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Integrated Understanding

Re-Thinking the Human Environment of Military Operations

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Executive Summary

This study examines Land Forces' approach to the Human Environment.1 In response to the challenges of the past two decades, and with a view to near-term doctrinal change, it critiques how we understand our opponents as integral features of the societies in which we confront them.

- ***Section I: Investigating the Human Environment***, argues that our principal analytical and conceptual frameworks are inadequate.
- ***Section II: Understanding the Human Environment***, addresses structural faults in our intelligence architecture, and the inherent limitations of "intelligence fusion" as currently practiced.
- ***Section III: Integrated Understanding***, offers an alternative intelligence architecture, alongside a novel "vector-based" methodological framework to investigate the contextual features of the human environment.

This study is offered with a sense of urgency—an urgency that was shared by numerous Defence stakeholders who contributed their time and insight. Land Forces, like our American and NATO partners, suffer from a systemic sense-making problem. Our inability to develop a focused contextual understanding of either Afghanistan or Iraq was vividly exposed and ruthlessly exploited by vastly inferior military powers within small-scale, limited wars. Looking to the current strategic landscape, we are facing concurrent hybrid and irregular threats, set against the backdrop of potential large-scale combat against formidable opponents, featuring
open warfare in cities. In each of these contexts, shortcomings in our understanding pose a perilous liability.

The intent of this study is to prompt action. The flaws examined in Sections I and II must be acknowledged and addressed. In the view of the author, arguments for the adequacy of the *status quo* are untenable in the wake of our recent campaigns. The concepts outlined in Section III are offered as prospective enhancements. They should be subjected to rigorous scrutiny and, if deemed viable, to intensive field-testing as well.

Lastly, it is hoped that this study will spark broader debates over opportunities for innovation within Land Forces. The interviews supporting this study tapped into deep currents of frustration related to Land Forces' posture in the human domain of conflict. The critique offered in this document is by no means comprehensive, nor are the changes suggested. It is offered as step in a new direction, which might be accompanied by numerous others.

Introduction

The human environment is fundamental to any military campaign. It is the interconnected set of social, economic, political, and cultural systems that comprise our lived reality. Our enemies are integral features of the human environment, as are our allies, and likewise the people amongst whom we fight. The human environment is the living, breathing context in which military operations of all types occur, and within which the consequences of those operations reverberate.

Land Forces must develop a granular understanding of the human environment, in order to maneuver astutely therein. This begets a critical challenge: the human environment is incomprehensibly vast and perpetually dynamic. Detailed understanding is essential, but *comprehensive* understanding is impossible.[1]

A traditional reconnaissance element can be straightforwardly tasked to map the physical environment within a given area. Every bridge, hill, and hospital can be meticulously and objectively plotted. Similarly, intelligence assets can be tasked to provide a comprehensive view of the disposition of enemy forces or the composition of an enemy network. Constraints of time and access may prevent a complete understanding, but the tasking itself (to identify and assess a finite number of discrete things) is reasonable. We know what we are looking for, and we know where and how to look.

As we look to the contextual features of the human environment, we face a different sort of challenge. Vastness and dynamism preclude any attempt at mastery. Nor would comprehensive knowledge necessarily be a desirable objective. Most facets of the human environment will be irrelevant within a specific operational context, and information overload would rapidly and inevitably ensue.

Standardized checklists of “key features” are of dubious value as well. Different aspects of the human environment will gain or lose relevance contingent upon the circumstances of a given operation, and also in response to any number of social, economic, political, or cultural developments entirely unrelated to our campaign. The human environment is a moving target, which demands an agile and adaptable approach to understanding.

Focusing Our View of Context

As Land Forces confront the human environment, selective focus is paramount. We must limit ourselves to a targeted endeavor that identifies and examines those features most relevant to our particular objectives. This prompts three questions, which must be clearly and systematically answered if we are to develop the necessary understanding. The answers to these questions are vital in pre, mid, and post-conflict environments, with the caveat that understanding offers its greatest strategic utility *before* Land Forces are committed to military action:

- How should Land Forces identify those features of the human environment that are most relevant in a given time and place?

- How should those features be investigated and understood?

- How should Land Forces integrate the resulting insights into planning and decision-making processes?

These are elemental questions regarding Land Forces' relationship with the human environment, and our ability to maneuver and deliver effects therein. It is a premise of this study that, at present, doctrine does not offer adequate answers. Indeed, foundational publications within Defence concede this point explicitly.[2] Intelligence doctrine offers an array of robust analytical frameworks and operational processes to assess and attack our foes. Here, we are on comparatively solid ground. As we look to the contextual features of the human environment, however, the quality and consistency of our approach diminishes. So does the quality and consistency of our understanding, and of our ability to achieve results.

This study was commissioned in response to that imbalance, with an underlying view toward Land Forces' pending revision of urban warfare doctrine. It addresses a doctrinal gap between conceptual theorizing about the importance of the human environment (something done quite eloquently and consistently in doctrine), and the provision of suitable tools and processes to navigate its contextual features (which stands as a conspicuous gap in British, American, and NATO doctrine). In so doing, this study questions Land Forces' foundational analytical architecture, with respect to the processes and methods used to understand the human environment as a whole.

Vignette 1
Birthing "Bertie Basra"

During the 2003 invasion of Iraq, Land Forces came to control the city of Basra and its environs. This required a rapid pivot from combat operations to a governance and stabilization mission. Concurrently, it required Land Forces to develop a detailed understanding of its operational environment in the midst of a chaotic situation.

Operating under a strategic mandate for "regime change," which posited the ability of Land Forces and our Coalition partners to depose Saddam Hussein and his inner circle without affecting wider disruption to the functioning of Iraqi society, "Bertie Basra" was conceived.

The basic premise was twofold:

- Firstly, the core cadres of the Ba'ath Party and its Fedayeen paramilitaries were conceptualized as Bertie's head, which was to be summarily removed. Land Forces, the thinking went, could decapitate Bertie and replace his head with a new one (that would lead Basra, and Iraq more broadly, in a new direction). This notion was deeply fraught, prompting significant derision during the subsequent Chilcot Inquiry, and evoking the parable of Dr. Frankenstein's monster

during interviews supporting this study. As discussed further in the following vignette, the Coalition's sweeping ambitions in Iraq betrayed the paucity of our understanding.

- Secondly, distinct from the implausible notion of a head transplant, was the notion of Basra as a living being. As the metaphor was extended, Land Forces sought to understand how the city functioned as an interconnected system of systems. Kinetic action was to be directed solely toward the "head", while constructive non-kinetic action was directed to support the functioning of Bertie's other organs and vital systems. This was an *ad hoc*, non-doctrinal approach to understanding the interplay among the physical, human, and information environments in and around Basra. It was developed on the fly, by operational and tactical level leadership under fire in an implicit recognition of the inadequacy of doctrinal frameworks for understanding. It can be commended for the fundamental recognition of the operational environment as an interconnected, dynamic, "living" thing, even if its conception traces back to a basic misunderstanding of Basra itself, and Iraq more broadly.

Something is Wrong

The inadequacy of the *status quo* has been laid bare by recent campaigns in Afghanistan and Iraq. Theoretical arguments for the centrality of the "human terrain" gave rise to population-centric military strategies in both theatres, wherein civilians were designated as the center of gravity.[3] Land Forces were imbued with arguments for why this was so, and for the importance of understanding civil considerations and delivering civil effects. Land Forces were not, however, provided with adequate guidance on how these concepts were to be translated into operational planning or tactical action.

Absent a coherent set of tactics, techniques, and procedures for the investigation of the human terrain, the warfighter was compelled to innovate. Individual and unit-level talent enabled individual and unit-level successes. However, dependency upon improvisational initiative brought uneven results. There was neither consistency across battlefields, nor continuity over time. Contextual reporting was often "interesting" or "nice to know," but it was not reliably actionable in the eyes of its intended customers.[4]

As a result, cynicism grew regarding the practical utility of contextual reporting at the tactical level. The attendant capabilities and their outputs were marginalized. Vital information about the human environment was not systematically fed into Land Forces' central nervous system. Strategies and plans were developed without the requisite understanding.

This breakdown was a decisive point of failure in the campaigns of the past two decades.[5] The apostles of counterinsurgency did not provide suitable investigative approaches and analytical processes to manifest the alleged centrality of the human terrain. The theories of "COIN" were translated into alluring strategic mantras, but not into consistent, effective activity on the front lines. The result was a bifurcation between narrative and reality. Strategic objectives were conceived and evolved without due reference to the nuances of the human environment, because those nuances were not captured and integrated within our analytical processes. This abetted strategic drift—and, in the end, catastrophic failure.

This study offers a critical analysis of the tools and processes that gave rise to this failure. It also offers alternative solutions. The investigation supporting this study has examined Land Forces' challenges in developing a focused, actionable understanding of the human environment, and likewise in synchronizing the delivery of kinetic and non-kinetic effects. Analysis draws from a review of Land Forces doctrine, the experiences of the author, and confidential interviews with stakeholders from across the armed forces. Collectively, the resulting insights benefit from extensive first-hand experience in theatres such as Mali, Ukraine, Kosovo, Iraq, Afghanistan, and Northern Ireland over the past four decades.

The interviews supporting this study made clear that this is not a "COIN problem," which Land Forces might transcend *en route* to a new strategic paradigm. These challenges are systemic, and they demand a thorough re-evaluation of Land Forces' approach to the human environment. Land Forces, like our American and NATO counterparts, struggled mightily to understand the villages of rural Afghanistan. How will we contend with the complexities of the human environment within the cities and mega-cities that are sprawling across the 21st century's most pivotal geopolitical terrain?

Land Forces cannot expect a technological *deus ex machina*.[6] Artificial intelligence, machine learning, and big data cannot provide us with the necessary causal, actionable understanding of what is happening, *why* it is happening, and why it matters at a given moment within the human environment.[7] Nor can we use social media as a stand-in for reality. The digital realm offers only a partial view into the real world, and a readily distorted one at that. Our understanding of the human environment is an intrinsically human challenge, which requires a human solution.

The target audience for this study is military professionals who engage with the human environment (thus the entirety of Defence), as well as civilians at varied levels of authority who either direct or support military operations. The text has been drafted with an absolute minimum of jargon. The intent is to provide a concise, accessible discussion of the issues noted above, alongside practical solutions for warfighters, planners, strategists, and policymakers.

