

Dark Side of Clarity: Its Effect on Knowledge Production and Decision-Making

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ABSTRACT

Law enforcement decision-makers rely on intelligence analysts to produce intelligence products that are clear. Yet, intelligence analysts live in a world characterised by ambiguity and information overload. This paper examines the intellectual journey that leads to clarity of thought, and the effect of the dark side of clarity on producing knowledge for decision-making. The paper asked, how does the dark side of clarity manifest itself to analyst and decision-maker? The result is counterintuitive; while the bright side of clarity is expected, and demanded because of its benefit to decision-making, the dark side of clarity co-exists in the shadows of certainty and makes it difficult to think critically. Neither analyst nor decision-maker is likely aware of this negative effect. To make this dark side of clarity visible, recommendations are made that begin with raising analyst awareness by augmenting existing training. Then, decision-maker awareness can be approached through training and facilitated coaching.

Keywords: intelligence, analysis, information overload, equivocality, helpfulness, clarity

BACKGROUND

In the United States, state and local law enforcement intelligence analysts are employed by any one of 18,000 law enforcement agencies (Reaves, 2011). These analysts, and those employed by federal law enforcement agencies, work in a cognitively demanding environment, requiring the collection and analysis of information to produce knowledge for decision-makers. Yet, the understanding of their analytical processes and efforts to produce intelligence knowledge and the potential negative effects are largely invisible to the decision-makers they support, i.e., sworn officers who have the authority to make arrests and carry firearms. Examples of two such negative effects include: irrelevant knowledge produced and therefore not supportive of decision-maker action because decision-maker

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assumptions about what they were expecting were not explicitly made known and included in the analyst's processes or data; and relevant knowledge produced that is supportive of decision-maker's tactical action but omits a much more strategically- or operationally-relevant framework the analyst's possessed or could have possessed, thereby leaving the decision-maker disadvantaged as to patterns and/or trends. According to the US Department of Justice (DoJ, 2003), such a gap between analyst and decision-maker and its potential negative effects is exactly what intelligence-led policing is intended to overcome.

INTRODUCTION

Intelligence-led policing is a philosophy in which crime problems are identified so that criminals can be targeted for investigation and prosecution (Peterson, 2005; Ratcliffe & Guidetti, 2008). Intelligence-led policing requires intelligence analysis be the core of data-driven decision-making (Ratcliffe, 2016). However, the full implementation of intelligence-led policing appears to be slow to take effect. Some of the reasons for its slow adoption include external factors such as the criminal environment, the socio-political context, and legal constraints, and internal factors such as law enforcement organisational culture and structure (Lemieux, 2008).

In a survey given to over 250 law enforcement intelligence analysts at the 2015 joint conference of International Association of Law Enforcement Analysts (IALEIA) and Law Enforcement Intelligence Units (LEIU), analysts identified impediments to implementation as the: lack of executive support; lack of training for intelligence analysts; lack of training for sworn officers; management unwillingness to let analysts try new analytic methods; and lack of trust between analysts and investigators (Peterson, 2017).

Still, there is a more systemic reason for the difficulties in the adoption of intelligence-led policing, thus far not recognised: the dark side of clarity. Everyone knows its opposite, the bright side. Clarity can be defined as the quality of being intelligible and certain, ensuring that ambiguity is absent. Clarity has long been recognised a fundamental characteristic of good intelligence products for any type of organisation: national security, law enforcement, public policy, and in the for-profit and non-profit sectors (Wilensky, 1967). Clarity is important for two reasons. One is that in law enforcement organisations, clarity in intelligence products helps ensure individual rights to "due process of law" are not violated, as required by the Fifth and Fourteenth Amendments to the US Constitution

(Lippman, 2017). The other is that clarity in knowledge products helps reduce disagreements between decision-makers who use the knowledge that ultimately affects people's lives. For these reasons, clarity is a beneficial outcome for decision-makers. Nevertheless, intelligence analysts start and develop their knowledge production efforts from a place far from clarity. Decision-makers who task intelligence analysts reinforce these needs for clarity, rarely engaging in dialogue with analysts to discuss their journey culminating in clarity. There is a relational aspect occurring between analyst and decision-maker, which means their interaction needs elaboration before fully discussing the dark side of clarity.

RATIONALE

Analyst and Decision-Maker Dynamics

Clarity and Helpfulness are Related. Intelligence analysts can be successful at achieving clarity but only if they first have the motivation to be of service—a sense of professionalism—to those who make decisions.

Clarity and Helpfulness. Intelligence analysts are influenced by various factors that negatively affect their ability to learn to assess new patterns and trends, an important competency for intelligence analysts. Some of these factors include the high volume of tasks they are assigned, the degree of ambiguity in data available to them, as well as ambiguity in their organisational context, and the difficulties in communicating with decision-makers so as to gain a deeper understanding of the broader context for which the analyst is supporting at a tactical event. Training standards for learning and other law enforcement analyst competencies, such as critical thinking, the use of analytic techniques, and communicating judgments with clarity to customers have been well documented (DoJ, 2012; DoJ, 2013; Heuer & Pherson, 2011; Kovacs, 1997; Marrin, 2008; Whitford, 2013). In addition to these competencies, analysts need to possess a professional attitude to be helpful.

