danger is imminent (UN News, n.d.). This framing is not just descriptive; it is a call to action. It highlights the profound confusion and danger faced by a population and underscores the critical need for intervention. In this context, the reporting organization or responding NGO positions itself as a beacon, providing the clarity and aid necessary to weather the storm.

The persuasive power of the UNCERTAINTY IS DARKNESS metaphor functions by triggering primal, fear-based responses in the amygdala, creating a cognitive vacuum that the communicator then fills, establishing their narrative as the only source of safety and orientation. By framing a situation as dangerously unclear, a communicator can establish their own authority as the provider of essential knowledge, thereby gaining control over the narrative (Cialdini, 2007). When uncertainty is framed as an enveloping darkness, the information required to dispel it is often framed not merely as passive light, but as an active tool for combat.

4.2.3 The INFORMATION IS A WEAPON Metaphor

The INFORMATION IS A WEAPON metaphor arises from the broader ARGUMENT IS WAR conceptual system, in which we understand discourse not as a cooperative search for truth but as a conflict with winners and losers (Evans & Green, 2006). In this frame, language, ideas, and data are construed as tools for attack, defense, and strategic maneuvering. This metaphor has gained strategic significance in contemporary risk discourse, where the global information environment is increasingly viewed as a contested battlefield, and control over narratives is seen as a key component of national power.

Adversary actors, particularly Russia and China, have systematically operationalized this metaphor in their strategic doctrines. Russia's concept of "non-linear" war explicitly includes the

strategy of "weaponizing information" through targeted propaganda and disinformation campaigns designed to sow confusion and erode trust (InfoLab). China employs its "Three Warfares Strategy," a form of cognitive warfare that integrates media warfare (propaganda), legalistic warfare (using international law to claim legitimacy), and psychological warfare to weaken an adversary's resolve (InfoLab). These tactics treat information not as a means of communication but as a projectile in "cognitive warfare," aimed directly at the minds of a target audience.

In response, states like the United States have adopted symmetric, and equally martial, framing. RAND Corporation reports analyze the necessity of "countering disinformation" and "fighting and winning the undeclared cyber war," casting state-led information initiatives as defensive imperatives (RAND Corporation, 2017). The strategic goal is to achieve "cognitive security" by defending against informational attacks on an active "information battlefield." This language frames the state's use of information and influence as a necessary, protective response to hostile actions, legitimizing its own activities within a paradigm of conflict.

The INFORMATION IS A WEAPON metaphor is also prevalent among media and non-state actors. Journalists and activists often frame their work in martial terms, such as using "damning evidence" to mount an attack on corruption or deploying influencers to gain an advantage on the "information battlefield" (Dataset for Thesis Research; RAND Corporation, 2023). While often used to connote a righteous struggle, this framing reinforces the underlying logic of conflict. It positions reporting and advocacy not as a contribution to a shared understanding, but as a volley in an ongoing war for narrative dominance.

By framing information as a weapon, discourse is transformed from a collaborative enterprise into a zero-sum conflict. This conceptualization escalates tensions, justifies aggressive information tactics as legitimate acts of war or self-defense, and works to delegitimize opposing viewpoints by casting them as enemy propaganda. On a cognitive level, this frame promotes cognitive rigidity and in-group/out-group polarization, making collaborative problem-solving nearly impossible as all external data is filtered through a threat-detection lens. The strategic interplay of these three dominant metaphors—journey, darkness, and weapon—demonstrates a comprehensive toolkit for shaping the cognitive landscape of risk.

4.2.4 The Strategic Framing of Risk

The strategic deployment of conceptual metaphors is a central feature of modern risk discourse. The analysis of RISK IS A JOURNEY, UNCERTAINTY IS DARKNESS, and INFORMATION IS A WEAPON reveals how different actors systematically frame complex issues to manage perceptions and guide behavior. The journey metaphor simplifies complexity and builds commitment to a prescribed path. The darkness metaphor heightens anxiety to create a demand for authoritative guidance. The weapon metaphor transforms public discourse into a battlefield, justifying aggressive tactics and delegitimizing dissent. These conceptual frames are not merely descriptive figures of speech; they are powerful, often invisible, tools of influence that structure thought, evoke emotion, and compel action. Recognizing these metaphorical patterns is therefore a critical component of "Metaphorical Inoculation." As with a vaccine, pre-exposure

to these manipulative frames builds cognitive antibodies, allowing individuals to recognize and critically evaluate persuasive framing rather than unconsciously adopting it, thereby fostering cognitive resilience in a contested information environment ("Embodied Risk").

4.3 Manipulative Adaptations of Conceptual Frames by Adversarial Maligned Actors

Introduction: Weaponizing the Mind's Architecture

Human thought is fundamentally metaphorical, a foundational principle established by Lakoff and Johnson (1980) in Conceptual Metaphor Theory. We comprehend abstract concepts, or *target domains*, by mapping them onto more concrete, embodied experiences, known as *source domains*. This cognitive architecture, which allows us to understand an argument in terms of a journey or a theory in terms of a building, is an essential component of human reasoning. This section analyzes how Adversarial Maligned Actors (APMs) exploit this very mechanism as a central technique in cyber-enabled influence operations. The strategic importance of this analysis cannot be overstated; APMs do not merely spread falsehoods, but actively manipulate the conceptual frames through which target populations perceive reality. This represents a core tactic of cognitive warfare, aimed at undermining trust, destabilizing institutions, and ultimately influencing the choices of a target population (du Cluzel, 2020). Understanding the mechanics of this cognitive manipulation is therefore critical to developing effective countermeasures.

4.3.1 The Mechanics of Cognitive Manipulation: From Metaphor to Malign Influence

The strategic objective of manipulating conceptual frames is to bypass an individual's rational, reflective thinking by appealing directly to their faster, more intuitive, and automatic cognitive systems (Thaler & Sunstein, 2008). Rather than engaging in a debate over facts and logic, which can be scrutinized and rejected, APMs seek to alter the underlying cognitive lens through which information is interpreted. This makes their preferred conclusions feel not just plausible, but natural and self-evident.

APMs weaponize conceptual metaphors by deliberately re-mapping an abstract target domain, such as *national security* or *social policy*, onto a new, emotionally charged source domain that serves their strategic objectives. This reframing is not arbitrary; it is carefully designed to activate specific cognitive and emotional responses. As supported by the weak version of the

Sapir-Whorf hypothesis, this linguistic reframing can directly influence non-linguistic thought, reasoning, and problem-solving, making an adversary's preferred course of action seem like the most logical choice. This process succeeds by activating what linguists call encyclopaedic knowledge—the vast, culturally-specific information associated with a word beyond its dictionary definition (Langacker, 1987). For example, calling a married man a 'bachelor' is not a logical contradiction but a potent accusation, tapping into a cultural frame of infidelity and predatory behavior to bypass rational analysis. This process is insidious because it operates below the threshold of conscious awareness, shaping perceptions before a target has even begun to analyze a specific piece of information. A particularly potent application of this technique involves the manipulation of abstract moral frameworks, which provides a clear case study of these mechanics in action.

4.3.2 Case Study: Moral Framing in Nationalist Propaganda

Cognitive linguistic research identifies MORALITY as a common abstract target domain for influence operations, precisely because its abstract nature makes it highly susceptible to metaphorical framing. APMs frequently adapt this domain for nationalist propaganda by mapping MORALITY onto the deeply embodied, physical source domain of **PURITY versus CORRUPTION/CONTAMINATION**. This frame is psychologically potent because it triggers what is known as the "realism heuristic," where audiences react to a conceptual threat with the same cognitive and emotional intensity as a physical one.

By framing an out-group or a political ideology as a contaminant, the propaganda bypasses rational discourse and activates deep-seated, non-rational responses of disgust and avoidance. For example, a malign influence campaign might portray a political or ethnic minority not merely as ideologically different, but as a "sickness," an "impurity," or a "plague" that threatens the "health" and "integrity" of the nation-state. This language transforms policy disagreements into matters of biological survival, framing the out-group as a pathogen that must be cleansed to protect the social body. This cognitive reframing transforms political choices into matters of public hygiene. By doing so, it justifies extreme actions and systematically lowers the moral and cognitive barriers to discrimination and violence. This weaponization of deep-seated conceptual frames is not merely theoretical; it is currently being deployed with significant effect in geopolitical contests, as seen in the Sahel region.

4.3.3 Case Study: Geopolitical Reframing in the Sahel

The Sahel region, following a series of military takeovers in Mali, Burkina Faso, and Niger and their subsequent realignment with Russia, serves as a contemporary theater for cognitive warfare (ISD, 2024). Pro-Kremlin actors have strategically deployed conceptual reframing to erode the influence of Western nations and legitimize Russia's presence. The core of this strategy involves seizing control of the conceptual frame used to interpret foreign engagement. The target domain, *Western Engagement in the Sahel*, was previously understood through the pre-existing source domain of *International Cooperation*. Pro-Kremlin influence operations have aggressively re-mapped this target onto a new source domain, *Imperialism and Colonial*

Exploitation, while simultaneously framing their own involvement through the preferred source domain of *Reliable Partnership*.

This contrast is detailed below:

Conceptual Element	Adversarial Frame (Pro-Kremlin)	Pre-existing Frame
Target Domain	Western Engagement in the Sahel	International Cooperation
Source Domain	Imperialism / Exploitation	Development / Security Assistance
Key Metaphors	*Western actors are neo-colonialists.*	*Western actors are partners.*
Intended Perception	Western presence is illegitimate and harmful.	Western presence is beneficial and supportive.

The strategic implication of this reframing is profound. By activating a frame of colonial exploitation, these operations tap into legitimate historical grievances and contemporary narratives of state neglect. This erodes trust in Western allies, recasting their security and development assistance as a form of continued subjugation. In its place, Russia is presented as a straightforward, stabilizing alternative free from colonial baggage. This case illustrates how adaptive APMs are in tailoring their cognitive manipulations to exploit the specific cultural and historical vulnerabilities of a target population.

4.3.4 Conclusion: The Imperative of Cognitive Defense

The weaponization of conceptual metaphors by Adversarial Maligned Actors represents a significant and evolving threat in the modern information environment. As this analysis has shown, APMs do not just inject disinformation into public discourse; they systematically adapt the cognitive frameworks their targets use to understand the world. The case studies on moral framing in propaganda and geopolitical narratives in the Sahel deconstruct this process in action, exposing a deliberate strategy to shape perception, evoke powerful emotional responses, and influence behavior by exploiting the fundamental architecture of human thought. Effectively mitigating these cyber-enabled influence operations requires more than fact-checking and content moderation. A critical component of a robust defense is the development of the

cultural and cognitive intelligence required to identify, analyze, and preempt these manipulative adaptations of conceptual frames before they become entrenched.

4.4 Case Study Analysis

This analysis serves to empirically test the thesis's central argument: that cyber-enabled influence operations function by systematically hijacking the embodied cognitive frameworks foundational to human reason. To do so, this section applies the principles of Conceptual Metaphor Theory (CMT) as a diagnostic tool to dissect two distinct real-world cases. The selected cases—Russian state-sponsored information operations targeting Ukraine and malign influence campaigns destabilizing Africa's Sahel region—offer valuable points of comparison. They differ significantly in their primary actors, strategic objectives, and the maturity of their respective information environments, yet as this analysis will demonstrate, the underlying cognitive mechanisms of manipulation remain remarkably consistent. The first case study examines Russia's sophisticated, state-driven information war against Ukraine.

4.4.1 Case Study: Russian State-Sponsored Disinformation in Ukraine

Introduction: The Strategic Context of the Russo-Ukrainian Information War

Russian information operations targeting Ukraine are not an ancillary tactic but a core, integrated component of the Kremlin's hybrid warfare strategy. These campaigns are designed with clear strategic objectives: to undermine Ukrainian national unity by exploiting internal divisions, to degrade international political and military support by creating an image of a corrupt and unreliable partner, and to sow general distrust in democratic institutions and the media. The strategic objective is to induce cognitive paralysis and erode political will, thereby weakening Ukraine’s collective resistance to aggression (RAND Corporation, 2024).

Cognitive-Metaphor Diagnostics: Deconstructing Manipulative Frames

Russian disinformation campaigns achieve their strategic goals by exploiting fundamental conceptual metaphors—the largely unconscious, embodied frameworks people use to understand abstract concepts like nationhood and truth (Evans et al., n.d.). This analysis identifies two dominant metaphorical frames weaponized by Russia.

- **Frame 1: NATION AS A DISEASED BODY.** A persistent theme in Russian narratives is the portrayal of the Ukrainian government and society as fundamentally corrupt, illegitimate, and plagued by "Nazism." This line of messaging represents a malicious weaponization of the foundational **SOCIETY IS A BODY** metaphor ("Embodied Risk", n.d.). By framing Ukraine as a living organism suffering from a terminal disease (corruption, fascism), Russian military intervention is implicitly positioned as a form of "treatment" or "cleansing." This framing attempts to legitimize aggression by recasting it

as a necessary, albeit painful, medical procedure to purge a sickness, thereby circumventing rational arguments about sovereignty and international law.

- **Frame 2: TRUTH AS A BATTLEGROUND.** Russia frequently floods the information space with a high volume of contradictory reports, false narratives, and "what-if" scenarios, a tactic often referred to as the "firehose of falsehood." This strategy leverages the deep-seated conceptual metaphor of **ARGUMENT IS WAR** (Evans et al., n.d.). For the audience, the process of discerning fact from fiction is transformed from an act of inquiry into an exhausting and unwinnable conflict. This manufactured chaos exploits the related metaphor of **UNCERTAINTY IS PHYSICAL HEIGHT**, making audiences feel disoriented and "desperate for stable ground" ("Embodied Risk", n.d.). In this state of cognitive paralysis, they become more susceptible to simplistic, authoritative narratives that offer a false sense of security and clarity.

Manipulation Toolkit in Action

These metaphorical frames are not deployed in a vacuum; they are amplified by established principles of psychological influence that target innate cognitive biases.

- **Availability Heuristic:** By relentlessly repeating narratives of Ukrainian corruption, military weakness, or declining international support, Russian propaganda exploits the Availability Heuristic. This cognitive shortcut causes people to assess the likelihood of a risk based on how easily examples come to mind (Thaler & Sunstein, n.d.). The constant exposure makes these manufactured examples feel more prevalent and representative of reality than they are, systematically distorting the audience's perception of risk and their assessment of Ukraine's viability as a state ("Embodied Risk", n.d.).
- **Social Proof:** To create an artificial sense of consensus, Russia employs troll farms and automated "super-connectors" on social media platforms to amplify its narratives. This tactic is designed to trigger the principle of Social Proof, the tendency for individuals to look to the actions of others to determine their own (Cialdini, n.d.). By manufacturing the appearance of widespread support for its positions, Russia makes its narratives seem more credible and widely accepted, encouraging others to conform to a non-existent majority opinion (RAND Corporation, 2020).

Resilience Mechanisms: Ukraine's Cognitive Defense

Faced with this onslaught, Ukraine has developed sophisticated cognitive defense mechanisms that directly counter Russia's manipulative frames. As documented by a RAND Corporation report (2024), these countermeasures are effective because they operate on the same cognitive level as the attacks.

- Ukraine's strategy of rapid, transparent, and often preemptive communication serves as a form of inoculation or "pre-bunking" against anticipated Russian falsehoods. This approach ethically builds a counter-narrative that reinforces a metaphor of **INFORMATION AS A SHARED RESOURCE**. By treating credible information as a

public good to be protected and distributed, the Ukrainian government fosters trust and builds collective cognitive resilience among its population and international partners.