Study Overview

Analysis builds from the bottom-upward:

- *Section I: Investigating the Human Environment*, reviews the principal tools prescribed by doctrine for the assessment of the human environment. It examines their strengths and weaknesses, and how they are employed by different elements across Land Forces—with focus on the extent to which these tools enable a targeted, coherent investigation of our opponents in context.

- *Section II: Understanding the Human Environment*, surveys how Land Forces synthesize a holistic understanding of the human environment, in order to synchronize the application of lethal and non-lethal instruments of power. Discussion highlights the segmented nature of Land Forces' doctrinal approach to understanding, wherein operational environments are analyzed piecemeal (with certain lines of inquiry focused upon our foes, and others upon the context in which we confront them), and the inherent limitations of "intelligence fusion" as currently practiced.

- *Section III: Integrated Understanding*, suggests an alternative. Instead of investigating the human environment via an array of independent lines of inquiry that examine particular features or issues—and then synthesizing the outputs of those inquiries into a holistic picture—Integrated Understanding would establish a single, coordinated *investigation* of the human environment. Put another way, Land Forces would join up its analysis of our opponents and the context in which we confront them within a single process, as opposed to stitching together the results of myriad discrete analytical processes.

  This model is offered in the belief that the single greatest (and least appreciated) obstacle to achieving Integrated Action has been a structural flaw in Land Forces' approach to making sense of the human environment. This section also presents a novel "vector-based" assessment framework for the investigation of contextual dynamics within the human environment. This approach would supplant certain frameworks that are critiqued in Section I, while providing structure and consistency to the utilization of others.

Section I: Investigating the Human Environment

The centrality of the human environment is thoroughly and consistently established within Land Forces doctrine. *JDP 04 Understanding and Decision-making* opens with the declaration that "understanding underpins everything that we do."[8] *ADP Land Operations* furthers this message, repeatedly emphasizing the criticality of context within the human environment, and also noting the impossibility of comprehensive understanding and the need to zero in on what matters most.[9]

This begs the question: where does this understanding come from? How does the warfighter plan a targeted, structured investigation? What features of the human environment do we examine? What criteria do we use to assess them? What questions do we ask, and of whom? What do we do with the answers?

This section examines the tools set out in doctrine to conceptualize and investigate the human environment. Doctrine offers a range of analytical frameworks to that end, which are to be used in different situations for varied purposes. As noted in the introduction, this section focuses primarily on how Land Forces situate an understanding of our opponents in context. Several processes and methods employed for foe-centric intelligence are thus referenced, but with principal focus on how they align with examination of the broader features of the human terrain, and the extent to which they enable a contextualized understanding of the enemies and threats that are central to our concerns as a military force.

The Tools of the Trade

The following frameworks are examined:

- **A3E**: An acronym for Audiences, Actors, Adversaries and Enemies. This is Land Forces' over-arching conceptual mechanism for categorizing the individuals and groups that comprise the human environment.

- **Centre of Gravity Analysis & SWOT Analysis**: These are frameworks used primarily for the strategic assessment of our foes, but that can also incorporate contextual information about the subject's place in the human environment.

- **Link Analysis**: This is a software-based modeling approach that visualizes connections among people, places, and things. It is primarily utilized to target enemy networks (e.g., the Taliban or al-Qaeda), but the technology has also been repurposed for contextual ends within the human environment (e.g., "tribal mapping" in Afghanistan, Iraq, and Mali). Due to Link Analysis' multi-purpose functionality and connectivity to advanced databases, it has become a central mechanism for the storage and visualization of information about all aspects of the human environment.

- **ASCOPE/PMESII Analysis**: This is the foundational analytical framework used by Land Forces (and our American and NATO counterparts) to assess operational environments. ASCOPE (Areas, Structures, Organizations, People, Events) categorizes the potential features of an operational environment, while PMESII (Political, Military, Economic, Social, Information, and Infrastructure) classifies those features by type. Fused together on fan X-Y axis, they form Land Forces' go-to framework for developing understanding.

Additional methodologies and frameworks were reviewed in the course of this study, including Target Audience Analysis, Shade Shift Analysis, and Human Terrain Mapping. Target Audience Analysis is a process through which the potential recipients of Land Forces' messaging are segmented and targeted based upon their intrinsic characteristics and priorities. Shade Shift Analysis is a related technique, wherein various stakeholders in an operational environment are situated in context based upon specified criteria, and thereafter lines of effort are designed to influence their behavior *vis-à-vis* the criteria in question. Human Terrain Mapping is a process through which individuals and groups are geospatially or otherwise visually located on a map, with commentary on the significance of localized dynamics.

These tools are not presented in detail in this section, for the reason that they draw upon (or assume) a depth of contextual understanding that is to be provided via the frameworks noted above. They are processes through which we refine and action our understanding of the human environment, not through which that understanding is initially developed. For example, the Target Audience Analysis Handbook references ASCOPE and PMESII as core tools for developing the requisite understanding.

Vignette 2
Contextual Understanding & Non-Kinetic Ambition

Non-kinetic targeting processes such as Target Audience Analysis, Shade Shift Analysis, and Human Terrain Mapping demand a nuanced understanding of the human environment. The deeper our contextual understanding, the more deftly we may apply these approaches to the design of non-kinetic operations.

That said, the relationship between the depth of our understanding and our ambitions to achieve non-kinetic effects is not reciprocal. On the contrary, it is the inverse.

The deeper our understanding of the human environment within a given area, the more circumspect we must become with respect to our ability to exert influence and alter societal dynamics.[10] As we begin to understand the depth and complexity of the situations that we seek to influence, strategic oversimplifications are quickly exposed: for example, Western references to Iraq's supposedly coherent blocs of "Sunnis", "Shi'as", and "Kurds" in our initial debates over that country's invasion and occupation.

In this respect, caution is demanded in the face of any suggestion that a more finely honed understanding of the human environment might open up newer and broader horizons for non-kinetic activity (which must be understood, "non-kinetic" euphemisms aside, as social engineering). On the contrary, substantive enhancements to our understanding would inject much-needed humility and modesty into our strategic debates and planning processes, while better anticipating the follow-on consequences of our actions and avoiding "Bertie Basra" style embarrassments.

A3E

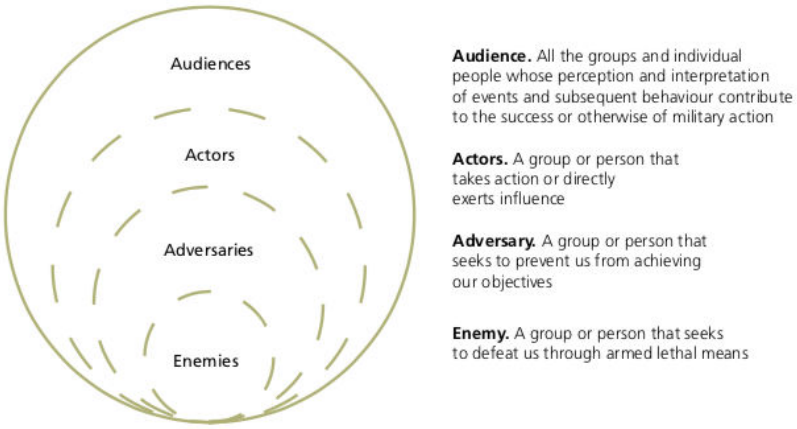
At present, Land Forces use the A3E framework to categorize the features of the human environment.[11]

- "Audience" refers to any individual or group that may be affected by a given military operation or the consequences thereof. Critically, the audience for a military operation within one geography may sprawl well beyond that immediate area, with effects reverberating among expatriate or exile communities, and across the global commons writ large.

- "Actor" denotes an individual or group that exerts agency within an operational environment. If we think of the audience as the spectators to an event, the actors are those who take part with the caveat that individuals or groups may enter or leave the performance at any moment.

- An "adversary" is an individual or group whose interests run counter to our strategic objectives, but that opposes Land Forces without taking up arms.

- An "enemy" is an individual or group that uses armed force to oppose our strategic objectives and/or military operations.



Source: Land Warfare Development Centre, Army Doctrine Publication AC 71940

These categories are presented as a series of concentric circles. Doctrinal explanations emphasize how individuals and groups will move amongst these categories, contingent upon contextual circumstance. This fluidity enables the use of A3E as a planning tool, whereby Land Forces might seek to induce or coerce enemies to become mere adversaries, or for adversaries to shift to being actors, etcetera.

The A3E framework is a taxonomy. It is a mechanism through which Land Forces categorize the features of the human environment. To its credit, A3E marks an important step away from previous taxonomies that placed individuals and groups into "friendly", "neutral", or "hostile" boxes. Nonetheless, the categories of A3E have no explanatory power. We may place an individual or group within a chosen circle, but there are no analytical steps within the A3E framework that guide our decision making, or that explain the significance of our categorization.

How, for example, should we label a militarized narco-warlord in Libya, the Philippines, or Colombia? And, to what end, exactly? Our choice of label does nothing to further our understanding of this individual, or the group that they lead.

In this sense, the A3E framework offers its greatest analytical functionality by omission. The act of categorizing an individual or group prompts the question: why? The answer, invariably, is contextual. To the narco-warlord hypothetical, our categorization *necessarily* depends upon circumstance. The interplay among Land Forces' objectives and actions in an operational environment, and those of other individuals and groups (wherever they may fall within the A3E framework), gives rise to circumstances that provoke particular courses of action by all parties involved. This is the reality of the human environment as a dynamic system of systems.

A3E does nothing, in and of itself, to enhance Land Forces' understanding of these systems and their interconnectivity, or of the specific contextual dynamics that shape the risk/reward calculations of a given individual or group. In certain instances, the interests of various parties will align. Under different conditions, they will diverge or conflict outright. Critically, there will be occasions wherein Land Forces' actions and interests will be irrelevant to the calculations of key stakeholders.

Indeed, A3E's mandate to categorize the features of the human environment within categories that are defined by Land Forces' *own interests* opens the door to varying forms of analytical bias. The underlying paradigm invites distortion, insofar as it places Land Forces at center stage, and defines the features of the human environment based upon their posture toward *us*. This is a dangerously self-aggrandizing construct, which overstates both our centrality and our agency as well.

The A3E taxonomy is an important evolutionary step away from a "good guys" and "bad guys" mentality, and toward a contextualized understanding of the human environment. However, its lack of explanatory power, the constant need to inject contextual understanding in order to make sense of the framework, and its insertion of structural bias into the analytical process render it dubiously useful in our attempts to develop understanding.

