

COMMENTARY**Adaptive Analysis for Uncertain Environments: A Case for Inductive Thinking in Irregular War**

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ABSTRACT

This paper argues that persistent analytic failure in U.S. irregular warfare stems less from poor execution of deductive frameworks than from their dominance over analytic practice. Doctrinal tools such as PMESII-PT, DOTMLPF-P, and JIPOE provide structure and comparability but impose linear assumptions on environments defined by political fragmentation, contested authority, and rapid adaptation. Drawing on cases from Vietnam, Afghanistan, and Somalia, the paper shows how deductive analysis distorts understanding through oversimplification, misattributed causation, cognitive bias, and method bias. Inductive analysis offers a corrective by grounding assessment in observation, contextual immersion, and iterative learning. Rather than rejecting deductive tools, the paper argues that they remain useful only when subordinated to inductive insight. Rebalancing analysis in this way improves analytic fidelity and adaptive learning in irregular warfare contexts and carries important implications for how analysis is taught within professional military education and civilian academic partnerships.

KEYWORDS

Operational Analysis; Deductive Analysis; Inductive Analysis; PMESII-PT; Bias; Irregular War; SOF; JIPOE

“They try so hard to make their systems coherent and complete that they are stuffed with common-places, truisms and nonsense of every kind.”

Carl Von Clausewitz¹

Introduction

Irregular warfare (IW) demands an analytic approach fundamentally different from the linear, deductive models that dominate U.S. Department of Defense planning. Frameworks such as PMESII-PT, DOTMLPF-P, and JIPOE were built to support conventional maneuver warfare:

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environments where variables are stable, adversaries are structured, and effects can be sequenced. In IW, these assumptions collapse. Political authority, which is the objective, is fragmented; causation is diffuse; and actors adapt faster than these models can predict. Systems analysis that begins with predefined categories often obscures what matters most in irregular conflict. Issues like legitimacy, informal authority, social networks, tribal dynamics, grievances, and the political economy of violence are difficult to measure and simplify for charts and PowerPoint decks.

Deductive analysis refers to reasoning that applies a top-down process in which analysts apply predefined categories or models to explain or predict phenomena.² Many defense experts defend deductive logic as the foundation of effective military analysis. Clark observes an “ongoing commitment to a deductive approach for analytical problem solving” in Army doctrine, tracing it through decades of planning manuals that codify decision-making as sequential reasoning from premises to outcomes.³ Eikmeier reinforces this logic through a structured, top-down “ends, ways, and means” framework for identifying centers of gravity, a disciplined process that is meant to bring order to operational design.⁴ In the Department of Defense, this logic underpins frameworks like PMESII-PT and DOTMLPF-P, all of which impose structured, universal bins on complex environments in an effort to produce coherence and comparability. Razma extends the argument, noting that models like PMESII-PT remain “reliable interpretations” for describing essential defense functions.⁵ Likewise, Ross’s Capability Package Planning Model emphasizes structured frameworks such as DOTMLPF-P to shape thinking and ensure coherence in security cooperation planning.⁶ These scholars support a mechanistic, positivist approach to understanding the environment.

Inductive analysis, by contrast, builds upward from local, boots-on-the-ground observation. Analysts begin with variables like behaviors, relationships, informal authority, and grievances, then allow patterns and causal mechanisms to emerge from the data itself. This bottom-up logic echoes classical warnings from Clausewitz and Trotsky, who argued that any theory of war must remain grounded in lived experience and adapt to historical context rather than be confined within closed analytical systems.⁷ More recent scholarship in complexity theory reinforces this same point. In nonlinear conflict ecosystems, small shifts in social relationships or incentives can produce disproportionate strategic effects that rigid deductive models fail to anticipate.⁸ Likewise, interpretivist IR scholars demonstrate that meaning, identity, and legitimacy, which are key drivers of behavior in IW, cannot be captured through deductive, variable-based models alone.⁹

