STRATEGIC INTELLIGENCE MIDTERM

March 10, 2021

Sudhan Chitgopkar
University of Georgia
sudhanchitgopkar@uga.edu

Contents

1 Short Answer

1.1 Intelligence Operations

There are three overarching types of intelligence operations present within contemporary intelligence. They may be enumerated as follows: (1) strategic intelligence, (2) operational intelligence, and (3) tactical intelligence (Carlee Lecture 1). While all are considered types of intelligence, their use-cases are varied significantly. As a result, many are important stand-alone types of intelligence that may complement each other in certain respects.

Strategic intelligence is the most broad, policy-oriented approach to intelligence (Carlee Lecture 1). In this form, there is a request for intelligence by some consumer or decision-maker and a process by which a report is prepared for said consumer. This report is meant to be an objective, unbiased brief on the topic requested that may be used to guide future decision-making (Carlee Lecture 1). Often, strategic intelligence is focused on understanding the effects of intelligence and international factors, lending itself to the policy-side of the intelligence sphere (United States of America Joint Forces 2017).

The second type of intelligence is operational intelligence. This is more focused than strategic intelligence but is not quite as focused as tactical intelligence (United States of America Joint Forces 2017). Rather than focus on the effects intelligence has on international factors in the world, this sector of intelligence is focused on groups and institutions. Such intelligence may be useful when considering large or long-term missions, as significant detail regarding a medium-sized target is important (Carlee Lecture 1). Examples of this operational intelligence may be understanding and monitoring areas of interest, conducting analyses on terrain being used for operations, and understanding adversary capabilities.

The most narrow type of intelligence is tactical intelligence. This form of intelligence focuses on specific field scenarios and day-to-day operations (Carlee Lecture 1). Whereas strategic intelligence concerns itself with the global implications of certain intelligence and the policies that may come out of it,tactical intelligence focuses on the minute details that assist mission success. Because tactical intelligence often focuses on a particular scenario or condition, the fruit of tactical intelligence is frequently used in military decisions (United States of America Joint Forces 2017). Such decisions must generally be made quickly with little attention to macro factors that strategic intelligence may concern itself with. Examples of tactical intelligence include monitoring network vulnerabilities for a particular type of virus, simulating the effects of particular weaponry usage against enemies, and monitoring real-time security risks. While the time-frame of strategic intelligence is relatively long-term, the time-frame of tactical intelligence is very short.

1.2 Types of Intelligence

There are many different types of intelligence, each useful in their own right. Consider three (3) types of intelligence: human intelligence (HumInt), imagery intelligence (ImInt), and open-source intelligence (OSInt). Human intelligence refers to any intelligence that is collected by individuals. Such individuals need not be spies. Rather, they may be diplomats, heads of state, and other government officials (Carlee Lecture 2). Imagery intelligence focuses on the collection of intelligence through some sort of photography. While this certainly includes photography in its conventional digital and film respects, ImInt also includes topographical imagery, infrared imagery, and use of area mapping imagery (Carlee Lecture 2). Finally, open-source intelligence exploits information that is available to the public for the collection of relevant information in intelligence operations (Carlee Lecture 2). Such open-sources may include public databases, journal publications, and news media.

HumInt is particularly useful as a cost-effective method of intelligence collection. As the oldest form of intelligence collection, humans have proven themselves to be adaptable and useful vehicles of intelligence (Carlee Lecture 2). Humans also often have the abilities to provide narrative, documentary information. Many other forms of intelligence fail at providing any understanding of the emotions of the intelligence target (Department if the Army 2004). Only through HumInt is such subjective intelligence possible. As aforementioned, HumInt is also extremely cost-effective. Unlike many other types of intelligence, HumInt has low overhead infrastructure costs. This is critical given just how expensive some intelligence collection may be. As a whole, HumInt is a tried and true approach to intelligence collection that is both cheap and provides narrative, emotional information that other intelligence types lack.

HumInt is not without its limitations, though. While the loss of an imagery satellite or radio interception station would certainly be costly, the loss of an intelligence agent is devastating. The risk that HumInt places on human life is significantly higher than any other type of intelligence. This is problematic, as it may be possible to buy a new satellite or develop a new radio station but it is not possible to bring a dead intelligence agent back to life. This is likely the largest drawback with HumInt. HumInt can also be largely limiting. The same emotional qualities that may make HumInt a greater asset over other types of intelligence can also be very problematic. Because humans may be manipulated and provide more anecdotal, subjective information, they may be less reliable than hard numbers or images that come out of other intelligence types. Different types of HumInt also come with their own problems. For example, opportunistic HumInt's greatest drawback is its consistency. People should not be counted upon to willingly present themselves and provide information. Similarly, research-enabled HumInt may not be self-sustaining. Because such HumInt requires

minimal investment and is lead-generated, research-enabled HumInt's biggest drawback is that it likely can not be the only type of intelligence collected. It must work in tandem with other types of intelligence to produce complete results. As a whole, then, HumInt is cost-effective and unique but also high-risk, has more reliability risks, and is not as self-sustaining as other types of intelligence.