Furthermore, interviews in support of this study highlighted how the manner in which we use the A3E framework re-enforces a segmented approach to the human environment. Several interviewees with intelligence backgrounds noted how the A3E conceptualization limits the view of Military Intelligence, insofar as they see themselves as being "in the business of enemies and adversaries", while actors and audiences are the realm of specialized entities such as 77 Brigade. As discussed in the following sections, these analytical silos create insurmountable problems within Land Forces' efforts to understand the human environment as a coherent whole, as their outputs cannot be retroactively fused together in the manner set out by doctrine.

Link Analysis

Link Analysis is a core tool of Military Intelligence, which has been used extensively to target militant networks during the first two decades of the 21st century. Leveraging commercial software tools, we conceptualize an enemy in the shape of a molecule: a series of relationships primarily among people, but also among places and things.

Link Analysis software enables us to develop a clean, readily interrogated model of our foes. Quantitative social science methods can thereafter be used to identify critical nodes and linkages within these models. This functionality has been harnessed most notably in support of lethal effects-based targeting (particularly within the Special Operations community), enabling a surge in kinetic operational tempo.

Link Analysis can also be used to map connections between our foes and other actors on the battlefield (both licit and illicit) as well as among and within civil networks (economic, communal, political, etcetera.). This has enhanced Land Forces' ability to visualize and understand connectivity within operational environments. The fact that these tools can integrate our view of various individuals and groups with other features of an operational environment (e.g., civil networks, critical infrastructure, illicit trade flows, etcetera) illuminates the interconnectedness of the world around us.

However, the segmented manner in which these tools are typically used has limited their overall value—and, in certain contexts, distorted our understanding and subverted our efficacy. At issue is the molecular view that Link Analysis tools create. Yes, these tools *can* be used to develop a broad view of how a given individual or group connects to the system of systems present in an operational environment. In theory,

they offer a valuable approach to conceptualizing the human environment as a coherent whole, and understanding an individual or group's position therein.

In practice, enemy-centric intelligence has utilized Link Analysis within a far more limited remit. As made emphatically clear during the interviews in support of this study, Military Intelligence is not in the business of contextual understanding. Instead, core intelligence processes concentrate their focus, and likewise their use of Link Analysis, on our foes.[12] We conceptualize networks as molecules in suspension, with a view to disrupting or degrading their immediate membership via kinetic action. This has driven a flurry of activity in lethal effects-based targeting, as we disrupt and degrade opposing forces.

The problem is that the "molecule in suspension" view is dangerously misleading, as is the static "cleanness" created by software tools. Reality is far messier and unstable. A more apt metaphor would be a tree, wherein we see the enemy as a web of branches and limbs, which are sustained by an elaborate root structure burrowing deep into in the human terrain. As the intelligence processes that drive kinetic action do not capture this root structure, we achieve the effect of pruning our enemies as opposed to uprooting them. Regrowth and adaptation have been the inevitable result.

The investigation and analysis of the human terrain, meanwhile, is conducted separately by an array of specialist capabilities. Cultural Specialists, CIMIC professionals, Information Operations practitioners, and advisors on Stabilization and Political concerns are among the numerous niche functions that investigate contextual factors. Each of these capabilities makes use of Link Analysis tools. Yet, they do so within their own analytical spaces. This creates a segmented, disjointed view. The fusion process is meant to integrate this kaleidoscope into a single frame, but this does not reliably occur. As explored further in the following section, this is a feature (and a failing) of Land Forces' fusion-based approach to understanding.

Vignette 3
Exploring Uncharted Territory – Innovating in Real-Time

As this study is written in 2021, Land Forces are supporting the United Nations mission to Mali. This is a stabilization campaign with counter-terrorism elements, requiring a detailed understanding of the human environment. Land Forces are conducting long-range reconnaissance patrols to areas of Mali that are broadly unknown to outsiders. As operational environments go, Mali offers some of the world's least-charted territory.

In order to support the UN mission, Land Forces personnel have developed a new framework for understanding contextual features of the human environment. "8-Factor Analysis" builds from the United Nations' own 7-Factor framework for Human Security. The UN's core factor areas are Economic, Environmental, Food, Health, Political, Personal, and Community concerns, whereas Land Forces have included Information as an additional factor.

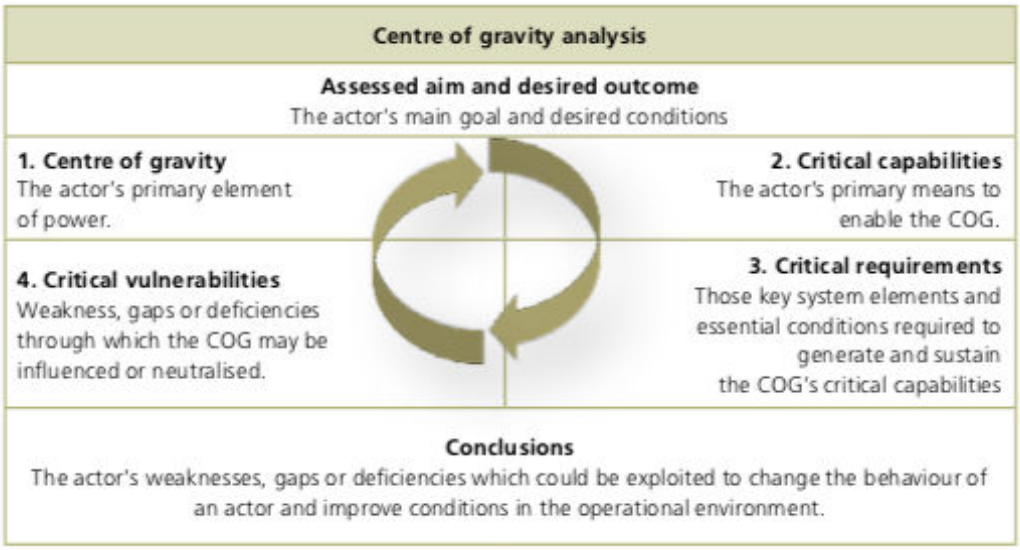
Land Forces' intent has been to better understand the contextual factors that drive violence, and how different segments of the civilian population have been affected by human security issues. The framework itself has enabled military personnel to identify and communicate key contextual issues within a UN-

friendly paradigm. Described by one interviewee as "a work in progress" that is more focused on presenting issues than explaining their significance to military decision-making processes, it is nonetheless an example of innovation under fire in the development of understanding.

One key lesson from this effort, which is echoed in the Human Terrain Reconnaissance vignette below, has been the need to push specialized and uniquely skilled investigative assets "to the coalface," rather than utilizing them as a staff element. The underlying distinction is pivotal, with respect to how we approach contextual features of the human environment: the development of understanding is an investigative, exploratory activity—not a rear-echelon "academic" exercise. The exceptional utility in this effort of Reservists with skill sets that have been developed outside of Defence further highlights shortcomings in Land Forces' staffing and training processes for contextually oriented capabilities.

Center of Gravity & SWOT Analysis

Center of Gravity (CoG) Analysis is set out in doctrine as the preferred approach to understanding the vulnerabilities of our enemies. The CoG framework guides Land Forces along a structured analytical pathway, which begins with identification of the enemy's "center of gravity," namely its fundamental strength.[13] It then prompts a deeper understanding of the basis of that strength, and how it may be subverted and exploited. The framework can also be used for defensive purposes, when supporting an ally or civilian element. In this scenario, the identification of vulnerabilities enables Land Forces to remedy critical weaknesses.



Source: Land Warfare Development Centre, Army Doctrine Publication AC 71940

In all contexts, the framework lends itself to the inclusion of civil information. For example, Land Forces might use CoG Analysis to target an adversary's societal bases of support on contested terrain, or to identify and reinforce weaknesses of an allied government. In both cases, we are free to incorporate contextual human-environment factors. That said, there is nothing in the framework that specifically

prompts this, or that explains how this should be done. Those who are inclined to emphasize civil considerations may do so, whereas others may neglect them entirely.

Alternatively, SWOT Analysis is used to identify Strengths, Weaknesses, Opportunities, and Threats. Used widely in both military and corporate environments, it is a well-known framework to establish a high-level strategic view of a particular situation.

	STRENGTHS	WEAKNESSES
INTERNAL	• The West is already present territorially with: men, infrastructures and Armed Forces in arctic countries • The West has strong navies, backed by defence industries • Alliance treaties have already been ratified: NATO	• Non-aligned political interests between different Western countries • The West may disagree on operational and tactical manoeuvres • Lack of adequate financing for operations
	OPPORTUNITIES	**THREATS**
EXTERNAL	• Take China and Russia by surprise before they join forces, no country is really in control • Secure transatlantic submarine cables before the arrival of China and Russia • Ensuring the West's right of passage in the strategic strait of the 21st century	• Russia and China have already positioned themselves and taken a lead in their Arctic deployments • Some areas and infrastructure have already passed under Russian or Chinese control

Source: Ytier[14]

The SWOT framework can be applied to our foes, our allies, ourselves, and any other individuals or groups we may select. Like CoG Analysis, the SWOT framework can readily accommodate civil information. Social, economic, political, and cultural issues can stand as strengths or weaknesses, and likewise give rise to opportunities or threats. In this sense, it is a useful framework to capture the contextual factors that matter most in a given time and place.

But how is this done? Which contextual factors are the ones that "matter most?" As in the case of CoG Analysis, there is nothing inherent to the framework that helps Land Forces determine precisely where, when, how, or why a particular contextual issue might merit inclusion in a SWOT diagram. We are, once again, in the realm of subjective inference. The quality of our results will, necessarily, be the byproduct of individual instincts.[15]

ASCOPE/PMESII

The ASCOPE/PMESII framework is the dominant analytical tool for analyzing the human environment across Land Forces, and among American, NATO, and myriad partner forces as well. More than that, it is the ubiquitous tool for assessing operational environments as a whole, with human factors comprising a portion thereof. During the interviews in support of this study, interviewees were asked what tools and approaches they would use if tasked to develop an understanding of a previously unknown operational

environment. The most common answer, by an overwhelming margin (and with a notable lack of enthusiasm), was the ASCOPE/PMESII framework.