- Simultaneously, Ukraine has invested heavily in reinforcing its national and cultural identity. By consistently highlighting stories of national heroism, cultural heritage, and social cohesion, Ukraine has successfully built and sustained a powerful counter-frame: the **NATION AS A RESILIENT FAMILY**. This metaphor, which emphasizes unity, mutual obligation, and a shared fate, directly contests the Russian framing of a diseased, fractured, and illegitimate state.

Section Conclusion and Transition

In the Ukrainian context, Russian information operations systematically weaponize foundational cognitive metaphors to frame the conflict in their favor, an effort that has been met with a sophisticated and equally cognitive Ukrainian defense. This case illustrates a direct, state-on-state information conflict. The next case study pivots to a more diffuse and complex information environment, exploring how similar cognitive principles are exploited by a mix of actors to foster regional instability in Africa's Sahel.

4.4.2 Case Study: Malign Influence and Destabilization in the Sahel Region

Introduction: A Contested Information Environment

The Sahel region, encompassing countries such as Niger, Mali, and Burkina Faso, is a geopolitical landscape marked by profound political instability, a recurring "pattern of coups," and intense competition among external actors for influence (USIP, 2023). This volatile environment creates a fertile ground for malign influence operations from both state and non-state actors. Unlike the clear state-on-state dynamic in Ukraine, the objective is more diffuse: to erode trust in democratic governance and amplify instability, creating political vacuums exploitable by malign actors (AFRICOM, 2025; USIP, 2023).

Cognitive-Metaphor Diagnostics: Fueling Instability Through Metaphor

In the Sahel, malign actors exploit conceptual metaphors that tap into widespread public frustration with governance and security, thereby legitimizing anti-democratic actions and accelerating political decay.

- **Frame 1: GOVERNANCE AS A FAILED JOURNEY.** Narratives that endlessly highlight government failures, unfulfilled promises, and political gridlock activate motion-based image schemas that frame the nation's progress as a journey (Evans et al., n.d.). Within this frame, the country is portrayed as being on a path that is blocked, hopelessly off-course, or heading toward a dead end. This cognitive framing makes drastic and otherwise illegitimate actions, such as a military coup, seem like a necessary and even logical "change of direction" to escape a failed path and start a new journey.
- **Frame 2: THE STATE AS A COLLAPSING STRUCTURE.** Persistent messaging about systemic corruption, institutional weakness, and the inability to provide basic security

maps onto the conceptual metaphor of **THE STATE IS A BUILDING**. This powerful frame presents democratic institutions not as dynamic processes but as a physical structure that is fragile, unsafe, and on the verge of collapse. By framing the state as a crumbling edifice, authoritarian alternatives, such as military juntas, can be positioned as a source of "stability" or a "stronger foundation" capable of preventing total ruin.

Manipulation Toolkit in Action

These metaphorical frames are powerfully amplified by psychological principles that are particularly potent within the Sahel's specific political and social context.

- **Social Proof in Regional Politics:** The pattern of instability across the Sahel creates a powerful regional dynamic of Social Proof (Cialdini, n.d.). Unlike the *artificial* social proof generated by bots in the Ukrainian context, the Sahel features a more potent, *organic* form of regional social proof, where a successful anti-democratic action in one state provides a tangible playbook for actors in another. As noted by the U.S. Institute of Peace, this regional contagion makes the prospect of a coup seem more plausible and legitimate to military and political actors in other nations, lowering the psychological barrier to intervention (USIP, 2023).
- **Commitment and Consistency:** Malign actors can exploit the principle of Commitment and Consistency by persuading key military figures or civilian elites to take one small, seemingly reversible step against a democratic government—such as issuing a critical public statement or refusing a direct order. Once this initial commitment is made, the psychological need to remain consistent with one's previous actions makes it increasingly difficult to reverse course. This can lead individuals down a path of escalating complicity, culminating in full support for a coup they might have initially opposed (Cialdini, n.d.).

Resilience Mechanisms: Building Regional Cognitive Defenses

Countering these destabilizing influence campaigns requires building cognitive resilience not just within nations, but across the entire region. Potential mechanisms focus on creating powerful, unifying counter-metaphors.

- Strengthening regional multinational blocs like the Economic Community of West African States (ECOWAS) is a primary form of cognitive defense (USIP, 2024). A strong, cohesive regional body promotes a powerful counter-metaphor: **THE REGION AS A UNIFIED BODY**. This frame positions an anti-democratic coup in one member state not as an isolated internal event, but as an injury to the entire regional organism. This fosters a sense of collective security and shared identity that can resist attempts to fracture the region and isolate its members.
- U.S. and international partnerships, such as the African Chiefs of Defense Conference, contribute to resilience by reinforcing a shared narrative of security and stability. Emphasizing a model of "African-led, U.S.-enabled solutions" (AFRICOM, 2025) helps to create an alternative cognitive frame to those pushed by malign external actors. This

collaborative frame builds trust and promotes democratic norms, countering narratives that portray foreign partnerships as exploitative and democratic governance as ineffective.

Section Conclusion and Transition

Influence operations in the Sahel expertly exploit metaphors of failure and collapse to weaken democratic institutions and legitimize authoritarian takeovers. The most effective defenses, therefore, are those that build regional cohesion through unifying counter-metaphors. Having examined a state-on-state conflict and a regional destabilization campaign, the final section will synthesize these findings to identify the common principles of cognitive manipulation.

4.4.3 Comparative Synthesis

Introduction: Identifying Common Mechanisms in Diverse Conflicts

This subsection synthesizes the key findings from the Ukrainian and Sahelian case studies. While the geopolitical contexts, actors, and specific objectives differ markedly, a comparative analysis reveals the universal principles of cognitive manipulation that transcend these differences. The goal is to demonstrate a common underlying logic based on the weaponization of embodied cognitive frameworks.

Comparative Analysis Table

Variable	Case 1: Ukraine	Case 2: The Sahel
Primary Actors & Objectives	State Actor (Russia) with clear objective of subjugation as part of a hybrid warfare strategy (RAND Corporation, 2024).	Diffuse State/Non-State Actors with objective of regional destabilization and exploitation of security vacuums (AFRICOM, 2025; USIP, 2023).
Dominant Metaphorical Frames	**NATION AS DISEASED BODY** (framing Ukraine as corrupt/fascist) and **TRUTH AS BATTLEGROUND** (creating cognitive paralysis) ("Embodied Risk", n.d.; Evans et al., n.d.).	**GOVERNANCE AS FAILED JOURNEY** (framing coups as necessary change) and **THE STATE AS A COLLAPSING STRUCTURE** (framing authoritarianism as stability) (Evans et al., n.d.).

Key Amplification Principles	Manipulation of online discourse via *Artificial Social Proof* (bots/trolls) and the **Availability Heuristic** (repetition of narratives) (Cialdini, n.d.; RAND Corporation, 2020; Thaler & Sunstein, n.d.).	Exploitation of political events via *Regional Social Proof* (coup contagion) and the **Commitment & Consistency** principle to foster complicity (Cialdini, n.d.; USIP, 2023).
Primary Resilience Strategy	Cohesive *national-level* counter-framing, primarily through the metaphor of **NATION AS A RESILIENT FAMILY**, to foster unity against external aggression (RAND Corporation, 2024).	Coordinated *regional-level* counter-framing, primarily through the metaphor of **THE REGION AS A UNIFIED BODY**, to foster collective security and resist fracturing (USIP, 2024; AFRICOM, 2025).

The Universal Logic of Embodied Manipulation

Despite the significant differences in context, both the Russo-Ukrainian War and the instability in the Sahel demonstrate that modern influence operations are not random acts of propaganda but follow a predictable, structured logic. These campaigns systematically target the embodied, metaphorical frameworks that humans unconsciously use to reason about abstract and complex concepts like national identity, governance, truth, and risk (Evans et al., n.d.; "Embodied Risk", n.d.). Whether framing a nation as a "diseased body" to legitimize invasion or as a "failed journey" to justify a coup, the underlying mechanism is the same: hijacking innate cognitive structures to shape perception and manipulate behavior. Defending against these pervasive threats therefore requires a fundamental shift away from reacting to individual falsehoods toward a more robust cognitive security framework. This defense requires a new strategic paradigm: a cognitive security framework dedicated to identifying, deconstructing, and ultimately inoculating societies against manipulative metaphorical frames.

Certainly. Below is the fully rewritten version of subsection **4.4b Case Study Analysis**, integrating the new source materials and aligning with the thesis tone and APA citation style. This section is formatted for direct insertion after the previous section in your thesis titled *"The Embodied Conceptualization of Risk: Applying Conceptual Metaphor Theory to Analyze and Mitigate Cognitive Manipulation in Cyber-Enabled Influence Operations."*

4.4b Case Study Analysis PII: Social Media Ecosystems and Political Discourse (2023–2025)

To further illuminate the application of Conceptual Metaphor Theory (CMT) in cyber-enabled influence operations, this section analyzes two interrelated case domains: (1) the framing of migration on YouTube and X (formerly Twitter) during the period 2023–2025, and (2) the infusion of metaphorical frames into political discourse. The goal is to apply metaphor diagnostics to evaluate both manipulation techniques and emerging resilience mechanisms in these narrative ecosystems.

1. Aquatic Metaphors and Dehumanization on YouTube and X

An observable trend across social media platforms—particularly within right-leaning YouTube channels and verified X accounts—is the use of **aquatic metaphors** to characterize irregular migration. Migrants are portrayed not as individuals, but as vast, uncontrollable forces of nature. Popular videos carry titles such as *"Border Flood: A Tidal Wave of Illegals Overruns the Rio Grande"* and include drone footage of individuals crossing riverbanks, thereby pairing visual metaphor with linguistic metaphor. One such video from 2024, titled *Crisis in the Jungle: The Darien Gap's Tidal Wave of Migrants Overwhelms Capacity*, exemplifies this framing by describing the event as a "tidal wave" and pairing it with sensationalist narration and imagery (YouTube, 2024).

On X, phrases like *"illegals flood into our country"* or *"migrant tsunami"* are frequently deployed in political commentary and viral memes. These messages draw from the **CONTAINER** and **WATER** source domains, framing the nation-state as a fragile vessel threatened by overflow. Computational linguistic analyses confirm that phrases such as *"flood of illegal aliens"* co-occur with ideologically loaded language and elicit higher engagement rates than neutral descriptions like *"increase in migration"* (ElSherief et al., 2021). The choice of metaphor amplifies fear by evoking a lack of control, erosion of boundaries, and ecological collapse.

This metaphorical system functions as a **cognitive manipulation vector**, according to CMT. It constructs migrants not as agents, but as forces of destruction—eroding empathy and justifying harsh policy responses. By shifting from the source domain of "people" to that of "natural disaster," the speaker creates emotional distance and invites securitized, militarized responses (Charteris-Black, 2011). The resilience to this metaphor is often found in satirical reframing and counter-metaphor narratives—e.g., activists resharing footage with captions like *"A flood? More like a trickle of families seeking refuge."*

2. Contamination and Bodily Metaphors in Political Rhetoric

A second dominant metaphorical system identified between 2023 and 2025 is the use of **contamination and disease metaphors** within mainstream political discourse, particularly in reference to immigration and public health. In a widely shared statement from December 2023, former U.S. President Donald Trump declared that immigrants were *"poisoning the blood of our country"*—a phrase that went viral across X and elicited both support and condemnation (Axios, 2023). This instance exemplifies the **POISON IS IMMIGRATION** metaphor, framing migration as a biohazard threatening the purity of the national body.

Such metaphors invoke the **BODY POLITIC** conceptual model, where the nation is imagined as a living organism that must be protected from infection or impurity. Posts responding to Trump's statement reflected polarized metaphorical framings. Some users described immigration as a "viral invasion," while others condemned the language as fascistic and reminiscent of historical genocidal rhetoric (Van Hollen, 2023). These metaphorical clashes show how conceptual framing is contested terrain, with both manipulative and corrective narratives vying for dominance in digital spaces.

The strategic use of metaphor here is not merely expressive but **cognitive and directive**—guiding public reasoning toward exclusionary or nativist policy solutions. Scholars have shown that such metaphors can profoundly affect policy preferences, especially when deployed in emotionally charged contexts (Thibodeau & Boroditsky, 2011). Moreover, repeated exposure to disease metaphors in immigration contexts correlates with support for mass surveillance and border militarization (Johnson et al., 2022).

3. Cross-Domain Interaction and Resistance

While aquatic and contamination metaphors operate through different source domains, they share functional properties in terms of cognitive manipulation: both induce fear, dehumanize, and simplify complex phenomena. These metaphorical frames travel across platforms and formats, from YouTube thumbnails to Senate hearings, creating **cross-domain reinforcement loops** that legitimize discriminatory policies under the guise of protection.

However, instances of metaphorical resistance are also increasing. Journalists, scholars, and digital activists have begun to dissect these tropes explicitly. For instance, media literacy campaigns and satire accounts on X now highlight metaphorical bias by overlaying literal translations onto videos and memes. These countermeasures offer glimpses of **metaphorical resilience**, suggesting that cognitive inoculation—through exposure and deconstruction—can weaken the persuasive power of manipulative metaphors (Banas & Rains, 2010).

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4.5 Cross-Case Comparative Insights

Introduction: The Strategic Importance of Cross-Cultural Metaphorical Analysis

To effectively analyze and counter global influence operations, one must first understand the cognitive terrain on which they are fought. Central to this terrain is the concept of 'risk'—an abstract yet powerful driver of human behavior. However, risk is not a monolithic, universal concept; it is conceptualized differently across cultures, shaped by language and shared experience. This section, drawing on foundational principles from cognitive linguistics, explores the universal foundations and culturally specific divergences in the metaphorical language used to frame risk. By dissecting how different societies talk and think about uncertainty, we can develop a more nuanced and predictive model for identifying and mitigating cognitive manipulation. This comparative analysis begins by examining the universal metaphorical patterns grounded in our shared human experience.

Universal Foundations: Embodied Experience and Primary Metaphors in Risk Conceptualization

Cognitive linguistic theory posits that our most fundamental abstract concepts are understood through primary metaphors, which are considered likely cross-linguistic universals. This universality arises not from a shared abstract logic, but from a shared physical existence; primary metaphors are grounded in common human physiology and recurring environmental experiences (Vyvyan, n.d., p. 308). The way we interact with the physical world—moving through space, interacting with objects, and engaging in conflict—provides a stable, embodied foundation for understanding abstract domains like risk. This principle of shared embodied experience leads to remarkably consistent foundational metaphors for risk across different cultures.

These universal metaphors provide a common cognitive ground that can be exploited in broad-spectrum influence operations. Key examples of primary metaphors for risk include:

- **RISK IS A JOURNEY:** This conceptualization derives from the universal human experience of physical movement. Just as cognitive linguists have identified `AN ARGUMENT IS A JOURNEY` (Vyvyan, n.d., p. 307), the process of confronting uncertainty is framed as navigating a path. We speak of *moving toward* a goal, *avoiding pitfalls*, or being *at a crossroads*. This metaphor maps the structure of physical navigation—with its paths, obstacles, and destinations—onto the abstract process of decision-making under uncertainty.
- **RISK IS AN OPPONENT:** This metaphor is grounded in the embodied experience of physical conflict or confrontation. Uncertainty is framed as an adversary to be *confronted*, *battled*, or *overcome*. We talk about *fighting the odds*, *defending against threats*, or *wrestling with a difficult decision*. This framing transforms risk from a passive state of uncertainty into an active antagonist, tapping into primal instincts related to survival and defense.