ImInt, like HumInt, has its benefits. Imagery tends to provide reliable intelligence that often takes little processing and can be extremely helpful (United States of America Join Forces 2017). Given the long history of photography and image capture, there are also a wide variety of different ImInt techniques that may be used for different situations. For example, infrared imagery may be useful during the nighttime to detect individuals and movement when ordinary digital photography isn't quite as useful (Carlee Lecture 2). ImInt is generally cheaper and less technical than many other types of intelligence. This is because much imagery infrastructure, like satellites, already exists.

ImInt does come with its own drawbacks, though. Specifically, ImInt can often be hindered by problematic weather conditions like significant cloud cover or rain (Carlee Lecture 2). ImInt, while not as technical as some other intelligence, still requires significant amounts of tech-focused analysts for processing (Carlee Lecture 2). This makes intelligence collection a more expensive, technical process. Finally, ImInt can also be counterproductive if it is not conducted covertly. If discovered, the subject of the intelligence collection may be able to fake information that is gathered by ImInt, hurting the intelligence operation (Carlee Lecture 2). Consider a terrorist base that knew in advance a sattelite would be passing overhead, taking pictures of their compound. They would be able to fake the amount of people and weapons they have within the compound, making the intelligence inaccurate.

OSInt is an extremely interesting form of intelligence collection with numerous benefits. The first large benefit of using OSInt is the variety of different perspectives and viewpoints that can be found with OSInt. Like HumInt, OSInt generally consists of more than just hard numbers with no emotional content. OSInt may also be less rigorous to collect and process, as the information already exists and it must simply be scraped from publicly available sources.

Despite these benefits, OSInt may be of limited use. With journal publications specifically, much of the OSInt information collected may be theoretical - something that is especially problematic when dealing with practical intelligence endeavors (Carlee Lecture 2). The reliability and validity of some OSInt may also be difficult to ascertain (Carlee Lecture 2), as the nature of publicly available information lends itself to inaccuracies and lax collection methods. Finally, there is likely a limitation on the amount of sensitive information publicly available. Surely, no terrorist organization would publish much information about their

bases or capabilities on the internet. Collection of this information is likely possible through other forms of intelligence collection but not OSInt.

1.3 General Morphological Analysis

Duczynski and Knight's 2018 proposed General Morphological Analysis (GMA) represents a potential solution to a significant need within the planning and direction phase of the intelligence cycle. Specifically, the status quo lacks a significant, standardized approach to task definition and proper plan creation (Duczynski and Knight 2018). Noting this and the problems that may be associated with it, Duczynski and Knight propose a solution through their six-step General Morphological Analysis.

The analysis begins with a sort of task definition. Specifically, Duczynski and Knight explain that a task question must be composed from a customer request such that the question allows for a more focused, shared view towards the intelligence subject (Duczynski and Knight 2018). This is critical as this common question will determine the factors set forth in future steps of the GMA.

Following this question definition, those partaking in the intelligence planning are free to enumerate potential factors that may affect the derived questions (Duczynski and Knight 2018). These factors may be directly or tangentially related to the topic so long as they contribute to the question in some way.

Using an amalgam of these factors as guidance, the intelligence planner(s) will be able to narrow down to seven or fewer overarching primary factors that most directly relate to the question. These seven factors may then be used for to brainstorm "conditions." These conditions, which are to be organized from most to least desirable, describe ways in which the factors may come out. Organizing this properly will result in a table consisting of condition-factor cells. These cells are meant to represent the entire problem set (Duczynski and Knight 2018). Duczynski and Knight recommend attempting to create some sort of acronym from the factors, though this is not a critical step for the GMA to succeed.

Following the creation of a table with condition-factor cells, the GMA requires intelligence planners to pair up cells systematically, judging them on their general compatibility with one another. Mutually exclusive cell combinations, along with any problematic or illogical configurations are discarded (Duczynski and Knight 2018). Ideally, this will result in a small, workable number of configurations remaining at the end of the pairing and judging process.

Because the completed table will still be largely representative of the problem space, it should contain both the status-quo configuration and some desired configuration. Once each of these are classified, the GMA

instructs the intelligence planner to analyze the nature of the gap between the status quo and the desired condition. There should exist some intermediary configurations that allow the intelligence planner to plot his/her way from the status quo to the desired condition (Duczynski and Knight 2018).

Finally, a plan is created that would allow for passage through the previously identified intermediary conditions to the final desired configuration (Duczynski and Knight 2018). This plan is the same overarching plan that is to be developed during the planning and direction phase of the intelligence cycle.

