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## The Organizational Design of Intelligence Failures

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### Abstract

While the detection, and prevention, of the September 11, 2001 plot would have been ideal, I argue that the more major intelligence failures occurred *after* the attacks of September 11. The erroneous intelligence concerning the WMD presence in Iraq permitted the Bush Administration to order the invasion of Iraq. Systematic underestimates of the budgetary costs and personnel requirements of the war meant that Congress did not give the matter the debate that it warranted. Finally, incorrect (or incomplete) intelligence concerning the extent of the informal opposition to the U.S. led forces resulted in inadequate numbers of allied forces being deployed and a protracted period of conflict and disruption in Iraq. These facts are all well known to anyone who reads newspapers.

I make three arguments in this paper. First, the collection of the intelligence data and its evaluation does not occur in a vacuum. There must always be an organizing theory that motivates the collection and evaluation of the data and that this theory is formulated at the highest levels of the decision making process. Second, it is not possible to construct a truly neutral or objective (analytical) hierarchy. Third, it is impossible to separate the analytical evaluation of the data from the decision that will be based on such evaluation. As an inevitable consequence of these arguments, intelligence analysis and the resulting conclusions are driven by top-down considerations rather than bottom-up as has been argued by some reviewers of recent intelligence failures.

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*“I have no evidence that there is any rip-off taking place, but it’s the role of the Federal Trade Commission to assure me that my inclination and instinct is right.”  
President George W. Bush commenting on the recent increases in gasoline prices  
(April 28, 2006).*

### I. Introduction

On September 11, 2001 terrorists hijacked four U.S. commercial aircraft and three of these were flown into structures causing considerable loss of life and damage to property. The fourth crashed before it could be used to destroy another target. This event has transformed U.S. external policy and resulted in considerable domestic policy changes as well.<sup>2</sup> While the detection, and prevention, of the 9/11 plot would have been ideal, I argue that the more significant intelligence failures occurred *after* the attacks of September 11 because these failures were preventable and the costs of resulting errors avoidable. Erroneous intelligence analysis concerning the presence of weapons of mass destruction (WMD) in Iraq allowed the Bush Administration to undertake an invasion of Iraq rather than continue with the containment policy that had been in effect since the first Gulf War and to justify an early partial exit from Afghanistan.<sup>3</sup> Systematic underestimates of the budgetary costs and personnel requirements of

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<sup>1</sup> An earlier version of this paper was presented at the May 2006 meetings of the Canadian Economic Association in Montreal, QC, Canada. I am grateful to have received extremely useful comments from the participants in the session and from Lawrence McDonough and Ron Wintrobe in particular. Of course, none of these scholars is responsible for any remaining errors.

<sup>2</sup> That the ground targets were highly visible and symbolic of US culture only served to increase the outrage among the US populace and fuel the demand for an active response. Hence the initial support for the invasion especially when Iraq was characterized as haven for the terrorists.

<sup>3</sup> Gen. (ret) Colin Powell testified before Congress, in considerable detail, the extent of Iraq’s program in WMD including reports (complete with design schematics and mention of specific numbers) of the existence of mobile biological weapons labs.

the war meant that Congress did not give the matter the debate warranted. Finally, incorrect (or incomplete) intelligence concerning the extent of the informal opposition to the U.S. led forces resulted in inadequate numbers of allied forces being deployed and a protracted period of conflict and disruption in Iraq.<sup>4</sup>

Thus, the invasion of Iraq was predicated (justified) on intelligence reports of the presence of WMD in Iraq, including reports that Iraq was in the process of developing nuclear weapons.<sup>5</sup> Both of these assessments were later shown to be wrong. But, perhaps the most serious (and costly) intelligence failure had to do with the personnel and equipment requirements for the Iraq war itself. Despite arguments from line personnel (Gen. Eric Shinseki, in particular), the Administration argued the entire mission would require only 130,000 troops.<sup>6</sup> The Administration stated that it was expecting substantial allied support. In 2003 Wolfowitz argued that allies (numbering “several hundred thousand”) would assist in the reconstruction of Iraq (Schmitt, 2003).