Together, these traditions establish why IW environments require analytic approaches grounded first in observation and context, not abstraction. This is not a SOF argument dressed up as theory. This inductive orientation aligns with a broader tradition in political science that treats context not as analytical noise but as constitutive of political processes. As Goodin and Tilly argue, valid explanations in complex political environments “depend triply on context”: on the analyst’s interpretive position, on the evidence available, and on the actual operation of the processes under study.¹⁰ Against law-seeking approaches that abstract too early, contextual analysis emphasizes mechanism-based explanation grounded in observation and interaction rather than invariant variables. From this perspective, inductive reasoning is not a rejection of rigor but a prerequisite for it, ensuring that analytic structure follows lived political reality rather than distorting it through premature abstraction.

This paper argues that IW analysis can invert DoD’s dominant logic. Irregular warfare practitioners, from SOF detachments to interagency teams, rarely encounter the world implied by doctrinal models. Instead, they navigate fluid local realities in which power is contested at

the village level and where tactical behaviors cannot be inferred from national-level indicators. Historically, U.S. programs in Vietnam, Afghanistan, Somalia, and the Sahel have shown that deductive, top-down assessments frequently misread conditions, leading to poor anticipation and brittle campaign designs. Inductive reasoning, which is grounded in field immersion, iterative learning, and contextual sensitivity, captures causal mechanisms that rigid deductive frameworks miss. Programs such as the Combined Action Program in Vietnam and Village Stability Operations in Afghanistan demonstrated that proximity to the population uncovers how authority, legitimacy, and social incentives actually function. When analysis starts this way, rather than from abstract diagrams, planners can identify constraints and limitations and support partner forces in ways that align with the human terrain rather than institutional templates.

Deductive analysis, the top-down method, suffers from recurring limitations that reduce its effectiveness in security cooperation planning. Challenges arising from oversimplification, dynamism, causation, cognitive bias, and method bias can distort assessments and misalign interventions. As Clausewitz and Trotsky warned, systems that promise coherence often mistake their internal logic for reality itself. Analysts feel pressure to look for evidence that supports those deductive frameworks. By rebalancing deduction with inductive discipline, IW analysts gain a more accurate, adaptive, and politically attuned understanding of conflict ecosystems. This approach does not reject structured analysis; it ensures that structure serves the operational problem rather than distorting it. The examples used in this paper are not intended as full campaign histories. They are used as focused examples to illustrate specific analytic problems and practices. Each case supports a particular claim, either a limitation of deductive analysis or a strength of inductive reasoning, but not both at the same time. In several instances, the same theater appears in different sections to highlight different analytic dynamics rather than to make a single judgment about the conflict as a whole. The purpose is not to relitigate wars, but to show how different analytic approaches shape what planners see, miss, and ultimately do.

The remainder of the paper examines the analytic pitfalls of deductive reasoning and demonstrates how inductive approaches strengthen planning, M&E, and partner-force development in irregular warfare contexts.

Oversimplification

To make systems manageable, analysts often simplify complex realities by reducing variables or ignoring external influences.¹¹ This can lead to models that do not reflect the full scope of real-world dynamics.¹² In many cases, particularly in security or humanitarian contexts, reliable data may be incomplete or unavailable. These data limitations make modeling partner sentiment accurately very difficult. This drives a tendency to focus on variables that can be measured easily, called quantification bias, while ignoring intangible factors like political will, morale, or cultural context, which can be critically important in national security.¹³ Assumption sensitivity hardens the more readily available preferred information is to gather.¹⁴ When deductive assumptions fail, systems optimized for those scenarios may underperform or create strategic risk.

The Strategic Hamlet Program in South Vietnam illustrates this problem vividly. The program relied on modernization theory and assumptions that centralized state-building would yield stability.¹⁵ The program treated security and legitimacy as outputs of institutional design rather than as socially contingent processes. Analysts privileged formal administrative

structures and population control metrics over village-level authority, informal power networks, and local grievance patterns. Top-down models oversimplified the fragmented political landscape, assuming coherence where none existed. Analysts privileged formal institutions over village-level legitimacy and informal power structures, leading to interventions misaligned with local realities. The Strategic Hamlet Program thus became a case of the very “doctrinairism” Clausewitz and Trotsky derided. The result was an intervention that appeared analytically tidy but was detached from the lived realities it sought to manage.