ASCOPE is an acronym, representing Areas, Structures, Capabilities, Organizations, People, and Events. These categories are meant to encompass the potential features of an operational environment. PMESII is another acronym, standing for Political, Military, Economic, Social, Information, and Infrastructure. These categories are used to classify the features of the operational environment. When laid out on an X-Y axis, a matrix is created, into which the user inputs what is known about the Areas, Structures, Capabilities, Organizations, People, and Events that relate to Politics in a given area, and then to Militaries, and then to Economics, and so on.

ASCOPE/PMESII

	P Political	M Military	E Economic	S Social	I Information	I Infrastructure
A Areas	Areas - Political (District Boundary, Party affiliation areas)	Areas - Military (Coalition / LN bases, historic ambush/IED sites)	Areas - Economic (bazaars, shops, markets)	Areas - Social (parks and other meeting areas)	Areas –Information (Radio/TV/newspapers /where people gather for word-of-mouth)	Areas – Infrastructure (Irrigation networks, water tables, medical coverage)
S Structures	Structures - Political (town halls, government offices)	Structures - Military / Police (police HQ, Military HHQ locations)	Structures - Economic (banks, markets, storage facilities)	Structures - Social (Churches, restaurants, bars, etc.)	Structures - Information (Cell / Radio / TV towers, print shops)	Structures - Infrastructure (roads, bridges, power lines, walls, dams)
C Capabilities	Capabilities - Political (Dispute resolution, Insurgent capabilities)	Capabilities - Military (security posture, strengths and weaknesses)	Capabilities - Economic (access to banks, ability to withstand natural disasters)	Capabilities - Social (Strength of local & national ties)	Capabilities - Info (Literacy rate, availability of media / phone service)	Capabilities - Infrastructure (Ability to build / maintain roads, walls, dams)
O Organizations	Organizations - Political (Political parties and other power brokers, UN,)	Organizations - Military (What units of military, police, insurgent are present)	Organizations - Economic (Banks, large land holders, big businesses)	Organizations - Social (tribes, clans, families, youth groups, NGOs / IGOs)	Organizations - Info (NEWS groups, influential people who pass word)	Organizations - Infrastructure (Government ministries, construction companies)
P People	People - Political (Governors, councils, elders)	People - Military (Leaders from coalition, LN and insurgent forces)	People - Economic (Bankers, landholders, merchants)	People - Social (Religious leaders, influential families	People - Info (Media owners, mullahs, heads of powerful families)	People - Infrastructure Builders, contractors, development councils)
E Events	Events - Political (elections, council meetings)	Events - Military (lethal/nonlethal events, loss of leadership, operations, anniversaries)	Events - Economic (drought, harvest, business open/close)	Events - Social (holidays, weddings, religious days)	Events - Info (IO campaigns, project openings, CIVCAS events)	Events - Infrastructure (road / bridge construction, well digging, scheduled maintenance)

Source: Goodman[16]

ASCOPE/PMESII has been adopted as the go-to analytical framework across the Western military community. Several characteristics have fueled its popularity. Its boxes provide clear tasking. It is clean and organized, offering a structured approach to the complexities of an operational environment. It is also scalable, insofar as it can be used for a single village, or for an entire country. It is user-friendly as well, enabling non-specialists to rapidly develop basic awareness. In the language of reconnaissance, ASCOPE/PMESII is a serviceable tool for presenting "the ground in general." Additionally, it provides a structured framework for the presentation of information (as its boxes are readily transposed to PowerPoint slides), and likewise for information management purposes.

Against these credits, the ASCOPE/PMESII framework suffers from severe limitations as an analytical tool. Most critically, it fails to address the most vital imperative of contextual investigation within the human environment: the need for selective focus. On the contrary, it guarantees the unfocused, blanket collection of information. As we catalog, for example, the Areas, Structures, Capabilities, Organizations, People, and Events that might relate to politics in a given area, we have absolutely no way of assessing

how this information might matter in an operational context, or their interconnectivity. Nor does the framework help us prioritize the relative importance of our inputs. We are filling in boxes, with a view to making sense of everything at a later date.

As a result, we are inundated with information of uncertain value. An ASCOPE/PMESII grid explains nothing. It can only categorize. As such, while the framework may offer value in describing "the ground in general," it is entirely unfit for purpose when investigating "the ground in detail." A chart's creator can identify, for example, notable individuals and organizations within an economic system. But nothing in the framework enables us to understand why these individuals and organizations might matter in a specific situation, how they might relate to one another, or which merit deeper study. Any actionable insights that may arise from an ASCOPE/PMESII-enabled analytical process will, therefore, be the result of an analyst's personal instincts and intuition.

In addition to its failure to focus our investigation, ASCOPE/PMESII suffers from a subtler, yet no less insidious flaw: it is based upon a reductionist approach to understanding. The framework forces us to take a segmented view of the world. We break complex and dynamic systems down into pieces and compartmentalize their various features. This brings the appearance of order and clarity to our analysis—but "order" comes in lieu of grappling with complexity, and any "clarity" is illusory. In that sense, the framework's reductionism is an active impediment to Land Forces' understanding. It offers a view of the human environment that is static, segmented, and structurally misleading: a two-dimensional and atomized impression of a dynamic, interconnected, three-dimensional world.

Like the A3E framework, ASCOPE/PMESII is better understood as a taxonomy. It is a framework to categorize and present knowledge, or to identify broad information gaps. No more, no less. The fact that it serves as Land Forces' foundational investigative and analytical paradigm is at the heart of the issues raised in this study, intertwined with structural flaws that underpin Land Forces' fusion-based approach to understanding.

The Right Tools for the Job?

This section has examined the key conceptual and analytical frameworks established in doctrine to investigate the human environment. The A3E framework is an important evolutionary step toward a contextualized understanding of enemies and threats, but the manner in which it is used (and its inability to make sense of the contextual factors that define its categories) call its suitability into question. Link Analysis has the potential to support an integrated, focused investigation of the human environment as a whole, but this technology is utilized in a segmented manner within Land Forces' analytical silos. Centre of Gravity and SWOT Analysis are agile frameworks to situate an enemy or threat in context (or, likewise, to do so for other actors on the battlefield), but the inclusion of contextual dynamics is left entirely at the subjective discretion of the user. Finally, the ubiquitous ASCOPE/PMESII framework is demonstrably unfit for purpose.

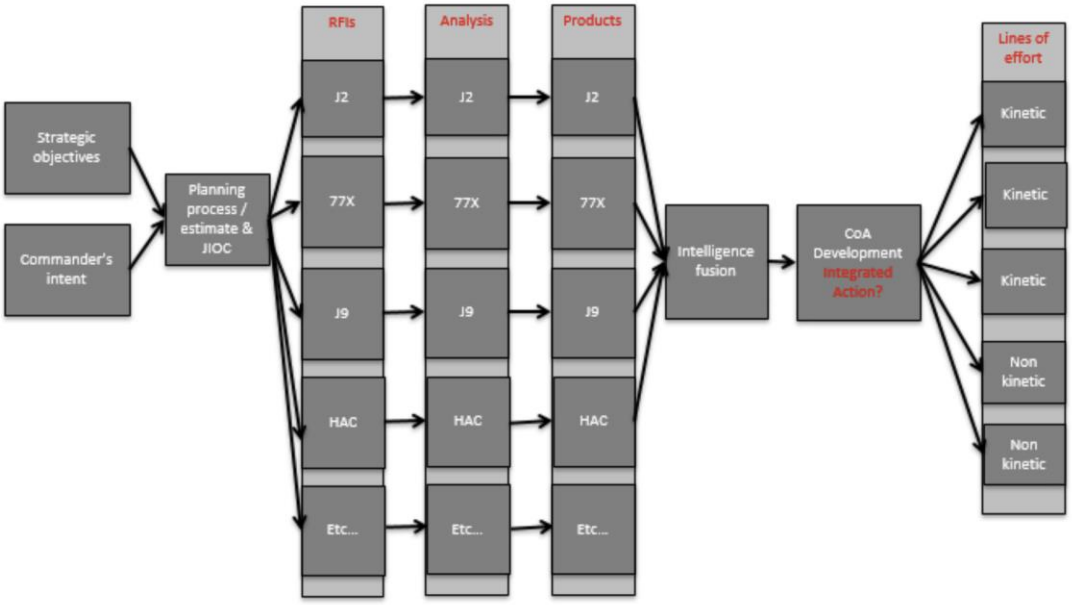
Taken in sum, Land Forces lack the requisite tactical and operational level tools to conduct targeted, action-oriented investigation of the human environment as demanded by doctrine. This is evident in the fact that Land Forces elements have repeatedly felt compelled to develop bespoke, non-doctrinal solutions

to understanding, with Bertie Basra and 8-Factor Analysis both examples thereof.[17] Finally, there is little guidance as to how our various tools should be used in conjunction with one another. This study argues that Land Forces urgently require better tools to make sense of the human environment, but this is only half of the solution. The other half lies in a revised intelligence architecture that would enable us to optimize their efficacy.

Section II: Understanding the Human Environment

The previous section surveyed the principal tools that Land Forces use to investigate the human environment. That investigation generates outputs of various types. This section examines how these outputs are translated into understanding—and, thereafter, action.

Land Forces employ a fusion-based approach to understanding operational environments. Investigative tasking (which is shaped variously by strategic policy, operational objectives, and a commander's intent—and manifested as discrete Requests for Information) emanates from a central authority within the chain of command. Thereafter, disparate analytical processes flow in tandem. Different elements of Land Forces investigate different subjects, via independent workflows. Military Intelligence assesses our foes. Cultural Specialists assess socio-cultural dynamics. CIMIC professionals assess risks to civilian populations. The list goes on. The resulting puzzle pieces, crafted by specialists in their respective disciplines, are then assembled into a coherent whole via a process referred to as intelligence fusion.



Source: Author

Achieving Integrated Action

The fusion process feeds a framework for action that is referred to in doctrine as the Full Spectrum Approach or, alternatively, the Integrated Approach. This mirrors NATO's Comprehensive Approach. Common to each of these frameworks is the imperative to coordinate the application of kinetic and non-kinetic power. Having stitched together a holistic understanding of the operational environment, commanders and their staffs develop courses of action to achieve effects via the full suite of options at their disposal. Lethal and non-lethal instruments of power are applied in carefully calibrated harmony, with a view to catalyzing synergies.

This process is well established in doctrine. The underlying theory was uniformly embraced during interviews in support of this study. It has proven challenging to apply, however, prompting widespread frustration across Land Forces.

