

Finding Cyber Terrorists: The Influence of Status on Inter-agency Counter Terrorism Taskforces

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Several post-hoc analyses of the intelligence “failures¹” to prevent the 9/11 terrorist attacks implicate the lack of sharing of information across various intelligence agencies (cf- Kean, 2011). In response, the U.S. government established an Office of the Director of National Intelligence (ODNI) to which all of the intelligence agencies reported, including the Department of Homeland Security (DHS), the Central Intelligence Agency (CIA), the Federal Bureau of Investigation (FBI), the Department of Defense (DOD), the Department of State and other related agencies. The purpose of consolidating the disparate agencies under a single umbrella was to better integrate intelligence gathering and coordinate responses. There was also a marked increase in the use of multi-agency intelligence task forces to reduce the prevalence of institutional silos that prevent information sharing needed for early warning signals to prevent future attacks.

However, these types of task forces have been frustratingly ineffective at overcoming the barriers to information sharing among the intelligence community. Although surprising, perhaps, to policy makers this should not be particularly shocking to psychologists. Prior research has demonstrated that both cognitive and social biases can lead group members to over-weigh shared information and under-value unique information and dissenting opinions during group discussions (Janis, 1985; Stasser & Titus, 1985). Moreover, functional, political and institutional barriers also impede information sharing across group boundaries (Carlile, 2004; Tinsley, 2011). Thus, even when team members might be aware that relevant information is equally distributed amongst them, they can struggle to utilize it all effectively in their decision

¹ We put failure in quotes here to indicate that although agencies failed to share information with each other, there is still debate as to how much sharing could have been expected—at the time—given the prior structures and processes of the intelligence community.

making processes. Our objective, therefore, is to identify the team dynamics that create barriers to the effectiveness of these kinds of multi-agency intelligence task forces and to develop effective interventions to overcome them.

One of the critical determinates of effective group decision making is the sharing and utilization of complete information (Mesmer-Magnus & DeChurch, 2009). In our first study, we investigate the role of structural status in hindering or facilitating the sharing and incorporating of complete information in a team's decision making process. Although scholars have identified the importance of expertise status as a cue that mitigates the common information bias somewhat by increasing members' attention to the unshared information provided by recognized expert group members in some circumstances (Stewart & Stasser, 1995; Woolley, Gerbasi, Chabris, Kosslyn, & Hackman, 2008), "groupthink" and social conformity research reveal pressures on other group members to suppress their dissenting opinions during group discussions, especially in the presence of a high-status, authoritative group member (Asch, 1955; Janis, 1982; Milgram, 1963). In our second study, we examine the relative strength of three group process interventions in facilitating the sharing and use of each team member's unique information.

The Role of Structural Status

The extant research in this domain has concentrated on the individual characteristics and behaviors that cue status to which other members tend to defer and conform (e.g., Bunderson, 2003; Cheng, Tracy, Foulsham, Kingstone, & Henrich, 2013; Phillips, 2003). In contrast, our research examines how status differences across group members' agencies might play out in a multi-agency task force. Our novel approach considers how the status of a group

member's home organization affects that member's status within a cross-organizational group. This approach is particularly relevant for the Intelligence Community (IC) because within the IC, not all agencies enjoy the same status, a problem believed to hinder intelligence analysis (National Academy of Sciences, 2011). The Central Intelligence Agency has the most structural status of all the agencies, reporting directly to the President and the National Security Council (NSC) as well as the Office of the Director of National Intelligence (ODNI). All other agencies report through an intermediary agency to ODNI, and they have no direct or indirect link to the President or NSC. Our research studies the effects of group members being in structurally different positions in the reporting hierarchy of the IC even if the individual agent is otherwise undifferentiated from the others and does not have direct supervisory authority over the other agents.