Dynamism

Security systems are not static, but are dynamic, evolving over time and influenced by feedback loops, delays, and nonlinear behavior.¹⁶ In such systems, goal ambiguity is a real concern. As stakeholders often disagree on objectives or priorities, analysis slows down as the independent variable disappears in squabbles and bureaucratic politicking. Analysts attempting to model system dynamics can fall prey to these boundary discreteness issues, since a model requires variables that are well defined, controlled, and accounted for in the system.¹⁷ This makes model boundary selection critical, as what is included or excluded shapes conclusions. Dominating feedback loops, like powerful staffers, can determine the trajectory of analysis.¹⁸ For instance, changes in a variable like foreign aid might have unintended, time-lagged effects on governance, security, or public perception, out of sync with timelines for funding or activity approval. These second- and third-order effects are notoriously hard to capture. Ignoring them is easy and compounds oversimplification.

The Strategic Hamlet Program also illustrates how deductive analysis struggled to account for dynamism in irregular warfare environments. Designed around linear assumptions that pacification could be sequenced through clear, hold, and build phases, the program relied on static indicators such as the number of fortified hamlets or populations relocated. These metrics treated social stability and legitimacy as fixed inputs rather than as variables shaped by continuous interaction and adaptation. As local actors responded to resettlement, coercion, and shifting security conditions, feedback loops emerged that the analytic model could not absorb. Villages classified as “secure” one quarter often collapsed the next, as coercive resettlement inflamed resentment and insurgents adapted their tactics.¹⁹ This was due less to improper execution than to the system itself evolving faster than the deductive framework could keep pace with.

Causation

Clausewitz condemned the belief that war, or analysis of war, can be captured in a closed system: causation, the perfidious princess of analysis, was his muse. In analysis, causation goes beyond a connection between two variables. It attempts to understand the activities behind the connection.²⁰ In simple terms, causation means that one thing makes another thing happen.

Unlike correlation, which only indicates a relationship between two variables (they move together), causality refers to the process of explaining why events unfold as they do, recognizing multiple interacting influences rather than linear cause–effect chains. Explanation is about constructing meaning by identifying patterns of influence and interaction that make sense of outcomes, rather than proving singular deterministic causes.²¹ For example, a country receiving extensive DoD security assistance might show declining levels of violence. However, this does not necessarily mean the assistance caused the reduction. Both may be correlated because a third factor, like political settlement or improved governance, has created conditions

favorable for peace and also made the country a more attractive candidate for more assistance. Mistaking correlation for causation could lead to overestimating the impact of security programs. The principle of non-spuriousness—that the relationship between two variables is not due to some other variable—is a measurement precision issue.²² Analysis takes multiple iterations with the subject over time. Isolating variables in security cooperation is often impossible, making determinations of non-interference questionable at best.

In practice, especially in complex systems like national security or public policy, causation is rarely simple or singular. Multiple interacting causes often lead to an outcome, and feedback loops can further complicate the causal chain. For example, the African Union Mission in Somalia (AMISOM) illustrates how deductive analysis can misattribute causation in complex security environments. Strategic assumptions held that degrading al-Shabaab kinetically would erode its legitimacy and that standardized training inputs would translate into improved force cohesion and governance outcomes.²³ These assumptions reflected a linear causal logic that treated correlation as causation. In practice, observed changes in security conditions often were more influenced by clan realignments, localized political bargains, or external financial flows that were independent of formal assistance efforts. By privileging program inputs and output metrics over underlying political processes, deductive analysis overstated the causal impact of training and operations while obscuring the mechanisms that actually shaped outcomes. But AMISOM lacked a mechanism to systematize these insights into mission-wide planning, revealing a disconnect between operational feedback and strategic adaptation.²⁴

Cognitive Bias

Cognitive biases are systematic errors arising from mental shortcuts that are used when the analyst has limited resources to process large amounts of data.²⁵ This bounded rationality is shaped by real-world environments, motivations, and task demands. Biases are evolved strategies to enhance efficiency over strict accuracy, especially in situations with uncertain or asymmetric outcomes.²⁶ These patterns, like structured SOPs and regulations, can be maladapted for modern environments.