This is a far more standardized process for planning and direction than many others that exist today. It is, however, reliant on knowledgeable planners providing thorough input to succeed (Duczynski and Knight 2018). Without a complete knowledge of the intelligence question, it is likely that an error will be made in at least one part of the process, hurting the accuracy of the factor-condition table's representation of the full problem space.

1.4 Intelligence Agencies

The United States has a myriad of intelligence agencies, many with somewhat redundant roles. Amongst these agencies are the Central Intelligence Agency (CIA), Office of the Director of National Intelligence (ODNI), and the National Security Agency (NSA).

The CIA is the leading expert in US clandestine operations. They are the only independent agency that runs operations and accordingly have their own paramilitary (Carlee Lecture 1). This set of differences from other intelligence agencies certainly makes the CIA a distinctive intelligence agency within the US. The CIA's purpose within the overall intelligence community is to analyze national security intelligence and protect the United States from foreign threats (Carlee Lecture 1). Because of their aforementioned paramilitary, they have the acute ability to carry out tactical operations through their own agency at the request of the president. Furthermore, the agency is largely agile when compared to many other US intelligence agencies (Turner 1990). They move quick to changing global threats, as demonstrated by their shift in focus towards anti-terrorism following the September 11th attacks and, more recently, their focus on cyber-security.

The NSA is an agency under the Department of Defense that focuses on signals intelligence (SigInt) and telecommunication (Carlee Lecture 1). The NSA is specifically tasked with monitoring, collecting, and analyzing SigInt and network intelligence both domestically and abroad. The NSA's work, like many other agencies is primarily clandestine and requires significant amounts of technical data. The NSA is also a leader in cryptography and cyber-security for the US (Britannica 2018). The NSA's purpose within the national

intelligence community is to act as a hub of domestic and foreign SigInt collection, with some extraneous activities in cryptography.

The ODNI is an independent agency working as the intermediary oversight agency for the US. The work of the ODNI is often more varied than other intelligence agencies but focuses on intelligence consolidation and correspondence with decision-makers (Carlee Lecture 1). The ODNI is also tasked with reporting directly to the president with matters such as a daily brief on national security issues (Office of the Director of National Intelligence 2019). Because of it's unique position as a sort of hub for intelligence between all the other intelligence agencies, the ODNI's purpose in the national intelligence community is to oversee macro operations of other intelligence agencies and consolidate intelligence updates for correspondence with decision-makers.

2 Essay

While the utility and accuracy of the contemporary intelligence cycle is under contention, it represents an important aspect of strategic intelligence instruction. At its core, the intelligence cycle is a model depicting the five basic phases of intelligence and their relationship to one another (Johnson 2003). While the relationship of these phases is largely complex and non-linear, the intelligence cycle seeks to present it as linear for the sake of simplicity. This is because the cycle is first and foremost an educational tool used to explain the basic intelligence process (Phythian 2013).

As aforementioned, the intelligence cycle consists of five (5) phases connected linearly. The first phase in this cycle is (1) planning & direction, followed by (2) collection, (3) processing, (4) analysis, and finally (5) dissemination. Because each step depends on its preceding step in some capacity, understanding every phase is critical to understanding the cycle as a whole.

2.1 Phase Significance

2.1.1 Planning & Direction

The planning and direction phase is arguably the most important part of any intelligence project. During this initial phase, an intelligence manager will receive a request for intelligence on a particular topic from a customer (generally one or more policy-makers). During this phase, the intelligence manager will be tasked with using the intelligence request to devise an appropriate plan and resource list for the intelligence report to be completed (Carlee Lecture 2). It is critical that both the plan and the resources be made clear at

this phase in the intelligence cycle, as failure to do so may hinder aspects of subsequent steps. For example, underestimating the technical resources required to properly analyze large amounts of collected data through a machine learning algorithm may significantly hinder the effectiveness of the analysis stage and slow the entire process. Because this planning and direction is such a critical part of the intelligence process, this phase can be further subdivided into three sections.

The first of these sections is known as **task definition**. Simply put, task definition consists of converting a potentially vague customer request into a defined, actionable task (Carlee Lecture 2). Task definition is important as it is the primary starting point of both the planning and direction process and the intelligence cycle as a whole.

Following the formulation of a clear, actionable task, the intelligence manager is tasked with **analysis and formulation**. During this part of the planning and direction process, all facets of the task are considered to create an effective overall plan (Carlee Lecture 2). This process is important as it includes the creation of the intelligence plan used for the remainder of the intelligence process.

Finally, **core planning** is conducted. This is the period during which specific resources are allocated, per the overall plan created during analysis and formulation (Carlee Lecture 2). This specific sub-phase is important for the same reason as aforementioned. Namely, all subsequent steps rely on having the specific resources they need in order for the intelligence project to be effective.

Planning and direction is therefore an important phase in the intelligence cycle as it lays the groundwork for many of the following steps. The planning and direction is also important to maintain a clear project goal that may be clearly communicated with all participants in this intelligence project. Having such a goal may also help minimize the effects of the principal-agent problem by outlining clear guidelines and criteria for intelligence collection, processing, and analysis.