We predict that when one of the agencies represented on the task force is in a structurally superior position it will cue higher expectations for that agent's expertise, meaning that individual has more expertise status. Group members' expectations about the expertise of the individual representing the structurally superior agency will shape the discussion processes – not only the contributions of that agent but also the reactions to that agent by the others. Thus, we further predict that unique information presented by a structurally-superior agent will influence the group's decision more than will the same information presented by a structurally-subordinate agent because other team members will engage with and process the unique information differently. Introducing unique information into group discussions is intimidating and is often suppressed by group members who fear they may be ostracized or will lose status if they dissent from the majority of the group (Phillips & Loyd, 2006). When a team members

with unique information and a dissenting opinion is considered an expert, however, that individual is empowered to present the dissenting information and persist in attempting to influence the group based on the unique information (Bunderson, 2003).

In our study, since the CIA is in a structurally superior position to other agencies in the IC (see Appendix), task force members from other agencies should defer to the CIA analyst in the group, such that relevant information known by another analyst may not get shared and processed with the same amount of serious consideration. Thus, we expect the CIA agent to assert unique information in group discussions more than would analysts from other agencies who hold unique information. Furthermore, we expect that other group members will be more receptive to unique information that is presented by an individual whose structural position cues expert status than from one whose position doesn't. Other group member should engage with and discuss the unique information more when it is presented by the CIA agent in the group than when it is presented by other agents. In sum, unique information that is presented by a structurally superior group member should be processed more deeply and, therefore, be more influential in groups' decisions when it is presented by structurally superior than subordinate group members.

All of this means that if this structurally superior agent actually has better information (more actual expertise) then we predict that groups will do a better job of predicting the right answer than if it is a structurally inferior agent (from another agency) who has better information. In other words, if agency structural status and agent expertise status align then groups should be more likely to overcome the common information bias than if agency structural status and agent expertise are misaligned.

The Role of Group Process Interventions

When agency structural status and agent expertise are misaligned (i.e.- the CIA agent has inferior information to one of the other agents), we expect the group to make a poorer decision because of members' deference to the CIA agent's information. Yet, several group process interventions might attenuate this effect. One intervention might focus on how the information is shared among the team members. Since the objective is to elicit all the unique information from each member, we consider the influence of a group process intervention that instructs all team members to take turns sharing all of their information about a particular suspect before the next agent speaks. We also instruct that the agent from the high status agency not present first so that their information does not set an anchor. A second intervention focuses on the communication style of the agent from the high status agency. If this agent communicates in an affiliative manner, increasing the psychological safety of other team members and encouraging their participation, then the other agents are likely to share more information than if the agent from the high status agency has a non-affiliative style. Finally, a third intervention focuses on the communication style of the agent who actually has the relatively superior information. If this agent communicates in an assertive, confident style then his or her information may have more of an impact than if the agent communicates in a way that signals he or she is unsure of the information or opinions being presented. In Study 2, we test these three interventions

Methods

Participants and Procedure

Study 1 has already been run and analyzed; data for Study 2 will be collected in April. We used a laboratory experiment with undergraduate college student participants in four-person (Study 1) or three-person (Study 2) teams. We used a modified version of the Threat Target hidden profiles task (Kellogg Teams and Groups Center) in which four intelligence analysts from different agencies are given pieces of information about three terrorism suspects from which they need to identify the one who poses the greatest threat. As part of the materials, participants reviewed an organization chart of the agencies reporting to the ODNI on which the four agencies represented on the task force were highlighted (Appendix A). Three of those agencies reported indirectly to the ODNI through an intermediary department and one, the CIA, reported directly to the ODNI. We manipulated the distribution of information such that shared information pointed to one suspect (suspect A) and one analyst's unique, private information clearly identified a different person (suspect B), who was the correct suspect. The analyst with the key, private information, thus, was the "information expert," but we did not reveal his or her expert status to the any of the participants (including the expert).