"It's all brilliant in theory," noted a field grade officer with broad operational experience, "but it doesn't really happen." Instead, the following pattern was observed: Land Forces attempt to develop a focused, structured view of the human environment. Enemy-centric intelligence predominates, however, while contextual insights are marginal (with respect to both the attention paid thereto, and the resonance thereof). Several interviewees employed identical language when describing Land Forces' efforts to understand and engage with the human terrain: "we pay lip service to it," with the "it" being the doctrinally established criticality of context.[18] Instead, Land Forces' understanding of the human environment is overwhelmingly enemy- and threat-centric. As a result, Land Forces struggle to align kinetic and non-kinetic courses of action within an integrated campaign plan—and, likewise, to situate the armed forces' role within a whole-of-government approach to the challenge in question.

These frustrations are referenced in *ADP Land Operations*, albeit indirectly, in discussion of the "paradox of understanding."[19] The text observes how Land Forces often lack the few critical insights necessary to make a decision, and yet simultaneously suffer from pervasive information overload. This is a cutting observation, which ties together several issues addressed in this study. Most immediately, it exposes a systemic problem with Land Forces' lack of focus in the collection of information. We are gathering far too much of it, and much of what we collect (and then attempt to process and store) offers little in the furtherance of identifying and understanding the issues that matter most.[20]

Land Forces appear trapped in a vicious cycle: confronted by overwhelming amounts of information that has been collected without deliberate intent (as per the ASCOPE/PMESII approach to gathering as much information as possible and making sense of it thereafter), the producers of contextual insight struggle to deliver the right inputs at the right time. Uncertainty abounds over what matters, why it matters, and what should be done. The intended consumers of these insights disengage, and double down on enemy-centric intelligence. One problem feeds the other, and vice-versa. Integrated Action remains out of reach.

How can Land Forces break this cycle? There is limited value in a "chicken or egg" discussion over who is to blame for an inadequate *status quo*.[21] Instead, this study focuses on a resolution.

Pieces of the Puzzle

To continue the puzzle metaphor employed at the start of this section, those tasked to investigate the human terrain are not trained, equipped, or positioned to determine which puzzle pieces (among countless millions) are the right ones in a given moment, which might then be joined up with those provided by enemy- or threat-centric intelligence. Moreover, we rarely encounter clear-cut "pieces" in the course of such work. Instead, we find swirling, dynamic patterns and trends that must be cut into shape on the spot.

Such craftsmanship requires specialized tools and structured processes. As argued in Section I, doctrine offers neither. This is a critical root cause of Land Forces' difficulties in pivoting from a theoretical appreciation of the importance of contextual understanding, to focused and productive action. Instead, our contextual analysis feeds piles of puzzle pieces into the fusion process without clarity as to how those pieces might fit together, if they even belong in the image we are creating, or whether key pieces have been crafted into a shape that will "fit" with our enemy-centric inputs. Chaos results. Doctrine refers to this chaos as a paradox of understanding. In reality, it is a side effect of methodological and structural faults in our intelligence architecture.

In the fusion-based approach, Land Forces attempt to synthesize understanding by cobbling together a disparate collection of analytical outputs: products that examine our foes, and others that explore the context in which we confront them. The pre-requisite for actionable understanding and astute maneuver within the human environment is to establish causal relationships among these reporting streams.[22] For example, to understand why an enemy has adopted a certain course of action in response to specific contextual dynamics, or how a given facet of the human environment can be leveraged to effect behavioral change among a particular target audience. Intelligence fusion, as currently practiced, cannot reliably do this.

Consider the position of a fusion center analyst at a desk somewhere in the United Kingdom, presented with a link analysis diagram of a militant network, SWOT analysis of its strategic position, an ASCOPE/PMESII grid that lists various social, economic, and political issues, and data streams that track the trajectory of myriad indicators from the battlefield (e.g., incidences of violence, the prices of commercial goods, illicit trade flows, and the movement of displaced persons). Are surges in violence indicative of an enemy on the rise, or one in a panicked state of collapse? Is this violence a cause, or an effect of economic fluctuations? Are corresponding population movements driven by fear or opportunism? What is the relationship between our enemy and the particular groups that have chosen to leave or remain? Who has the upper hand in the relationships that exist between our enemy and the various social, economic, and political entities present on the battlefield and who is driving the behavior of whom?

How can this be stitched together? The significance of each individual input *vis-à-vis* another has not been systematically captured at the point of collection. We know that various things are happening, but we lack the "why" and the "because" to explain them. As such, we must infer those answers after the fact. This effort is sufficiently fraught as to be compromised from the outset on the sparse human terrain of Helmand Province or northern Mali. Consider the prospect of making sense of the human environment via intelligence fusion in a conflict or disaster-affected Lagos, Karachi, or Seoul. Similarly, consider the

challenges inherent to this effort in an irregular warfare environment, wherein Land Forces are seeking to understand the subtleties of Russian influence in Lithuania, Hungary, or Georgia?

This is the reality of intelligence fusion. Analysts confront piles of puzzle pieces that may or may not be cut to the correct shape, and attempt to cohere them within a single frame. We forge connections among disparate insights, pieces of information, and bits of data. As our analytical raw materials have been fed into the fusion process without an understanding as to their connectivity, causal relationships must be ascribed retroactively (by individuals who may or may not have first-hand, current knowledge of the subject matter at hand). This opens a Pandora's Box of distortion and errors arising from mistaken assumptions, biases of varying types, political manipulation, the urge to tell superiors what they want to hear, and hubristic bluffing. It is a near hopeless attempt to reverse engineer something that we should have established in the first place: an understanding of our opponents as integral features of the human environment.

Vignette 4
Myth vs. Reality: The Population as the Centre of Gravity

Between 2007 and 2009, Coalition Forces transformed the security situation in Baghdad. In a campaign commonly referred to as "the Surge," American land forces greatly increased their physical presence in the Iraqi capital, and established a day-to-day presence within the city's contested neighborhoods. In keeping with prevailing COIN theory, which cast the human terrain as "the decisive terrain," conventional forces focused their attention on the provision of security, development, and governance while American and British Special Operations Forces targeted the conflict's principal sectarian antagonists.

The standard narrative of the Surge is as a successful application of COIN theory. Coalition Forces secured the population, won over their support, and thereafter marginalized and defeated the various militant networks that had waged a brutal, years-long war against the Coalition, the Iraqi people, and each other. The apparent success of this approach then led to its transferal to the Afghan campaign, and a further embrace of population-centric approaches by American, British, and NATO forces in both theaters.

This narrative is fictive, however, and dangerously misleading. Its origins stem from several factors, the most relevant of which to this study was the Coalition's fundamental misunderstanding of the human environment in Baghdad, and of the relationship between the city's various militant networks and the population writ large.

The campaign to provide security, development, and governance in Baghdad was predicated on the belief that military operations could "separate the insurgents from the population." By winning popular support (or "hearts and minds", as the expression goes), American forces and their Iraqi partners would be able to isolate and thereafter destroy insurgent and terrorist networks. This belief, in turn, necessarily implied that the people of Baghdad were integral to the violence that had wracked the Iraqi capital, and in possession of sufficient agency to affect its trajectory.

This was demonstrably not the case. Instead, as examined in detail elsewhere, the civilian residents of Baghdad were, overwhelmingly, the passive recipients of violence at the hands of organized, isolated networks.[23] Efforts to provide security (most notably in the emplacement of concrete barriers) were thus welcomed, but this did not lead to substantive popular assistance in the mitigation of violence. Efforts to drive economic development and improve the provision of governance broadly and comprehensively failed to the extent that there is little evidence to be found at present of the billions of dollars spent toward those ends.[24]

Contrary to the prevailing narrative, the successes of the Surge were born overwhelmingly of lethal effects-based targeting by Special Operations Forces, which systematically dismantled the networks that were responsible for violence in the Iraqi capital. These achievements owed little to popular enthusiasm for American forces (or, for that matter, for the Iraqi government, which provided little to no governance or development across the city's most pivotal terrain), for the simple reason that "the population" was neither complicit in mass violence nor able to confront those responsible. A kinetic approach proved strikingly successful in this particular situation, at least in the short- to medium-term, because of the nature of connectivity between our enemies and the wider population. At the time of the Surge, Iraq's militant groups were not the vanguards of popular movements that had established deep roots within Iraqi society. On the contrary, they were narrowly defined networks that preyed upon the populace. As such, they could be targeted and destroyed with limited societal repercussions.

Counterinsurgent forces did not defeat Iraq's al-Qaeda franchise or the constellation of Shi'a militias in Baghdad by winning over the populace, and inducing their pro-active support. Instead, hard-fought security gains were secured in spite of broad popular skepticism, and a systemic failure to achieve non-kinetic effects. The fact that the standard narrative of the Surge remains that of a COIN success betrays the depth of Coalition Forces' misunderstanding of the human environment even in the midst of temporary success. Hundreds of lives and billions of dollars were squandered as a result, justified by a strategic narrative that was not grounded in reality.

Section III: Integrated Understanding

At present, Land Forces investigate the human environment via a collection of specialized analytical pathways. These pathways (some enemy-centric, others contextually oriented) generate pieces of an analytical puzzle. Intelligence fusion is then employed to assemble these pieces into a coherent picture. Our intent is to establish a unified view of our opponents and the threats that they pose *in context*.

As discussed above, the fusion process breaks down for two main reasons. Firstly, because of Land Forces' inability to reliably find (and/or fashion) the right pieces at the right time, and a concurrent over-abundance of misshapen and irrelevant pieces within our out-sized "pile" of contextual reporting. Secondly, because of a structural flaw in the intelligence fusion process, which attempts to retroactively establish causal relationships between disparate, de-contextualized insights, data, and pieces of information. We re-shape and re-color the pieces in front of us, creating images that we *think* offer answers. Yet, we are poorly positioned to determine whether our fusion-based connections capture the reality of cause and effect, and if we are highlighting the right connections among the right features of the human environment.

The success of intelligence fusion is contingent upon the pre-existing contextual knowledge and subject matter expertise of the individuals involved in the process. Put another way, the quality of this process' outputs is determined by personal craftsmanship. Hence, Land Forces' practice of establishing bespoke "fusion centers" for high-priority operations, wherein we have sought to concentrate our most knowledgeable and experienced personnel. This practice has, unquestionably, improved Land Forces' acumen in each respective campaign. That said, the net result remains unsatisfactory. Contextual reporting still struggles to deliver focused insights, while the realities of time and distance limit the ability of rear-echelon analysts to provide timely operational support.