Was the Administration concerned that if the public learned some 350,000 troops were required (Pentagon estimates) political support for the invasion would be reduced? We have no explicit statements but it is likely that public support would have been less enthusiastic if the extent of the force (and other resource) requirements had been known.<sup>7</sup> What is undoubtedly true is that the protracted conflict has not enhanced the U.S. reputation in the region. The economic disruption is imposing costs on the entire population. But, perhaps the most important

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<sup>4</sup> Although the “war” was quickly over, the “peace” has been more elusive. Since the original plan was presumably not to simply topple Saddam Hussein’s regime and exit, we have to conclude that there was a failure to anticipate (an intelligence failure) the extent of opposition within Iraq to the US intervention.

<sup>5</sup> Since there was little or no evidence of the presence of Osama Bin Laden in Iraq, an alternative theory was required to support the decision to invade.

<sup>6</sup> General Shinseki argued that more than double the proposed force would be required (see Schmitt, 2003).

<sup>7</sup> This may have been particularly true if the extent of the resources available to the U.S. military had been known to the public. On this matter, it is difficult to blame intelligence failures. Certainly, the extent of the inventory of personnel and equipment was known to Secretary Rumsfeld at the time the mission was undertaken. As I report later, the costs of the war were also systematically underestimated by the Administration.

effect has been to shift attention away from the pursuit of Bin Laden and the destruction of the terror organization most likely responsible for the 9/11 attacks.

I make four arguments in this paper, which lead me to conclude that intelligence failures arise as a top down rather than a bottom up organizational failure. First, I argue that the collection of the intelligence data and its evaluation does not occur in a vacuum. There must always be an organizing theory that motivates the collection and evaluation of the data. Further, since collection and analysis of the data requires budgeted resources, the organizing theory will be formulated at the highest levels of the decision making process. As a corollary to this point, I argue that it is impossible to design a data mining technique that does not take a prior as the seed necessary to recover patterns in the data. That is, there is no means to collect data that does not invoke a theory since there is simply too much data to analyze if we don't design a system (impose a theory) that separates noise from signal.

Second, I argue that it is not possible to construct a truly neutral or objective (analytical) hierarchy. The decisions and actions of the hierarchy will be influenced by the objectives of the top-level administration. The hierarchy will be neutral in the sense it lacks its own objective regarding the nature of its output but it will not be neutral in the sense of analyzing policy or program options from a purely objective perspective. All promotion ladders will necessarily embody some form of rank order tournament providing the necessary incentives. Since individuals can make selective effort choices (productive effort vs. shirking) it is necessary to introduce a reward structure.<sup>8</sup> And, the performance as well as the method of evaluation that is rewarded is defined at the top of the administrative hierarchy.

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<sup>8</sup> This argument differs from Hammond and Thomas (1989). They argue the hierarchy will have its own objectives. Even if the hierarchy does have its own objectives, in the US system of budget and priority setting, a hierarchy that persists in advancing its own objectives in opposition to those of the administration will find that its budgets shrink.

Third, it is impossible to separate the analytical evaluation of the data from the decision that will be based on such evaluation. Thus, the analysts must “buy in” to the theory advanced by the high-level decision maker. Hence, there is no incentive on the part of the senior administration to construct a neutral hierarchy. It is the hierarchical rule structure (promotion mechanism) that provides the incentives to select the data (separate signals and noise) and interpret the data in ways that are consistent with the views of the high-level decision maker(s). In other words, it is the hierarchical structure that provides the incentives for the analyst to “buy in” to the decision-maker’s theory and to collect and analyze data consistent with the theory.

Fourth, given the presence of a single decision maker in this class of settings, the usual forms of competition – internal and/or external – will fail to limit the errors. In fact, the type of competition likely to emerge will exacerbate the class of problems arising from the over-promotion of the position advocated from the higher-level decision makers.

As an inevitable consequence of these arguments, intelligence analysis and the resulting conclusions are driven by top-down considerations rather than bottom-up as has been argued by some reviewers of recent intelligence failures. Garicano and Posner (2005) review the recent intelligence failures covered in the WMD report. While their primary focus is on organization failures as a proximate cause for the propagation of misleading (or incorrect) intelligence failures, Garicano and Posner (G&P) do accept that non-organizational problems, such as political pressure, “... may have been larger contributory factors,” (p 152) but they maintain that the errors leading to the 2003 invasion of Iraq were due to “inevitable tradeoffs necessitated by efficient organization design” and not to organization failures (p 154). Although they do accept a failure of the type usually referred to as “groupthink”.<sup>9</sup>

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<sup>9</sup> One point of agreement between my argument and that of Garicano and Posner is that organizational efficiency will inevitably lead to organizational failure in the collection and analysis of intelligence data.