2.1.2 Collection

The collection phase of the intelligence cycle directly follows planning and direction. As its name suggests, this phase involves the collection of raw intelligence data (Carlee Lecture 3). This data may be collected through a variety of different means (explained in detail later) for processing and analysis to be done upon it. The importance of this phase in the intelligence cycle is relatively self-explanatory. Without the collection of relevant intelligence per the plan outlined in the planning and direction phase, there will be no information from which specific intelligence may be gathered. It is important to note the importance of relevant collection

here. There are often instances where much irrelevant information is gathered. Such irrelevant information may not be inherently useless as it may help with a future intelligence project, though the collection of such information should be minimized for the sake of resources used to both collect, process, and analyze irrelevant information. As a whole then, intelligence collection is an important part of the intelligence cycle as it provides future phases with the raw information necessary for the final report. It is also important that collection be done effectively, minimizing irrelevant collection for the sake of minimizing resource waste in processing and analysis.

2.1.3 Processing

The processing step is largely a buffer between intelligence collection and intelligence processing. The processing stage converts raw, often unreadable collected data into data that may be used for analysis (Carlee Lecture 4). Processing can be considered the amalgam of pre-analytical filtering, collation, and evaluation. Pre-analytical filtering involves a cursory filtering of total raw data collected into usable, relevant information for further processing. From this filtering, collation transforms raw data into a finished, readable state. Finally, evaluation analyzes the credibility and reliability of each piece of data for further analysis (Carlee Lecture 4).

The importance of **pre-analytical filtering and collation** is two-fold. (1) Firstly, data is only good insofar as it may be used by analysts to understand data patterns and derive a final conclusion from. Data that is either poorly processed or only partially processed may not allow for pattern-matching and proper analysis to be conducted. (2) Secondly, the processing phase may indicate to data collectors what type of data is most usable or needs more collection. For example, it is possible that problems with particular imaging techniques used during collection only become apparent during the processing phase. Similarly, it may become clear during processing that particularly noisy data is yielding little fruit and further collection of such data will be impractical. While the intelligence cycle is linear, the importance of the processing phase in practice is doubly-linked to both analysis and collection.

Evaluation is also a critical element of processing. Such evaluation lays the groundwork for further evaluation to be done by intelligence analysts. Because analysts focus on piecing together processed data to create a sort of narrative, knowing the reliability and validity of data sources is critical to producing the most accurate possible report. The importance of evaluation, therefore, is to minimize the problems confounding intelligence has during analysis.

2.1.4 Analysis

The analysis phase is one of the final phases of the intelligence cycle and serves to piece together the collected intelligence in order to provide a cohesive intelligence report to the customer (Carlee Lecture 5). The analysis phase is important because without analysts to put the intelligence together, there is no point to intelligence collection and processing. Just as bricks and mortar are worth very little but houses are worth very much, intelligence without analysis is a construction site without workers. Customers neither have the time nor the resources put the intelligence together themselves, making the final analysis of collected intelligence extremely important. Without analysis, the customer would not get what they asked for.

2.1.5 Dissemination

Following the completion of the intelligence product, it is important to disseminate the completed product to the consumers (Hulnick 2015). This is often a process that varies from project to project depending on the nature of the topic and intelligence collected. While this may be an oft overlooked element of the intelligence process, it is critical that dissemination be done properly. Dissemination is important because it implies completion of the project, allows the intelligence report to be fully actionable by decision-makers, and may raise new tasks.

2.2 Phase Nature

2.2.1 Planning and Direction

Because planning and direction are less structured than many of the other phases of the intelligence cycle, the specific activities of planning and direction may vary based on the project and the intelligence manager. In general, though, planning and direction is an intensely creative process which requires clear and thorough brainstorming (Carlee Lecture 2). Some general activities that may occur in this stage are semantic analyses for task definition, research into optimal collection routes, and creating resource breakdowns.

Consider the **task definition** phase in which a potentially vague intelligence request must be made clearer (Carlee Lecture 2). Here, it is important to semantically define specific concepts and operationalize variables (Johnson 2003). For example, a customer that wants recent intelligence on domestic terrorism may be vague in his/her intelligence request. In this phase, it would be necessary to operationalize what "recent" means and the time-frame of the research to be conducted. Furthermore, it may be necessary to semantically define terms like "domestic terrorism," as such definitions are often left to interpretation. Here, semantically defining and operationalizing the intelligence project are some activities that may be carried out in the

planning and direction phase.

Determining optimal intelligence collection methods is also a critical activity that may take part in the planning and direction phase. It is important to know if human intelligence (HumInt), image intelligence (ImInt), or some other form of intelligence collection will best fit the intelligence project in question. Only when details like this are determined for the analysis and formulation section, it is possible to perform the activities required for core planning.