Integrating Contextual Understanding

This section offers an alternative approach, which would feature the use of new methods situated within a modified intelligence architecture. This approach is presented as Integrated Understanding. The core premise, designed to bypass the structural and methodological limitations of the fusion-based approach, is to establish a single, integrated *investigation* of the human environment. Instead of fusing the analytical outputs of multiple investigative efforts, Integrated Understanding would fuse the investigations themselves—thereby ensuring that contextual insights and causal relationships are embedded within our understanding of enemies and threats from the outset.

How do we do this? First, we must acknowledge that comprehensive understanding is fantasy. The question asked of Land Forces cannot be to "understand the human environment" writ large. To pose this task is to suggest that it can be achieved. This, in turn, opens the door to a broad range of strategic policy choices premised upon an unachievable breadth and depth of understanding. Instead, our tasking must be to identify and understand the most critical aspects of the human environment as related to a specific set of operational objectives at a given place and time. We are not cartographers, seeking to map all of the features within a given area. Instead, we are *explorers*, equipped with a desired end state (as defined by strategic priorities, operational objectives, and the commander's intent), needing to rapidly identify, understand, and navigate the human terrain toward that objective.

Integrated Understanding offers a route to that end, in full alignment with Land Forces' principal concepts and philosophical tenets.

- Conceptually, the armed forces must design and execute Multi-Domain Operations. This requires the joint synchronization of land, air, sea, cyber, and space campaigns.

- Operationally, Land Forces must orchestrate the application of lethal and non-lethal levers of power. This is the mandate of Integrated Action laid out in doctrine.

- Philosophically, Land Forces must embrace the ethos of the Maneuverist Approach, which emphasizes agility and tempo in the identification and exploitation of our enemies' vulnerabilities.

- Organizationally, Land Forces must adopt the principles of Mission Command, which empowers the men and women on the ground to take action, seize initiative, and achieve the commander's intent.

What does this mean in practical terms? Firstly, the imperatives of Multi-Domain Operations and Integrated Action call for a single, shared understanding of the human environment, and of operational environments as a whole. Such an understanding is an essential pre-condition of the coordination demanded by doctrine. Neither the domains of warfare, nor Land Forces' various lines of effort therein, can be synchronized without a common analytical foundation that situates our opponent in context. Integrated Understanding would provide that foundation, by fusing our investigative and analytical processes.

Secondly, in harmony with the ethos of the Maneuverist Approach, Land Forces' investigation must be rapid, agile, and deliberately targeted. The features of the human environment, and the connections among them, change constantly. Our efforts should not plod toward mastery or perfection. Instead, we must rapidly zero in on what we think matters most, and examine it to the best of our ability. The constraints of time and access will often prevent us from developing deep expertise of our own. To compensate, we require an investigative approach that will make us ruthlessly efficient *consumers* of expertise. We must be equally fast in the identification of mistakes in our understanding as well, and of changes within the human environment that render our understanding obsolete. This aligns fully with the mindset of Mission Command, wherein Land Forces' front-line personnel are empowered to take action, identifying and solving problems as they arise.

Current Land Forces doctrine contains critical signposts toward the Integrated Understanding concept. For example, ADP Land Operations notes that "action is often the best way of developing understanding," while JDP 04 Understanding and Decision-making observes that "understanding is contextual, it is perishable and requires continual development to maintain its validity."[25] Land Forces' actions in an operational environment, like those of other entities therein, illuminate interconnectivity and generate insight. Similarly, we must be dynamic and adaptable. As noted in ADP Land Operations, different elements of Land Forces will require different understanding of different features of the human environment.[26] Our investigative approach must, therefore, be sufficiently agile as to be used toward varied purposes by different elements of Land Forces, across the spectrum of conflict.

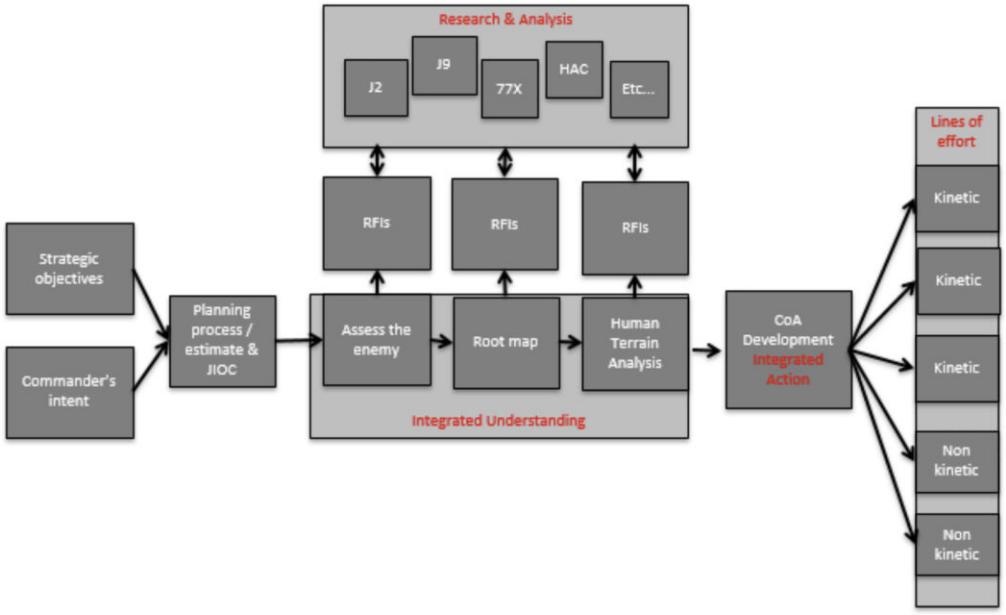
The six principles of understanding, as laid out in ADP Land Operations, remain pertinent: self-awareness, critical analysis, creative thinking, continuity, collaboration, and fusion (albeit not as currently practiced) are all vital tenets as Land Forces develop understanding.[27] That said, how do we apply these concepts? How do we make the pivot from the theories laid out in doctrine to the action that is demanded as a result thereof?

This section offers two elements of a solution. First, it outlines an intelligence architecture that obviates the structural flaws of Land Forces' current fusion-based model. Second, it presents an agile and dynamic investigative framework that would supplant certain existing frameworks (most notably the ASCOPE/PMESII grid), and provide essential focus to our use of the other analytical tools at our disposal

(e.g. Link Analysis, CoG Analysis, SWOT Analysis, etcetera). This approach could be employed across Land Forces, and likewise by interagency partners.

Integrated Understanding: The Architecture

In the interviews supporting this study, Integrated Action was described as a "symphony" featuring violent and non-violent instruments. Playing in harmony under the direction of a commander, these instruments come together to produce outputs that are greater than the sum of their individual parts. Integrated Understanding would provide the sheet music for this performance, by orchestrating our investigative and analytical efforts within a single coherent process.



Source: Author

Land Forces' unified investigation of the human environment would begin with the principal opponent, threat, or event that prompted our engagement in the first place (e.g. the 2014 Russian invasion of Ukraine and concurrent separatist violence, or the Islamic State's activity in the Sahel). Enemy and threat-centric intelligence thus retains its rightful place at center stage in our intelligence architecture. In alignment with current doctrine, Land Forces would commence with the investigation of the disposition of opposing forces, the organizational structure thereof (leveraging Link Analysis), their strategic and operational objectives, their resources and capabilities, and their cohesion and will to fight. Centre of Gravity Analysis and SWOT Analysis are readily nested within this endeavor.

From this opponent-centric foundation, Land Forces' investigative lens would then broaden to examine our opponent's touch-points in the human environment. Where, when, how, and why have they mobilized local support, absorbed local resources, and shaped public opinion? Conversely, where, when, how, and why have they failed to do so? What actions, capabilities, and narratives have given rise to their successes and failures? This analytical process would map our opponent's *root structure* within the contours of the human terrain.

The ensuing "root maps" would be a signature intelligence product. They could be produced by Military Intelligence, by Land Forces' contextually oriented specialist capabilities, or via collaboration between the two. Building from the "molecular" view of the enemy discussed in Section I, Land Forces would be establishing a contextualized view of the enemy as an integral feature of the human environment—and our Link Analysis diagrams could be deliberately and consistently expanded to capture this connectivity.

Consider the actionable utility of a standardized intelligence product that mapped the roots of Russian influence and activity in the Black Sea Region, or Chinese influence and activity from one country to the next across sub-Saharan Africa. Looking to a kinetic environment, consider such a product mapping the localized, community-level roots that have been established by the regional franchises of the Islamic State and al-Qaeda in the Sahel or the Levant. In all such cases, these products would provide an essential intermediate connection between traditional enemy-centric intelligence and Land Forces' contextually oriented capabilities, and likewise between the lethal and non-lethal targeting processes.

Having mapped our opponent's root structure within the human terrain, contextually oriented capabilities would further broaden Land Forces' analytical lens by investigating the social, economic, political, and cultural dynamics that explain the growth of said roots. As noted above in reference to *ADP Land Operations*, movement and maneuver have consequences. The activities of our foes, and local reactions thereto, illuminate key features of the human terrain. This dynamic holds equally true in pre, mid, and post-conflict environments.

Why has our opponent targeted certain elements of the human terrain in specific ways? Why have certain individuals and groups adopted particular courses of action in response? What explains the varied resonance of an opponent's narratives within the human terrain, and what local narratives have emerged in response? What particular qualities inherent to the individuals and groups within the human environment confer varying levels of agency and power? Which individuals and groups have the resources and will to shape outcomes? Which segments of the populace are particularly vulnerable, and to which specific threats? As we are building from a structured intelligence product that maps our foe's roots in the human terrain, our understanding of these roots will dictate what questions we ask, and which particular tools and investigative approaches upon which we should draw. Our root maps are thus a vital resource in narrowing our focus, and optimizing our efficiency in the consumption of expertise.

Land Forces' investigation of the human terrain would thus be framed, from the outset, by our understanding of our opponent as an integral feature of the human environment. This *guarantees* the operational relevance of our contextual reporting. Equally important, it fuses that reporting to our understanding of the foe in question. This, in turn, enables the development of integrated campaigns that disrupt and degrade their efforts, while simultaneously uprooting them from the human terrain.