Helpfulness can be defined as any act that is intended to benefit another person (Bernstein, Penner, Clarke-Stewart, & Roy, 2008). Helpfulness used in this sense is a work-related behavior associated with one's task completion. This meaning should not be confused with the organisational citizenship behavior concept of helpfulness, which is voluntary-based behavior in aid of others, but not related to one's task completion (Podsakoff, MacKenzie, Paine, & Bachrach, 2000). In service industries, a close analog to the public safety sector, employee helpfulness has been shown to be the key indicator in customer satisfaction,

behaviors that inspire the customer to have confidence in the employee (Keh, Ren, Hill, & Li, 2013). In national security intelligence, analyst helpfulness is about a service mentality, to help the decision-maker better understand an issue, especially when it is complex (Petersen, 2011; Prunckun, 2015). Success at helpfulness means the intelligence analyst overcomes many, if not all, challenges in determining how the decision-maker processes information. Helpfulness is a precursor to achieving clarity.

Challenges in Achieving Clarity

Achieving clarity is not easy. Beyond the analytical task-related challenges analysts face, they face relational challenges in assessing what clarity means for the decision-maker receiving the intelligence product.

Uncertainty Absorption. Decision-makers want clarity in intelligence products, but typically do not understand the challenges in how an intelligence product is made (Wilensky, 1967). Thus, decision-makers are at risk in two ways. One risk is they absorb varying degrees of uncertainty without consciously knowing it, but may feel comfortable nevertheless because of their trust in the intelligence analyst, a phenomenon called *uncertainty absorption* (March & Simon, 1958). A simple example is the children's game "telephone" where one child starts with a story and as it is repeated to each subsequent child in a circle, the story reproduced becomes different from the preceding one, each modification a result of each child's own interpretation and contribution to fill in what may or may not have been heard (Kurke, Weick, & Ravlin, 1989).

A decision-maker faces uncertainty absorption whenever an intelligence analyst, who, being aware that he or she has in-depth access to and knowledge about data and its analysis, extrapolates inferences from the data and conveys these inferences to the decision-maker instead of the raw, actual data. Because the decision-maker does not necessarily understand the technical aspects surrounding the data from which the inferences are constructed, he or she does not understand the logic behind the construction of knowledge. Consequently, the decision-maker attempts to fill-in his or her understanding based on little or no understanding of the journey raw data has taken. Left unchecked, without follow-on briefings or discussions, that "filling in" could be in error, or worse, disastrously misleading.

Absorptive Capacity. Faced with uncertainty absorption, intelligence analysts should ensure that their product is clear and understandable to the decision-maker.

This second risk is that a product that can be understood needs to be able to be absorbed quickly so that it can be used for the decision-maker's intended purpose; a phenomenon called *absorption capacity* (Cohen & Levinthal, 2009). Absorptive capacity is the degree an individual and an organisation can identify, assimilate and use information that originates outside of his or her area of expertise. A common example in most organisations is when one unit attempts a knowledge transfer of its best practice to another unit having a different mission and skill set; the success of the transfer is, in part, dependent on the foundational knowledge the gaining unit has about the best practice, which comes from a very different context (Szulanski, 2003).

When decision-makers have low absorption capacity, they do not possess the foundational knowledge to understand what the intelligence analyst conveys, or be open-minded enough to recognise that they need more knowledge. Cohen and Levinthal (1990) showed this capacity is influenced by path dependency: what an individual knows now—based on his or her past—determines what he or she is likely to absorb and learn next. This capacity is also influenced by that fact that individuals tend to overestimate what others know compared to what they actually do know (Tversky & Kahneman, 1974). If not accurately assessed, decision-making options are constrained because of how information is framed, boxed into a fixed sense of importance that ignores other related, perhaps more important, factors (Kahneman & Tversky, 1979).

Not all decision-makers who have low absorption capacity suffer such negative consequences. They may be able to gather supplemental information from subordinates and peers. This process, called *informing*, occurs when decision-makers with low absorption capacity bring themselves up to speed in knowledge areas they are lacking (Preston, 1986).

Why Critical Thinking is Important. Decision-making is dependent, in part, on the law enforcement analyst who has to accurately assess the decision-maker's absorption capacity in order to produce products that are clear and understandable for the targeted audience. Such an assessment requires a relational and cognitive ability to use perspective taking, understanding how other people process information (Krauss and Fussell, 1991; Piaget, 1932; Rommetveit 1979). This is one of the reasons why critical thinking by decision-makers is necessary: to surface the nature and character of these relational challenges, both the degree of the decision-maker's uncertainty absorption and the accuracy of the intelligence analyst's perspective taking of the decision-maker's absorption capacity. Other

cognitive reasons include asking questions about analytic assumptions, how assumptions are handled, and how inferences are formed. Opportunities for decision-makers to engage in critical thinking should not be lost, especially since critical thinking is an important competency for sworn officers (Bradford & Pynes, 1999; DoJ, 2003; Phillips & Burrell, 2009) and intelligence analysts (DoJ, 2010; DoJ, 2013; Harris, 2011; Moore, 2007; Prunckun, 2015). Most importantly, critical thinking is an important prerequisite to learning (Wolfberg, 2016).