Core planning activities often focus on brainstorming and researching required resources, and compiling a list of such resources to obtain (Carlee Lecture 2). Because things like ImInt would potentially require access to film cameras, infrared cameras, and sattelites, it is important that the infrastructure necessary to carry out an intelligence operation be known as soon as possible.

2.2.2 Collection

Like planning and direction, the activities contained within the collection process may vary based on the type of intelligence desired. There are a multitude of intelligence types from HumInt, which focuses on using individuals to ascertain information through both overt and clandestine activities, to ImInt, which focuses on imagery. In general, though, the activities present in this phase are focused on simply gathering relevant information through the mediums outlined in the planning and direction phase (Carlee Lecture 3).

For HumInt, this may include simply conducting interviews for opportunistic HumInt, conducting research for research-enabled HumInt, or doing proper networking for target-specific HumInt. Signals Intelligence (SigInt), however, would require a completely different set of activities that constitute collection. Here, tapping into radio frequencies and monitoring news are activities that collect communications intelligence (ComInt) (Carlee Lecture 3). ImInt activities would involve the use of some imaging equipment to take pictures of a particular subject. This imaging equipment could range from film cameras to infrared satellite-based imaging. On a different note, open-source intelligence (OSInt) collection activities would be largely research and database focused. Here, the intelligence collection activities would likely be focused on scraping relevant information from websites and databases (Carlee Lecture 3).

While it is possible to enumerate every single type of intelligence collection method and its corresponding activities, these collection activities tend to have some common factors. All intelligence collection activities utilize some sort of instrument (humans, cameras, computers, etc.) in order to ascertain information in a raw form.

2.2.3 Processing

Intelligence processing activities, like intelligence collection activities, often vary based on the type of intelligence collected. In general, though, processing generally consists of two activities: (1) collation and (2) evaluation (Carlee Lecture 4).

During the collation phase, related pieces of evidence are grouped together to drive further processing . Activities during the collation phase include using and developing automated, computer-driven processes to sort data, classifying evidence through manual visual formats, and organizing intelligence in micro-graphic visual formats. The use of automated, computer-driven processes often tends to include both supervised and unsupervised machine learning models (Carlee Lecture 4). Because of the sheer size of collected intelligence and the sometimes vague patterns that may exist in this data, it is most practical to develop a machine learning algorithm which can detect patterns in intelligence and group them accordingly. Another activity could be organizing information through manual visual formats. Use of the Dewey Decimal System here is widespread, though there are other organization systems that may be more effective for particular intelligence projects based on the nature and amount of collected intelligence. Finally, micro-graphic visual formats may be organized through the use of microfilms and microfiches for viewing. Determining an appropriate collation method and completing the collation process through that method is the set of activities comprised by collation.

Following this, evaluation must be completed. The activities that take place during the evaluation section largely involve cross-checking intelligence to its original source and other pieces of collected intelligence (Carlee Lecture 4). This is because evaluation consists of determining the validity and reliability of a given piece of collected intelligence. Validity is determined by how true the intelligence may be, and reliability is based on how trustworthy the intelligence source is (Carlee Lecture 4). In order to determine validity, information must be checked against other intelligence to understand areas of overlap. In order to determine reliability, intelligence sources must be checked for their empirical reporting and its validity. As such, activities during the evaluation phase largely require the intelligence processor to determine the reliability and validity of intelligence by comparing it to other intelligence and sources.

2.2.4 Analysis

Activities in the analysis stage largely comprise of comparing processed intelligence, determining what the intelligence really means. This analysis will determine the information that goes into the intelligence report, making the process extremely important (Carlee Lecture 5). During the analysis phase, intelligence analysts

will often interpret organized data to make conclusions. Intelligence analysts also have the most direct contact with the consumer (Carlee Lecture 5) so their activities may include meetings with the consumer to discuss expectations and results. Finally, activities done during the analysis phase include completing the final intelligence report. This final report should include an amalgam of the key findings derived through intelligence analysis and is the document disseminated to the customer in the next phase of the intelligence cycle.

2.2.5 Dissemination

During the final dissemination phase in the intelligence cycle, intelligence activities are likely to include presentations and deliveries of intelligence reports to the appropriate parties for decision-making (Davies, Gustafson, Ridgen 2013). These presentations are meant to be objective analyses based on the original intelligence request. Further activities that may occur during dissemination is the answering of questions, consultations with customers, and further explanations of the intelligence report as necessary.

2.3 Phase Problems

2.3.1 Planning & Direction

As intelligence is a sensitive endeavor, there is much potential for error in each of the individual cycles. Errors made during planning and direction may be particularly problematic because of their tendency to spill over into other phases. For example, improper resource allocation during the core planning stage my lead to significant problems with processing or analysis. The vast majority of the problems that occur with the planning and direction phase can be attributed to oversight of one or more aspects of the task.