These universal primary metaphors offer a common shorthand for communicating about risk, but they are only the foundational layer. Upon this shared ground, cultures build more complex and divergent metaphorical systems.

Cultural Divergences: The Role of Compound Metaphors and Linguistic Relativity

While primary metaphors provide a universal foundation, cross-cultural divergence emerges through the development of compound metaphors. Unlike their primary counterparts, compound metaphors are constructed from more specific, detailed, and elaborate knowledge structures, making them highly dependent on cultural context (Vyvyan, n.d., p. 308). For example, the compound metaphor `THEORIES ARE BUILDINGS` is intuitive in societies with a long history of permanent architecture. However, as Vyvyan (n.d., p. 308) notes, a culture of nomadic tent-dwellers would be far less likely to conceptualize abstract intellectual structures in terms of permanent buildings. The same logic applies directly to the conceptualization of risk; different societal structures, economies, and histories produce unique and powerful compound metaphors for understanding uncertainty.

The following table illustrates how distinct cultural contexts might generate divergent compound metaphors for risk:

Cultural Context	Potential Compound Metaphor for Risk

A maritime trading culture with a deep history of seafaring.	`RISK IS NAVIGATING TREACHEROUS WATERS`
A society reliant on agriculture in an arid, unstable climate.	`RISK IS A FAILED HARVEST` or `RISK IS A POISONED WELL`

These linguistic differences are not merely stylistic; they have profound implications for non-linguistic cognition. A compelling example of this "Whorfian effect" is found in a comparative study of speakers of Guugu Yimithirr (an Australian Aboriginal language) and Dutch. This study provides powerful, real-world evidence that linguistic frames not grounded in universal embodied experience—such as cardinal directions versus relative directions—can produce profound cognitive divergence. The Guugu Yimithirr language exclusively uses a field-based, cardinal direction frame of reference for locating objects in space, requiring its speakers to constantly dead-reckon their position. A study found that this linguistic requirement endowed Guugu Yimithirr speakers with a vastly superior ability to calculate their location in unfamiliar environments compared to Dutch speakers, whose language employs multiple frames of reference (Vyvyan, n.d., p. 77).

Demonstrating scholarly rigor, it is important to acknowledge a potential confounding variable noted in the source text: "experience, as well as language, may play a part in these sorts of experiments. After all, Guugu Yimithirr speakers are likely to have more experience of assessing directions and finding their way around rainforests than the average Dutch speaker" (Vyvyan, n.d., p. 77). This caveat does not invalidate the linguistic finding but rather suggests that language and experience likely work in concert to produce the observed cognitive effect.

This finding is critical. If the language used to describe a concrete, physical domain like *space* can so deeply shape a fundamental cognitive ability, it is highly probable that the linguistic framing of a deeply abstract domain like *risk* will have equally profound, yet divergent, effects on decision-making, threat perception, and behavior across cultures, potentially shaping everything from a population's tolerance for uncertainty to its preferred strategies for mitigation (e.g., 'weathering a storm' versus 'slaying a beast'). This linguistic relativity offers both a challenge and an opportunity for analyzing influence operations.

Implications for Analyzing and Mitigating Cyber-Enabled Influence Operations

This comparative analysis of risk metaphors holds a dual utility for threat intelligence and strategic communications. Adversaries can exploit both universal and culturally specific metaphors to manipulate target audiences, making the ability to decode this metaphorical layer a critical defensive capability.

The exploitation of **universal metaphors** allows for the creation of broad-based, low-cost influence campaigns that resonate across diverse audiences. By framing a political or economic issue in terms of a physical threat (`RISK IS AN OPPONENT`), manipulators tap into primal, embodied schemas that trigger fast, intuitive, and emotional **System 1 thinking**, bypassing rational deliberation. These campaigns achieve widespread emotional priming by triggering fundamental fight-or-flight responses, preparing a population for further, more targeted messaging.

Conversely, the exploitation of **culturally specific compound metaphors** is a hallmark of sophisticated, high-resonance influence operations. The power of these targeted campaigns comes from hijacking a group's unique history, values, and deeply embedded **cultural schemas or Idealized Cognitive Models (ICMs)**. For example, in a culture that metaphorically conceptualizes its society as a physical structure built by its ancestors (`SOCIETY IS A BUILDING`), an adversary could frame a new economic policy not merely as a financial risk, but as a corrosive force that threatens the community's very "foundations." Such a framing is potent because the manipulative message feels internally generated, intuitive, and authentic to the target audience, lending it immense persuasive force.

Ultimately, a sophisticated understanding of the interplay between universal and culture-specific risk metaphors is essential for moving from a reactive to a predictive posture in countering cognitive manipulation, a strategic framework Chapter 5 will explore in greater operational detail.

Chapter 5: Discussion

5.1 Interpreting the Findings through Cognitive Linguistics and Risk Management

Introduction: Bridging Cognition, Language, and Risk

This section synthesizes the preceding findings on cyber-enabled influence operations by applying foundational principles from cognitive linguistics and risk management. This synthesis transcends a purely technical or behavioral analysis to explore the underlying cognitive architecture that makes individuals, organizations, and societies vulnerable to manipulation. The core thesis of this analysis is that the conceptual metaphors used to frame abstract domains like "risk" and "security" do not merely describe reality but actively structure it. This structuring process creates inherent cognitive vulnerabilities—predictable patterns of thought and automatic response—that sophisticated adversaries can identify and exploit.

By deconstructing how language shapes perception, this analysis provides a robust framework for diagnosing these human-centric vulnerabilities. It serves as a crucial bridge between understanding the mechanics of influence and developing strategies for principled risk communication, a cornerstone of established frameworks such as ISO 31000. This analysis, therefore, first deconstructs the cognitive-linguistic mechanisms that create these vulnerabilities before applying that understanding to principled risk mitigation.

The Cognitive Foundations of Vulnerability: From Language to Automatic Action

Effective countermeasures to influence operations require an analysis that transcends surface-level messaging to examine the cognitive structures that make populations susceptible to manipulation. Human language, from a cognitive linguistics perspective, does not function as a complete container of meaning. Instead, words and grammatical constructions act as "prompts" that activate a vast repository of pre-existing encyclopaedic knowledge and cognitive models within an audience's mind (Evans, 2006). An utterance is merely "the tip of the iceberg of cognitive construction," guiding a complex process of meaning-making that happens largely unconsciously.

At the heart of this process is **Conceptual Metaphor Theory (CMT)**, which posits that metaphor is not a mere linguistic device but a fundamental cognitive mechanism. We understand abstract or complex concepts (the *target domain*) by mapping them onto more concrete, embodied experiences (the *source domain*) (Lakoff & Johnson, as cited in Evans, 2006). For example, we structure our understanding of arguments by mapping them onto the source domain of war, leading to expressions like "defending a position," "winning a point," or "attacking a weak argument." These metaphors are not arbitrary; they structure our reasoning and guide our actions regarding the abstract concept.

This cognitive process intersects powerfully with the principles of automatic, heuristic-based thinking. Much of human decision-making operates not through laborious logical analysis but through shortcuts and rules of thumb that trigger what Robert Cialdini (1984/2007) terms "click, whirr" responses—fixed-action patterns that are activated by a specific trigger feature. When an influence operation successfully frames a message using a target's dominant conceptual metaphor for a given topic, that metaphor can act as a powerful trigger. It bypasses critical, analytical thought and activates an automatic "click, whirr" response that is consistent with the metaphor's framing. Thus, a conceptual metaphor does not merely prime an idea; it can serve as the specific ‘trigger feature’ that initiates a Cialdini-esque (1984/2007) ‘click, whirr’ response, effectively weaponizing the target’s own cognitive architecture against them. This fusion of cognitive linguistics and persuasion psychology provides a powerful diagnostic for identifying the cognitive blind spots that make an organization or a society predictable and, therefore, vulnerable.

Metaphorical Framing as a Diagnostic for Uncovering Cognitive Blind Spots

If conceptual metaphors fundamentally structure how we think, then analyzing the dominant metaphors within an organization's or a society's discourse serves as a powerful diagnostic tool. This analysis can reveal inherent biases, assumptions, and cognitive blind spots in their perception of risk and security. A given conceptual metaphor, by its very nature, highlights certain aspects of its target domain while simultaneously hiding others. The choice of metaphor is not neutral; it directs attention, prioritizes certain responses, and renders others invisible.

Consider, for example, the difference between framing risk as an adversarial conflict versus a systemic condition.

- **`RISK IS AN ENEMY`**: This metaphor entails a need for defense, counter-attack, and vigilance against a thinking opponent. It structures risk management around building walls, identifying adversaries, and responding aggressively to acute threats.
- **`RISK IS A CALCULATED GAMBLE`**: This frame entails statistical analysis, probability, and the acceptance of potential loss as a cost of doing business. It prioritizes data analysis, diversification, and hedging strategies.

A comparative analysis of contemporary discourse on financial instability reveals how these competing frames create distinct cognitive environments. One RAND Corporation perspective frames the danger to the U.S. financial system not as a "sudden assault" but as a slow, steady degradation, calling it a form of **"financial climate change"** (RAND, 2024).

- The **"sudden assault"** metaphor, aligned with `RISK IS AN ENEMY`, primes an organization to look for discrete attacks from identifiable adversaries—a market crash triggered by a hostile actor, for example. Its focus is on immediate defense and response.
- The **"financial climate change"** metaphor, in contrast, frames the threat as a slow, systemic, and cumulative process, much like ecological change. It highlights the danger of gradual erosion from persistent forces like deepfakes and AI-driven disinformation, which "weaken the system over time" (RAND, 2024). This frame suggests that a purely defensive, event-based security posture is insufficient.

An organization that relies exclusively on the `RISK IS AN ENEMY` metaphor develops a predictable blind spot. Its sensors, personnel, and response plans are all oriented toward detecting and repelling acute attacks. An adversary, aware of the target's dominant `RISK IS AN ENEMY` frame, would avoid overt, shock-and-awe cyberattacks. Instead, they would pursue a campaign of slow, systemic degradation through AI-driven disinformation, as noted by RAND (2024). This campaign, akin to "financial climate change," would not trigger the target's acute threat-detection systems, allowing the adversary to erode trust and market stability while remaining below the threshold of a perceived "assault." Understanding these metaphorical frames is therefore not an academic exercise but a critical step toward proactive risk communication and mitigation.

A Cognitively-Grounded Approach to Risk Communication and Mitigation

Connecting this cognitive-linguistic analysis to the practical requirements of risk management is essential for developing effective countermeasures. While the specific tenets of frameworks like ISO 31000 are not detailed in the provided context, its fundamental goal—to ensure clear, timely, and tailored communication with stakeholders—provides the pragmatic grounding for this approach. If influence operations succeed by exploiting the cognitive landscape of a target audience, then any effective risk communication strategy must be designed with that same landscape in mind.

Synthesizing principles from cognitive linguistics and the psychology of persuasion, a three-step mitigation strategy emerges that enhances traditional risk management by directly addressing these human-centric vulnerabilities.

1. **Diagnose Cognitive Frames** Before crafting any communication, it is crucial to analyze the target audience's dominant conceptual metaphors and cognitive models regarding the specific risk. This involves understanding their pre-existing "encyclopaedic knowledge" (Evans, 2006), values, and cultural context. This diagnostic step identifies

the potential "trigger features" that could lead to automatic, uncritical processing and reveals the cognitive pathways an adversary is most likely to exploit (Cialdini, 1984/2007). The output of this diagnosis—a map of the audience's dominant frames and potential triggers—becomes the direct input for the second step: strategic communication design.

2. **Employ Strategic Framing and Nudging** Armed with this cognitive map, risk communication moves from mere information delivery to the conscious application of what Thaler and Sunstein (2008) call "choice architecture." This means carefully structuring the presentation of information to account for human biases and heuristics. Communications should be framed using metaphors that are not only easily understood but also "nudge" the audience toward a more resilient and accurate perception of the risk. This may involve aligning messages with constructive existing metaphors to enhance comprehension or introducing new, more effective metaphors (e.g., shifting from "market assault" to "financial climate change") to reframe the problem in a way that encourages more adaptive behaviors.
3. **Build Cognitive Resilience** The final step moves from reactive communication to proactive defense by building cognitive resilience among stakeholders. This involves education and training designed to make people aware of manipulative metaphorical framing and other "weapons of influence" (Cialdini, 1984/2007), such as the reciprocity or authority principles. This strategy functions as a form of cognitive inoculation, equipping individuals with the critical-thinking skills needed to recognize influence attempts as they occur. By understanding *how* their cognitive processes can be manipulated, stakeholders are better able to consciously resist such attempts and rely on more deliberate, analytical thinking.

By integrating these steps, risk communication moves beyond simple information dissemination. It becomes a strategic function aimed at shaping the cognitive environment, closing vulnerabilities, and empowering stakeholders to navigate a complex and often manipulative information landscape.

Conclusion

Interpreting the findings of influence operations through the lens of cognitive linguistics reveals that risk perception is not a purely objective calculation but a cognitively mediated process, structured by embodied and metaphorical frameworks. The language we use to discuss threats actively shapes our perception of and response to them, creating cognitive vulnerabilities that can be systematically exploited. This perspective offers novel diagnostic and mitigative tools that are essential for strengthening security in an era defined by cyber-enabled influence. By analyzing dominant metaphorical frames, we can uncover societal or organizational blind spots; by applying principles of choice architecture and cognitive resilience, we can craft risk communication that directly counters manipulation. Having established this theoretical bridge, the following section will outline a practical methodology for implementing this cognitive-linguistic analysis within a security-focused organization.

5.2 Integrating Structured Analytic Techniques (SATs)

Applying Conceptual Metaphor Theory (CMT) to the analysis of cyber-enabled influence operations offers a powerful lens for discerning an adversary's attempts at cognitive manipulation. However, while CMT is invaluable for identifying the underlying frames an adversary uses to shape perception, its interpretive nature can be prone to analytical subjectivity and confirmation bias. To move from insightful interpretation to reliable intelligence, methodological rigor is essential. Structured Analytic Techniques (SATs) provide a crucial framework for systematically testing and validating metaphor-based assessments, thereby increasing their reliability and utility for intelligence and defense applications. This section will demonstrate how three distinct SATs—Analysis of Competing Hypotheses, Red Team Analysis, and Systems Thinking—can be integrated to create a robust validation methodology for cognitive security analysis.

5.2.1 Analysis of Competing Hypotheses (ACH) for Metaphorical Framing

Accurately identifying the specific conceptual metaphors an adversary is leveraging is a foundational step in countering an influence operation. An incorrect assessment of the primary metaphorical frame can lead to flawed analysis and ineffective countermeasures. The Analysis of Competing Hypotheses (ACH) provides a systematic method for moving beyond an analyst's initial intuition to a more rigorous, evidence-based conclusion about the dominant metaphorical framing being employed.

ACH is a core intelligence analysis method that requires the explicit evaluation of multiple plausible hypotheses against all available evidence. In this context, different conceptual metaphors serve as the competing hypotheses. For instance, an adversary seeking to frame immigration might leverage the conceptual metaphor `IMMIGRATION IS A FLOOD` or, alternatively, `IMMIGRATION IS AN INVASION`. Each metaphor does more than transfer words; it transfers an entire *semantic frame*, a cognitive model that gives rise to a distinct and observable set of lexical evidence in the adversary's communications (Vy, n.d., p. 86). The `FLOOD` frame, for example, evokes concepts of overwhelming natural disaster, resource scarcity, and the need for barriers or rescue. By treating each potential metaphor as a competing hypothesis, ACH forces a disciplined evaluation of the linguistic data, requiring analysts to seek evidence related to the full frame: the *cause* of the flood (e.g., broken policies), the *victims* (e.g., citizens "drowning"), the *destructive force* (e.g., an "overwhelming" culture), and the proposed *solution* (e.g., building walls).