Why Learning is Important

Analysts navigate these task-related, relational challenges while working within a messy cognitive environment; both relational and cognitive aspects are dynamic conditions difficult to control. For analysts to balance these aspects, they are highly motivated to take a learning stance.

Information Overload and Equivocality. Analysts are exposed to substantial cognitive challenges. These include external effects, which everyone in the workplace and in their daily life faces, the effects from information overload, and equivocality (i.e. ambiguity). Information overload can be defined as the quantity (volume) rendered in a given situation by an individual, while equivocality is defined as the level of confusion about the meaning of that information being exchanged (Daft & Macintosh, 1981). Daft and Huber (1987) argued that how organisations adapt to these informational properties forms a key factor influencing the success of organisational effectiveness; that is, information overload and equivocality directly affect how intelligence analysts learn, and thereby, the performance of the overall organisation.

Learning. Learning can be defined as a change in the individual's mental model, when the individual absorbs new knowledge he or she reframes their understanding of their existing world (Leahey & Harris, 2001; Lewis, 2000). An individual's ability to shift mental models improves over time because of assessing and assimilating new knowledge, resulting in higher levels of learning (Gray & Meister, 2004). When an individual's learning takes place, an organisation's capability may be enhanced, as well, because the individual can sense greater resolution into the problem dynamics, and increase their identification of valid cause and effect relationships (Edmondson & Moingeon, 1998; March, 1991). How and why intelligence analysts can identify new trends and patterns is directly related to how they learn.

RESEARCH QUESTION

In order to understand clarity and the effects it has on the complexity and messiness of knowledge production, we need to understand how intelligence analysts learn while experiencing information overload and equivocality (Daft & Huber, 1987). The subject literature on the simultaneous effects of both overload and equivocality, and their effects on learning is wanting. Therefore, by investigating how law enforcement intelligence analysts are affected by overload and equivocality, we can understand: how and why the dark side of clarity manifest itself to law enforcement intelligence analysts and the decision-makers they support?

METHOD

Quantitative Component. The quantitative study used an electronically disseminated, Internet-based, self-administered survey within a population of law enforcement intelligence analysts. In 2012, a survey was emailed to 1,451 law enforcement intelligence analysts working in the United States and Canada who were members of the International Association of Law Enforcement Intelligence Analysts (IALEIA). The study received 485 responses for a response rate of 33%, of which 364 records were usable. The demographics of the 364 respondents were: 53% female, 47% male; 75% of the total worked in the United States, 25% in Canada; and almost 50% had bachelor degrees, another 27% held a master's degree, about 11% earned an associate's degree, three percent had either a doctorate or law degree, and less than 10% were high school graduates.

In pre-testing of the data, equivocality was found to have no effect on learning contrary to theoretical insight and empirical findings (Weick, 1979, 1995). This effect was due to the confounding effect, i.e., masking or making hidden, that overload had on equivocality (MacKinnon, Krull, & Lockwood, 2000). To correct for this confounding effect, the 364 records were double dichotomised using medians of both overload and equivocality, which resulted in four equally sized subpopulations of data (91 records each).

The study used only four constructs in a structural equation model consisting of the three independent variables—filter, dialogue, and networking—and one dependent variable, individual learning. Structural equation models allow for the simultaneous integration of multiple regression analysis and factor analysis, which yields a richer hypothesis testing of causal effects than if sequentially analyzed (Hoyle, 2012). Four moderating conditions were tested to see how they affected

individual learning: low overload with low equivocality, high overload with low equivocality, high overload with high equivocality, and low overload with high equivocality. As predicted by Daft & Huber (1987), each condition of overload and equivocality had different effects, but the nature of these differences had not previously been investigated. To explain why such differences occurred, a qualitative study was deemed appropriate, discussed next.

Qualitative Component. For the qualitative component, the study used Charmaz's application of grounded theory (Glaser & Strauss, 1967; Charmaz, 2006). This involved interpretation and coding of interview data. Such methods have been used successfully in recent intelligence studies (Hulnick, 2011; Wolfberg, 2016; Zohar, 2013). Thirty-one intelligence analysts were interviewed in early 2013; these interviewees had responded to the 2012 IALEIA survey. The interviewees were randomly drawn from the four subpopulations, resulting in 7–9 interviewees per condition.

The 31 worked in a variety of work contexts ranging from cities or counties with populations between 50,000 and 4 million, and providing intelligence to the following kinds of decision-makers: locally elected officials such as city mayors, chiefs of police, county sheriffs, and city council members; locally appointed officials such as chiefs of police; state elected officials such as attorneys general and political appointees such as chief prosecutors and secretaries of state; and senior-level career professionals such as chief investigators and agents in charge of city and regional offices. Since the quantitative study identified the conditions of overload and equivocality the interviewees resided, the interview questions focused on the differences and similarities in how they operated in their work context. A full description of the independent variables, dependent variable, quantitative and qualitative methods, and the integration of the quantitative and qualitative findings of the original mixed methods study are reported elsewhere (Wolfberg, 2017).