During **task definition**, potential problems include incorrectly operationalizing variables or making the task either too broad or too narrow. A topic that is too broad may yield little fruit as it requires more resources and potentially gathers little relevant information. A topic that is too narrow will not deliver information of the correct scope necessary to the customer for decision-making.

Problems with **analysis and formulation** are also possible. Here, problems may often manifest through missing a key element of the task. Consider an intelligence operation investigating the financial capabilities of ISIS. Overlooking the potential usage of cryptocurrencies as an anonymous transaction vehicle during this phase is an example of how missing a key element of the task can be a problem in planning and direction. As aforementioned, this problem may compound. In this example, overlooking the role of cryptocurrency

may mean that no data is collected upon it and it is therefore neither considered by an intelligence analyst nor the customer.

Problems with the **core planning** phase also exist. These may often deal with improper resource allocation. It is possible that the incorrect resources are allotted for a project. For example, machine learning experts may be hired to conduct processing on data that exists primarily on microfilm. Resources for a specific section may also be forgotten entirely if not carefully considered during this sub-phase.

2.3.2 Collection

Like the planning and direction phase, the potential for problems during data collection is also high. Many of these problems may arise with improper data collection methods. For example, using digital satellite photography techniques in areas with significant cloud cover would likely result in poor data (Carlee Lecture 3). Similarly, using signals intelligence (SigInt) without properly covering one's trail may allow an adversary to leak misinformation and create analysis problems (Carlee Lecture 3). Open-source intelligence (OsInt), which uses the wide range of open-source materials available for intelligence collection, may also be flawed in this manner. Specifically, problems with OSInt collection may include the over-collection of theoretical rather than practical intelligence (as is often the problem when pulling from academic journals) (Carlee Lecture 3). While it is possible to provide examples of things that may go wrong with every single possible type of intelligence, the nature of the problem remains relatively constant: improper use of intelligence collection infrastructure leading to processing or analysis problems.

The principal-agent problem is also a problem here. Because there may exist some miscommunication regarding the intelligence project, there is potential for the intelligence collected to be somewhat irrelevant to the topic at hand (Grossman and Hart 1983). This is because both the principal and the agent have their own somewhat different task definition.

2.3.3 Processing

Problems that occur with processing may be sub-divided into two main categories. The first is using improper processing techniques. Each method of intelligence collection corresponds with at least one proper processing techniques. Using such techniques is important for effective collation to occur. There are three specific collation types: (1) automated, computer-driven data systems, (2) manual visual formats, and (3) micro-graphic visual formats. Automated, computer driven data systems often utilize algorithms and machine learning techniques while manual and micro-graphic formats use more conventional organization and classification systems (Carlee Lecture 4).

Utilizing the right type of collation type for the evidence collected is important to ensure that proper processing is done and that all possible information is available for analysis. It makes little sense to use machine learning algorithms to try and classify microfilm, just as it makes little sense to try and manually organize massive digital databases. Accordingly, one problem that can occur during the processing phase is ineffective use of proper processing methods.

The second big problem which may occur during processing is improper evaluation. Evaluation is the final step in processing and determines both the reliability and validity of the source. Problems that can arise during this sub-phase are generally a result of poor evaluation methods. For example, not checking the past validity of a source may result in it being given an F rating when there is indeed source information. Evaluation problems may also arise as a result of poor standardization. Some intelligence processors may have varying standard for the 1-6, A-F scale. This skews some sources to appear more or less reliable than they actually are, throwing the accuracy of the analysis in jeopardy.

2.3.4 Analysis

As one of the most critical parts of the intelligence process, it is important to minimize the amount of problems that occur during the analysis phase. Such problems largely occur through (1) incorrect analysis organization or (2) falling prey to biases or fallacies (Carlee Lecture 5).

The first problem that may occur with the analysis phase is poor organization. While a data-driven paper organization is conventional for academia, it is poor practice for intelligence reports (Carlee Lecture 5). Rather, message-driven organization is better for intelligence as it provides the customer with a clear, concise report with little extraneous information. For this reason, message-drive organization begins with key judgements and analysis unlike the lit review and data that its data-driven counterpart prefers to open with.

The second problem that may occur with analysis is falling prey to biases or fallacies. Analysts may often have their own heuristics and cognitive biases by which they judge information, Avoiding such biases as well as intuitive traps, logical fallacies, and analytical traps is important to produce an objective intelligence report (Carlee Lecture 5). Because heuristics and cognitive biases are often mental shortcuts taken (Carlee Lecture 5), they can be done quite implicitly and are difficult to catch. This unique quality increases the likelihood of such problems occurring during this phase. Logical fallacies, intuitive traps, and analytical traps are less implicit. They may occur by mistake but do not have the same "cognitive shortcut" quality

as heuristics and biases, making them a little easier to detect. As a whole, then, use of biased or fallacious information during analysis is a common problem that occurs during this part of the intelligence cycle.