In Study 1, we had 71 four-person teams and two conditions in the experiment. In the first condition, the expert was from the CIA, so in a structurally superior position, meaning that structural status and expertise status aligned. In the second condition, the expert was from the Bureau of Intelligence and Research (INR), which reports first to the State Department who in turn reports to the ODNI, so in a structurally inferior position, meaning structural status and expertise status were misaligned. Although these agencies are in different positions in the

structure of the U.S. intelligence community, they did not have hierarchical reporting relationships or any formal power differences. Group members each read their private information, identified their preferred suspect independently and rated their perceptions of each analyst's status (comprised of how respectable, worthy of esteem and prestigious each agent is perceived to be. Cronbach's alpha = .90). They then had a 30 minute face-to-face discussions (that we video recorded) in which they were identified only by agency affiliation. They reported their consensus decision after the meeting, re-rated their status perceptions, and then privately indicated which pieces of information about the suspects had been revealed during the group discussion from a complete list.

The recorded group discussions were then unitized into speaking turns and coded for the number of times each agent spoke ("speaking turns"), the pieces of information that were presented (information about each suspect, particularly the correct suspect, "B") and the affiliative and dominant speech patterns of the group member by three research assistants who were blind to the study hypotheses and the experimental conditions each group was in. Affiliative speech included supportive comments, acknowledgment of others, understanding and agreement such as "that's good", "what do you think?", "I may be way off base but..." Dominant speech included directives, disagreement, or challenging others such as, "let's do it this way", "I don't think so", "do you really think that?" One research assistant unitized every video, and the two others coded them. The first several minutes of five videos were used for training purposes until an acceptable Cohen's Kappa of inter-rater agreement for the coding system was achieved (kappa =.81). We analyzed the likelihood of identifying the correct suspect

with logistic regressions and the counts of coded information, affiliative and dominant acts with poisson regression.

Results- Study 1

To check the effectiveness of our manipulation, we conducted ANOVAs of the analysts' status ratings (from all group members, including self-ratings) prior to the group discussions. The manipulation was fairly successful with the CIA analysts being rated highest in status ($M_{CIA} = 5.53, s.d. = .56$; $M_{DIA} = 5.43, s.d. = .60$; $M_{OIA} = 5.37, s.d. = .62$; $M_{INR} = 5.21, s.d. = .64$; $F = 3.42, p = .02$). Pairwise contrasts reveal, however, that although CIA agents' status ratings are significantly higher than the INR agents' ($B = -.32, p = .00$), they are only marginally significantly higher than those of the OIA agents ($B = -.16, p = .085$) and not significantly different from those of the DIA agents ($B = -.10, p = .27$). Thus, although the structurally-advantaged CIA agents were seen as somewhat higher status than the other agents prior to their group interactions, the differences were not huge.

We report correlations and descriptive statistics in Table 1. As predicted, results indicate that groups in which the expert analyst was from the CIA (i.e. where hierarchical status and expertise status aligned) were significantly more likely to identify the correct suspect (35%) than were groups in which the expert analyst was from the INR, such that expert and hierarchical status were misaligned (8%, $\chi^2 = 7.86, p = .005$). This difference in decision quality was attributable to groups in which the CIA analyst was the information expert discussing more information about the correct suspect, determined by the coded video recordings, than in groups in which the INR agent was the information expert (see Table 2: $B = -.36, p = .00$). When the amount of information that was shared about the correct suspect is added to the

analysis of the likelihood of teams identifying the correct suspect in logistic regression analyses, it has a significant positive effect ($B = .71, p = .00$), which mediated the effect of condition on decision outcome (percentile bootstrap 95% confidence interval = $-.72$ to $-.04$).