Vector-Based Investigation: An Agile Analytical Paradigm

The opponent-centric framework of Integrated Understanding provides a focused view into the human environment. It would serve as Land Forces' primary analytical lens. Yet, this is only one perspective into a complex and dynamic reality. Such focus is necessary, but not sufficient. To return to the metaphor of

our foe as a tree with roots that sink deep into the human terrain, said foe is unlikely to be a single tree on a barren hillside. Instead, that "tree" will be situated deep in a forest. This creates challenges to our understanding, as a result of the innate density and complexity of the human environment. However, it also creates opportunity: all movement within the human environment catalyzes effects, and has the potential to illuminate aspects of its interconnected system of systems. Each tree within the forest, and its associated root structure, can be examined to further our understanding of the human environment as a whole.

To broaden and enrich Land Forces' understanding, the same agile investigative principles of Integrated Understanding could be applied along additional axes. As noted previously, different elements of Land Forces require their own particular view of the human environment. Moreover, not all Land Forces operations are enemy-centric. In all such cases, understanding can be rapidly and deliberately developed via a "vector-based" investigative approach that mirrors the methodological and structural progression of Integrated Understanding.

The core premise of vector-based investigation is that the interconnected system of systems within the human environment is most efficiently and holistically understood by tracing the path of someone or something (the "vector" in question) as it maneuvers through the human terrain. Within the Integrated Understanding framework, Land Forces use the enemy (or adversary, competitor, etcetera) as our central vector. By mapping our foe's roots in the human terrain, Integrated Understanding develops a roadmap for the onward investigation of the contextual factors that shaped this root structure. This provides focus to Land Forces' effort to understand and navigate the human environment.

When employing a vector-based investigative process, this same methodological progression can be replicated with any number of starting points. One option is to select an organization or network operating toward a particular objective (e.g., a political party, a religious sect, or an armed faction). The classification of "friendly, neutral, or hostile" is irrelevant, as is the distinction between "enemy, adversary, or actor." We take this entity as it is, and understand it on its own terms.[28] Another option is to select a natural or inanimate phenomenon (e.g., COVID-19, resource scarcity, or a development initiative like China's One Belt One Road project). The commonality to both options is that our vectors are moving through the operational environment, triggering effects and catalyzing reactions. These effects and reactions are what illuminate the key features of the human environment, and enable us to understand those features in context.

In each instance, Land Forces would begin by developing a focused, structured understanding of the vector in question. This would mirror the initial step in Integrated Understanding's enemy-centric approach. From there, we would broaden our view to the vector's touch-points in the human environment. If our vector is an organization or network, the process mirrors exactly the "root map" produced within Integrated Understanding. If our vector is a phenomenon, we would identify its particular points of impact (and, conversely, those segments of the human environment that are comparatively less affected for one reason or another), and assess the vector's momentum and trajectory. Finally, our onward investigation flows out into the human terrain, seeking to understand the specific contextual dynamics that explain the growth of an organization's roots, or the character of a phenomenon's impact, from one segment of the human environment to another.

This is a bottom-up, micro-to-macro investigative approach that rapidly develops focused, contextualized insight. It is also a deliberate rejection of "all encompassing" acronym-based macro frameworks and lists of "critical considerations" that predominate within Western military circles (which, despite their stated intent, are never able to deliver comprehensive understanding of anything).

Theory in Practice

Consider a scenario where Land Forces use the Integrated Understanding architecture and vector-based lines of enquiry to understand the Islamic State's campaign across the Sahel region. Our core intelligence process would center its focus on the Islamic State, and the network's capabilities and intentions in that theatre. As detailed above, this is business as usual for the practitioners of Military Intelligence. We would then broaden our view, developing structured products that capture the roots of the Islamic State's local influence. What individuals, groups, and demographic cohorts have the Islamic State sought to leverage? Why has the network taken this approach, how, and to what end? The creation of this root map would anchor and integrate Land Forces' subsequent course of action development, kinetic and non-kinetic alike.

Having established this root map, Land Forces' contextual investigation would examine the social, economic, political, and cultural dynamics (and attendant narratives) that have abetted or constrained the Islamic State's influence from one segment of society to the next. This investigative process will, necessarily, take us down into the weeds of the granular societal issues at play in the network's campaign. It gives use a focused understanding of when, where, why, and how the Islamic State has established channels of influence, paired with an understanding of the relevant social, economic, political, and cultural factors at play on a case-by-case and "root-by-root" basis.

This contextualized, integrated understanding of our adversary's campaign would enable the seamless development of strategies and plans to counter the Islamic State's operations, mitigate or uproot specific channels of influence, counter critical narratives, organize resistance movements that could be leveraged against the network, and build societal resiliency. The imperatives of Integrated Action would flow naturally from the foundation provided by Integrated Understanding.

Concurrent to our primary investigative thrust, Land Forces could examine particular areas of the Sahel via an array of additional vectors. Whereas the countering of the Islamic State's activity is a primary concern, we must develop a contextualized understanding of the Sahel itself. Exploratory vectors could include the effects of climate change on traditional patterns of socio-economic activity, resource scarcity and attendant inter-communal struggles, stress-induced population movements, and the political economy of oil, gold, and uranium extraction.

Each of these vectors would provide focused insights into the workings of the interconnected system of systems that comprise the human environment. Taken collectively, they would provide contextualized understanding of the playing field on which Land Forces and our local partners across the Sahel confront the Islamic State. With the agile nature of this approach, Land Forces has the flexibility to select specific vectors in response to particular concerns, and commence new lines of enquiry as desired. Furthermore,

inter-agency partners can leverage this same approach as well whether through the sharing of information, or the adoption of these methods. For example, how might the root maps produced via vector-based investigation and the attendant contextual reporting explaining said roots shape FCDO efforts to counter extremism or demobilize and reintegrate former partisans to conflict?

The intelligence architecture of Integrated Understanding, supplemented by an array of vector-based investigations into the Islamic State's campaign in the Sahel, would provide Land Forces with focused pathways through the human environment. The methods and structures described in this section would enable the different specialist capabilities within Land Forces to identify the issues that matter most, and present them to decision-makers with clear answers as to "why" and "how" they matter. Critically, our contextual understanding would be integrated seamlessly with our understanding of the Islamic State's core network, and likewise the additional vectors that we select.

The challenges of intelligence fusion, as currently practiced, are resolved. We are no longer confronted by piles of misshapen and potentially irrelevant puzzle pieces. Instead, we have focused, deliberately formulated, and contextualized insights into issues that matter. As a consequence, intelligence fusion within the Integrated Understanding framework would feature the alignment and synthesis of the various reporting streams provided via vector-based assessment with our primary, foe-centric investigative thrust. In this scenario, we are no longer attempting to assemble ambiguously-shaped pieces of a puzzle—clear images have already been created, and analysts can compare and contrast their features, identify interconnectivity, and further sharpen Land Forces' maneuver within the human environment.

Finally, theoretical and structural discussions of Integrated Understanding and the vector-based approach prompt the question: who does this, and what does that look like in practice? In the interviews supporting this study, the conduct of civil assessment was compared to combat medicine. All Land Forces personnel are trained to a basic standard in lifesaving techniques, and in the fundamentals of care under fire. Field medics are trained to a higher standard, and able to provide more specialized treatment. Doctors work at a higher level, while specialized surgeons provide yet deeper expertise. This is a useful way of conceptualizing the implementation of the concepts laid out in this study with the distinction that, as highlighted in the vignette concerning Land Forces' campaign in Mali, our most elite capabilities must be pushed forward, to the edges of the front lines.

Should Land Forces adopt these concepts, the fundamentals of Integrated Understanding and vector-based assessment could be installed from the tactical to the strategic levels. It is simply a question of establishing basic fundamentals across the force, allocating investigative responsibilities within this intelligence architecture, and determining which assets will be trained to higher standards and deployed forward accordingly. With a shared knowledge of Integrated Understanding, all personnel with exposure to the human environment could contribute to the understanding of our foe, its roots in the human terrain, and the contextual factors that shape the growth of these roots. By offering established analytical criteria around these focal areas, different elements of Land Forces could provide inputs as their access and aptitude permit.

Similarly, with competency in vector-based analysis, Land Forces' myriad constituent parts could conduct concurrent investigations of those factors of the human environment they deem most relevant. The depth

and quality of the resulting analysis would vary based upon talent, training, and access. Nonetheless, each investigative effort would provide a dynamic view into the interconnected system of systems that comprise the human environment. If established within a structured intelligence architecture, these reporting streams would provide a breadth of focused and actionable insights, as well as a steady supply of leads that Land Forces' more refined investigative capabilities might pursue in greater depth.

The Realities of Urban Warfare

As noted in the introduction, the impetus for this study traces to Land Forces' impending revision of its urban warfare doctrine. Prevailing demographic and geopolitical winds have made the prospect of "fighting in cities" a trending topic within Western military circles. Much of the attendant debate focuses on strategies, tactics, and technologies that will enable maneuver and execution within the cities and mega-cities that are sprawling across the world. Abundant references are made to "lethality," "survivability," and "large scale combat operations." Discussion of civil considerations typically focuses on Land Forces' legal obligations to protect civilians, and logistical and humanitarian challenges related to war-induced population movements.

The prospect of how we might *understand* these cities has received far less attention. This study has highlighted structural and methodological flaws in Land Forces' approach to the human environment. As the human environment is at its most dense, dynamic, and complex within cities, the challenges detailed in Sections I and II of this study will, inevitably, be at their most acute should Land Forces find ourselves engaged on urban terrain.

Current Land Forces doctrine repeatedly calls for us to "separate civilians from potential targets," and to "separate adversaries from civilians."[29] These directives echo the wildly optimistic mantras of COIN, which implored us to separate the insurgents from the population. Such objectives are as laudable as they are impracticable. In any plausible near-term urban warfare scenario, we will be fighting amongst civilians. Our foe will, doubtless, make ample use of this reality not merely in the tactical sense of using civilians as human shields, but along strategic and operational axes that leverage the features and fault lines of the human terrain against us. As Land Forces consider the prospect of urban warfare, we must expect an opponent that has inextricably intertwined itself within the urban landscape. This may be most tangibly apparent with respect to the physical environment, but the dynamic is equally real (and, arguably, far more challenging) within the human environment.

