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Discourse on Failure of Intelligence: A Theory of Mind Perspective

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Headings

- Abstract
- Key Words
- Introduction
- The Relationship between Collective Intelligence and Theory of Mind
- The Role of Imagination in Theory of Mind
- The Role of Imagination in Collective Intelligence
- Ramifications for the Intelligence Community
- References

Abstract *This article aims at explicating that can we usefully talk about a failure of intelligence and deliberating the perspective of mind theory into it. Failures of intelligence are useful insofar as they can be evaluated so as to improve analysis. In this process, it is important that one considers the psychological processes that underpin analytical failures. It is especially important to consider how failures of intelligence are governed by an insufficient ability to understand the perspectives of others. This ability to determine other's mental states is known as the theory of mind. This paper further argues that discourse on the failure of intelligence is increased because of a flaw in the epistemic process among intelligence operators and consumers.*

Key Words: Collective Intelligence, Theory of Mind, Cognitive Development

Introduction

The "Oscar Wilde captures the deep challenges relating to intelligence when he states that, 'it is the spectator, and not life, that art really mirrors'. This statement elucidates the negative force of cognitive closure on intelligence, as well as bringing attention to the importance of an understanding of the human factor in intelligence production, and its relationship to discourse failure" (Dyson, 2017). The "Intelligence literature after 9/11 has focused on the causes and nature of intelligence failure, though few inquests have conceived intelligence as a deeply cognitive, and therefore mental and moral landscape that needs to be explored in all its complexity" (Woolley, 2010). "Intelligence operators, like art spectators, perceive reality filtered through all sorts of implicit and explicit ideological prisms, and these ideologies, whether they are political assumptions or social orthodoxies, manifest themselves as cognitive closure, and shape the discourse in intelligence organizations, as well as between these organizations and society at large" (Dyson, 2017).

Failures of intelligence are useful insofar as they can be evaluated so as to improve analysis. In this process, it is important that one considers the psychological processes that underpin analytical failures. It is especially important to consider how failures of intelligence are governed by an insufficient ability to understand the perspectives of others. "This ability to determine other's mental states is known as theory of mind" (Engel, 2014).

Theory of mind is principally studied as part of the developmental field of psychology, as it is a mechanism that children purportedly acquire at the age of four (Wimmer & Perner, 1983). However, there remain very legitimate flaws in adult thinking that are comparable to the weak theory of mind ability. The psychological phenomenon known as the theory of mind is related to the logical flaw referred to as mirroring by the intelligence community. Further, I suggest that the human mind is more complex than we

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might imagine and that though psychologists estimate that theory of mind is developed at age four, it is evidently an imperfect process- otherwise, how would mirroring and other logical flaws when considering other's perspectives occur? Also, just as the theory of mind is being discredited as an absolute threshold, it is also being understood to be more nebulous than previously envisioned, and is influenced by factors such as imagination. Further, the theory of mind is critical for collective intelligence, which is important for analytical judgments within intelligence community settings. This raises many questions regarding ramifications in terms of improving logical analysis in the intelligence community based on improved understandings of how the human mind works. It is useful to consider how the intelligence failures that result from the limitations of the theory of mind could be examined so as to overcome some of these mental limitations when performing future analyses.

Part I: The Relationship between Collective Intelligence and Theory of Mind

In a study by Woolley, "it was shown that the performance of a group at intelligence tasks, referred to as 'collective intelligence', does not seem to correlate so much with the average or maximum intelligence of members of the group, but rather with 'average social sensitivity of group members, the equality in distribution of conversational turn-taking, and the proportion of females in the group" (Woolley, 2010). "The study of collective intelligence is an emerging field" (Malone, 2017). Although "one might believe that the collective intelligence would be the average of individuals' intelligence in the group, but apparently collective intelligence has less to do with individual intelligence rather than how group members interact and communicate information with one another" (Woolley, 2010). "A group's ability to coordinate with one another effectively is more important than the intelligence of individual group members" (Malone, 2017) By this logic, it would seem that social intelligence, especially theory of mind, would be useful not just as a way for intelligence agencies to understand the groups they are evaluating, but also as a means of improving how analysts communicate information to one another. Further, research shows that the theory of mind is critical for collective intelligence (Woolley, 2010).