This leads to confirmation bias, a major source of analytic problems. Confirmation bias is when analysts favor information that supports their preexisting beliefs or supervisors' preferences while downplaying contradictory evidence.²⁷ This tendency to favor believable conclusions intensifies with problem complexity.²⁸ As logical tasks become harder, people rely more on intuitive judgments than formal logic. These 'dual process' cognitive limits lead individuals to favor belief-based reasoning under increased cognitive load.²⁹ In deductive analysis, the oversaturation of variables leads analysts to choose simpler courses of action.

The U.S. experience in Afghanistan illustrates how cognitive bias can shape analysis within deductive planning systems. Early assessments of partner force development and governance capacity were strongly influenced by anchoring and confirmation bias, as analysts interpreted field reporting through prior assumptions about institutional progress and absorptive capacity.³⁰ Indicators that aligned with expectations, such as force size, training throughput, or formal organizational charts, were privileged, while contradictory signals related to patronage networks, corruption, and political fragmentation were discounted or explained away. Error-management bias further reinforced these tendencies, as planners often favored optimistic assessments to avoid the perceived costs of withholding assistance or revising strategy.³¹ When false positives and false negatives carry asymmetric costs, evolution favors biases that err toward the less costly mistake. U.S. assistance planners may err on the side of caution by

assuming a partner force is less prone to corruption or collapse than evidence supports. As a result, deductive frameworks did not simply misread conditions; they systematically filtered evidence in ways that sustained analytically comfortable but increasingly fragile conclusions.

Another issue in analysis is error management bias, which refers to systematic cognitive tendencies that evolved to minimize the costliest type of error in uncertain situations. Anchoring bias returns us to the initial problem, where too much emphasis is placed on initial estimates or assumptions also distorts judgment, particularly in time-sensitive or uncertain environments.³² Organizational and institutional anchors can arise when agencies filter findings to conform with leadership expectations or prevailing policy agendas.³³ Analysts may unconsciously align conclusions with what is seen as acceptable or career-safe.

Method Bias

Bias in analysis refers to systematic distortions in how information is gathered, interpreted, or presented, leading to inaccurate or misleading conclusions.³⁴ Bias can enter the analytical process at any stage: data selection, framing of questions, modeling, or interpretation, and often occurs without the analyst's conscious intent. Method bias happens when models or data are selected based on convenience or when complex qualitative variables like morale, leadership, or legitimacy are excluded because they are hard to quantify.³⁵ Quantification bias is also common. Analysts may prioritize logistics metrics or weapons system performance while underweighting harder-to-measure variables like host-nation support or civil-military relations.³⁶ Turning back to the AMISOM mission, we see an illustration of how method bias can distort analysis through the choice of measurement and reporting tools. Assessments prioritized quantifiable outputs such as training completion rates, unit certifications, and equipment delivery. Harder-to-measure variables like clan loyalties and unit morale were ignored.³⁷ These choices in method produced reporting that appeared coherent and positive but was poorly aligned with the underlying political and social realities shaping force behavior. By privileging what could easily be counted over what actually structured performance, deductive assessment systems generated an illusion of progress that masked persistent fragility within Somali security forces. Method bias also multiplies misperception, as systems designed to verify progress end up validating their own assumptions, thus starting the next cycle even further from reality.