Insert Tables 1 and 2 Here

To determine the patterns of affiliative and dominant interactions that may explain why more information about the correct suspect was discussed in groups where expert and hierarchical status was aligned than misaligned, we first considered the summary statistics of coded affiliative and dominant speech acts by each agent in both conditions (see Table 3). First, we observe that the CIA agents were much more reserved when they were not the information experts, with fewer affiliative *and* dominant speech acts in condition two ($M_{\text{affiliative}} = 6.87, S.D. = 4.91; M_{\text{dominant}} = 6.67, S.D. = 5.23$) than in condition one ($M_{\text{affiliative}} = 10.67, S.D. = 6.80, t(1,69) = 2.72, p = .008; M_{\text{dominant}} = 9.27, S.D. = 8.45, t(1,69) = 1.58, p = .11$). Second, the INR agents did not assert themselves more dominantly or affiliatively when they were the information expert in condition two ($M_{\text{affiliative}} = 8.54, S.D. = 6.38; M_{\text{dominant}} = 7.43, S.D. = 5.09$) than when they were not in condition one ($M_{\text{affiliative}} = 8.41, S.D. = 7.44, t(1,69) = .08, p = .94; M_{\text{dominant}} = 8.29, S.D. = 7.06, t(1,69) = .59, p = .53$). Finally, the other agents seem to have followed the pattern set by the CIA agents, with far more total speech acts (both dominant and affiliative) in the first (when CIA agent is expert) than in the second conditions (when INR agent is expert) (total speech acts condition one $M=101.94, S.D. = 39.44$ versus condition 2 $M= 81.11, S.D. = 32.50, t(1, 69) = 5.07, p = .00$). In other words, the speech patterns of the whole team appear to have been set by the

CIA agent's behaviors to which the other agents reacted. The CIA agents' communication varied much more than did the subordinate INR agents' depending on if they were information expert or not.

Insert Table 3 Here

We, therefore, tested if the CIA agents' affiliative and dominant speech patterns explained the differential amount of information about the correct suspect that the teams discussed, which predicted the likelihood of them getting the correct answer (see Figure 1).² Indeed, we found a significant indirect path from condition (CIA versus INR as information expert) to the likelihood of identifying the correct suspect through CIA agents increasing their affiliative communication, which increased the amount of information about the correct suspect that was discussed (percentile bootstrap 95% confidence interval = -.19 to -.02). We also found a marginally significant indirect effect of CIA agents increasing their amount of dominant communication, which *decreased* the amount of information about the correct suspect that was discussed (percentile bootstrap 95% confidence interval = .00 to .11), though the latter path indicates only partial mediation because the confidence interval includes zero. In other words, although the CIA agents engaged in marginally significantly more dominant speech acts in condition one (when they had expertise) than in condition two (when they did

² Note that because the varied forms of dependent variables at different analytical stages, the indirect path analyses could not be calculated with structural equation models. Instead, the results of each step in the analyses were aggregated and tested as linear combinations using bootstrap analyses with 100 replications (Preacher & Hayes, 2008).

not), this had a weaker deleterious effect on the quality of the group's decision than when the CIA agents who had expertise (condition 1) engaged in more affiliative speech acts than the CIA agents without expertise (condition 2). It was these affiliative speech acts that helped groups in that condition one to deeply process information about the correct suspect and, therefore, get the right answer.

Insert Figure 1 Here

Discussion-Study 1

Overall, these results suggest that when the CIA agent presented unique information that dissented with the majority opinion among the other group members, two things happened that increased the likelihood of groups picking the correct suspect. First, the CIA agents persisted at presenting the information more than when they were not the information experts and more than the INR agents did when they were the information experts. Second, the other group members engaged with the unique information by increasing their overall amount of speech when it was presented by the CIA agent than by the INR agent. Thus, it appears that relatively little unique information about the correct suspect was presented when the information expert was in a structurally inferior position (i.e., the INR agent in condition two) and that the information that was introduced was largely ignored by the other agents.