Part II: The Role of Imagination in Theory of Mind

Since the original study by Wimmer and Perner in 1983, researchers have examined "children's understanding of the theory of mind through the paradigm of the false belief task. In the study, a subject observed the actions of a boy, Maxi, in an enacted scenario. The tests were conducted on children aged three to nine. In the task, there was an object, child and a protagonist in the room. The object is moved from one place to another, with the child observing but the protagonist not observing. The child was then asked where the protagonist would believe the object had been placed" (Wimmer, 1983). The correct response was that the protagonist believed the object was still in the same place because if the child understood the protagonist's mental state, he would understand that the protagonist did not observe the place change. However, if the child was incorrect, he might say that the protagonist would believe that the object had been moved to its new location because he failed to understand the protagonist's mental state (Wimmer & Perner, 1983).

Despite this initial assessment, it had been shown that "theory of mind is a dynamic, indefinite, and ongoing perceptual change over a range of years. Various adaptations of the false belief task have already revealed various aspects of how children learn to understand false belief at different stages in development" (Onishi & Baillargeon, 2005). In a study by Onishi and Baillargeon, researchers came to the conclusion that even fifteen-month-olds could understand false beliefs. Though it would be inaccurate to state that the infants understood the theory of mind in the same way as the four-year-olds, the study did reveal how that altering aspect of the false belief task affects children's performance. Consequently, these studies show how children's approach to the false belief task characterizes their grasp of various aspects of the theory of mind.

According to *Cognitive Development*, children under the threshold age of four are able to

comprehend false beliefs through the use of pretense (Flavell, Miller, & Miller, 1993). When playing pretends games, children imagine things they know to be false. According to a study by Rosen, Schwebel, and Singer, children understand pretense based more on contextual clues than through the use of the theory of mind (Rosen, Schwebel, & Singer, 1997). However, according to Taylor and Carlson, there is a correlation between children's aptitude for imaginary games and children's understanding of false belief (Carlson & Taylor, 1997). There must be an interplay between the two. Possibly, pretense facilitates children's understanding of the theory of mind. Another study showed that pretense involved the use of some, but not all, of the representational skills for false belief (Dissanayake & Nielsen, 2000).

Therefore, through various studies, it has been shown that the theory of mind is far more complex and governed by many mental factors, including imagination. Understanding other's mental states are not achieved through a concrete mechanism but rather through various aspects of cognition that can be quite gradual and variable. Given this variability, it is important to utilize these mental factors in order to improve the theory of mind.

Part III: The Role of Imagination in Collective Intelligence

The impact that imagination has on collective intelligence can easily be extrapolated from the above research. It has been shown that theory of mind is vital to the cooperation necessary for the intelligence community to achieve a high degree of collective intelligence in their analysis, and for understanding the intentions behind the actions of the other side without simply projecting one's own intentions onto that other side. Given that theory of mind is more nebulous than previously understood, and that imagination is a critical component, we know that imagination plays an important role in collective intelligence. What exactly this role remains open for further postulation and study but imagination is an important tool in collective intelligence, and therefore vital to conducting a more accurate analysis. This demonstrates the importance of understanding the underlying mental processes in order to improve future analyses.

Ramifications for the Intelligence Community

In his article on what he names "the human domain", Sands writes of the importance of evaluating behavior in understanding conflicts: "the defining variables of the human domain critical to the management of it are behavioral and based on constructs such as worldviews and underlying cultural lattices of belief systems and values of the actors (including military and/or intelligence personnel); in other words, these underlying cultural systems greatly influence the behavior that is observable in the human domain" (Baillargeon, 2005). Further, he writes that "the application of these types of knowledge sets to ascertain the meaning of behavior and to interact within this domain with pertinent actors is tantamount to success and requires mastering thinking strategies and interpersonal skills and abilities not traditionally a part of military operations or learning programs" (Baillargeon, 2005).