FINDINGS

There were substantial differences in the ways that intelligence analysts reacted to the four conditions of overload and equivocality, yet there were also, simultaneously, substantial similarities. The focus on the similarities was not included in the original Wolfberg (2017) study. The cognitive differences resulted in four learning archetypes: cooperative learning, focused learning, survival learning, and reflective learning. The theoretical and empirical basis for

identifying the presence of these learning archetypes was fully developed in Wolfberg (2017) and is summarised below. The relational similarities resulted in the expression of helpfulness and clarity. These cognitive differences and relational similarities are summarised in figure 1, and discussed below under each of the four conditions of overload and equivocality.

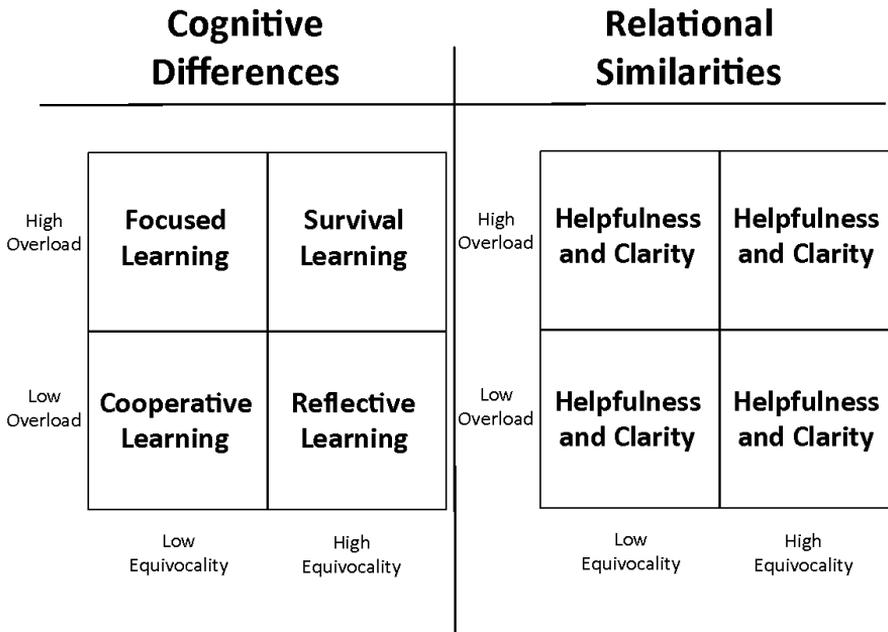


Figure 1—Cognitive Differences and Relational Similarities

Low Overload and Low Equivocality

Cognitive Difference—Cooperative Learning. Under low overload and low equivocality conditions, the distracting effects of overload and equivocality were absent, allowing analysts to focus their attention on decision-maker needs and use conversation to make decision-maker knowledge needs explicit. Dialogue was valued. Trust was fostered. Common ground was established. Analysts learned because decision-makers provided facts beyond the analyst’s awareness, expanding the analyst’s ability to interpret data and contextualise knowledge. Both analyst and decision-maker shared in the path towards knowledge discovery.

This condition expanded the breadth of knowledge from what the analyst knew, and the decision-maker was able to gain insight into what and how the

analyst knew, which increased the decision-maker's breadth of knowledge, as well. The advantage of this learning type was the sense of parity between the two very different worlds of analyst and decision-maker, which created a space for shared understanding. The disadvantage was analysts were not particularly reflective because they were less likely to be exposed to perceived imperfect, stressed conditions. Also, depth of analysis was limited, moderated by the level of foundational knowledge analyst and decision-maker shared.

Relational Similarity: Helpfulness. Analysts considered the need to be helpful.

I am a team player and people know that I will do whatever they ask, even if it is not analytical. I have a reputation that if someone needs something, they "go to [name]." The request may not be analytical, "can you dig this up on this guy?" or "find people for this court filing." I do a lot of special projects for people, special requests. I am both an analyst and a "go to" person. (Analyst 1.5)

Relational Similarity: Clarity. Analysts knew to be most effective they needed to produce intelligence products with clarity.

It is kind of a two-edged sword. You put together what the attorney will use in a jury trial. If I put together a map, for example, I will talk with the attorney and ask them how they want to use the map, what they want it to look like, what information they want on it. He will tell me how he wants to present the information. This is from the prosecutor's perspective. But also, we talk about whether the facts and visuals, "is this a good point to make?" One side of the sword is using the info to help the attorney figure out what he needs, and the other is figuring out what the jury needs. I used link charts with eighteen people, it was a drug related case. No one thought we could win. It was a team effort. It was a combination of brainstorming, logic, luck, photo measurement, link charts. The jury was out in less than one hour. One juror told me after the trial that "I couldn't understand the case but when you put the chart up, it was so clear. (Analyst 1.3)

High Overload and Low Equivocality

Cognitive Difference: Focused Learning. High overload and low equivocality conditions, with the distraction of equivocality absent, afforded the analyst clarity of context. This allowed the analyst to focus attention on exploiting their specialized skills to produce knowledge. The analyst compensated for externally originated overload by successfully controlling his or her own work efforts enriching knowledge production. Nonetheless, the demand for more knowledge

by decision-makers unintentionally contributed to increasing the analyst's overload.