The validation process can be structured into the following steps:

1. *Formulate* multiple, plausible hypotheses about the primary conceptual metaphor an adversary is using to frame a key concept (e.g., `IMMIGRATION IS A FLOOD` versus `IMMIGRATION IS AN INVASION`).
2. *Determine*, for each metaphorical hypothesis, its full semantic frame and logical entailments. Because metaphors transfer conceptual structure from a source domain to a target domain, they generate *rich inference* that predicts specific linguistic expressions and narrative roles (Vy, n.d., p. 298).
3. *Gather* and evaluate linguistic evidence from adversarial propaganda and target audience discourse against a pre-established baseline of neutral communication on the topic, noting significant deviations (Hartley & Karinch, 2012; Rouse, 2020). Each piece of evidence should be assessed for its consistency or inconsistency with each metaphorical hypothesis.
4. *Analyze* the matrix of evidence and hypotheses to determine which metaphorical frame most consistently explains the collected data. The goal is to disconfirm the alternative hypotheses, thereby validating the identification of the adversary's primary manipulative metaphor with the highest degree of confidence.

While ACH provides a robust methodology for validating the *identification* of a manipulative metaphor, assessing its potential effectiveness as a cognitive weapon requires a different approach. The next step is to test the validated metaphor's persuasive power and potential impact on a target audience.

5.2.2 Red Team Analysis for Assessing Metaphorical Potency

Once a high-confidence assessment of an adversary's conceptual metaphor has been achieved through ACH, the next critical task is to evaluate its potency. How effective is this metaphor as a cognitive weapon? Can it achieve the adversary's strategic goals of shaping attitudes and behaviors? Red Team Analysis is the ideal technique for stress-testing the metaphor's potential impact from an adversarial perspective.

Red Team Analysis is a method designed to challenge plans, strategies, and assumptions by adopting an adversarial mindset and simulating an opponent's actions. In the context of cognitive security, this aligns directly with the documented aims of cognitive warfare: to "undermine trust, and to weaken, interfere with, and destabilize a target population" (InfoLab, n.d., p. 20) by exploiting "pre-existing fissures in society" (InfoLab, n.d., p. 12).

To validate a metaphor's potency, a Red Team can be tasked with designing and executing a mock influence campaign built around the conceptual metaphor identified through the ACH process. Following the `IMMIGRATION IS A FLOOD` example, the Red Team would craft messages using the metaphor's entailments—such as "drowning in newcomers," "a wave of migrants," or "leaky borders"—to test their impact on a simulated audience's perception of threat and resource scarcity. The specific task of the Red Team is to discover the most effective

altered replications of the metaphor's linguistic expressions for that audience; the goal is not just to use the metaphor, but to stress-test which specific phrasings and narrative adaptations (Vy, n.d., p. 129) are most potent at exploiting societal fissures. By probing for cognitive vulnerabilities in a simulated target audience, the Red Team can test the metaphor's ability to activate what Cialdini refers to as *"weapons of automatic influence"*. The success of the simulated campaign in generating desired cognitive and behavioral effects—such as increased polarization or decreased trust in institutions—and their subsequent societal consequences serves as direct evidence validating the *potency* of the chosen metaphorical framing.

Red Team Analysis confirms whether a metaphor has the potential to achieve direct, localized cognitive effects. However, to understand its full, cascading consequences across the broader information environment, a systems-level perspective is required.

5.2.3 Systems Thinking for Mapping Metaphorical Impact

A conceptual metaphor deployed within an influence operation does not act in isolation; it enters a complex information ecosystem of competing narratives, cultural beliefs, and social dynamics. Its ultimate success depends on its ability to integrate with, alter, and propagate through this system. Systems Thinking provides the necessary framework to analyze these interactions, revealing the metaphor's potential for systemic, second-order, and long-term impact.

At its core, Systems Thinking is a holistic approach to analysis that focuses on understanding complex phenomena by examining the linkages and interactions between the components that comprise the whole. This connects directly to the cognitive linguistics concept of *Idealized Cognitive Models (ICMs)*, which are the complex, interconnected knowledge structures that represent our theories about the world (Vy, n.d., p. 269). For an adversarial metaphor to be effective, it must successfully connect with or reshape the target's existing network of ICMs.

An analyst employing a Systems Thinking approach would map the relationships between the adversary's metaphor and other related concepts, salient cultural narratives, and prevailing social dynamics. In the `IMMIGRATION IS A FLOOD` example, this would involve tracing how the metaphor links to pre-existing ICMs about natural disasters, national security, and economic fragility. This analysis would focus on identifying potential feedback loops that could amplify the metaphor's effects. For instance, leveraging the principle of *social proof*, a metaphor, once adopted by a critical mass of influential actors, can accelerate its own propagation as uncertain individuals look to the behavior of others as a guide for their own beliefs and actions (Cialdini, n.d., p. 122), creating a self-reinforcing cycle where media coverage amplifies public anxiety, which in turn drives policy debates framed by the metaphor. This approach validates the analyst's understanding of the metaphor's potential *systemic consequences*. As the metaphor propagates, it can blend with other ICMs to create novel, emergent meanings through *conceptual blending* (Vy, n.d., p. 408). For instance, `IMMIGRATION IS A FLOOD` could blend with an ICM of `DISEASE` to create a new, more potent frame of `IMMIGRATION IS A CONTAMINATING FLOOD`, which carries emergent properties not present in the original inputs.

By integrating these three Structured Analytic Techniques, analysts can build a comprehensive and defensible assessment of a cognitive threat, reducing analytical uncertainty at progressive scales. This multi-method approach—using ACH to validate the metaphor at the **message level**, Red Team Analysis to validate its impact at the **audience level**, and Systems Thinking to validate its potential consequences at the **ecosystem level**—provides a rigorous framework for transforming metaphor-based intelligence. It elevates what could be a subjective interpretation into a structured, actionable assessment of a cognitive threat, enabling more effective and targeted countermeasures.

5.2.4 Case Study: Mauritania

The case study of Mauritania serves as a practical example demonstrating how **Structured Analytic Techniques (SATs)** can be strategically integrated with **cognitive linguistics** to validate, test, and operationalize assessments derived from metaphors. The goal of this structured approach is to ensure that metaphors are not merely analytical shortcuts or rhetorical devices, but remain **analytically disciplined, falsifiable**, and strategically actionable.

The core process involves translating metaphorical frames into testable hypotheses and subjecting them to rigorous evidentiary scrutiny.

Strategic Synthesis: Validating the "Mirror of Legitimacy" Metaphor

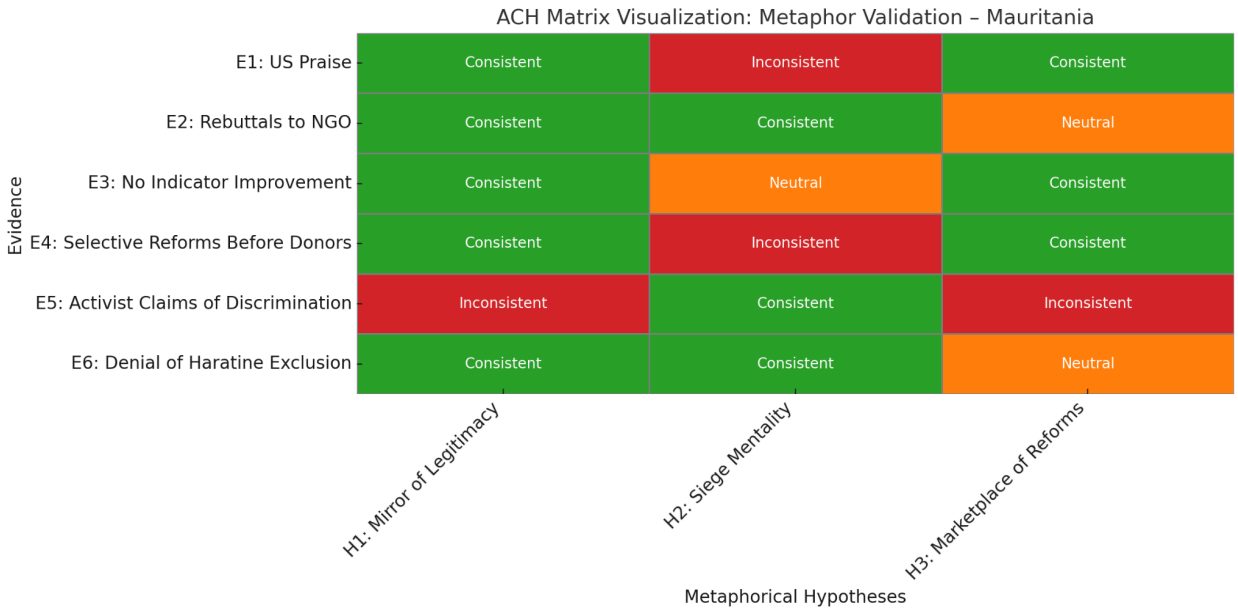
The Mauritania situation was metaphorically described as a “mirror of legitimacy”—a behavior where the state reflects reform narratives back at donors or the international community without implementing meaningful internal change. Three specific SATs were used in synthesis to validate this particular metaphor:

1. Analysis of Competing Hypotheses (ACH)

The primary role of **ACH** is to **test metaphor-derived narratives against empirical evidence** to assess which metaphorical frame best aligns with reality.

Implementation and Findings: A detailed ACH matrix was constructed to compare the dominant frame (H1) against alternatives: **H1: Mirror of Legitimacy**, **H2: Siege Mentality** (defensive, isolationist stance), and **H3: Marketplace of Reforms** (selective, transactional engagement). Each hypothesis was tested against six pieces of evidence (E1 through E6) covering diplomatic praise, media rebuttals, human rights indicators, selective legal reforms, and activist claims.

- **Preliminary Conclusion:** H1, the **"Mirror of Legitimacy," showed the most consistency** across all evidence points and was retained as the strongest explanatory frame.
- **Interpretation:** This metaphor aligns with state behavior that mimics reform for international optics while actively avoiding deeper change. H2 ("Siege Mentality") was partially consistent, matching defensive rhetoric but undermined by evidence of international praise. H3 ("Marketplace of Reforms") fit well in donor-tied contexts but failed to explain systemic neglect or activist rejection.
- **Strategic Utility:** The ACH matrix validated that the "Mirror of Legitimacy" was not just rhetorically compelling but survived scrutiny across diplomatic, civic, and cognitive domains, making it a **valid predictive schema**.



2. Red Team Analysis

The purpose of **Red Team Analysis** is to challenge metaphor-driven assumptions by simulating alternative mindsets or adversarial logic.

Contribution to Validation: In the Mauritania case, Red Teaming revealed that regime actors might genuinely believe in their own reform narrative, indicating a **non-manipulative self-perception**. This insight is vital because it challenges the Western or activist assumption that the "mirroring" is necessarily cynical manipulation. Red Teaming helps assess whether the analyst's metaphor is likely to resonate, provoke, or be misinterpreted by key actors, which is useful for messaging strategy or policy interventions.

3. Systems Thinking

Systems Thinking is used to embed metaphors into feedback loops and interdependencies within the broader socio-political system.

Contribution to Validation: Systems mapping helped determine if the "Mirror of Legitimacy" reflected a **dynamic structure** rather than just a static rhetorical stance. The analysis showed that the act of maintaining donor approval while simultaneously repressing dissent functions as a **balancing feedback loop**. This structure, while allowing the regime to manage dual demands (international legitimacy vs. domestic control), is inherently **vulnerable to external shocks**. Metaphors that map cleanly onto such dynamic structures, delays, or feedback loops gain predictive utility.

Broader Application of SATs in Geo-Risk Assessment

Beyond the primary validation of the "Mirror of Legitimacy," the case study details the application of SATs in a subsequent Geo-Risk Assessment focused on Mauritania's societal fault lines and human rights narratives, utilizing a **cognitive linguistics lens**.

Key Assumptions Check (KAC)

The assessment began by identifying and challenging critical assumptions, such as the belief that Mauritania is actively addressing human trafficking and slavery, that the Haratine identity debate is progressing toward resolution, or that external reports reflect ground realities. KAC revealed that these assumptions did not hold uniformly due to contradictions between state-aligned and independent/activist sources.

ACH (Revisited)

A second ACH was conducted using hypotheses specific to human rights reform:

- H1: Mauritania has made significant, meaningful reforms.
- H2: Reforms are superficial and designed for international optics.
- H3: Mixed reality—some reform exists, but structural inequities persist.

Assessment: The evidence supported **H3 (mixed reality)**, concluding that reforms may be present but co-exist with deep structural inequities, a finding supported by the persistence of reports of abuse and the ongoing Haratine identity debate.

What-If? Analysis

This technique tested a critical scenario: **What if external diplomatic and aid pressure is withdrawn?**. The analysis predicted that this trigger would lead to decreased incentive for reform, potential regression in human rights enforcement, and the empowerment of entrenched elite networks.

Cognitive Linguistics Analysis

The analysis also looked at the **framing, metaphors, and narrative constructs** within Mauritanian discourse to understand deeper cognitive schemas.

- **Binary Framing:** Government narratives use "institutional legitimacy" (e.g., denying reports lack objectivity), signaling an in-group vs. out-group linguistic schema, while activist narratives rely on **exposure metaphors** signaling moral urgency.
- **Ontological Insecurity:** The use of terms related to identity (**"الهوية"**) and belonging (**"المواطنة"**) signals a battle over **category access**. Titles posing questions like “Who are we or what do we want to become?” tap into **ontological insecurity frameworks**.
- This analysis helps policymakers track narrative frames to assess shifts in perception and power structures.

This overall structured approach leads to specific predictive outlooks, such as the high probability (67.5%) of NGO-State confrontation and the moderate probability (47.5%) of media crackdowns, demonstrating the **strategic implication** that reputational risk is managed through dual-track narratives while systemic reforms face inertia.

5.3 The Embodied Nature of Decision-Making Under Risk

5.3.1 Introduction: Cognition Beyond the Abstract

Strategic decision-making, particularly in high-stakes environments, is often depicted as a purely rational, abstract process—a cerebral chess match played out in the minds of policymakers. This view, however, overlooks a fundamental aspect of human cognition. The central premise of embodied cognition, articulated in Mark Johnson's (1987) foundational work, *The Body in the Mind*, posits that our reasoning is not disembodied but is profoundly structured by our physical, sensory-perceptual experiences. This perspective argues that human cognition, and specifically judgment under risk, is shaped by a set of pre-conceptual structures that arise directly from our bodily interactions with the world. This section deconstructs how these embodied experiences create cognitive frames and metaphors that not only shape strategic policy but also represent exploitable vulnerabilities in the cognitive domain. To understand this process, we must first examine the basic building blocks that connect our physical experience to abstract thought: image schemas.

5.3.2 From Body to Mind: Image Schemas as Cognitive Primitives

Image schemas represent the foundational link between physical, embodied experience and abstract thought. Understanding these cognitive primitives is crucial because they form the unconscious, structural basis for the conceptual metaphors that permeate strategic discourse, defining how we reason about complex challenges like risk.

As defined by Johnson (1987), image schemas are rudimentary concepts such as `CONTACT`, `CONTAINER`, and `BALANCE` that derive their meaning directly from our pre-conceptual, physical engagement with the world. They are not disembodied abstractions; rather, their substance is rooted in the very sensory-perceptual experiences that give rise to them. The `CONTAINER` schema, for example, is meaningful not as an abstract definition but because our daily lives are filled with experiences of containing and being contained.