Perhaps it seems strange to suggest that imagination plays much of a role in intelligence analysis, but I argue that the whole profession relies upon the ability to extrapolate, which requires a certain type of imagination. Perhaps not fantastical imagination, but at least a certain kind of imagination based upon the sequencing of rational motives as one can observe in the other. Although we seldom wish to regard imagination as intrinsic to rational thought, I believe that it is altogether necessary, at least in the realm of foresight. In the case of understanding the problems that led to the incorrect assumption that there were weapons of mass destruction in Iraq, Jervis writes that the intelligence community was not imaginative enough- or at least not imaginative in the right ways. He writes that 'there are countless dots that can be connected in a great many ways' and it is important that analysts use imagination with discipline rather than not at all. He believes that it was a lack of imagination that led to the failure in Iran because analysts were unwilling to imagine that the Shah would not crack down forcefully as predicted based on his reputation. It was also a failure of imagination in part that led to the failure to consider that there might not be weapons

of mass destruction in Iraq, just because Saddam's behavior seemed to suggest that he was hiding these. Duelfer and Dyson suggest that this was a case of misperception, "defined as the gap between the world as it actually exists and the world as it exists in the mind of the perceiver' on both sides that lead to the decision to engage in the Iraq war" (Duelfer, 2017). Saddam overestimated the U.S. and Iraq's common interests and believed that the U.S. knew that he did not actually possess WMD. He also did not believe that the U.N. was likely to take action against him if he did. The U.S. did not correctly perceive that Saddam was hiding a lack of WMD rather than WMD. Perhaps these misperceptions on both sides could have been averted through greater imagination in understanding the other's mental intentions.

Jervis writes that "intelligence analysts are selected and trained to stay close to the information and to eschew speculation', instead of utilizing the human capacity for the imagination to understand the mental states of subjects they analyze" (Aggarwal, 2012). In Kent's papers in which he considers why the Board of National Estimates missed the Soviet deployment of offensive missiles in Cuba, he writes: "If NIEs could be confined to statements of indisputable fact the task would be safe and easy. Of course, the result could not then be called an estimate. By definition, estimating is an excursion out beyond established fact into the unknown--a venture in which the estimator gets such aid and comfort as he can from analogy, extrapolation, logic, and judgment" (Aggarwal, 2012). On the other hand, the successful conclusion of the missile crisis is something that Neustadt attributes partially to Kennedy's ability to 'constantly put himself in Khrushchev's position', a theory of mind exercise in imagination.

According to Duelfer and Dyson "States send each other signals as to their thinking and likely behavior both intentionally and unwittingly. At the same time, they are receiving signals and attempting to make sense of them" (Dyson, 2017). The consequence is "that international politics is characterized by incomplete, often contradictory, information concerning the interaction with multiple international actors where the payoffs for each side are constantly shifting" (Duelfer, 2017). This means that having a superior ability to imagine the other's intention is crucial to navigating international politics.

Imagination is defined by the U.S.-government prepared 2009 "A Tradecraft Primer: Structured Analytic Techniques for Improving Intelligence Analysis" as "an unconstrained group process designed to generate new ideas and concepts" (US, 2009). Its importance is expounded upon in a section that focuses on imaginative thinking as a structured analytic technique. Given that estimation is a necessary analytic technique, it only remains to further explore the psychological processes underlying this as a component of theory of mind, and thus, collective brainstorming. Just as imaginative thinking can be used for understanding unknowns regarding other's mental states, it becomes useful as a brainstorming mechanism for considering unprecedented possibilities to foster a more comprehensive understanding of a scenario.

The handbook encourages brainstorming methods such as incorporating outside views and considering unconventional viewpoints, "which truly reflects the use of imagination as a theory of mind tool. Further, the use of imagination as in theory of mind is meant to cultivate open-mindedness when considering intelligence concepts by providing enough time for thorough thought and determining the reason behind associative thoughts" (US, 2009). The manual emphasizes the importance of recording thoughts and doing away with hierarchies for the purpose of imaginative discussion, which makes sense in terms of both theory of mind and brainstorming given the need for continuity and unfettered investigation of the "other"- whatever that may be in either case. The manual also emphasizes the importance of structure in these processes to ensure that divergent ideas converge so that the new ideas are fully synthesized and incorporated into the collective thinking. This reflects psychological concepts of the theory of mind, wherein imaginative thinking seems useful when constrained to thinking about the possible mental states of the "other". This would be applied to brainstorming both for the purposes of improving collective understanding through cooperative, interactive thinking, as well as for the purpose of understanding the unknown intentions of entities envisioned in the scenarios, such as state leaders.

