# "Why do they keep telling us what we just told them!?": Intelligence and decision making in asymmetric warfare

*"Why do they keep telling us what we just told them!?"*
— Battalion commander expressing frustration about intelligence summaries from higher echelons.

*An infantry battalion in the Balkans is assigned the mission of providing safety and security to the local population while interdicting insurgents moving across the border to conduct operations in a neighboring region. This unit reports observed insurgent activity as well as disturbances in the civilian population on a continual basis. Additionally, they submit daily reports that summarize their assessment of the local situation. Higher echelons receive reports from multiple units such as this battalion and have the responsibility of assessing global implications for local events. They are concerned with cross-boundary interactions and long term trajectories of stakeholders. These global assessments inform strategic command decisions and are disseminated to lower echelons.*

*As tensions increase in the region, events in the infantry battalion's sector increase in frequency and magnitude and draw increased attention from higher echelons. A threat to coalition forces is made to a local patrol which then reports this instance in accordance with operating procedures. The battalion staff notices that intelligence assessments from higher are becoming increasingly similar to the ones that they are sending up. One officer in the battalion notes that the report reads "more like the news" than useful guidance for further operations. It appears as if less and less attention is being paid to more global issues. One morning, the battalion commander is handed a report that the Commander of U.S Forces in Europe has ordered an increase in force protection measures (i.e. increase in body armor, weapon systems and personnel on patrols) based on information that suggests a threat to U.S. forces in the region. The source of the information was missing from the order, but the text of the message is exactly that of the report the battalion had submitted two weeks prior.*

This account, taken from the personal experiences of the author, is representative of breakdowns that affect intelligence analysis and decision making in asymmetric conflicts. Asymmetric operations differ from conventional operations in that threats are identified and reduced on longer time horizons. Conventional operations focus on moving or destroying objects on the battlefield, whereas asymmetric operations are more phenomenological[1]. Experiences such as the one above underscore the importance of understanding inherent analytical challenges in environments that demand appreciation and anticipation of attitudes and beliefs of the population. These challenges include leveraging strategic resources and perspectives in support of tactical decision makers and misperceiving rigor in analysis. Cognitive engineers studying information analysis and supervisory control in high-risk domains such as space flight, air traffic control, healthcare, emergency response and the military have offered suggestions for overcoming these challenges. This paper discusses these challenges and summarizes some important cognitive engineering findings that indicate how to improve future operations.

## "Reach-back", "overwatch" or "sanctuary operations"

Increased automation and improved telecommunications have fueled a desire among senior intelligence leaders to leverage distant analysts in support of local decision makers, providing so-called "Reach-Back Intelligence"[2] or "Tactical Overwatch"[3]. With today's technology, analysts in secure locations, such as the United States, have the ability to receive data from a remote theater of operations, such as Iraq. These "sanctuary" operations afford security and comfort to the analysts at the expense of face-to-face interaction with deployed units and environmental feedback. Regardless of

the title, this type of support has inherent shortcomings that arise from the nature of large supervisory systems.

The military intelligence community is a system that supports operations at strategic, operational and tactical levels[4]. At the strategic level, planners, analysts and decision makers are concerned with developing national strategy and policy, and determining weapon system and force structure requirements. Operational level practitioners focus on accomplishing strategic objectives within a theater of war by planning and conducting campaigns and major operations. Tactical units are responsible for planning and conducting battles and engagements. Tactical analysts provide their commander with information on imminent threats.

This spectrum of responsibility is analogous to the Sharp-end/Blunt-end continuum of a supervisory system as depicted in Figure 1[5]. At the sharp end of practice, agents work more directly with the hazards and system components. They pursue multiple goals while acting according to local constraints and are also more sensitive to changes in their environment and system. At the blunt end, practitioners have a more global perspective and control more resources. In the intelligence community, these resources include processing capacity and collection assets.



**Figure 1 – Sharp and Blunt Ends of Human-Machine Systems** – from Woods, Johannesen, Cook, and Sarter (1994).

Tactical intelligence has a tighter feedback loop which aids in diagnosing problems and assessing accuracy of assessments. "Tactical intelligence tasks are distinguished from those at other levels by their perishability and ability to immediately influence the outcome of the tactical commander's mission"[6]. This also suggests that tactical analysts experience greater time constraints and more near term consequences. Additionally, tactical intelligence analysts typically have much more well-defined geographic or organizational areas of responsibility. This can result in tactical analysts relying more on local collaborations, whereas strategic analysts often exploit collaborations with distant counterparts. Finally, strategic analysts are often concerned

with the interactions of tactical activity in multiple areas. These differences are summarized in Table 1.