Rethinking the Analytic Approach

Deductive analysis offers structure, consistency, and comparability, but its assumptions often distort reality in fragile or politically complex environments. Inductive reasoning, by contrast, grounds analysis in lived experience and emergent dynamics. This is what SOF does. Inductive reasoning embodies the methodological humility Clausewitz and Trotsky demanded: plans must follow careful collection, not dictate it. In qualitative research parlance, SOF empirically grounds direct observation of behaviors, actors, and contexts rather than the imposition of an a priori top-down framework.³⁸ The Marines in the Combined Action Program in Vietnam did the same. Small units of U.S. Marines lived and operated full-time alongside local Popular Forces, engaging daily with village populations. Through sustained proximity, these teams learned how legitimacy, morale, informal authority, and local grievance patterns actually functioned at the village level.

Inductive approaches emphasize contextual sensitivity, which is cultural and political embeddedness, treating context as constitutive of outcomes rather than as background noise.³⁹

Field immersion enables analysts to recognize how clan structures, neopatrimonial exchange, or kinship networks shape partner performance. These insights are often invisible to top-down assessments. The AMISOM experience, for instance, demonstrated that training metrics obscured the centrality of clan cohesion and local legitimacy.

Induction fosters adaptive learning via iterative adjustments. Because it prioritizes observation and feedback, it allows analysts to refine programs as realities evolve.⁴⁰ Village Stability Operations in Afghanistan displayed this strength: Special Forces teams learned through continuous engagement, modifying security arrangements in response to shifting tribal alliances and grievances rather than adhering to rigid, state-centric templates. Continuous field observation mitigates bias, as emerging evidence disrupts analytic path dependency.⁴¹ Inductive processes reduce confirmation and quantification bias by confronting planners with disconfirming data. Instead of validating assumptions through outputs, analysts reinterpret frameworks through ground truth and structured reflection.

Finally, induction enhances local ownership and long-term resilience. Programs co-produced with partners and communities resonate with indigenous norms of authority and reciprocity, producing greater durability than externally imposed designs. By anchoring analysis in observation, context, and feedback, inductive reasoning transforms planning into an adaptive, learning-oriented process that keeps security cooperation aligned with political and human realities.⁴² This method privileges responsiveness, adaptability, and empirical grounding. The CAP in Vietnam highlighted induction's strength in capturing causal mechanisms overlooked by deductive models. By embedding Marines in villages, Marines lived among the population, conducted joint patrols, and helped administer civic action programs tailored to each village's specific context, building legitimacy, morale, and trust, rather than abstract force ratios.⁴³

The Village Stability Operations (VSO) program in Afghanistan also demonstrated how inductive reasoning can manage dynamism more effectively.⁴⁴ Early U.S. efforts had applied deductive, state-building models that assumed centralized coherence and institutions would reduce corruption and increase absorptive capacity. VSO reversed this logic. Special Forces teams embedded in villages, observed local politics, and co-developed solutions tailored to each community. By privileging continuous observation and feedback, VSO adapted to evolving tribal grievances and power dynamics. The program's inductive design recognized that stability emerged from relationships and legitimacy, not from static institutional templates. Though difficult to scale and causally ambiguous, VSO exemplified how inductive analysis can address the dynamism that deductive frameworks often miss.

In Vietnam, the Combined Action Program helps illustrate how inductive practice can mitigate such distortions.⁴⁵ CAP teams grounded their analysis in lived experience rather than inherited assumptions, learning directly from population behavior. By privileging observed reality over formal logic, Marines reduced confirmation bias and uncovered causal mechanisms—like community legitimacy and morale—that top-down models had missed. This example demonstrates that proximity to context and iterative feedback can counter cognitive blind spots inherent in distant, deductive systems.

Implications for the IW Nomos

The implications for irregular warfare planning and execution are threefold. First, deductive planning tends to validate its own assumptions rather than interrogate them, reinforcing and

building what might be called pseudo-U.S. capabilities. Frameworks such as PMESII-PT and JIPOE impose the appearance of coherence and rigor, but their internal logic rewards alignment with American institutional preferences rather than with local effectiveness. These systems measure the degree to which partner programs conform to U.S. categories of performance, not whether they function within indigenous political economies. The result is an analytic echo chamber in which models confirm their own premises: success is defined as consistency with the plan rather than adaptation to reality. True capability development demands that analysis test, not simply affirm, the assumptions embedded in American doctrine and planning culture.