Consider the simple spatial scene described in the sentence, "The coffee is in the cup." An analysis by Tyler and Evans (2003) reveals the schema's underlying logic: the concept of *in* involves a containment function. This function has direct physical consequences, such as "locating and limiting the activities of the contained entity." The cup prevents the coffee from spilling and ensures that if the cup moves, the coffee moves with it. This fundamental logic of boundaries, interiority, and exteriority, derived from countless physical interactions, becomes the unconscious template for conceptualizing abstract strategic challenges, such as containing a threat, operating within a theater, or securing a border. These foundational schemas, derived from an infinite number of mundane physical interactions, thus become the primary tools for structuring and reasoning about complex, non-physical ideas.

5.3.3 Conceptual Metaphor: Structuring Abstract Domains

While image schemas provide the basic structural patterns, conceptual metaphor is the primary cognitive mechanism for applying that structure to abstract domains like risk, love, or economics. This process, termed **conceptual projection**, is not merely a poetic or linguistic device but a fundamental mode of human reasoning. It is how we systematically make sense of abstract concepts by grounding them in the familiar logic of our physical world.

Drawing on the work of George Lakoff (1987, 1990, 1993) and Mark Johnson (1987), a conceptual metaphor is understood as a projection from a concrete **source domain** (our physical experience) to an abstract **target domain** (the concept being understood). For instance, the abstract concept of `LOVE` is often understood via the `CONTAINER` image schema, which gives rise to the conceptual metaphor **LOVE AS A CONTAINER** and its corresponding expressions, like being *in* love or *falling out of* love. Here, the abstract and complex emotional state of love is conceptualized as a physical container one can enter and exit.

This mechanism is equally powerful in structuring our understanding of complex strategic concepts. Through the metaphor **INFLATION AS A PHYSICAL ENTITY**, the abstract concept of `INFLATION` is rendered tangible, allowing it to be quantified ("much more inflation"), to produce physical effects ("giving the government a headache"), and to be acted upon ("reduce the effects of inflation"). It is by understanding inflation in terms of something with physical properties that we can reason about its scale, its impact, and the actions we can take against it (Evans & Green, 2006). In the same way that `INFLATION` is conceptualized through embodied metaphors, so too is the concept of `RISK`, which lies at the heart of strategic decision-making.

5.3.4 The RISK Frame and Its Metaphorical Underpinnings

Conceptual metaphors do not exist in isolation; they are organized into larger, more complex knowledge structures called frames. Pioneered by Charles Fillmore, Frame Semantics posits that words are understood not by simple definitions but by their relationship to a broader, encyclopedic knowledge structure that provides their context. Analyzing the semantic frame for `RISK` is therefore essential, as it reveals the specific, often unconscious, embodied metaphors that policymakers and strategists draw upon when assessing threats and formulating responses.

In their detailed analysis of the semantic frame for `RISK`, Fillmore and Atkins (1992) identified a core set of lexical items that are conventionally associated with the concept. These words provide a window into the frame's underlying metaphorical structure:

- `risk`
- `danger`
- `peril`
- `hazard`
- `gamble`
- `invest`
- `expose`

The very vocabulary used to discuss risk reveals its grounding in embodied experience and its attendant consequences for policy. Terms like `expose` evoke the powerful conceptual metaphor of **RISK AS PHYSICAL VULNERABILITY**, where a potential harm is understood as a physical body being left unprotected from an external force. This framing primes policymakers for defensive, fortification-based solutions aimed at shielding or hardening the vulnerable entity. Similarly, terms like `gamble` and `invest` tap into the metaphor of **RISK AS A GAME OF CHANCE**, a domain involving physical actions, stakes, and potential gains or losses. This frame primes decision-makers for probabilistic calculations, risk acceptance, and potentially more aggressive moves designed to maximize gain. The abstract concept of risk is thus systematically understood by being mapped onto concrete, embodied experiences, and the choice of metaphor implicitly constrains the set of actions deemed logical or possible. The language used to discuss risk is therefore not neutral; it is a direct reflection of the underlying conceptual metaphors that frame the problem, powerfully shaping what is perceived and what is considered a viable solution.

5.3.5 Conclusion: How Embodied Frames Shape Policy Responses

Ultimately, decision-making under risk is not an abstract calculation but an embodied process. It is fundamentally shaped by the pre-conceptual image schemas derived from our physical existence, which are then organized into conceptual metaphors and semantic frames that structure our understanding of abstract challenges. This cognitive architecture has profound and direct implications for strategic policy.

The specific metaphorical framing of a risk directly constrains the available solution space and predetermines the strategic playbook. If risk is framed as a **CONTAINER** (e.g., *containing a threat*), policy gravitates toward containment and boundary enforcement, whereas framing it as a **JOURNEY** (e.g., *navigating a crisis*) prioritizes adaptation, maneuver, and forward movement. When risk is cast as an **OPPONENT** (e.g., *fighting a hazard*), the resulting policies become adversarial and zero-sum, oriented toward victory or defeat. The language and metaphors chosen—or, more accurately, unconsciously activated—to define a risk are not merely descriptive. They are generative, creating the very reality within which policymakers operate and making certain courses of action seem logical and necessary while rendering others invisible. This theoretical foundation provides a critical lens for the subsequent analysis of how threat actors weaponize these embodied frames in cyber-enabled influence operations, manipulating the very metaphors through which policymakers perceive and react to risk.

5.4 Implications for Policy, Governance, and Peacebuilding

5.4.1 Introduction: From Theoretical Insights to Practical Applications

Having established the theoretical link between Conceptual Metaphor Theory and the mechanisms of cognitive manipulation within cyber-enabled influence operations, the analysis now shifts to the strategic implications of these findings. This section moves from the descriptive to the prescriptive, examining how a deeper understanding of the cognitive architecture of persuasion can inform the development of more robust and resilient democratic institutions. The core argument is that understanding these cognitive-linguistic mechanisms is essential for developing modern strategies across three interconnected domains: enhancing societal digital resilience, redesigning counter-disinformation frameworks, and fostering long-term peacebuilding and civic trust. The exploration begins by addressing how to strengthen societal defenses against the pervasive threat of cognitive manipulation.

5.4.2 Fortifying the Cognitive Domain: Implications for Digital Resilience Strategies

In an era of pervasive information warfare, the strategic importance of digital resilience cannot be overstated. True resilience, however, extends beyond technical security and platform integrity. It encompasses the cognitive capacity of a populace to withstand and critically process manipulative information, thereby insulating the democratic process from malign influence. The findings of this research suggest that current approaches to digital literacy, while valuable, are insufficient. To fortify the cognitive domain, strategies must evolve to address the underlying frames and psychological triggers that influence operations are designed to exploit.

2.1 Moving Beyond Fact-Checking to Frame Awareness

The analysis presented in this thesis challenges the sufficiency of traditional media literacy programs, which often prioritize fact-checking as the primary defense against disinformation. While identifying falsehoods is critical, it is an incomplete strategy because influence operations frequently achieve their objectives not through outright lies, but through appeals to emotion and misleading arguments that bypass logical evaluation (Framing Deception, n.d.). The most potent of these tactics operate at the cognitive level of conceptual metaphor. Resilience, therefore, requires a shift toward cultivating "frame awareness." This is the capacity to recognize when a specific metaphorical frame is being employed to evoke an immediate emotional and cognitive response by structuring an abstract concept in embodied, visceral terms (Vyvyan, 2006). These frames are powerful because they make audiences susceptible to logical fallacies. For instance, appeals to fear are often delivered through metaphorical frames that construct out-groups as existential threats, justifying extreme policy positions without evidential support (Framing Deception, n.d.). A resilient citizenry must be educated not just to ask, "Is this statement true?" but also, "What frame is this statement activating, and what emotional response is it designed to produce?"

2.2 Inoculating Against Persuasion Tactics

The principles of influence identified by Cialdini (1984), such as reciprocity, social proof, authority, scarcity, and unity, are significantly amplified by metaphorical framing in digital ecosystems. For example, when an influence campaign successfully frames a political debate using the metaphor ARGUMENT IS WAR, it primes an audience to be more susceptible to the "Unity" principle (Cialdini, 1984), framing their political allies as fellow soldiers and opponents as enemies to be defeated rather than partners in dialogue. This makes manufactured social proof from the "in-group" all the more powerful. Insulated media environments, in particular, create potent and distorted forms of social proof, where fallacious narratives are recycled and amplified until they are widely perceived as truth within a specific group, creating a powerful propaganda feedback loop (Benkler, Faris, & Roberts, 2018). Digital resilience education must therefore include explicit instruction on these psychological tactics. By teaching citizens to identify the underlying principles in action, they can be cognitively inoculated against their effects. Recognizing that a particular message is a deliberate appeal to authority or an attempt to manufacture social proof serves as a crucial defense, allowing for a more critical and detached evaluation of the information presented.

2.3 Designing Resilient Choice Architecture

Insights from behavioral economics on "choice architecture" offer a promising avenue for public policy and platform design (Thaler & Sunstein, 2008). Just as a cafeteria layout can be designed to "nudge" patrons toward healthier food choices, digital environments can be architected to encourage more reflective and less automatic cognitive processing. For instance, platforms could introduce intentional friction, such as a mandatory time delay or a prompt asking, "Are you sure you want to share this?" before a user can amplify content that exhibits markers of manipulative rhetoric. Furthermore, platforms could develop systems to automatically flag

language that employs common manipulative metaphorical frames, providing users with a contextual warning, such as, "This content uses language often associated with fear-based appeals." Such nudges would not restrict speech but would instead create moments for conscious deliberation, disrupting the automatic, click-whirr responses that influence operations rely upon (Cialdini, 1984). By defending against manipulation at the individual and systemic levels, society can build a stronger foundation for actively countering malign influence campaigns.

5.4.3 Re-Engineering a Response: Implications for Counter-Disinformation Frameworks

Current counter-disinformation efforts, while necessary, are often limited by their reactive nature. Content moderation and post-hoc debunking frequently fail to address the underlying cognitive structures that make disinformation persuasive in the first place. An overemphasis on refuting individual false claims can be likened to treating the symptoms of an illness while ignoring the underlying pathogen. A modern, cognitively informed framework must move beyond simple rebuttal and engage directly with the metaphorical frames that structure public perception, aiming not only to neutralize threats but to proactively shape a healthier information environment.

3.1 A Shift from Content Rebuttal to Frame Contestation

An effective counter-disinformation framework must incorporate strategies for contesting the manipulative frames themselves. This requires a proactive approach that goes beyond exposing an opponent's misleading metaphor. It involves the strategic introduction of alternative, more constructive metaphors to reframe the public conversation. For example, if a malign actor frames immigration as an INVASION, a purely fact-based rebuttal about economic statistics may fail to displace the powerful, fear-inducing entailments of the invasion metaphor. A more effective response would be to introduce and consistently reinforce an alternative frame, such as IMMIGRATION IS A CURRENT THAT ENRICHES THE NATIONAL SOIL. The power of this approach lies in its ability to trigger a "target domain override," where the entailments of the new, more positive metaphor begin to structure public understanding of the issue in a fundamentally different way (Lakoff, 1993, as cited in Vyvyan, 2006). This strategy contests the narrative on the same cognitive battlefield where it is being waged, rather than ceding the framing ground to the adversary.

3.2 Leveraging Authority and Trustworthiness Ethically

Influence operations frequently exploit the principle of authority by fabricating credentials or creating front organizations that appear to be legitimate sources of expertise (Cialdini, 1984). Simultaneously, public trust in legitimate institutions has eroded, leaving a vacuum that malicious actors are eager to fill. A comprehensive counter-disinformation framework must therefore prioritize the strategic rebuilding of credibility for trustworthy experts and institutions. Authority is a function of two key perceptions: expertise and trustworthiness (Cialdini, 1984). It is not enough for an institution to possess expertise; it must also effectively and transparently

communicate its trustworthiness to the public. This involves a shift away from assuming public trust toward actively earning it through clear communication, demonstrating credentials without arrogance, and admitting uncertainty where it exists. By ethically leveraging genuine authority, governments and civil society organizations can create a powerful counterweight to the manufactured authority of malign actors. This effort to restore institutional credibility is not only a defensive measure against disinformation but a foundational requirement for repairing the social cohesion upon which democratic governance depends.

5.4.4 Rebuilding the Commons: Implications for Peacebuilding and Civic Trust

The erosion of civic trust is a primary objective and a direct consequence of sustained cognitive influence operations. These campaigns are designed to deepen polarization, destroy social cohesion, and undermine faith in democratic processes. The restoration of trust is therefore not a peripheral concern but a critical component of national security and long-term social stability. Insights from cognitive science and the psychology of persuasion offer a clear path forward for peacebuilding initiatives aimed at repairing the fractured public sphere and rebuilding a shared sense of community.

4.1 Countering Divisive Unity with Inclusive Identities

Malign influence operations are adept at weaponizing Cialdini's "Unity" principle, which posits that people are most easily influenced by those they perceive as being part of their in-group, or "one of us" (Cialdini, 2016). These operations create powerful "we" versus "they" distinctions, often through dehumanizing metaphors that frame out-groups as contaminants, vermin, or existential threats, thereby justifying hostility and undermining empathy. Peacebuilding communication must consciously work to counter this dynamic by employing unifying language that emphasizes shared identities, common goals, and mutual values. This involves highlighting overarching identities that transcend partisan or factional divides. As Cialdini’s research demonstrates, invoking a shared history, such as saying, “We've been in the same department for 12 years,” can transform a confrontational dynamic into a cooperative one by activating a sense of shared belonging. Peacebuilding efforts must systematically identify and promote these points of commonality to bridge the divides that influence operations seek to exploit.

4.2 The Role of Communication in Restoring a Mutual Cognitive Environment

Meaningful civic dialogue and trust are impossible without a shared basis for communication. Influence operations deliberately attack this foundation through tactics designed to exhaust critical thinking and poison the information commons. Deceptive practices like "whataboutism," which deflects criticism by pointing out the alleged hypocrisy of an opponent, serve to derail productive conversation and normalize the idea that all actors are equally corrupt, making good-faith dialogue seem pointless (Chow & Levin, 2024). Similarly, a strategy of constant deception erodes the very possibility of establishing a baseline reality, leaving audiences disoriented and cynical (Hartley & Karinch, 2012). Peacebuilding must therefore involve a deliberate and public commitment to communication norms that reject these toxic tactics. The

goal is to reestablish a "mutual cognitive environment," a shared space of understanding and good-faith assumptions where constructive dialogue can once again occur (Vyvyan, 2006). This requires leaders and institutions to model ethical communication and create platforms that reward honesty and cooperation rather than division and deceit.

4.3 A Synthesis of Implications

The practical implications for policy, governance, and peacebuilding derived from this thesis are clear and urgent. In an information environment saturated with sophisticated cognitive manipulation, a deep understanding of the embodied, metaphorical, and psychological nature of human communication is no longer an academic luxury but a strategic necessity. Fortifying society against malign influence requires moving beyond reactive fact-checking to cultivate public awareness of manipulative metaphorical frames. Countering disinformation effectively demands a shift from content rebuttal to proactive frame contestation, coupled with a concerted effort to rebuild trust in legitimate sources of authority. Finally, repairing the damage done to the social fabric necessitates a peacebuilding approach grounded in the principles of inclusive identity and the restoration of a mutual cognitive environment for good-faith dialogue. These cognitive-linguistic insights are indispensable tools for policymakers, security professionals, and civic leaders aiming to protect and repair democratic discourse in an era of pervasive cognitive manipulation.