Analysts learned because their self-generating and self-correcting overload reducing efforts allowed them to be thorough and in-depth about their expertise. When needed, if any knowledge into areas outside of the analyst's expertise was required it was acquired by tapping into the analyst's social and professional networks. This condition allowed the analyst to exploit the depths of existing knowledge, discovering new knowledge about phenomenon of which they already had a firm understanding. The advantage of this learning type was the likelihood of deep and thorough data analysis, exploiting existing expertise. The disadvantage was that even though analysts were highly skilled in their field they were not particularly innovative or integrative across knowledge boundaries.

Relational Similarity: Helpfulness. Analysts considered the need to be helpful.

The chief will say, "I don't know what I need," when he obviously needs something, so I go through a needs analysis series of questions and statements; I do this to find out what he really needs. If you ask the patrol officers, they would say to me, "you know how to get the information." They look up to me. (Analyst 2.4)

Relational Similarity: Clarity. Analysts knew to be most effective they needed to produce intelligence products with clarity.

I testify frequently. I create charts and graphs to tell the story in a courtroom with a jury. I am asked to help explain complex parts of a case in easy to understand ways. (Analyst 2.5)

High Overload and High Equivocality

Cognitive Difference: Survival Learning. Under high overload and high equivocality, the analyst was in a survival mode, fending off little understood distractions beyond their control. The challenge was how to prioritize their attention and what to reduce: focus on overload and/or equivocality? This condition was the most hectic, perhaps quite common, and has the potential for the most negative impact on knowledge production and decision-making. Dealing with equivocality alone was difficult enough because isolating the source of ambiguity and controlling it were challenging, if not impossible, but they were greatly increased when overload existed. Nevertheless, the analyst focused on reducing overload—because it was easier to identify the source of it and to control

it, relatively speaking—which led to ignoring equivocality, creating blind spots that, in turn, unintentionally increased the negative effects of equivocality.

Learning under this condition occurred by an analyst making process-related choices to expend energy to find ways to bypass cognitive obstacles, rather than expend energy on solving task-related problems. As a result, the choices they made reduced methodological and analytical rigor, and focused their efforts to find the fastest ways to solve problems. Learning occurred only in the sense that the analyst quickly assessed the knowledge readily available in memory, the shallowest and fastest way to problem-solve without having to think too much. The advantage of this learning type was analysts might be able to excel in survival tactics in chaotic environments and act quickly, the greater their expertise, the more so. The disadvantages were far more numerous: analysts felt they were not particularly successful at their job, they were not reflective about how they performed and how they could improve, and, probably most important, they lacked adequate situational awareness.

Relational Similarity: Helpfulness. Analysts considered the need to be helpful.

This was before the Ministry of Environment, early in my career. The report went to the executive committee of the Ministry of Natural Resources, the highest decision making body. My manager at the time was very supportive; he understood the value of how intelligence can influence operations. That is how I began to see how intelligence could influence operations. That is when I got the idea that I could help operations and have an impact. (Analyst 3.1)

Relational Similarity: Clarity. Analysts knew to be most effective they needed to produce intelligence products with clarity.

I realised that a timeline based on movements was not useful. Within a couple of weeks, I had a link chart drawn. It was a timeline, but at every location, underneath I put in bold what the witnesses saw, him drinking something or his being drunk, those things. When the police brought him back for questioning again, they put the chart on the table in front of the driver, and he plead guilty right away after he saw the chart. (Analyst 3.4)

Low Overload and High Equivocality

Cognitive Difference: Reflective Learning. Under low overload and high equivocality, the absence or reduction in overload allowed the analyst time to ponder the root causes of equivocality, largely by introspection using two

methods. In one method, they imagined a new context to think about a problem they are working on, taking time to reflect and create a broader world view by temporarily stepping outside their mental model and reframe new possibilities. Absent overload, analysts were able to attend to ambiguity and reflection emerged. In the other method, the analyst became acutely more mindful of one's environment, expanding their attention space to a broader operational environment, thus increasing their ability to interpret data within a broader context. These two methods collectively and iteratively allowed the analyst to be unhinged by cognitive boundaries, thus allowing access to both breadth and depth of new knowledge.

Learning occurred for these analysts because they had the time and energy to creatively expand their thinking. They did that by reframing their mental model, which resulted in expanding the number and quality of organisational and societal factors that affected their knowledge production, an especially relevant competency for solving complex problems. The advantages of this learning type were the analysts were reflective, engaged in creative problem solving of complex problems, and were innovative. The disadvantages were analysts were not quick, and they were not optimized for complying with organisational routines.

Relational Similarity: Helpfulness. Analysts considered the need to be helpful.

This job, I love doing it. The challenge is making sense of it, the data, and to give it to the police officers. I am very passionate about this job. I love the puzzle, making sense of the data. It is a challenge, I live for the challenge to make things fit. (Analyst 4.8)

Relational Similarity: Clarity. Analysts knew to be most effective they needed to produce intelligence products with clarity.