2.3.5 Dissemination

Problems in the dissemination phase are just as problematic as problems in other phases of the intelligence cycle. Here, such problems are likely a result of either subjectivity in the dissemination of information or dissemination in a manner not requested by the customer (Carlee Lecture 2). Firstly, subjectivity can become a large problem during intelligence projects. Intelligence reports are meant to be objective guides by which policy makers can decide the merits of certain approaches (Carlee Lecture 2). To provide subjective policy prescriptions alongside intelligence is to muddy the integrity of the intelligence itself. The second problem regarding improper dissemination occurs when the disseminated information can not be easily used by the customer due to its highly technical nature or its unclear arguments. This can often be an result of the principal-agent problem, just on a different scale than was explored earlier in this paper. Here, the principal is the customer and the agent is the intelligence team. Improper communication may lead to different expectations regarding the final intelligence product produced, which often makes the final intelligence product relatively useless to the customer.

2.4 Solvency

2.4.1 Planning & Direction

Solutions to the problems listed in the planning and direction phase are few and far between. This is because many of the problems regarding planning and direction in the status quo involve general oversight - something that does not have a quick fix. A potential solution to this problem, however, might be possible. Utilizing a more standardized approach to planning and direction may forego any oversights made during a loose creative brainstorm. This holds through Duczynski and Knight's proposed General Morphological Analysis (GMA). Because the GMA lays the groundwork for a defined means by which to pursue both **task definition and analysis**, the amount of problems that occur during this phase can be minimized through its use. While the GMA isn't perfect (See 1.3 for a more detailed explanation), the GMA does create a sound means of brainstorming factors and conditions that assist in formulating an intelligence plan. Because the GMA also depicts intermediary steps between the status quo and desired goal, it may be easier to visualize resources necessary throughout the intelligence process. This helps solve back for oversights during the **core planning** sub-phase.

2.4.2 Collection

Problems with collection are more difficult to solve. Things like cloud cover becoming problematic for ImInt or unreliability in OSInt sources is difficult, if not impossible, to alter. As a result, the best we can do with problem rectification in the collection phase is through minimizing the principal-agent problem which may occur here. Because the principal-agent problem stems from asymmetric information between the principal and the agent, clearer planning and direction combined with greater communication and feedback may solve this problem (Grossman and Hart 1983). Through a clear plan and direction, potentially through the Duczynski and Knight GMA resolution mentioned above, it is possible to minimize the principal-agent problem by ensuring that both parties have the same understanding of the task at hand (Duczynski and Knight 2018). Second, through greater communication and feedback between the principal and the agent, it is possible to hone the collection of the agent over time to the requirements of the project. In this way, it is possible to minimize the problems of the principal-agent problem during intelligence collection.

2.4.3 Processing

The problems with processing generally occur as a result of incorrect collation method use or improper evaluation. Fixing the former problem seems relatively simple, as it just requires that the intelligence planner realize the relationship between the type of intelligence collected and the collation method which should be used. The latter problem is a much more interesting one, as determining intelligence reliability and validity may be a cumbersome process. To solve this, it may be possible to treat all relevant pre-existing data as intelligence that must also be collated into some sort of centralized repository or database that could be referenced to check for validity and reliability. This would likely be an expensive, difficult endeavor. The creation of such a central repository, however, could minimize the amount of work necessary to cross-check sources and information with empirical evidence. It would also help eliminate the amount of pre-existing intelligence overlooked when trying to determine reliability and validity.

2.4.4 Analysis

Solving cognitive biases and heuristics along with logical fallacies is a little more straightforward than solving the problems with processing. The use of outsider input and analyst collaboration here is critical. Because the nature of heuristics and biases is such that they are *personal* mental shortcuts (Carlee Lecture 5), they may be significantly more identifiable when viewed by another analyst familiar with the intelligence content. Similarly, fallacies are likely more visible to others, especially when they are familiar with the content being analyzed (Carlee Lecture 5). Ensuring that reports are written in the correct message-driven organization

is also a relatively trivial fix, required potentially more training for analysts and attention to detail to break a potential habit of data-driven writing.

2.4.5 Dissemination

Problems with dissemination may often occur as a result of subjectivity on the part of the intelligence officer or not considering the need of the customer. Because intelligence is meant to be objective information that allows customers to make a sound-decisions, intelligence should not seek to be oriented for or against a particular policy (Carlee Lecture 2). For this reason, this problem can be solved by focusing specifically on the analysis and completed report. Such a report, if without problems, should be largely objective. Dissemination may also be problematic if it does not correctly answer the request of the customer as a result of being too technical or otherwise difficult to read. This is a problem that can be fixed through consistent feedback during the analysis phase. because intelligence analysts are the ones spending the most time with customers, they have an understanding of the customer's expectations when it comes to the report. A consistent amount of feedback regarding these expectations and the nature of the requested report will therefore be able to fix this problem.