This suggests that when information expertise is aligned with structural superiority, groups overcame the common information bias by processing unique information deeply enough that it appropriately influenced their decisions. However, groups did quite poorly when

structural and expertise status were misaligned. In these situations, they fell into the common information trap and the unique information did not influence their decisions. Groups with aligned structural and informational superiority did particularly well when the prestigious agent engaged in affiliative, rather than dominant speech. That is, they asked others for their input or when they disagreed they did so softly suggesting, “maybe we should look at things this way” rather than insisting, challenging, or interrupting others. This may indicate that the key is having an analyst who is in an advantaged position facilitate a group discussion in which members consider and process unique information.

In our experiment, the structurally-advantaged group members who shared the unique information may have been more motivated to facilitate such a group discussion than were those who only had common information. Recall that if the CIA agent does not have expertise it means that agent also shares information with the other agents in the task force and therefore may feel no need to insert him or herself into the discussion. It is possible, however, that a process intervention that facilitated the sharing and deep consideration of unique information could be developed and taught to high status agents or even any member of the group. This could extend the ability of multi-agency intelligence task forces to overcome the common information trap beyond our situation here where structural status and expertise status aligned. Thus, in Study 2 we test facilitative process interventions to see if we can mitigate the differences between these two experimental conditions by increasing the amount of information about the correct suspect that is shared when structural status and expertise are mis-aligned.

Participants and Procedure Modifications- Study 2

For this study, we modified the case to be a three-person team because in hind-sight we realized we had the DIA and OIA roles we redundant (given that neither role had either structural status or expertise status). Also Study 1 revealed a modest structural status bump for the DIA agent, likely because this agency was more familiar to our participants than either the OIA or INR. Therefore we eliminated the DIA agent, distributing the unique information from this role equally across the other three roles.

We have four conditions. In all conditions, it is the CIA agent who has more structural status (as before) and the INR agent who has superior information about the suspects (expertise status—as in Study 1). The first condition manipulates the group discussion process in that each agent is given the following paragraph after they have prepared their individual role and before meeting with the other agents:

Research shows it is important that everyone be able to present their information about a suspect before moving on to another analyst. Therefore, to begin the group discussion, the OIA analyst should present everything he or she knows about suspect Ahmed Fadil (for example, everything the OIA analyst has written about Ahmed during the individual preparation time). Then the next analyst should do present all the information he or she has about suspect Ahmed Fadil, and then the third analyst will present his or her information about suspect Ahmed Fadil. After all this information is presented the process should repeat for the other two suspects, again starting with the OIA Analyst's presentation of his or her information. Finally after, all information about suspects has been reported the group should begin their discussion and evaluation of this information.

Notice that this intervention instructs that the “neutral” agent, who has neither structural status nor expertise status, begin the conversation.

The second condition manipulates the style of the agent from the high status agency.

The CIA agent is given the following paragraph to read after he or she has prepared the individual role information and before meeting with the other agents:

In this exercise, others may disagree with you. Research shows that if you listen to people and acknowledge their perspective, they are more likely to listen to your perspective in return. Don't be too forceful or interrupt others when they are speaking.

The third condition manipulates the style of the agent who has relative superior information. The INR agent is given the following paragraph to read after he or she has prepared the individual role information and before meeting with the other agents:

You are highly confident about your agency's information. INR has spent a considerable amount of time and effort investing in human intelligence and cultivating assets. Information collected by the INR has been critical in several recent cases that have shut down a variety of terrorist plots, so you know your information is highly reliable.

The fourth condition is our control condition where no participants read any additional information or instruction.

General Discussion

Research on common information biases has demonstrated the strong tendency of groups to discuss and utilize only information that is shared commonly among members of the group and to ignore relevant information that is known only by a single or small minority of group members (Stasser & Titus, 1985). Hierarchical status that is based on relative positions in the structure of a group can either exacerbate or attenuate common information bias. When the agent from the structurally superior agency has poorer quality information than another team member, the team does worse than when the agent from the structurally superior agency

has higher quality information than other team members. In this “worst case” scenario where structural status and expertise do not align, it still may be possible to help teams improve their decision making. Interventions that direct the group discussion process can enhance decision quality by surfacing members’ unique information and cueing team members to seriously consider this information.