In another section of the handbook, there is a section devoted to encouraging analysts to avoid "mirroring" or projecting their interior understandings about themselves onto the entities that they are

analyzing- a nearly impossible task, but one that becomes possible due to theory of mind and the intrinsic imaginative processes therein. To truly understand the "other", and their motives, values, and perceptions, it is necessary to think like the adversary. "In order to do so, one must consciously place analysts in the same cultural, organizational, and personal setting-putting them in their shoes" (Sands, 2017). The handbook advises that "a manager needs to build a team of experts with in-depth knowledge of the operating environment, the target's personality, and the style of thinking used'. In particular, it is vital that this form of analysis 'avoids the use of caveats or qualifications and assumes that the recipient understands that the paper is aimed more at provoking thought or challenging the conventional understanding of how an adversary thinks', which highlights the imaginative component whereby thought is provoked for theory of mind to work in an analytical context" (Davis, 1996). Alternative futures analysis is just another example of the use of imagination through the theory of mind, simply because it is the job of analysis to 'imagine the future'. Further studies on different methods of imaginative thinking as it is used in the theory of mind processes could be useful to better understanding its use for focused brainstorming in analytical work. Therefore, this paper has been a case study in that it demonstrates how past analytical failures and their underlying psychological inconsistencies are useful to developing better mental abilities- such as a more imaginative theory of mind ability as benefits collective intelligence- for improved analysis.

Recommendations to Agency Leaders, Management, and Analysts

To ensure sustained improvement in assessing complex issues, "analysis must be treated as more than a substantive and organizational process. Attention also must be paid to techniques and tools for coping with the inherent limitations on analysts' mental machinery" (Davis, 1996). Agency leaders take steps to:

- Establish an organizational environment that promotes and rewards the kind of critical thinking he advocates—or example, analysis on difficult issues that considers in depth a series of plausible hypotheses rather than allowing the first credible hypothesis to suffice (Davis, 1996).
- Expand funding for research on the role of such mental processes plays in shaping analytical judgments. An Agency that relies on sharp cognitive performance by its analysts must stay abreast of studies on how the mind works—i.e., on how analysts reach judgments (Davis, 1996).
- Foster development of tools to assist analysts in assessing information: "On tough issues, they need help in improving their mental models and in deriving incisive findings from information they already have; they need such help at least as much as they need more information (Davis, 1996).
- Bloom offers some concluding observations and recommendations, rooted in Jack's recommendations taking into account the tough tradeoffs facing intelligence professionals:
- Commit to a uniform set of tradecraft standards based on the insights in this book. Leaders need to know if analysts have done their cognitive homework before taking corporate responsibility for their judgments. Although every analytical issue can be seen as one of a kind, I suspect that nearly all such topics fit into about a dozen recurring patterns of challenge-based largely on variations in substantive uncertainty and policy sensitivity (Bloom, 2000).

Comprehending the nature of perception has significant implications for understanding the nature and limitations of intelligence analysis. "The circumstances under which accurate perception is most difficult are exactly the circumstances under which intelligence analysis is generally conducted—dealing with highly ambiguous situations on the basis of information that is processed incrementally under pressure for early judgment" (Kent, 1968). This is a recipe for inaccurate perception. "Intelligence seeks to illuminate the unknown. Almost by definition, intelligence analysis deals with highly ambiguous situations. As previously noted, the greater the ambiguity of the stimuli, the greater the impact of expectations and pre-existing images on the perception of stimuli" (Gates, 1994). Thus, "despite maximum striving for objectivity, the intelligence analyst's own preconceptions are likely to exert a greater impact on the analytical product than in other fields where an analyst is working with less ambiguous and less discordant information. Moreover, the intelligence analyst is among the first to look at new problems at an early stage when the evidence is