Chapter 6: Recommendations and Framework Development

6.1 The Embodied Risk Communication Model (ERCM)

6.1.1 Introduction: Bridging the Gap Between Risk Process and Cognitive Reality

International standards such as ISO 31000 provide a robust and essential procedural framework for managing risk, guiding organizations through systematic identification, analysis, and treatment of threats (Quanta Analytica MNS Consulting, 2024). However, their guidance on the critical function of risk communication often overlooks the deep cognitive structures that shape how audiences perceive, internalize, and react to risk information. This gap between standardized process and cognitive reality creates a significant vulnerability. In the modern information environment, adversaries engaged in influence operations exploit this very gap, targeting the subconscious ways people frame and understand abstract threats. The Embodied Risk Communication Model (ERCM) is a novel framework designed to close this vulnerability by integrating the principles of cognitive linguistics with established risk management functions.

The ERCM posits that to communicate risk effectively and defend against cognitive manipulation, one must first understand how the human mind makes sense of abstract concepts like "risk" itself. By augmenting standard risk management protocols with a systematic analysis of the underlying cognitive models that govern risk perception, organizations can move from simply disseminating information to strategically and ethically shaping the narrative. Therefore, the ERCM provides the necessary tools to deconstruct, analyze, and shape risk narratives to enhance clarity, foster resilience, and counter hostile influence.

6.1.2 Foundational Component: Conceptual Metaphor Theory and Embodied Cognition

A strategic approach to risk communication must begin with an understanding of embodied cognition—the thesis that conceptual structure is fundamentally derived from our physical, sensory, and motor experiences (Evans, 2004, p. 175). We comprehend abstract concepts not in a vacuum, but by mapping them onto the tangible, embodied experiences that form the basis of our conceptual system. This process is largely unconscious, yet it dictates how we reason

about and react to complex, non-physical ideas like economic instability, cybersecurity threats, or geopolitical tension.

The primary mechanism for this process is explained by Conceptual Metaphor Theory (CMT). CMT posits that we understand an abstract concept (the **target domain**) in terms of a more concrete, physically grounded one (the **source domain**) (Evans, 2004, p. 300). These conceptual metaphors are not mere linguistic flourishes; they are fundamental cognitive frameworks, or *Idealized Cognitive Models* (ICMs), that structure thought, guide inference, and shape emotional responses (Evans, 2004, p. 153). By framing a complex risk in terms of a simple, embodied experience—like a journey, a war, or a sickness—a communicator activates a host of pre-existing cognitive associations that influence how the risk is perceived and what actions seem logical in response.

Several conceptual metaphors for risk and influence are evident in the contemporary information environment:

- **RISK IS A PHYSICAL THRESHOLD:** Climate change is frequently framed not as a gradual process, but as a series of "tipping points" with specific temperature "thresholds" that can be crossed. The *Global Tipping Points Report* uses this exact language, framing risk as a physical boundary that, once breached, leads to an irreversible new state (McKay, 2025). This metaphor implies a finite window for action before a catastrophic and permanent change occurs.
- **A PROCESS IS A JOURNEY:** Complex negotiations and strategic plans are often described as journeys. The Gaza peace plan, for example, is referred to as a "road-map," implying a path with distinct stages, a clear direction of travel, and a final destination (Johnson, 2025). This metaphor encourages stakeholders to see the process as a collaborative, step-by-step endeavor requiring perseverance.
- **GEOPOLITICAL ALLIANCES ARE AXES:** The relationship between nations like China, Russia, Iran, and North Korea has been described as an "axis of upheaval" (Kong, 2025). This metaphor maps the abstract domain of international relations onto the concrete, physical image of a mechanical axis, suggesting a rigid, coordinated, and potentially threatening alignment that rotates in unison.

Because these metaphors operate below the level of conscious thought, they are a primary vector for both constructive communication and cognitive manipulation. An ethical communicator can use them to make a complex risk more understandable and relatable, while a malicious actor can use them to bypass rational analysis and provoke a desired emotional reaction. Integrating this understanding into a formal risk management process is therefore essential for navigating the modern threat landscape.

6.1.3 The ERCM Framework: Integrating Metaphor Analysis with Risk Management Functions

The strategic value of the Embodied Risk Communication Model lies in its ability to augment, not replace, standardized risk management processes. The ERCM is designed to enhance the

communication and reporting functions mandated by frameworks such as ISO 31000 by providing a structured method for cognitive analysis. The ERCM's unique contribution is its synthesis of CMT's diagnostic power with the predictive models of behavioral science, allowing an analyst to not only identify a risk frame but to anticipate its persuasive effect. This transforms risk communication from a simple act of information dissemination into a sophisticated practice of cognitive security and responsible influence. The model consists of a three-stage analytical process.

1. **Deconstruct the Metaphorical Frame** The first step is to identify the dominant conceptual metaphor used to frame a specific risk. This involves analyzing the language of a communication—whether a press release, a political speech, or a piece of propaganda—to identify the concrete source domain (e.g., WAR, SICKNESS, A NATURAL DISASTER) being used to structure the abstract target domain of the risk itself. Because linguistic meaning is encyclopedic and context-dependent, this analysis must consider the full background of knowledge and shared cultural assumptions that a given metaphor activates (Evans, 2004, pp. 153, 366). For example, framing a cyber threat as a *VIRUS* activates a completely different set of assumptions and responses than framing it as a *SIEGE*.
2. **Analyze Persuasive Triggers and Choice Architecture** The second step is to evaluate how the identified metaphorical frame functions as a form of "choice architecture" designed to "nudge" the audience toward a particular conclusion or action (Thaler & Sunstein, 2008). Different metaphors inherently activate different principles of influence. For example, framing a risk as a **WAR** (e.g., "the war on terror") is a powerful tool for mobilization that triggers at least two of Cialdini's principles of influence: *Unity* (creating an "us versus them" identity by defining an enemy) and *Authority* (demanding deference to a commander's judgment and strategy) (Cialdini, 2021). Similarly, framing a risk in terms of a dwindling resource or a "closing window of opportunity" triggers the *Scarcity* principle, compelling an audience to make immediate, often less-rational, decisions to avoid the psychological pain of loss (Cialdini, 2021).
3. **Assess for Manipulation vs. Ethical Influence** The final step is to apply the insights from the first two stages to differentiate between ethical influence and cognitive manipulation. Ethical influence can be defined as a "nudge" that uses a transparent metaphorical frame to help an audience better understand a complex situation and make more informed decisions for themselves. Cognitive manipulation, in contrast, is the deliberate exploitation of these metaphorical frames to bypass rational thought and induce a behavior that serves only the communicator's interests. This form of unethical influence is often signaled by the use of deceptive nonverbal cues, inconsistencies between words and actions, or the deliberate creation of emotional turmoil to prevent critical thinking (Hartley & Karinch, 2012; Rouse, 2020).

By systematically applying this three-stage process, a risk communicator or analyst can reverse-engineer a narrative to understand its intended cognitive and behavioral effects, thereby enabling a more effective and ethical response.

6.1.4 Application of the ERCM for Analysis and Mitigation

The true value of the Embodied Risk Communication Model lies in its dual-use application. It serves as a defensive tool for identifying, deconstructing, and neutralizing hostile influence operations, and as a proactive tool for designing more effective, resonant, and ethical risk narratives.

Defensive Application: Countering Cognitive Manipulation

As an intelligence analysis tool, the ERCM provides a structured methodology for dissecting adversary propaganda and disinformation. For example, by applying the three-stage process to Russian information warfare campaigns, an analyst can dissect Moscow's doctrine of "information confrontation" (RAND Corporation, 2022). Rather than conducting simple content analysis, the analyst can identify the core conceptual metaphors used to frame the conflict, analyze which psychological principles these frames are designed to trigger in target audiences (e.g., fear, unity, disgust), and assess the manipulative intent. This granular analysis enables the development of precise counter-messaging that does not merely refute false claims but exposes the underlying manipulative framework to the target audience, thereby inoculating them against its influence.

Proactive Application: Designing Ethical Risk Narratives

For policymakers, leaders, and public institutions, the ERCM offers a powerful framework for crafting more effective risk communication. Rather than defaulting to metaphors of crisis and threat, a communicator can consciously select a conceptual metaphor that aligns with the strategic goal. For instance, to foster long-term public and private sector collaboration on climate change mitigation, a leader might choose a **RISK AS A JOURNEY** metaphor to frame the effort as a multi-stage, cooperative project requiring endurance and shared purpose. This frame stands in stark contrast to a **RISK AS WAR** frame, which, while effective for short-term mobilization, would likely engender a zero-sum, conflict-oriented mindset detrimental to sustained, multi-decade cooperation. By making a deliberate and transparent choice of metaphor, communicators can build more resonant and persuasive narratives that ethically "nudge" stakeholders toward constructive outcomes (Thaler & Sunstein, 2008).

The ERCM thus serves as a comprehensive framework for both understanding and shaping the cognitive dimension of the information environment, bridging the gap between defensive analysis and proactive strategic communication.

6.1.5 Conclusion: A New Model for an Evolving Threat Landscape

The Embodied Risk Communication Model addresses a critical, and often overlooked, vulnerability in standard risk management frameworks. By integrating cognitive linguistics with the procedural rigor of existing standards, the ERCM provides a systematic method to analyze and influence the embodied, metaphorical nature of risk perception. It recognizes that how a risk is framed is just as important as the data used to describe it.

In an era defined by sophisticated, cyber-enabled influence operations and a complex, interconnected global risk landscape, understanding these cognitive principles is no longer an academic exercise but a strategic imperative. The ability to deconstruct hostile narratives and construct resilient, ethical ones is fundamental to national security, organizational resilience, and public trust. Having established the theoretical framework of the ERCM, the subsequent chapter will apply this model to a series of real-world case studies drawn from the contemporary geopolitical landscape.

6.2 Applications for Strategic Communication and Cognitive Resilience

The preceding theoretical analysis of embodied cognition and conceptual metaphor theory is not a purely academic exercise. These findings translate directly into actionable frameworks and protocols designed to enhance cognitive resilience against malign influence and to improve the efficacy of strategic communication. This section outlines applications for three critical sectors: training protocols for non-governmental organizations, strategic frameworks for governmental bodies, and a methodological research agenda for the academic and research community.

1. Actionable Protocols for Non-Governmental Organizations: Counter-Influence Training

Non-governmental organizations (NGOs) operating in contested information environments are on the front lines of countering disinformation. Equipping their teams with sophisticated cognitive resilience skills is therefore a strategic imperative. Effective training must move beyond simple fact-checking protocols to address the underlying psychological and cognitive mechanisms that malign actors exploit to manipulate perception and behavior.

1.1. Core Module: Identifying the Mechanisms of Cognitive Manipulation

A foundational training module must equip NGO staff with the ability to recognize the core techniques of cognitive manipulation. This involves understanding both the cognitive vulnerabilities that are targeted and the specific influence tactics used.

- **Foundations of Manipulation:** The training must explain how malign actors exploit the principles of embodied cognition. Human understanding of abstract concepts like `RISK` or `TRUST` is grounded in concrete physical experiences. This is why we say an argument "lacks a solid foundation" or that a market has "crashed" (Vyvyan Evans, n.d.). Malign actors do not need to invent new ways of thinking; they simply activate these pre-existing, embodied conceptual models to make their narratives feel intuitive and true.
- **Deconstructing Influence with the Six Principles:** Staff must be trained to identify how Robert Cialdini's six universal principles of influence are weaponized in

disinformation campaigns. The following table deconstructs how these principles are subverted for malign influence, providing a clear analytical checklist for deconstructing manipulative content.

Principle	Malign Application
Reciprocity	An adversary offers unsolicited "gifts," such as seemingly helpful information or minor concessions, to create a sense of obligation that can be exploited for a much larger request later.
Commitment & Consistency	Malign actors seek a small, initial commitment (e.g., sharing a "harmless" meme) that makes the target more likely to comply with larger requests later to remain consistent with their previous actions.
Social Proof	This principle is weaponized by creating a false sense of consensus through bot networks, fake online reviews, or astroturfed movements. It preys on uncertainty, making individuals believe a fringe idea is popular or widely accepted (Cialdini, n.d.).
Authority	Influence operations often use the trappings of authority—such as fake expert accounts, official-looking documents, or pseudo-academic reports—to lend credibility to false claims, knowing that people tend to defer to perceived experts.
Liking	Adversaries create front groups or use influencers who mimic the identity, language, and values of a target audience (similarity) or use flattery (praise) to build a rapport that lowers cognitive defenses.
Scarcity	Malign narratives often use the "limited quantity" or "exclusive information" tactic. This creates a sense of urgency and competition, leveraging the psychological principle that the fear of loss is a more powerful motivator than the prospect of gain (Cialdini, n.d.).

- **Recognizing Manipulative Frames and Metaphors:** Training must detail how to identify the activation of specific Idealized Cognitive Models (ICMs), or frames, within propaganda. Malign actors rarely create narratives from scratch; instead, they hijack and amplify existing cultural frames and societal fissures. For example, analysis of Russian disinformation in the Sahel shows a consistent effort to frame regional instability within a narrative of Western colonialism versus national sovereignty, a powerful frame that resonates with local grievances and historical memory (ISD, 2024; Information Operations and Cultural Intelligence, n.d.).

1.2. Advanced Module: Building and Deploying Cognitive Resilience

Beyond identifying threats, advanced training must focus on building active cognitive defenses and proactive strategies for both staff and the communities they serve.

1. **Establishing a Cognitive Baseline:** Adapted from interrogation and human analysis practice, the concept of "baselining" is crucial for information analysis (Hartley & Karinch, n.d.). NGOs must train staff to establish the normal patterns of communication, tone, and argumentation for key sources, individuals, and groups. By understanding the typical baseline, analysts can more easily spot deviations, inconsistencies, sudden shifts in narrative, and other indicators of inauthentic or deceptive activity.
2. **Pre-bunking and Inoculation:** This protocol is a strategic application of the concept of "pre-suasion," famously articulated by Cialdini, which involves preparing an audience to be receptive to a message *before* it is delivered (Cialdini, n.d.). Where pre-suasion is typically used to create a receptive moment for a message, here it is weaponized defensively to create a *skeptical* moment. By pre-emptively exposing audiences to weakened forms of manipulation and explaining the techniques, NGOs can inoculate them against the full-strength propaganda they will inevitably encounter.
3. **Tailoring Resilience for Different Audiences:** Cognitive resilience is not one size fits all. As research into personality types shows, different individuals respond differently to influence techniques (Harnessing the Enneagram and NCI, n.d.). Training programs must therefore be adaptable. For example, resilience training for highly analytical personality types might focus on spotting logical fallacies and data manipulation. In contrast, training for more community-oriented individuals might focus on building resistance to manipulative appeals based on a false in-group/out-group identity, which leverages Cialdini's seventh principle, "Unity."

While these protocols fortify non-governmental actors at the tactical level, true societal resilience demands a national-level strategic framework, a responsibility that falls squarely on governmental bodies.

2. Strategic Frameworks for Governmental Bodies: Proactive Risk Communication

In the contemporary information environment, a reactive posture is a strategic failure. Merely debunking false narratives cedes the cognitive terrain to adversaries. An effective national

strategy demands proactive and persistent risk communication that is grounded in a deep understanding of the population's cognitive landscape. This means moving from simply disseminating facts to shaping a resilient and shared understanding of complex challenges.

2.1. Mapping the Conceptual Landscape of Risk

Before a government can communicate effectively about risk, it must first understand how its population intuitively conceptualizes it. This involves a two-step analytical process.