At the time of the assessment of the decision to invade Iraq the U.S. intelligence sector consists of several agencies with differing responsibilities. The National Security Center, the National Security Administration (NSA), the Central Intelligence Agency (CIA), the Department of Defense (DoD), the Department of Homeland Security (DHS), and the Federal Bureau of Investigation (FBI) all have responsibility for the collection, analysis, and assessment of intelligence data. While there are technical allocations between foreign (CIA) and domestic (FBI) other assignments are less clear and there may be considerable overlapping. From a budgetary perspective, these various agencies compete for shares of the public revenues and their jurisdictions are somewhat blurred (WMD, 2005).

G&P argue that the intelligence failures leading up to 9/11 and the WMD assessments of Iraq were driven by a bottom-up failure to collect and analyze the appropriate data. As just noted, the U.S. intelligence system consists of several agencies tasked to collect and interpret (or analyze) data concerning external and internal threats to U.S. security. G&P argue that competition among these individual agencies implies less cooperation as lower level agents attempt to obtain positional advantages and earn promotions or superior assignments. Competition among the agents and agencies is manifest in several ways including “overselling” the information they have, non-cooperation in information sharing, and delay in reporting information in order to monopolize the information.

I am critical of the G&P arguments and the bottom-up approach, in general, on the grounds that the organization structure is: a) designed by, and to reflect the intents of, the higher level actors, perhaps political sponsors, and sponsors can implement the level of competition they desire (Bagnoli and McKee, 1991; Sah and Stiglitz, 1986), b) not easily modified in any meaningful way by lower level agents. Regarding the second point, I’ll show that many of the

“failures” of the organization stem from the inevitable competition for resources (promotions, assignments, personnel) inherent in any hierarchical institution. Further, it is the informal hierarchy rather than the formal hierarchy that affects the information aggregation, analysis, and evaluation. Finally, I will argue that competition is inevitable whether there are several intelligence agencies or only one agency. Internal competition and external competition will lead to the same type of outcome.

The conclusions I reach are not encouraging. It is indeed, impossible to construct a purely analytical hierarchy particularly in the domain of intelligence operations. All organizations will derive their direction and focus from the top and this will influence the decisions made within the hierarchy. From this, it would appear that intelligence assessments (threat assessments) will be manipulated, via selective data collection and selective data analysis, to yield support for the outcome favored by the senior administration. Given the intangible nature of the output, and the necessary secrecy under which the intelligence agencies operate, it is difficult for those holding opposing views to challenge – there is little or no competition of the sort that will lead to opposing views.

I have motivated my arguments with the events leading up to the 2003 invasion of Iraq. However, the structure of my arguments would apply to any and all U.S. administrations and to a broad class of intelligence-based decisions since the model of intelligence gathering and decision making process generally applies to the form of government characterized as republican. While certain characteristics of the George W. Bush Administration, chiefly the absence of an organized opposition, may have exacerbated the problems I identify, all administrations (past and future) are vulnerable to a similar class of decision errors.

## II. Theory of Organization Design and Behavior

Several features affect organizational performance. First, the intelligence agencies (in the U.S. and elsewhere) are public bureaucracies. Bureaus are characterized by several features, which fundamentally affect the behavior of the bureaucrats within them.<sup>10</sup> The organizational structure is hierarchical, in which all but the highest and lowest levels are simultaneously superiors and subordinates. Bureaus rely on rules, rather than discretion, in rewarding employees. Absent the ability to make discretionary allocation of rewards, superiors must rely on exchange to obtain services from personnel in lower levels. Without the power to pay for services or to fire at will, the superior must promise a reward in order to obtain services from subordinates. The rules of the bureau imply that the reward will be provided at some point in the future. Hence exchange within the bureau requires trust and such trust can only be built through repeated transactions. The accumulated trust can be regarded as organizational capital (Milgrom and Roberts, 1992).

Second, the output of the intelligence sector is the ultimate intangible – information concerning activities that the “other side” wishes to keep hidden. Thus, measuring output is problematic. The potential for malfeasance is significant as is the potential for direction from above influencing decisions and actions at the lower levels within the bureau.