For identification theft, I do maps to show locations. For cell [mobile] phones, I do maps. I do cell phone sprays to see how often he talks with another person in a given time. I use plotter printouts for the district attorney. There is a mapping initiative that we are planning for. It is using technology in an interactive way so that data from databases can be displayed whenever needed and manipulated as we need. One thing the mapping initiative will do is bring any type of video or photographic data from cameras in towns, on highways, schools, shopping malls, whatever has access to cameras and videos. Visualization is key, it helps the attorney general; it is easy to understand. (Analyst 4.6)

DISCUSSION

Dark Side of Clarity

Figure 2 shows how the dark side of clarity manifests itself to intelligence analysts and decision-makers. Intelligence analysts are discussed first, as shown in the top half of figure 2.

The Analyst's World. Analysts possess the underlying disposition of task-related helpfulness towards others, which serves them well as a guiding personal norm. Helpfulness reinforces our self-identity, because how others see us in response to helpfulness serves as a source of our motivation (Charmaz, 1987). When others see us as being helpful, they appreciate the behavior and seek more of it. As long as the individual provides help—as with intelligence analysts creating products with clarity—then a positive feedback cycle is created within the relationship between analyst and decision-maker (Watzlawick, Beavin, & Jackson, 1967). Positive feedback cycles reinforce and amplify behavior, creating more helpfulness and trust, thus creating a continuous loop reinforcing a person's self-identity and a desire for the analyst to provide more help. In cases where a familiarity does not exist between analyst and decision-maker, or when interaction is infrequent, analyst helpfulness may not be noticed or appreciated.

From a cognitive perspective, analysts live in a realm of highly complex processes. The effects of information overload and equivocality on analysts in the pursuit of their analytical tasks produce differential learning archetypes, in which differences in analyst' thinking and learning, and, ultimately, in their decisions made about data and the quality of the knowledge are affected. Simultaneously, analysts transform their highly complex cognitive context into clarity and to make this transformation, analysts have to use relational skills like perspective taking of decision-makers to assess their absorptive capacity, itself, a highly complex process. From a practical viewpoint, analysts have to target the degree and type of clarity in knowledge products in accordance to what the decision-maker's foundational knowledge will allow them to understand and use. Developing and mastering perspective taking is, therefore, a critical competency for analysts.

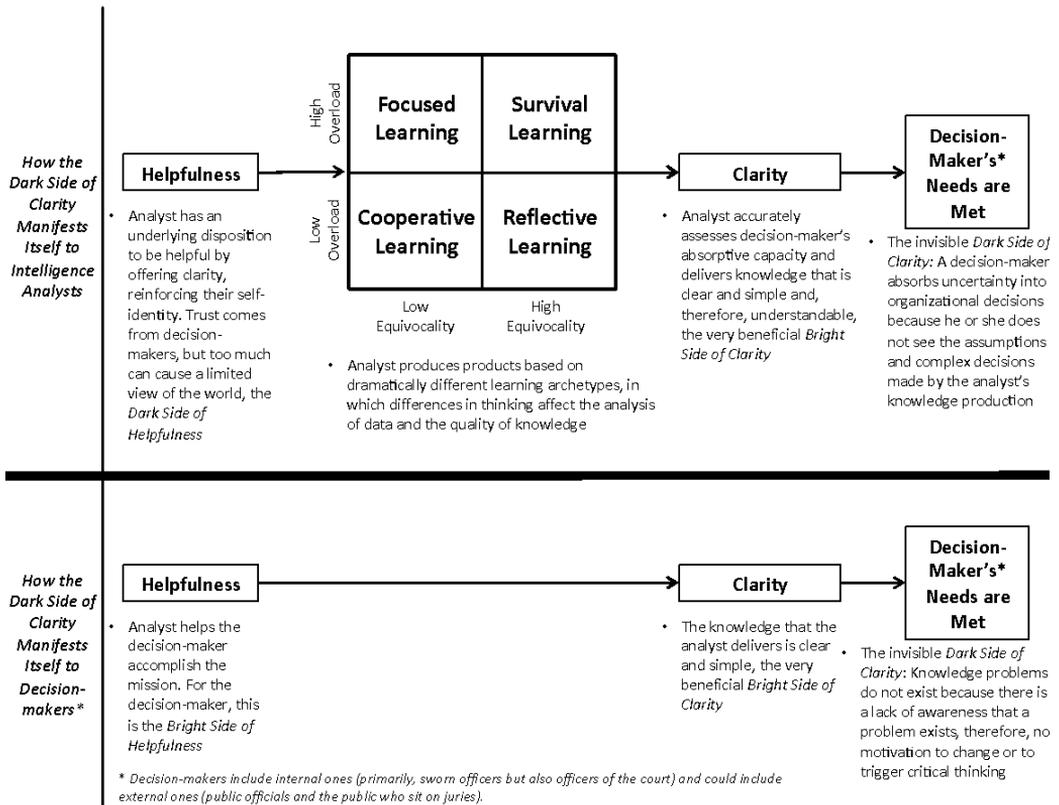


Figure 2—Dark Side of Clarity

Clarity in intelligence products has an advantage and disadvantage for decision-makers. The advantage is that decision-makers can easily understand the content destined for the court system, a natural inclination to ensure both protection of privacy and civil rights, on the one hand, and prosecution, on the other. But this clarity has a disadvantage, in that clarity makes it difficult for intelligence information and products to trigger critical thinking. Critical thinking is needed to understand the world when clarity is either absent or, even when clarity is present yet intentionally or unintentionally misplaced by the appearance of certainty. In effect, a counterintuitive phenomenon occurs—which this study termed the *dark side of clarity*—i.e. when one is in the shadows of certainty, it can be difficult to see beyond the obvious and think critically.