Differences in focus, resources, and feedback loops can create problems for distant analysts supporting local commanders. More resources must be dedicated by distant analysts to fully appreciate local disturbances. This is done at the expense of their strategic perspective. Research in other high-risk domains such as health care has indicated that transitioning between strategic and tactical approaches to problem solving can be cognitively difficult and can result in poor decisions[7]. Furthermore, the competing demands of both ends of the intelligence system hinder effective coordination and degrade feedback.

**Table 1 - Differences in Tactical and Strategic analysis**

| Tactical Analysis | Strategic Analysis |
|---|---|
| "Sharp-end" | "Blunt-end" |
| Focus on imminent threats; execution | Focus on policy, resource requirements, strategic planning |
| Sensitive to environment and system changes | Global perspective; concerned with interactions of local activity in multiple areas |
| Rapid feedback | Slow or no feedback |
| Well-defined areas of responsibility | General areas of responsibility; experience problems when too focused on one area |
| Greater control over fewer resources | Typically has less control over more, but dispersed resources |
| More local collaborations | May collaborate more with distant analysts |

This degraded feedback creates information gaps that become <u>cognitive vacuums</u> in the system[8]. In order to fill these gaps in knowledge, people dedicate additional resources and rely on their own interpretations. These interpretations can be faulty when people lack relevant information or the appropriate perspective to formulate hypotheses. Evidence of the cognitive vacuum has been noted in the congressional review of intelligence operations in the wake of the September 11, 2001 terrorist attacks. The *9/11 Commission* noted that strategic analysts are often duplicating work and are unaware of other agencies' perspectives and information[9]. Our narrative illustrates criticism that can arise at the sharp end of intelligence as expectations for blunt end counterparts are unmet. Due to the difficulty of communicating context with data and the dilution of information reported across multiple echelons, a gap in knowledge about the local situation developed at strategic echelons. Consequently, a lot of attention and resources were devoted at the blunt end to fill this gap.

Unfortunately, in filling this gap, the analyst loses his/her global perspective. "Supervisors who attempt to function as local actors will quickly lose sight of high-level organizational goals. They cannot continuously monitor all processes, filter the information, and determine the appropriate course of action for each local actor. They must remain detached from the details of the local actors' environments so they can evaluate the system's progress relative to the high-level goals"[10]. Similarly, the local agent who attempts to interpret global events lacks the broader understanding of cross-boundary interactions.

**Analytical rigor**

The second challenge for analysts and decision makers is misperceiving analytical rigor. Rigor has been said to be a "scrupulous adherence to established standards for the conduct of work"[11]. As such, rigor can be seen as a criterion for evaluating analysis. Unfortunately, analytical rigor is not well-defined, and can be quite subjective. In fact, research has indicated supervisors have difficulty in assessing rigor when simply reviewing analytical products[12]. A tragic example of this in space flight command and control contributed to NASA's decision to return the space shuttle Columbia to flight. This decision, which resulted in the shuttle disintegrating during re-entry, was made based on slideshow presentations that buried critical information[13].

Alternatively, metrics used to assess effectiveness in counter-insurgency operations in Vietnam and Iraq have confused the public and military decision makers with their inappropriate use of statistics[14]. Analysts and decision makers have historically relied on averages, bar charts and trend lines in order to assess and communicate effectiveness. This data, often briefed out of context, is not useful for determining whether changes are statistically or practically significant. In other words, decision makers are not considering the likelihood that any changes are due to chance, or are large enough to have any tangible meaning to those affected.

Creeping validity is another vulnerability that can result from analysis that is not sufficiently rigorous and often includes circular reporting. Circular reporting is when one report confirms another and both were based on the same primary source or when one was based on the other. The result is that the analyst gets a false sense of validity when the reports are actually unconfirmed. In our narrative, the battalion commander was able to cope with the lack of critical source reporting by recalling the text of his earlier report. No one else in this system was able to make this correction, with the result being unnecessary constraints being placed on local actors. As access to information increases the number of people who can do analysis (i.e. journalists and bloggers), this vulnerability increases in magnitude.