Results have obvious implication for the intelligence community multi-agency task forces, but also for other inter-organizational or inter-divisional groups wherein members’ home organizations or divisions enjoy unequal status and where team members have different quality information. Teams are used to make analytical decisions in many different contexts to optimize the expertise and decision making capacity that can be applied to informationally-complex tasks (Hackman & O’Connor, 2004). Our aim is to help improve their performance by optimizing their information sharing and decision processes.

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Table 1: Descriptive and correlation statistics

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Correct suspect	0.211	0.411	1												
2 Condition	1.521	0.503	0.33	1											
3 Info suspect A (coded)	3.736	2.033	0.02	0.08	1										
4 Info suspect B (coded)	3.683	2.587	0.55	0.26	0.44	1									
5 Info suspect C (coded)	3.944	2.256	0.15	0.05	0.57	0.26	1								
6 DIA Affiliative	2.102	1.37	0.23	0.13	0.03	0.09	0.09	1							
7 INR Affiliative	2.07	1.724	0.01	0.02	0.17	0.24	0.17	0.38	1						
8 CIA Affiliative	2.134	1.556	0.33	-0.3	0.23	0.36	0.2	0.43	0.34	1					
9 OIA Affiliative	1.856	1.297	0.46	0.34	0.11	0.24	0.18	0.36	0.16	0.35	1				
10 DIA Dominant	1.852	1.279	0.14	0.11	0.25	0.21	0.14	0.51	0.07	0.26	0.06	1			
11 INR Dominant	1.937	1.539	0.09	0.09	0.04	0.07	0.1	0.13	0.66	0.36	0.08	0.13	1		
12 CIA Dominant	1.908	1.719	0.02	0.22	0.13	0.05	0.07	0.16	0.1	0.59	0.02	0.44	0.39	1	
13 OIA Dominant	1.655	1.699	0.05	0.12	0.22	0.07	0.09	0.2	0.2	0.25	0.51	0.16	0.4	0.33	1

Table 2: Sequential analyses testing mediation of effect of condition on likelihood of choosing the correct suspect by coded information about the correct suspect that was discussed.

	Correct suspect (Logistic Regression)	Coded Information about Suspect B (Poisson regression)	Correct suspect (Logistic Regression)
Condition	-.83* (.41)	-.36*** (.12)	-1.60+ (.81)
Coded information about suspect B			.71*** (.21)
Constant	.02 (.69)	1.84*** (.18)	-2.39 (1.46)
Pseudo R ²	.05*	.02***	.38***