1. **Identify Core Metaphors:** The first step is to conduct cultural and linguistic intelligence research to identify the dominant conceptual metaphors a population uses for abstract threats. Just as English speakers unconsciously structure time using metaphors like `TIME AS A MOVING OBJECT` ("Christmas is getting closer") or `TIME AS A LANDSCAPE` ("We are approaching the deadline"), they also structure abstract risks through embodied metaphors (Vyvyan Evans, n.d.). A government must analyze how its citizens conceptualize `ECONOMIC RISK` (e.g., as a fragile building, a stormy sea), `NATIONAL SECURITY RISK` (e.g., as a disease, a leaky container), or `CLIMATE RISK`. The "Global Tipping Points Report," for example, leverages a powerful embodied metaphor of a system reaching a point of irreversible collapse, which is far more intuitive than abstract climate data (Dataset for Thesis Research, n.d.).
2. **Analyze the Domain Matrix:** Using the concept of a "domain matrix," governments must understand the full range of knowledge structures, or frames, that are activated by specific risk-related language (Vyvyan Evans, n.d.). A single term can activate vastly different mental models depending on the context and the audience. For instance, the phrase "border security" might activate frames related to `CONTAINMENT` (keeping threats out), `THREAT` (an invasion), or `ECONOMIC FLOW` (the movement of goods and labor). A failure to understand which frames are being subconsciously activated by the population can lead to communication that is ineffective or, worse, counterproductive, inadvertently reinforcing an adversary's narrative of 'invasion' while intending to discuss 'economic flow.' This governmental-level analysis mirrors the tactical training provided to NGOs for recognizing manipulative frames, but applies it at a nationwide, strategic scale to preemptively shape the information environment rather than merely react within it.

2.2. Designing Proactive and Resonant Narratives

Once the cognitive landscape is mapped, governments can design communication strategies that build national-level cognitive resilience. This requires adherence to several core principles.

- **Embodied Framing:** Government messaging must prioritize simple, concrete, and embodied metaphors that align with pre-existing cultural models rather than relying on abstract data and statistics. As the Gentner and Gentner (1982) experiment on analogical models of electricity demonstrated, the choice of metaphor (e.g., electricity as a teeming crowd vs. flowing water) fundamentally shapes how people reason about a problem and what solutions they see as viable (Vyvyan Evans, n.d.). Effective

communication does not just present facts; it frames them within a metaphor that makes them meaningful and actionable.

- **Ethical Application of Influence Principles:** Governments can and should ethically leverage established principles of influence to foster social cohesion and collective action.
    - **Authority:** It is critical to establish the credibility and trustworthiness of experts and institutions *before* a crisis, not during it. As Cialdini's research shows, authority must be established at the outset to be effective in reducing uncertainty and guiding behavior (Cialdini, n.d.).
    - **Unity:** Adversaries consistently seek to "worsen inter-ethnic tensions" and "aggravate political and social polarization" (RAND, 2018). To counter this, government messaging must consciously activate the principle of "Unity" by framing collective challenges through appeals to a shared identity. Highlighting the "we" relationship reinforces the social cohesion necessary to withstand external attempts to fracture society.
- **Fostering Public Buy-In:** Strategic communication must be a core component of policy development, not an afterthought. As scholar Dana Elkurd argues in her analysis of Middle East peace processes, the divergent fortunes of two major agreements illustrate this point: the Oslo Accords largely failed, in part because they were perceived as an elite-driven process imposed on the population, whereas the Good Friday Agreement succeeded, in part because it was built on "public buy-in and an inclusive process" (Elkurd, 2025). This principle holds true for any major government initiative, from public health campaigns to national security strategies; legitimacy and lasting success depend on the public's active and willing participation.

While governments must operationalize these frameworks to secure their domestic information environments, the long-term strategic advantage depends on the academic and research community to continually refine the underlying science and develop next-generation methodologies.

3. Methodological Integration for Academic and Research Sectors: Advancing the Field

The maturation of cognitive security as a discipline is contingent upon the systematic integration of the conceptual tools of cognitive linguistics into the analytical frameworks used by security-focused academics and research organizations. There is a pressing need to bridge the gap between abstract theory and operational practice, creating a more rigorous, evidence-based approach to understanding and countering malign influence.

3.1. Enhancing Models of Information Operations

Current models of information operations (IO) can be significantly enhanced by incorporating insights from cognitive linguistics.

- **Beyond Content Analysis:** Much of today's IO analysis focuses on message content (themes, narratives) and dissemination networks (bot activity, media outlets). This approach often overlooks the cognitive mechanisms that determine a message's actual impact. Practitioners must therefore adopt a new layer of analysis focused on identifying and tracking the deployment of specific conceptual metaphors, frames, and conceptual blends in adversary propaganda. This provides a more precise method for understanding *how* a message persuades and offers a more rigorous means of assessing the effectiveness of both malign campaigns and counter-influence efforts, addressing a long-standing challenge for the Department of Defense (RAND, 2015).
- **A Framework for Cognitive Threat Intelligence:** A more advanced framework for threat intelligence must combine the analysis of an adversary's narrative themes with the specific linguistic and cognitive tools used to make those themes persuasive. This integrated approach bridges the gap between high-level academic analysis of adversary doctrine (e.g., Russian "non-linear war") and the execution of tailored, effective responses by practitioners (InfoLab, n.d.; Information Operations and Cultural Intelligence, n.d.). It moves the focus from *what* the adversary is saying to *how* they are shaping the cognitive environment to achieve their objectives, and *why* those specific cognitive tools are effective against a given target population.

3.2. A Proposed Research Agenda

To push the field forward, several key research questions must be addressed. This agenda represents a fusion of security studies and cognitive science.

- **Cross-Cultural Conceptualizations of Risk:** How do different cultural and linguistic groups metaphorically structure abstract concepts that are central to security, such as `RISK`, `TRUST`, `SOVEREIGNTY`, and `SECURITY`? Answering this is fundamental to creating resonant communication and predicting how foreign influence campaigns might be tailored to different cultural contexts.
- **The Dynamics of Malign Conceptual Blends:** Research by Fauconnier & Turner (2002) has shown how certain conceptual blends, like the `GRIM REAPER` (which blends a person, a skeleton, and a tool to personify death), become incredibly persistent and powerful within a culture. How do modern propagandists create and deploy new, malign conceptual blends, and what cognitive properties make them so effective at spreading and influencing behavior?
- **Quantifying Metaphorical Influence:** Can computational linguistic and AI-driven models be developed to map metaphorical systems at scale across the information environment? The goal would be to correlate the widespread use of specific metaphors with measurable shifts in public opinion or behavior. Pursuing this question would operationalize the "human-led, technology-accelerated" approach called for by analysts and provide a quantitative method for measuring cognitive effects (InfoLab, n.d.).

The integration of cognitive linguistics into the practice of security and strategic communication is not merely an evolution; it is an indispensable paradigm shift. Adopting these rigorous,

evidence-based insights is a strategic necessity for the survival and resilience of democratic societies in an era of persistent cognitive warfare.

6.3 Recommendations for ARAC International and Lladner Global Development Division's Ecosystems

Moving from the preceding analysis of cognitive manipulation to proactive mitigation demands an evolution in strategy, from a reactive, tactical posture to a proactive, strategic one that offers a decisive advantage. In a contested information environment, this shift is not merely beneficial; it is essential. This section proposes two primary recommendations for implementation within the ARAC International and Lladner Global Development Division's ecosystems. These recommendations represent practical applications of Conceptual Metaphor Theory, designed to enhance institutional cognitive security and build societal resilience against cyber-enabled influence operations by integrating insights from cognitive linguistics with established security frameworks.

6.3.1 Integrate Cognitive-Metaphor Detection in Simulation and Risk Intelligence Models

The strategic imperative for this recommendation is to shift influence operations analysis from a reactive to a predictive posture. While current intelligence models excel at analyzing manifest content (what is said) and network structures (who says it), they often overlook the deeper cognitive frames that determine *how* information is understood and acted upon. Integrating cognitive-metaphor detection offers a predictive capability, allowing analysts to decode an adversary's cognitive strategy and anticipate its psychological impact on a target population, rather than merely reacting to disinformation after it has already propagated.

Theoretical Justification for Metaphor-Centric Analysis

A robust theoretical foundation justifies this shift toward metaphor-centric analysis. Sophisticated influence operations primarily target human cognition, not technological systems (Defendi, n.d.). According to Conceptual Metaphor Theory, metaphors are not merely decorative linguistic devices but are fundamental to cognition itself, serving as the primary mechanisms through which we structure abstract concepts like `CONFLICT`, `NATION`, or `RISK` in terms of more concrete, embodied experiences like `WAR`, `A CONTAINER`, or `A JOURNEY` (Evans, n.d.). An adversary who successfully imposes their metaphorical framing of a conflict effectively controls the strategic narrative before the first piece of disinformation is even deployed.

This cognitive function makes conceptual metaphors powerful psychological shortcuts. By framing a situation with a specific metaphor, a malign actor can activate a host of associated inferences and emotional responses, guiding a target's thought processes without their conscious awareness. This process functions as a "click, whirr" trigger for automatic compliance, a principle of influence well documented in psychological research (Cialdini, n.d.). This is precisely the mechanism that enables tactics such as "strategic community engineering," which is achieved by creating an information ecosystem saturated with a single, polarizing metaphorical frame like `IMMIGRATION` IS `AN INVASION`. This frame then triggers "click, whirr" compliance at scale and fosters the "generation of false consensus" that malign actors seek (Defendi, n.d.). Integrating metaphorical analysis into the disinformation "kill chain" model allows for the early decoding of an adversary's cognitive line of effort (Defendi, n.d.). During the reconnaissance phase, analysts would scan for the metaphorical frames an adversary is testing on fringe groups. During the weaponization phase, they would identify the core metaphor chosen to structure the entire narrative, allowing for early prediction of the campaign's intended emotional and cognitive effects.

A Framework for Practical Implementation

A multi-step process can guide the practical integration of this capability for ARAC and Lladner:

1. **Develop Advanced Analytical Capabilities:** The imperative first step is to develop and deploy new analytical tools capable of performing "metaphorical pattern analysis" on large-scale datasets from social media, news reports, and official communications. Unlike simpler sentiment or keyword analysis, this method identifies the dominant source domains (e.g., `WAR`, `DISEASE`, `FAMILY`) that are being systematically used to conceptualize key target domains (e.g., `THE GOVERNMENT`, `IMMIGRATION`, `ECONOMIC POLICY`).
2. **Map the Cognitive Terrain:** The output of metaphorical pattern analysis must be used to map the "cognitive terrain" of a given information environment. This map reveals not just isolated metaphors but the adversary's entire conceptual model of the conflict, complete with prescribed roles (`HERO`, `VILLAIN`, `VICTIM`) and plotlines that guide interpretation (Evans, n.d.). This process identifies which metaphorical frames are prevalent within specific populations, which in turn makes it possible to predict their vulnerability to certain types of narratives, transforming simple metaphor tracking into a form of predictive cognitive intelligence.
3. **Integrate into Risk Intelligence Platforms:** Finally, these cognitive maps must be integrated into existing simulation and risk intelligence platforms. This integration will enable analysts to model how specific metaphorical framings might propagate through a network and to forecast their potential impact on public opinion and behavior. This foresight provides a critical advantage, allowing for the development of preemptive counter-messaging strategies that can neutralize manipulative narratives before they take root.

This technical capacity to detect and model manipulative metaphors provides the necessary foundation for the human-centric goal of building durable cognitive resilience.

6.3.2 Embed Conceptual Literacy Training in Peacebuilding and Countering Malign Influence Programs

Sustainable peace and long-term resilience to malign influence cannot be achieved solely through technological tools or top-down interventions. A lasting solution requires a human-centric approach that, in stark opposition to the manipulative tactics previously analyzed, ethically empowers local populations with the cognitive tools to recognize and resist manipulation. Grounded in the principles of Neuro-Cognitive Intelligence (NCI) that prioritize individual cognitive autonomy (Shakoor, n.d.), this recommendation argues for embedding conceptual literacy training into peacebuilding and security programs to build societal cognitive resilience from the ground up.

Theoretical Justification for Conceptual Literacy

"Conceptual literacy" is the practical skill of identifying and critically evaluating the conceptual metaphors that shape one's own and others' understanding of complex social and political issues. This skill is directly linked to building "cognitive resilience" against malign influence tactics such as "strategic community engineering" and the "generation of false consensus," which exploit and amplify polarizing cognitive frames (Defendi, n.d.).

This form of training acts as a "nudge" toward more conscious and critical thinking (Thaler & Sunstein, n.d.). The strategic goal is to shift individuals from relying on their easily manipulated "Automatic System" to engaging their "Reflective System" when encountering persuasive messaging. The ethical foundation for this program is grounded in NCI methodologies, which emphasize the empowerment of individual cognitive autonomy and the creation of positive outcomes, standing in sharp contrast to manipulative approaches that seek to exploit psychological vulnerabilities for malign ends (Shakoor, n.d.).

A Dual-Track Implementation Strategy

ARAC and Lladner can implement this recommendation through a two-pronged strategy focused on their distinct operational domains.

1. Peacebuilding Program Module

- Conceptual literacy modules will be integrated into existing peacebuilding and conflict resolution workshops, using contexts like Sudan, Ethiopia, or the Israeli-Palestinian conflict as case studies.
- The training will guide participants—such as community leaders, negotiators, and journalists—to deconstruct the metaphors used by conflicting parties. For example, in workshops with Ethiopian community leaders, this would involve mapping how both

sides frame 'the nation'—is it a FAMILY being torn apart, or a CONTAINER whose boundaries are being violated? This identification is the first step toward introducing a more constructive SHARED JOURNEY metaphor. Analyzing such distinctions, such as whether a peace plan is a temporary CEASEFIRE versus a more durable PEACE DEAL or ARMISTICE, is precisely what the training would entail.

- The ultimate goal is to enable "metaphorical reframing," a process where participants consciously select and promote more constructive metaphors that facilitate dialogue, create common ground, and foster collaborative problem-solving.

2. Countering Malign Influence (CMI) Program Module

- CMI training programs incorporating conceptual literacy will be developed for civil society organizations, educators, and local media in regions vulnerable to disinformation, such as those within AFRICOM's area of responsibility.
- These modules will use real-world examples of disinformation to teach participants how to deconstruct manipulative metaphors. For example, by deconstructing how a malign actor frames political opponents as VERMIN to dehumanize them, the training pre-emptively neutralizes the dehumanizing effect of that metaphor, making future campaigns that rely on it significantly less potent. Likewise, analyzing how social change is framed as a DISEASE attacking the national BODY helps inoculate populations against fear-based rejection of reform.
- This training creates a cognitive "inoculation" effect. By understanding the underlying persuasion tactics, populations become more resilient to future influence campaigns that employ similar manipulative framing, affirming the principle that awareness is a key defense against persuasion (Cialdini, n.d.).

These two recommendations constitute a comprehensive, dual strategy designed to secure institutional intelligence to protect collective democratic capacity while simultaneously empowering individuals to defend their cognitive autonomy.

Chapter 7: Conclusion and Future Research

This concluding chapter serves to synthesize the core arguments advanced throughout this thesis, articulating its primary contributions to the interdisciplinary study of cognitive security. By drawing together the key findings, this chapter will consolidate the central claim that embodied conceptual metaphors represent a critical, yet largely unexamined, vulnerability in the modern information environment. This synthesis will demonstrate how the human perception of risk, far from being a purely rational process, is fundamentally shaped by these deep cognitive structures, which are now being systematically exploited in cyber-enabled influence operations. The chapter will then delineate the specific theoretical and practical advancements offered by this research for the nascent field of cognitive risk management before outlining several promising and necessary avenues for future inquiry. The ultimate aim is to solidify the foundational arguments of this work and to chart a course for continued investigation into the complex cognitive dimensions of 21st-century security challenges.