Second, inductive reasoning should anchor the analytic cycle by institutionalizing observation, feedback, and adaptation at every stage of design and implementation. This is a key strength of SOF. Field immersion and iterative learning are not ad hoc supplements to planning but essential sources of evidence for how irregular war actually unfolds. Without this emphasis, as Trotsky warned, theory “easily outlives its day, because it continues unchanged, while circumstances imperceptibly undergo complete change.”⁴⁶ Instead of forcing partners to conform to pre-set templates, planners would let context and evidence reshape frameworks in real time. Deductive models would still provide discipline by establishing comparability across commands and programs, but their role would shift from prescribing to testing emergent understanding. Just as important, analysis itself must be taught from first principles, beginning with the basic logic of observation, pattern recognition, and iterative inference.

Third, by teaching analysis as an adaptive craft rather than a fixed system, training programs would cultivate judgment about when deductive tools enhance, and when they distort, reality. The dialogue between field observation and structured analysis allows planners to detect disconfirming evidence early, recalibrate assumptions, and sustain responsiveness in complex or unstable environments.⁴⁷ In this sense, induction is not the opposite of deduction but its corrective: it ensures that structure serves learning rather than constraining it. Embedding such feedback ensures that theory remains the servant of experience, the relationship Trotsky insisted must guide all military study.

Inductive analysis can be most effectively taught at the intersection of civilian academic institutions and professional military education (PME), where methodological rigor and operational experience reinforce one another. Civilian universities, particularly graduate programs in political science, sociology, anthropology, public policy, and evaluation, are well-positioned to teach inductive reasoning as a formal analytic skill. These institutions emphasize observation, qualitative methods, process tracing, ethnography, and theory building from empirical evidence, providing students with disciplined tools for pattern recognition and causal inference grounded in context. When partnered with PME institutions, this methodological foundation can be translated directly into operational relevance.

PME environments, by contrast, offer the applied setting necessary to stress-test inductive thinking against real strategic problems. Staff colleges, war colleges, and functional schools expose practitioners to complex, ambiguous environments where predefined models routinely break down. Integrating inductive analysis into PME curricula through case-based learning, field reporting exercises, red-team observation, and adaptive assessment would teach officers, and particularly intel warrants and NCOs, how to begin with ground truth before imposing structure. Crucially, inductive reasoning must be taught explicitly, not assumed as an informal skill acquired through experience alone. A joint civilian–PME partnership would create the strongest learning environment: civilian scholars contribute methodological discipline, while military institutions supply contextual realism and decision constraints. Together, they cultivate

analysts capable of recognizing when deductive frameworks illuminate reality and when they obscure it, which is an essential competence for irregular warfare.

Conclusion

Irregular warfare exposes the limits of deductive analysis more sharply than any other operational domain. As Clausewitz and Trotsky warned, theory must never become so coherent that it outlives the reality it seeks to explain; when doctrine hardens faster than circumstances evolve, analysis loses its anchor in experience. Historical examples such as the Combined Action Program in Vietnam and Village Stability Operations in Afghanistan demonstrate the power of inductive practice to detect adaptation early and adjust accordingly. Deductive approaches do not fail because of their inelasticity. Indeed, many of the deductive approaches the U.S. military uses have built-in correction mechanisms meant to fix the very issues identified in this paper. Instead, they fail because of intent. In the DoD, top-down followership is valued more than bottom-up discovery. For IW analysts, the task is not to discard deduction but to subordinate it. When planning begins inductively, with observation before abstraction, deductive tools become more accurate, more adaptive, and more strategically meaningful.

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- ⁴⁵ Ronald E. Hays II, *Combined Action: U.S. Marines Fighting a Different War, August 1965 to May 1971*, Marines in the Vietnam War Commemorative Series (Quantico, VA: History Division, Marine Corps University, 2019), 11–20.
- ⁴⁶ Trotsky, “Military Doctrine.”
- ⁴⁷ Patton, *Qualitative research*, 545.