Decision-makers view intelligence analysts as helpful, whom they can trust, because analysts produce clarity in products that meet their needs, which this study called the *bright side of clarity*. Trust is a critically needed and shared behavior

between analyst and decision-maker (Speranza & Pfaff, 2016). The dilemma with the dark side of clarity is that the motivational factor necessary for triggering critical thinking in decision-makers is absent (Bonn, 2005; Halpern, 2014). It is absent because the success of bright side of clarity makes the targeted ideas understandable and appear certain, and therefore, the absences of opportunities to use critical thinking are not perceived as a problem. This perceived absence of a problem is the trigger of the dark side of clarity.

More importantly, the bright side of clarity unintentionally masks the dark side of the clarity. This is largely due to another counterintuitive phenomenon—which this study called the *dark side of helpfulness*—that when analysts bask in the trust from decision-makers because the bright side of clarity is helpful to them, it is difficult for the analyst to see beyond the obvious and think critically. The dark side of helpfulness can blindside the analyst to other potentially relevant collection sources and analytical methods needed for consideration. Because analysts are helpful, the bright side of clarity resonates as mission responsive and emotionally satisfying to decision makers. The bright side of clarity is quite visible and where attention is therefore focused by analyst and decision-maker alike, while the dark sides of clarity and helpfulness reside below their consciousness, and therefore, not available to pay attention to, and, thus, invisible.

The Decision-Maker's World. For decision-makers, the lower half of figure 2 depicts the path that clarity manifests itself. Analysts appear to them as helpful in terms of accomplishing the decision-maker's mission. Decision-makers see this as the *bright side of helpfulness*. The output of the analyst's work is the intelligence product, something that either terminates with the decision-maker or continues onward to other decision-makers, such as members of a jury. Clarity of a product is an essential requirement for understanding and usability, a factor so powerful it makes it difficult for a decision-maker to consider anything less than its positive effect.

Analyst helpfulness reinforces decision-maker trust in them. As a result of uncertainty absorption, decision-makers do not easily consider the assumptions and series of complex decisions—cognitive and relational—made during the journey that knowledge takes in the analyst's pursuit of completing an analytical task. More importantly, decision-makers are likely to be blind that such issues even exist or about the details within such issues, due in part, to their lack of awareness of analyst's learning archetypes (see figure 1) and their consequent effects on knowledge production. This lack of awareness reinforces two dynamics

within the decision-maker. One is that without having the motivation for considering problems associated with knowledge, there is no reason to engage in critical thinking about intelligence, intelligence products, or the assumptions and logics of the intelligence analyst. The other is that since there is an absence of a problem, there is no problem to fix, thus no reason to change. As a result, left unabated, the dark side of clarity results in a self-reinforcing cycle with little chance for the decision-maker to escape: with little motivation for critical thinking, there is little likelihood for its emergence.

Theory of the Dark Side of Clarity

The short version of the theory of the dark side of clarity is part of a broader theory of clarity: clarity can facilitate the ease of understanding yet simultaneously clarity can suppress critical thinking. The former is the bright side of clarity, expected and demanded, while the latter is the dark side of clarity, masked by the bright side and not acknowledged.

The long version of the theory of the dark side of clarity is stated in the following sequence of expressions: (1) the bright side of helpfulness simultaneously strengthens self-identity for the analyst and mission satisfaction for the decision-maker, thereby (2) masking the negative blindsiding effects of the analyst's dark side of helpfulness, and, (3) provides a self-reinforcing cycle for the bright side of clarity to flourish for both analyst and decision-maker, with little reason for diminishing, (4) not triggering the motivation for critical thinking or for seeing more deeply into the nature of a problem or issue, which combined is the dark side of clarity, and thus (5) the pattern will persist and remain invisible.

The dark and bright sides of clarity are theorised to be natural phenomenon of knowledge production in law enforcement contexts. The two sides are part of a double-edged sword and cannot be eliminated nor should be, but can be managed. Fortunately, humans can hold and engage opposing ideas simultaneously (Martin, 2009).

RECOMMENDATIONS AND CONCLUSION

Recommendations

Problems are not recognisable without having had the experience to frame and recognise them as such (Weick, 2005). A well-known example of this dilemma comes from our understanding of the 9/11 attacks against the World Trade Center towers. Intelligence analysts never experienced any behavior related to terrorists

flying commercial jets into skyscrapers and therefore they could not envision this tactic, and because they could not envision it, such a scenario was never recognised as a concern (Posner, 2004). After the 9/11 attacks, this new problem could be conceptualised: it was now possible to envision scenarios requiring action to dissuade terrorists from using public transportation systems as weapons of mass destruction.