+ p<.10, * p <.05, ** p <.01, ***, p <.001

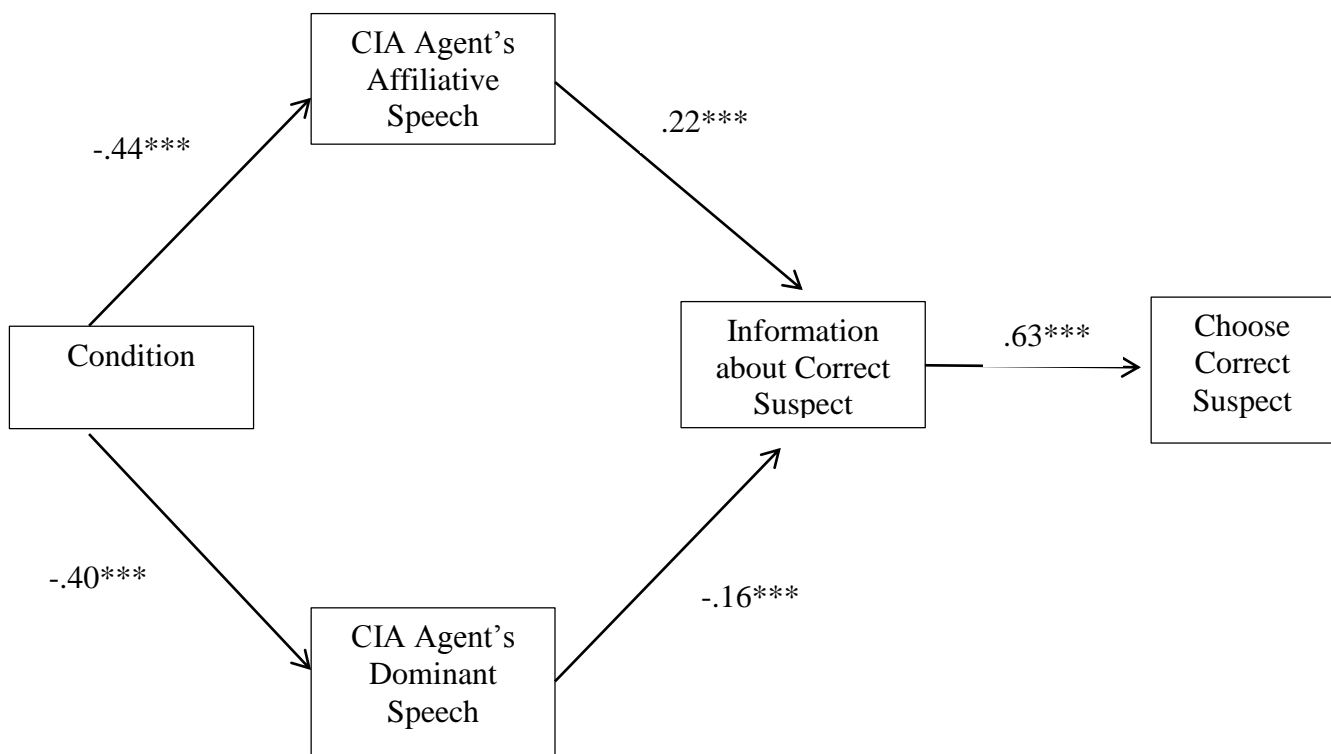
Percentile Bootstrap 95% Confidence Interval: -.72 to -.04

Table 3: Summary statistics of affiliative and dominant speech acts by agent role across conditions; Mean (Standard Deviation).

	Condition 1 CIA Agent is information expert	Condition 2 INR Agent is information expert	Between Condition contrast (2-tailed t-test)
CIA agent affiliative	10.67 (6.80)	6.87 (4.90)	2.72, $p = .008$
INR agent affiliative	8.41 (7.44)	8.54 (6.38)	.07, $p = .94$
DIA agent affiliative	9.15 (5.56)	7.95 (5.23)	.94, $p = .35$
OIA agent affiliative	9.26 (5.68)	6.30 (4.10)	2.54, $p = .01$
CIA agent dominant	9.27 (8.44)	6.66 (5.26)	1.58, $p = .11$
INR agent dominant	8.29 (7.06)	7.43 (5.09)	.55, $p = .59$
DIA agent dominant	7.97 (5.43)	7.03 (4.70)	.78, $p = .43$
OIA agent dominant	7.47 (6.26)	6.24 (7.23)	.76, $p = .45$
Total Speech Acts	101.94 (39.44)	81.11 (32.50)	5.07, $p = .00$

Figure 1: Path diagram of indirect effects of condition (1 = CIA agent is info. expert) on identifying the correct suspect through CIA agents' affiliative and dominant speech acts and the amount of information about the correct suspect that was discussed. Displaying path coefficients controlling for all previous variables in model.

Note: Percentile Bootstrap 95% confidence interval for path through CIA Agent's Affiliative Speech is -.19 to -.02. For the path through CIA Agent's Dominant Speech, it is .00 to .11.



Appendix A: Organization chart of the U.S. Intelligence community, with the agencies represented in our experiment circled. In our experimental conditions, either the CIA agent or the INR agent was the actual information expert on the team.