2.5 Cycle Modeling

The current iteration of the intelligence cycle is a relatively correct representation of realistic operations within the intelligence community. It is important to note that while the intelligence cycle is *not inaccurate*, it is an oversimplification of real intelligence project structures. Better models can certainly be created while still maintaining much of the simplicity that makes the intelligence cycle so appealing as an instructional tool (Davies, Gustafson, and Rigden 2013). The contemporary intelligence cycle is largely oversimplified as a result of (1) its singly-linked nature and (2) lack of parallelism.

Consider the singly-linked nature of the contemporary intelligence cycle, wherein each phase can only move one direction: forward. While the phases of the modern intelligence cycle are accurate, this single-linking leaves much to be desired in terms of complexity and realism. A doubly-linked model would be significantly more accurate, wherein each phase has the potential to go to either its predecessor or its successor after completion. To understand the utility and practicality of this, consider a problem discovered during analysis that required a new type of intelligence collection or processing in order to complete the intelligence report. Surely, more intelligence would be collected or properly processed in order for the analysis to be done. Such a situation is not acknowledged by the modern singly-linked model but would be a possibility for a doubly-linked model.

Similarly, the lack of parallelism in the contemporary intelligence cycle hinders its ability to be a correct representation of realistic intelligence operations (Hulnick 2015). The linear cycle, while certainly simple, does not acknowledge that phases such as collection and processing occur in tandem, as not all collection must be completed for processing to begin. Realistic operations within the intelligence community move at a fast pace to deliver reports to consumers. Given contemporary computational processing power and collection speed of many types of intelligence, presenting collection and processing as two consecutive phases is misrepresents reality.

It is important here to make a distinction between whether something is *correct* and whether it is *accurate*. A correct model is one that is free from error. An accurate model is one that is fully representative of that which it seeks to explain. The modern intelligence cycle does not make any significant errors in its explanation of intelligence processes. In this way, the intelligence cycle is correct. Despite this, it is not accurate due to the intelligence cycle's gross oversimplification of intelligence processes.

The intelligence cycle also misses two critical aspects of contemporary intelligence operations (counter-intelligence and covert operations) seeming altogether (Hulnick 2015). Because the processes for operations focusing on counter-intelligence and cover operations may differ from the intelligence cycle and are largely prevalent, an intelligence cycle that does not acknowledge them can not be a realistic representation. Here, again, we see that there are no large errors in the cycle, just misrepresentations.

3 Works Cited

1. Britannica, T. Editors of Encyclopaedia (2018, February 7). National Security Agency. Encyclopedia Britannica. https://www.britannica.com/topic/National-Security-Agency

2. Carlee, Charlie (2020). INTL440H Strategic Intelligence Lecture 1

3. Carlee, Charlie (2020). INTL440H Strategic Intelligence Lecture 2

4. Carlee, Charlie (2020). INTL440H Strategic Intelligence Lecture 3

5. Carlee, Charlie (2020). INTL440H Strategic Intelligence Lecture 4

6. Carlee, Charlie (2020). INTL440H Strategic Intelligence Lecture 5

7. Department of the Army (2004) Field Manual No. 2-0 (FM 2-0).

8. Duczynski, G and Knight, C (2018) "Strategic-Intelligence Analysis: Contributions from an Operational-Design Orientation." Australian Graduate School of Policing and Security.

9. Grossman, S., & Hart, O. (1983). An Analysis of the Principal-Agent Problem. Econometrica, 51(1), 7-45. doi:10.2307/1912246

10. Hulnick, Arthur. 2015. "What's Wrong with the Intelligence Cycle?" In *Essentials of Strategic Intelligence*. Johnson, Loch K. pp 67-91. ISBN 1440832285.

11. Johnson, Loch. 2003. "Bricks and Mortar for a Theory of Intelligence". Comparative Strategy. 22:1. 1-28. DOI: 10.1080/0149593039013048

12. Michael A. Turner (1990) Understanding CIA's role in intelligence, International Journal of Intelligence and CounterIntelligence, 4:3, 295-305, DOI: 10.1080/08850609008435146

13. ODNI — Who We Are. (2019).

14. Philip Davies, Kristian Gustafson, Ian Rigden. 2013. "The intelligence cycle is dead, long live the intelligence cycle: Rethinking intelligence fundamentals for a new intelligence doctrine." http://bura.brunel.ac.uk/handle/2438/11901 https://www.dni.gov/index.php/who-we-are

15. Tyler, Brian J. (n.d) "Intelligence and Design: Thinking about Operational Art. United States Air Force Press. DrewPaper Vol. 14.

16. United States of America Joint Forces, United States Air Force, United States Army, United States Navy, United States Coast Guard (2017). Joint and National Intelligence Support to Military Operations (01st ed., Vol. 2).

17. Warner, Michael. 2013. "The past and future of the Intelligence Cycle." In *Understanding the Intelligence Cycle*. Phythian, Mark. pp 9-19. ISBN 9780203558478.