Because Land Forces are perpetually the "away side," contesting foes on comparatively unfamiliar ground, we must develop the ability to rapidly identify, investigate, and understand key features of the urban environment. At present, we lack the tools to conduct this sort of assessment. Moreover, our intelligence architecture is not configured to make actionable sense of our findings.

Integrated Understanding and the vector-based assessment methodology are offered as means through which Land Forces could conduct targeted, focused investigation of the human environment in any setting, and across the spectrum of conflict. These frameworks are presented with a sense of urgency. For the past two decades, we have failed to understand the societies in which we have fought. Most damningly, we failed to develop a contextualized understanding of our enemies as integral features of the

human terrain. Land Forces' intelligence architecture and investigative methods, like those of our allies and partners, proved inadequate in the villages and towns of rural Afghanistan. Barring substantive changes to how we make sense of the human environment, we will fail far more dramatically and consequentially in any future urban contest.

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Endnotes

[1] This sentiment is clearly expressed in ADP Land Operations, section 4-2, which observes that "no amount of analysis can achieve a complete understanding in advance of an operation", and that Land Forces require "dynamic and continuous understanding". That said, The Essentials: Operations in the Urban Environment, p2, opens Land Forces' discussion of urban operations with the all-too-optimistic dictat that, "a thorough understanding of all aspects of the urban environment will… be vital to success." The fundamental, inescapable *limit* of Land Forces' ability to understand the human environment is central to this study, as is Land Forces' urgent need to adapt its intelligence architecture to reflect this reality.

[2] This is raised in Joint Concept Note 1/20 Multi-Domain Integration, p60, which states, "a much greater capacity for human factors analysis, audience analysis and understanding non-munitions based targeting is needed than is currently possessed." This is an extraordinary statement, made quite matter-of-factly, yet tucked away near the end of a foundational text—and not accompanied by any reference to a prospective resolution.

[3] For the purposes of this study, the term "human terrain" refers to the contextual (i.e., non-military) features of the human environment.

[4] The uneven resonance of contextual reporting cannot be blamed entirely upon its producers. The interviews in support of this study consistently argued that conventional commanders within Land Forces suffer from an overly linear and simplified view of how contextual dynamics may be understood and operationalized, as well as a dangerous consensus regarding the marginality of human terrain considerations. It is evident that Land Forces have both supply and demand issues with respect to how we develop and action our understanding of the human terrain - an issue addressed further in this study.

[5] Several sources who contributed to this study observed the inherent "unfairness" of blaming military personnel for their inability to execute strategic objectives that were ill-conceived and incoherently managed by politicians. In the view of the author, this perspective is as valid as it is irrelevant. Land Forces operate under political control, and war is a political endeavor. As such, Land Forces must make sense of whatever circumstances into which we may be thrust. However tempting it may be to blame our failures in Iraq and Afghanistan on the limitations of political leadership, our performance in these campaigns exposed systemic problems within our own ranks that demand urgent attention.

[6] Caution against over-reliance on "technological panaceas" is expressed in JPD 04, p39. Introducing the Integrated Operating Concept, p7, further notes that people are our most important asset. That said, Joint Concept Note 1/20 Multi Domain Integration, p28, makes the specious argument that our "overabundance of data" can be overcome via technology, and translated into "insight and foresight". For the author's views on the limits of technology in the provision of actionable understanding, see: https://mwi.usma.edu/intelligence-cycle-broken-heres-fix/ and https://mwi.usma.edu/mwi-podcast-human-analysis-age-algorithm-dr-nicholas-krohley/.

[7] For discussion of the promise, and the limits, of Fourth Industrial Revolution technology in delivering causal understanding, see: Pearl, Judea, and Dana Mackenzie, The Book of Why: The New Science of Cause and Effect, Basic Books, 2018.

[8] JDP 04 Understanding and Decision-making, p3.

[9] ADP Land Operations, sections 1-10, 4-1, 4-4, and 6-4.

[10] For an expansive discussion of this dynamic, see Tripodi, Christian, The Unknown Enemy: Counterinsurgency and the Illusion of Control, Cambridge UP, 2021.

[11] It is understood that ongoing innovation within Defence, and within NATO more broadly, is moving away from the A3E paradigm and toward frameworks with added layers of classification (i.e., the Audience-Centric Approach, which draws distinctions among "the public," "stakeholders," and "actors," while situating each on a Friendly-Supportive-Neutral-Unsupportive-Hostile continuum). These new

frameworks retain the structural faults detailed in this discussion of A3E—most importantly the imperative to classify the features of the human environment based upon their relationship to *us*.

[12] As discussed further in the course of this study, there are unassailable and patently obvious reasons why J2 should prioritize enemies and threats. The argument laid out in the following sections is not that Military Intelligence should refocus itself on contextual aspects of the human environment. Rather, the argument is that Land Forces urgently require new tools for the investigation of the human terrain, and a new structural approach to the application and synchronization of how these tools enable our understanding of enemies and threats as integral features of the human environment.

[13] There is ongoing controversy over whether the Centre of Gravity should be construed as the strength of the enemy, or the underlying source of that strength. This debate is outlined here: https://theforge.defence.gov.au/sites/default/files/adfwtc04_centres_of_gravity_and_critical_vulnerabilities_by_strange_and_iron.pdf. Doctrine casts the CoG as the source of strength, whereas the authors of the above piece argue compellingly that Clausewitz intended its use in reference to the strength itself. Regardless, the analytical exploration of a CoG, with a view to understanding and exploiting it, necessarily opens the door to examination of contextual factors.

[14] SWOT analysis of Western military approaches to the Arctic, drawn from: Mathilde Ytier, "What future will the West choose in the Arctic?," High North News, June 19, 2019, https://www.highnorthnews.com/en/what-future-will-west-choose-arctic .

[15] The same fundamental critiques could be transposed to other acronym-based corporate analytical tools, such as PESTLE (Political, Economic, Social, Technological, Legal, and Environmental). These frameworks provide a means to identify external factors that may affect Land Forces' operations, but offer no guidance as to how inputs into the framework should be identified, understood, prioritized, or actioned.

[16] ASCOPE/PMESII template drawn from: Alan Goodman, "Partnered MDMP: Achieving Shared Objectives Through Remote Advise and Assist Operations," Eunomia Journal February 21, 2021, https://www.civilaffairsassoc.org/post/partnered-mdmp-achieving-shared-objectives-through-remote-advise-and-assist-operations.

[17] There is also the fact that Land Forces' most proficient collectors and analysts of human terrain information have frequently come from the Reserves, where externally-developed skill sets have demonstrated greater utility than the resources provided through Land Forces' own doctrine and training.

[18] This is evident in the fact that the capabilities tasked to produce contextual reporting and deliver civil effects are staffed and resourced at a small fraction of their enemy-centric counterparts. Anecdotally, one interviewee recalled his experience supporting Coalition efforts to reclaim Mosul from the Islamic State in 2017, wherein upwards of sixty people staffed the lethal targeting cell, while its non-lethal counterpart was manned by one officer and two junior NCOs.

[19] ADP Land Operations, section 8A-2.

[20] The tendency toward bulk data collection is integral to Fourth Industrial Revolution thinking. The underlying premise is to collect as much data as possible, and then leverage technological tools (e.g., machine learning and artificial intelligence) to sift, sort, and process that data. As discussed further in Section II (and elaborated upon here: https://mwi.usma.edu/intelligence-cycle-broken-heres-fix/ and here: https://mwi.usma.edu/mwi-podcast-human-analysis-age-algorithm-dr-nicholas-krohley/), this is not a viable approach to understanding the human environment. Quantitative analytics have extremely limited value in generating causal understanding—for the simple reason that quantitative analysis cannot establish causality. Put another way, data-driven analytics can identify patterns and trends within vast data sets with extraordinary speed, but they cannot explain their meaning. The ability to establish causal relationships—to explain *why* things are happening within the interconnected system of systems in an operational environment—is the *sine qua non* of understanding. The tools of the Fourth Industrial Revolution, for all their power, cannot reliably do this for us.

[21] During the interviews supporting this study, and likewise during the preliminary manuscript review, numerous sources spoke of the need for "cultural change" within Land Forces. The common argument was that conventional commanders and senior leaders within Land Forces have a deeply implanted disregard for contextual factors and human terrain analysis, which must be addressed in order to effect meaningful change. In the view of the author, internal debates over "culture" are unlikely to yield results. Instead, the most effective way to shift perceptions of contextual reporting is to feed *better* contextual

reporting into Land Forces' central nervous system. Over time, the quality of this reporting could achieve a meaningful cultural shift, based upon evidence and experience (as opposed to theoretical argumentation). Commanders often "get" the value such reporting when they are presented with top quality work. The surest path toward Land Forces "getting" this on an institutional level is to produce such quality consistently and at scale. Supply will, in turn, create demand.

[22] In recognition of Land Forces current analytical limitations within the human environment, ADP Land Operations, section 4-2, concedes that "predictable relationships between cause and effect are rare in adversarial human conflict". Such relationships may not be readily predictable, but they are absolutely vital to astute maneuver.

[23] For detailed evidence and argumentation to this end, see: Krohley, Nicholas, The Death of the Mehdi Army: The Rise, Fall, and Revival of Iraq's Most Powerful Militia, C Hurst & Co, 2015.

[24] For a catalog of reporting from the U.S. government's Office of the Special Inspector General for Iraq Reconstruction from 2004 to 2013, see: https://discover.dtic.mil/results/?q=SIGIR#gsc.tab=0&gsc.q=SIGIR&gsc.page=1.

[25] ADP Land Operations 8-2, JDP 04 Understanding p4. ADP Land Operations, 8-13, further observes that "a land force's actions necessarily generate responses from actors and adversaries, which feed constantly updated understanding."

[26] ADP Land Operations, 8-2.

[27] ADP Land Operations, 8A-05.

[28] The underlying imperative that is "baked in" to Integrated Understanding, and to the vector-based assessment methodology, is to examine features of the human environment as they are, in context. At no time do we classify anyone or anything relation to our interests or objectives. We are investigating "them," without reference to "us." This is a deliberate approach that is designed mitigate bias. This study does not offer detailed discussion of "emic" and "etic" perspectives, or the wider analytical issues of intelligence and social science research related to biases of various types. These issues are expounded in detail throughout relevant literature, and Land Forces' doctrine as well. Instead, the analytical and methodological approaches presented in Section III have been designed to limit the encroachment of bias into the investigative process.

[29] "The Essentials: Operations in the Urban Environment" p 12, 18.