**Improvements from cognitive engineering**

Fortunately, there are interventions that can minimize these vulnerabilities. Cognitive vacuums result from poor feedback, so improving feedback across echelons reduces the tendency of any echelon to divert resources to fill the information gaps. Improving feedback is challenging and time consuming, however. Both sides have to reserve time for two-way communication about their perspectives. Effective coordination will only happen if both parties perceive value in the effort. Additionally, because tactical analysts have increased time constraints, strategic analysts have the responsibility of shaping their products to address their tactical customers – not just their own strategic commander. As suggested above in the Sharp-End/Blunt-End discussion, however, this is not to say that strategic analysts should attempt to replace the tactical analyst. Rather, they should provide their global perspective on local issues in ways that inform the tactical analyst about otherwise unforeseen trajectories. This typically involves expending significant resources early on to gain an appreciation for the tactical situation. This initial knowledge should then be sustained with regular visits throughout the operation.

Improving analytical rigor demands an increase in expertise in analysts, supervisors and commanders. Analysis should drive the form of the product, not the

reverse. Staff officers often find themselves updating pre-existing briefing slides in order to give the commander something with which he/she is comfortable. As mentioned earlier, this contributed to the Columbia disaster and continues to hinder meaningful analysis. Commanders must reserve time for real analysis as opposed to pretty slideshows. Finally, understanding attitudes and beliefs is central to victory against asymmetric threats. Analysts and commanders are under-skilled in statistics and research methods in order to provide and use rigorous analysis. Creeping validity can be reduced by providing audit trails with each assessment. These audit trails should provide future consumers with process information and supporting facts. Additionally, assessments should include context information that allows future consumers with the ability to infer perspectives of the analysts.

**Table 2 – Vulnerabilities and Interventions for intelligence analysis**

| Vulnerability | Intervention |
|---|---|
| Cognitive vacuums | Improve feedback across echelons<br>Remember tactical customers for strategic products |
| Creeping validity | Provide audit trails with assessments<br>Provide context information in assessments |
| Misperceived analytical rigor | Analysis should drive the product<br>Reserve time for thorough analysis<br>Increase skills in research methods and statistics |

**Technology over reason**

Unfortunately, implementing these improvements will require surmounting a cultural paradigm that encompasses and extends beyond the Military Intelligence community. Since the end of World War II, we have emphasized technological solutions at the expense of analysis. We have achieved military dominance in physical delivery systems and are unrivaled in our ability to project our presence throughout the world[15]. Our defense spending is more than three times the combined spending of all of our "potential enemies" (i.e. Russia, China, Cuba, Iran, Libya, North Korea, Sudan and Syria)[16]. However, as the *9/11 Commission* indicated, the weaknesses that contributed to the terrorist attacks were analytical, not technological. Regardless of the source of conflict or political agenda, the U.S. can fail to meet its objectives if it fails to adequately analyze and justify its position.

Of the roughly $40 billion that the U.S. spends on Intelligence related activity, only a very small portion is estimated to be spent on research, resources and training for analysts.[17] Although the findings of the *9/11 Commission* have sparked a tide of research on collection and analytical support tools, there has been relatively little interest in understanding the cognitive challenges of intelligence analysts.[18] Consequently, decision makers are often presented with the products of under-resourced analysts. As discussed earlier, these products often mask the inadequacies of the analysis.

In 2005, the DoD recognized the need for a concerted effort to reduce the effectiveness of Improvised Explosive Devices (IED).[19] Because these devices were the leading casualty producing weapon in the Iraqi theater, the DoD viewed mitigating their

impact as strategically important. The DoD formed the Joint IED Defeat Organization and allocated $7.9 billion to the program. In the first two years, JIEDDO spent 75 percent of its budget on technology solutions that never matched the pace of local insurgent adaptations. JIEDDOs focus is a reflection of our emphasis on gadgets over analysis. After 5 years of combat operations, we are just now realizing the need for increased understanding of the social networks that employ the IEDs.[20]

As we address future conflicts of interest, the U.S. will need to devote appropriate resources toward understanding and shaping the perceptions of our target populations. Our leaders and decision makers have become enamored with high technology solutions that mask real problems. We must overcome this myopic view of problem-solving as it hinders sufficient understanding of critical cultural and psychological considerations.

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[1] Phenomenology suggests that perception is reality. Attitudes, beliefs and behaviors are driven by what individuals perceive to be true about the world.

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