Getting an individual to shift their frame of mind can be accomplished through training and education (Martin, 2009). These five steps should be considered. First, intelligence analysts have to become aware of the dark and bright sides of clarity, the ways they manifest themselves through the dark and bright sides of helpfulness to analysts and to decision-makers, and how different these ways are. Raising such awareness of these four phenomena could be accomplished in analyst training and education settings by updating standards and augmenting the existing training curriculum. Specifically, a program of instruction that focuses on the importance of the communication relationship—through the use of dialogue—between an analyst and decision-maker would provide a foundation of knowledge from which the dark and bright sides of clarity and helpfulness could be built upon (Fischhoff, 2011; Wolfberg, 2015).

Second, analysts would then be able to recognise when and where the dark and bright sides of clarity cause a lost opportunity for decision-makers to use critical thinking. Understanding where and when opportunities exist or could exist entails knowledge about how one's organization operates. Such knowledge involves not only the awareness of similarities and differences between analyst and decision-maker across dimensions of self-identity, experience, view of the job, daily schedule, value placed on knowledge, and overall goal, but also the detection of cohesive and disruptive influences (Wolfberg, 2014). With this background awareness and knowledge in place, by understanding daily routines one can identify when and where analyst and decision-maker interactions can or should be opportunities for critical thinking.

Third, analysts, once proficient, are the ones who are going to have to identify to decision-makers the instances of the dark and bright sides of clarity. The analytic community must make a commitment that will help their analytic community and the greater law enforcement community. To accomplish this step, it is important to gain a deep understanding into difficulties of making changes to improve intelligence analysis and communication with decision-makers. These challenges include: the realisation that creating and adopting new practices is often

quite difficult in public sector organisations; a recognition that organizational structure affects the ability of its members to learn; and there is often a resistance to the innovation of new techniques and processes (Zegart, 2011). Especially relevant, for the last reason, is that innovation means not only new process changes but, more importantly, it first requires culture changes in order for new process changes to be understood, adopted and thrive (Wolfberg & Pelley, 2009).

Changing one's culture can be quite challenging. This is especially true when two or more groups that are dissimilar, and have different ways of thinking and different traditions, such as intelligence analysts and sworn officers. A key prerequisite for achieving culture change under such conditions is establishing a common ground, a sort of *trading zone*, where different groups can work together without each having to have a depth of knowledge about the other (Galison, 1997).

Fourth, when both parties share an understanding of the clarity issues, analysts and decision-makers need to engage in regular communication starting from analytical tasking to the delivery of the final product, where such engagement offers the opportunity to engage in mutual critical thinking. This would be an example of operationalising a trading zone. As Peterson's (2017) data suggests, there may be trust issues between analysts and decision-makers, making trading zones more difficult to establish. In such cases, or in cases when trust does exist but where communication between analysts and decision-makers could be improved, organisational members get into a routine where they learn very quickly how they are expected to act, which reinforces an unproductive pattern of communication behavior. One technique that has had positive results in the intelligence community is the use of an experiential and interactive venue that helped analysts and decision-makers become aware of specific individual and social factors that created barriers of communication between them, and then provides, in a transparent and nonthreatening context, a way to help reduce these barriers (Wolfberg & Dixon, 2011).

Finally, decision-makers need to recognise that a new problem now exists and be willing to ask intelligence analysts questions and think critically with them. Critical thinking is included in many training programs in the national security and law enforcement communities. Case studies are an excellent way for both analyst and decision-maker to be emerged into situations requiring critical thinking. A key activity that triggers critical thinking is confronting and grappling with contradictions (Wolfberg, 2016). Critical thinking is also improved when individuals from diverse levels and skill sets in the hierarchy work side-by-side in

problem-solving sessions to resolve contradictions, ambiguities and uncertainties (Wolfberg, 2016). Leadership coaching will likely be useful during most of these steps, especially this last one.

Other knowledge production contexts exist where analysts interact with decision-makers. These occur in the national security intelligence community, military intelligence, and in competitive intelligence functions within the for-profit sector. To what degree this study is generalizable across these and other more general management contexts involving knowledge production and decision-making is uncertain without further empirical study. However, given that common cognitive and relational dynamics exist between any knowledge producer and consumer in knowledge organisations, it is likely to a considerable degree.

Conclusion

Two self-reinforcing, interrelated, and invisible cycles negatively affect law enforcement knowledge production and decision-making. One cycle is from the dark side of clarity, which is largely cognitively-based, and has a direct and limiting effect on critical thinking by the decision-maker. The other is from the dark side of helpfulness, largely relational-based within the analyst, which reinforces the persistence of the bright side of clarity, masking the dark side of clarity. It is imperative, then, that solutions to bring these dark sides to light will require a joint commitment by analysts and decision-makers to work together to create a common ground. By making these dynamics visible, and addressing them through training and education, the law enforcement community has a better chance for improving decision-making and achieving intelligence-led policing.

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