7.1 Summary of Key Findings

Consolidating the research presented in the preceding chapters is a strategically vital step, allowing for a cohesive restatement of the thesis's central argument: that the perception of risk, a cornerstone of decision making in domains from personal finance to national security, is not a product of pure, disembodied rationality. Instead, this thesis has demonstrated that risk perception is fundamentally shaped and constrained by a repertoire of embodied conceptual metaphors. These deep, often unconscious, cognitive structures serve as a primary attack vector in modern influence operations, allowing adversaries to manipulate perception, emotion, and behavior by targeting the very framework of human understanding itself. This section will recapitulate the key theoretical and empirical findings that support this conclusion.

The foundation of this argument rests upon Conceptual Metaphor Theory (CMT), pioneered by cognitive linguists George Lakoff and Mark Johnson. CMT posits that human cognition is fundamentally embodied; that is, our capacity for abstract reasoning is structured and understood through the lens of our concrete, physical experiences in the world (Johnson, 1987). At the most basic level, this structuring is performed by pre-conceptual image schemas: rudimentary concepts like CONTAINER, BALANCE, or CONTACT that derive their meaning directly from our sensory-perceptual experience of having a body that interacts with a physical environment (Johnson, 1987). These image schemas are not abstract propositions but are dynamic patterns of experience that form the building blocks of more complex thought. Through a process known as conceptual projection, the logic and structure of these embodied source domains are mapped onto more abstract target domains, allowing us to reason about them.

A classic illustration of this process is the pervasive **ARGUMENT IS WAR** metaphor. This is not merely a poetic flourish but a cognitive reality that structures our understanding of intellectual debate, evidenced by a vast array of common expressions like “Your claims are indefensible,” “He attacked every weak point in my argument,” and “I demolished his argument” (Lakoff & Johnson, 1980, p. 4). The abstract concept of an argument is comprehended through the embodied source domain of physical conflict. Similarly, abstract emotional and psychological states are often conceptualized as physical spaces, as when we talk about being *in* love or getting *out of* trouble, a direct projection from the embodied image schema of a CONTAINER (Lakoff & Johnson, 1980). These metaphors are systematic, coherent, and deeply rooted in our pre-conceptual, bodily experience, forming the invisible architecture of our abstract thought.

This theoretical lens provides a powerful new perspective on the abstract and critical domain of ‘risk’. This thesis has argued that risk is not perceived as an objective, statistical probability but is instead conceptualized through a variety of embodied metaphors. Adversarial narratives can frame a given risk as a tangible, imminent danger (**RISK IS A PHYSICAL THREAT**), a process of movement with potential obstacles (**RISK IS A JOURNEY**), or a delicate system approaching a catastrophic threshold (**RISK IS A TIPPING POINT**). This latter metaphor has become particularly salient in public discourse, as seen in the communication surrounding climate change. The concept of complex, nonlinear atmospheric feedback loops is rendered comprehensible, urgent, and emotionally resonant through the embodied experience of a physical object losing its balance and tipping over (Dataset for Thesis Research). The scientific reality is intricate and statistical, but the metaphor provides a simple, compelling, and actionable cognitive model that mobilizes public concern.

Cyber-enabled influence operators, whether consciously or intuitively, exploit these deep cognitive frames to achieve strategic objectives. By carefully crafting narratives that activate a specific conceptual metaphor for risk, these operators can bypass an audience’s capacity for critical, conscious deliberation. This process mirrors the “click, whirr” response of fixed-action patterns described by the psychologist Robert Cialdini, where a specific trigger feature can activate a pre-programmed, automatic sequence of behaviors (Cialdini, 1984). In the cognitive terms articulated by Richard Thaler and Cass Sunstein (2008), this metaphorical framing engages the mind’s fast, intuitive, and emotional Automatic System while circumventing the slower, more deliberate, and analytical Reflective System. The Reflective System requires significant cognitive resources and time, commodities that are often scarce in a fast-moving, saturated information environment. Metaphors, by contrast, tap into deeply entrenched, resource-cheap embodied experiences, allowing them to bypass the need for conscious, effortful analysis. The target audience does not consciously process the metaphorical framing; they simply experience the emotional and cognitive consequences of its activation, such as heightened fear, a sense of urgency, or a feeling of fatalism.

This strategic deployment of conceptual metaphors thus constitutes a potent, yet often invisible, form of cognitive manipulation that directly targets the foundational architecture of human thought, transitioning our analysis from what has been found to what this thesis contributes.

7.2 Theoretical and Practical Contributions

The primary value of this thesis is located in its original synthesis of previously disparate academic fields and its direct application to pressing, real-world security challenges. By bridging the domains of cognitive linguistics, the psychology of persuasion, and formal risk management, this research offers a more nuanced and effective model for understanding and countering modern influence operations. It moves the conversation beyond surface-level content analysis to the deep cognitive structures that constitute a new frontier in security. This section delineates the specific theoretical and practical advancements the research provides for the emerging and vital field of cognitive risk management.

The principal theoretical contribution of this work is the development of a novel, integrated framework for analyzing cognitive vulnerabilities. Traditional analysis of propaganda and disinformation often focuses on the surface level features of content, such as factual inaccuracies or overt emotional appeals. This thesis moves beyond such analysis by integrating Conceptual Metaphor Theory (CMT) with the principles of risk management, as typified by frameworks like ISO 31000, and the psychology of persuasion. The resulting model identifies the deep, embodied cognitive structures, specifically the conceptual metaphors used to frame risk, as the principal “attack surface” for influence operations. This framework reframes our understanding of risk management by applying its structured process to the cognitive domain. For example, where the ISO 31000 process begins with risk identification, our model shifts the focus from identifying overt threats in the information environment to identifying the prevalent, potentially exploitable conceptual metaphors that shape a population's worldview. Risk analysis, in this context, becomes the assessment of how these metaphorical frames might be weaponized to generate specific cognitive effects. Risk evaluation involves prioritizing which metaphors pose the greatest vulnerability, and risk treatment involves designing strategic communications that can mitigate these vulnerabilities.

Within this framework, the well-established principles of influence articulated by Cialdini (1984), such as Scarcity, Social Proof, and Authority, can be understood not as standalone persuasive tricks but as tactical methods for operationalizing and amplifying the effects of these foundational metaphorical frames. For instance, framing a resource using the **RISK IS LOSS** metaphor becomes vastly more powerful when combined with social proof showing that others are already acting on this perceived scarcity. Similarly, the metaphor **RISK IS A HIDDEN ENEMY** gains immense potency when an authoritative source, whether genuine or fabricated, is used to "reveal" this enemy, triggering automatic deference and bypassing critical scrutiny. This synthesis provides a more comprehensive model, positing that adversaries are not merely trying to change *what* people think; they are trying to change *how* people think by activating specific, pre-existing cognitive models that favor their strategic aims.

This integrated framework yields several significant practical contributions for intelligence analysts, strategic communicators, and policymakers, giving rise to a new discipline of cognitive security.

First, it provides a powerful new diagnostic tool for understanding and anticipating adversary actions. By systematically identifying the dominant conceptual metaphors present in an adversary's strategic communications, analysts can develop a more accurate and predictive understanding of their intent and their idealized cognitive models (ICMs) of the world (Lakoff, 1987). The choice to frame a geopolitical risk as a **JOURNEY** versus a **TIPPING POINT** is not arbitrary; it signals a different desired cognitive and behavioral outcome in the target audience. The former may be intended to build patience and resolve for a long-term effort, while the latter is designed to create a sense of immediate crisis requiring urgent, and perhaps drastic, action. Mapping these frames provides a leading indicator of an adversary's campaign objectives and the cognitive effects they seek to produce.

Second, this research establishes and formally defines the concept of "cognitive risk management." This discipline is distinct from traditional information security or cybersecurity. Where cybersecurity focuses on protecting technological networks, data, and hardware from intrusion or damage, cognitive risk management is concerned with protecting the cognitive "operating system" of a population. It is a proactive approach that involves mapping the metaphorical landscape of a given information environment to identify latent cognitive vulnerabilities before they are exploited by malign actors. Just as a cybersecurity expert maps a network to find unpatched vulnerabilities, a cognitive risk manager would analyze public discourse to understand which metaphorical framings of key issues, such as immigration, economic stability, or national security, are most prevalent and resonant. This cognitive mapping allows for the identification of frames that could be easily weaponized to induce polarization, panic, or paralysis, enabling a more preventative and resilient security posture.

Finally, this analysis provides a foundation for designing more resilient information ecosystems through the deliberate practice of "choice architecture," a concept developed by Richard Thaler and Cass Sunstein (2008). Understanding the cognitive vulnerabilities created by certain metaphors allows strategic communicators to design more effective countermeasures. This does not imply manipulative counter-propaganda, but rather the construction of information environments that encourage more critical and reflective processing of information. This could involve developing counter-narratives that consciously reframe issues using more constructive or less polarizing metaphors. It could also involve providing informational "nudges," such as prompts or contextual information on digital platforms, that encourage users to engage their Reflective System and consciously consider the way an issue is being framed before accepting it uncritically.

The contributions of this thesis thus provide a more robust model for analyzing influence and a more strategic approach to building societal resilience, paving the way for the necessary next steps in developing this critical field of study.

7.3 Future Research Directions

While the current research lays a critical foundation for understanding the role of conceptual metaphor in influence operations, the dynamic and rapidly evolving nature of the cyber-enabled

information environment necessitates a continuous and multifaceted research agenda. Building upon the framework established in this thesis, future work should prioritize the development of advanced analytical tools, the expansion of cross-cultural analysis, and the integration of these concepts with proactive strategies for fostering digital peace and stability. This section outlines three key areas for future investigation that promise to significantly advance the field of cognitive security and provide tangible capabilities for its practitioners.

- **Behavioral AI Detection Models for Metaphorical Manipulation** A primary challenge in countering influence operations is the sheer scale and velocity of information, which overwhelms traditional human-centric analysis. To address this, future research should focus on the development of artificial intelligence and machine learning models specifically designed to detect, classify, and track the use of manipulative metaphorical framing in large-scale data streams. Drawing inspiration from the capabilities of analytical systems like the GDELT-IGRIS pipeline, these models could be engineered to fuse outputs from multiple data sources for comprehensive, real-time analysis (The GDELT-IGRIS Pipeline). For instance, a Document (DOC) API could be trained to identify and categorize specific conceptual metaphors for risk and measure their associated narrative tone. Simultaneously, a Geospatial (GEO) API could correlate the proliferation of these metaphorical narratives with real-world events and their geographic locations, identifying potential links between online discourse and offline instability. The core of this system would be its ability to map the detected metaphorical frames to behavioral classifications using established frameworks like the Conflict and Mediation Event Observations (CAMEO) Event Codebook. This would allow for the automated assessment of whether a given narrative is escalatory, associated with conflict-oriented metaphors, or de-escalatory, linked to cooperative frames. Such a system would function as a much-needed early warning system, enabling analysts to identify emerging cognitive manipulation campaigns in near-real time and anticipate their likely behavioral consequences.
- **Cross-Linguistic and Cross-Cultural Studies** The current thesis has primarily focused on the conceptual systems evident in English-language discourse, reflecting a common but significant limitation in the field. A crucial next step is to expand this research to conduct a comparative analysis of how risk and other key abstract domains are conceptualized across diverse linguistic and cultural contexts, with an initial focus on globally significant languages such as French and Arabic. The field of cognitive linguistics has demonstrated that fundamental concepts like time and space are not perceived universally but are profoundly shaped by the specific structures of one's language. For example, speakers of Aymara conceptualize the future as being behind them and the past as in front, a direct reversal of the English model, which is rooted in the high cultural value Aymara speakers place on visual evidence for past events (Evans, 2004a). Similarly, the linguistic framing of spatial relationships varies dramatically, as seen in the differences between English and Korean (Evans, 2004a). A failure to account for these deep-seated cognitive differences could render Western-designed counter-influence strategies ineffective or, worse, counterproductive in different cultural settings. As Scott Rouse (2020) notes, even simple nonverbal

gestures can carry opposite meanings in different cultures, leading to disastrous miscommunication. Therefore, rigorous cross-linguistic and cross-cultural research is not merely an academic exercise; it is a strategic imperative for developing culturally and linguistically resonant mitigation strategies that are effective on a global scale.

- **Integration with Positive Peace Indicators for Digital Environments** Finally, future research must move beyond a purely defensive, threat-centric posture. The ultimate goal of cognitive security should not only be to counter negative influence, which can be defined as the absence of overt cognitive conflict, but to actively foster the conditions for a healthy, resilient, and peaceful digital information ecosystem. To this end, a promising research agenda would focus on integrating the analysis of metaphorical manipulation with the established frameworks of Positive Peace developed in peace and conflict studies. This approach would investigate how the principles of "choice architecture" and "nudging" (Thaler & Sunstein, 2008) could be systematically applied to the design of digital platforms and communication strategies. The objective would be to create information environments that actively mitigate the effects of polarizing and conflict-oriented metaphors while simultaneously promoting constructive forms of discourse. Research could explore the design of platform features that encourage behaviors and interactions which strengthen key indicators of positive peace, such as promoting mutual understanding, building interpersonal and institutional trust, and facilitating constructive dialogue across ideological divides. This represents a critical shift from simply defending against cognitive attacks to proactively cultivating the cognitive foundations of a more stable and cooperative global society.

Pursuing these distinct yet interconnected research projects is essential for building upon the findings of this thesis and developing a more comprehensive and effective response to the defining security challenges of the information age.

7.4 Conclusion

This thesis has argued that the greatest vulnerabilities in the modern information age lie not in our technologies, but in the foundational structures of the human mind. The perception of risk, which drives decision making at every level of society, is not a product of objective calculation but is shaped by a bedrock of embodied conceptual metaphors that are now systematically exploited in influence operations. The research summarized in these pages has illuminated how adversaries weaponize these metaphors to bypass rational thought and trigger automatic emotional and behavioral responses, effectively turning the architecture of our own cognition against us. In response, this work has contributed a novel theoretical framework for cognitive risk management, integrating insights from cognitive linguistics, persuasion psychology, and formal risk management principles to create practical diagnostic tools and strategies for building informational resilience. The proposed path for future research, including the development of AI-driven detection models, the expansion of cross-cultural analysis, and the integration of this work with frameworks for positive peace, highlights the vast and urgent work that remains. Ultimately, defending our societies against the pervasive threat of cognitive manipulation requires more than just technological solutions or fact-checking initiatives. It demands a deeper,

more nuanced, and more empathetic understanding of the human mind itself, making this interdisciplinary field of study a critical component of 21st-century security and a vital endeavor for a more secure and peaceful future.

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This reference list represents the foundational scholarly and journalistic sources for the thesis, "The Embodied Conceptualization of Risk: Applying Conceptual Metaphor Theory to Analyze and Mitigate Cognitive Manipulation in Cyber-Enabled Influence Operations." A meticulously compiled reference list is crucial for upholding academic integrity, allowing readers to trace the intellectual lineage of the research, verify its claims, and explore the primary literature for themselves. All entries have been formatted according to the American Psychological Association (APA) 7th Edition style guide, ensuring consistency and clarity for scholarly review.

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The collective value of these diverse sources—spanning seminal works in cognitive linguistics, foundational texts in psychology, and contemporary reports on geopolitical and technological trends—provides a robust and multi-faceted evidence base for the thesis.

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