very fuzzy indeed" (Kent, 1968). The analyst then follows "a problem as additional increments of evidence is received and the picture gradually clarifies—as happened with test subjects in the experiment demonstrating that initial exposure to blurred stimuli interferes with accurate perception even after more and better information becomes available" (James, 1980). If "the results of this experiment can be generalized to apply to intelligence analysts, the experiment suggests that an analyst who starts observing a potential problem situation at an early and unclear stage is at a disadvantage as compared with others, such as policymakers, whose first exposure may come at a later stage when more and better information is available. The receipt of information in small increments over time also facilitates the assimilation of this information into the analyst's existing views. No one item of information may be sufficient to prompt the analyst to change a previous view" (George, 1992). The cumulative message inherent in many pieces of information may be significant but is attenuated when this information is not examined as a whole. "The Intelligence Community's review of its performance before the 1973 Arab-Israeli War noted: The problem of incremental analysis—especially as it applies to the current intelligence process—was also at work in the period preceding hostilities. Analysts, according to their own accounts, were often proceeding on the basis of the day's take, hastily comparing it with material received the previous day" (George, 1992). "They then produced in assembly-line fashion items which may have reflected perceptive intuition but which did not accrue from a systematic consideration of an accumulated body of integrated evidence" (Davis, 1996). And "finally, the intelligence analyst operates in an environment that exerts strong pressures for what psychologists call premature closure" (Harold, 1994). In the case of the "performance of the intelligence community before the Arab-Israeli War of October 1973, a preliminary post-mortem report of December 1973 says that the one-paragraph excerpt from this postmortem, as quoted in the text above, has been approved for public release, as was the title of the post-mortem, although that document as a whole remains classified" (Harold, 1994). "The system requires the intelligence analyst to come up with an almost instant diagnosis before sufficient hard information, and the broader background information that may be needed to gain perspective, become available to make possible a well-grounded judgment. This diagnosis can only be based upon the analyst's preconceptions concerning how and why events normally transpire in a given society. As time passes and more information is received, a fresh look at all the evidence might suggest a different explanation" (Kent, 1968). Yet, "the perception experiments indicate that an early judgment adversely affects the formation of future perceptions. Once an observer thinks he or she knows what is happening, this perception tends to resist change. New data received incrementally can be fit easily into an analyst's previous image" (Harold, 1994). This "perceptual bias is reinforced by organizational pressures favoring consistent interpretation; once the analyst is committed in writing; both the analyst and the organization have a vested interest in maintaining the original assessment. That intelligence analysts perform as well as they do is testimony to their generally sound judgment, training, and dedication in performing a dauntingly difficult task. The problems outlined here have implications for the management as well as the conduct of analysis. Given the difficulties inherent in the human processing of complex information" (Harold, 1994), a prudent management system should:

- "Encourage products that clearly delineate their assumptions and chains of inference and that specify the degree and source of uncertainty involved in the conclusions.
- Support analyses that periodically re-examine key problems from the ground up in order to avoid the pitfalls of the incremental approach.
- Emphasize procedures that expose and elaborate alternative points of view.
- Educate consumers about the limitations as well as the capabilities of intelligence analysis; define a set of realistic expectations as a standard against which to judge analytical performance" (Harold, 1994).

The process of perception links people to their environment and is critical to an accurate understanding of the world about us. "Accurate intelligence analysis obviously requires accurate perception. Yet research into human perception demonstrates that the process is beset by many pitfalls. Moreover, the circumstances under which intelligence analysis is conducted are precisely the circumstances in which

accurate perception tends to be most difficult" (Davis, 1996). This discusses perception in general and then applies this information to illuminate some of the difficulties of intelligence analysis. "People tend to think of perception as a passive process. We see, hear, smell, taste or feel stimuli that impinge upon our senses. We think that if we are at all objective, we record what is actually there. Yet perception is demonstrably an active rather than a passive process; it constructs rather than records reality" Davis, 1996). Perception implies understanding as well as awareness. "It is a process of inference in which people construct their own version of reality on the basis of information provided through the five senses. As already noted, what people in general and analysts, in particular, perceive, and how readily they perceive it, are strongly influenced by their past experience, education, cultural values, and role requirements, as well as by the stimuli recorded by their receptor organs" (Kent, 1992).

The human mind is more complex than one imagines, and that though psychologists estimate that theory of mind is developed at age four, it is evidently an imperfect process- otherwise, how would mirroring and other logical flaws when considering other's perspectives occur. Also, just as the theory of mind is being discredited as an absolute threshold, it is also being understood to be more nebulous than previously envisioned, and is influenced by factors such as imagination. Further, the theory of mind is critical for collective intelligence, which is important for analytical judgments within intelligence community settings.

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