Third, the agents within the bureau will exhibit risk aversion of some extreme order such as loss aversion.<sup>11</sup> Such risk attitudes will make it unlikely that these agents will advance information that is a challenge to the accepted perceptions. This risk aversion will exacerbate the tendency for collecting and reporting information that confirms current perceptions since the

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<sup>10</sup> The following discussion derives from Breton and Wintrobe (1982) with the addition of specific arguments applied to the class of problems addressed here.

<sup>11</sup> Payoffs to risky activities within a bureau are highly asymmetric due to the rules governing compensation. A bad outcome may result in dismissal or demotion (transfer) while a good outcome is often rewarded with minimal tangible compensation and often only with a lengthy lag.



potential for an adverse performance review is lower when an individual's performance is similar to that of others in the organization.<sup>12</sup>

Fourth, organizations characterized by hierarchical structure inevitably create rank order tournaments as reward mechanisms. It is impossible to avoid. Even if promotions are based entirely in seniority, the task assignment (and perhaps periodic rewards such as travel or course attendance) is often under the control of the immediate supervisor. Non-pecuniary benefits are often associated with task/location assignment. In the remainder of this section, I will address a series of questions related to the issues raised above in connection with the organization story.

a) Setting the Agenda

Information is costly to acquire and analyze. The collection of data requires that the issue be on the agenda (Arrow, 1974) since the commitment of resources to information gathering can only be authorized from the top. Further, the organization of the data (essential for the policy briefing) depends on the theory of risks being articulated – this theory will be generated at the highest levels.<sup>13</sup> The question of what is data versus what is noise is determined by the agenda. The agenda itself derives from the organizing theory that the senior administration imposes on the organization.<sup>14</sup> Thus, the senior administration formulates the theory of external (and perhaps internal threats) and this is what sets the agenda for information gathering. An agency cannot gather information unless the budget permits such information collection.

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<sup>12</sup> Rewarding for accurate information is possible but difficult to implement owing to the long lags between the dissemination of the information and the availability of corroborating information.

<sup>13</sup> In this paper I focus on the theory of security risks as articulated by the senior administration. This theory may be perfectly valid and, even if wrong, is based on a legitimate assessment of the risks. Accepting an incorrect theory is not the same as deliberate manipulation of information that is known to be wrong by the senior administration. That is, I am distinguishing pervasive organizational failures from deliberate machinations as some have accused the Bush administration of committing.

<sup>14</sup> This is more likely to arise in the U.S., where the structure of the budget committees facing the bureaus may be quite stable for long periods, than in countries with a parliamentary system.

The theory is also required in order to analyze the data – specifically, a theory is required so that signals can be identified as distinct from noise in the data. Even elemental data mining activities, such as the Brian Jacob and Steven Levitt evaluation of the Chicago public school teachers’ cheating to improve their class scores on the basic achievement test, requires a behavioral theory of teacher response to the testing environment.<sup>15</sup> First, the nature of the cheating – changing student answers. Second, the constraints – short time frame available. Three, desire to avoid detection – so change answers in the middle block of the test. Four, time and detection constraints – change all the answers in the block, which is faster than being selective. With that theory of behavior, a data mining exercise was conducted using pattern recognition software. Simply looking for strings of correct answers in all tests would not have been useful since such strings could occur at different places within the test and such a random pattern could occur absent malfeasance.

The agenda defines the information to be collected and also the decisions that will be taken based on this information. I show that the decisions that are to be taken will define the quantity and nature of the information that will be collected and the extent to which it will be verified and analyzed.

b) Information Acquisition: How Much Information to Collect?

As noted above, information is costly to collect and analyze. However, there may be other considerations affecting the volume of data an organization will wish to collect. Consider the situation of a decision-maker with the following rule: take an action if the value of the signal is greater than some target  $S^*$ . With a sparse information set, the decision-maker faces a probability distribution over the signal shown by  $A$  in Figure 1. The mean is shown as  $S_m$  and the 95% confidence interval (CI) is given by  $A_{ci}$ . An analyst reporting to the decision-maker

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<sup>15</sup> See Jacob and Levitt (2003) and Levitt and Dubner (2005).

cannot say that the signal value is above the target under acceptable confidence interval requirements and the decision-maker will not be able to utilize the information and analysis to justify an action. However, with a less sparse information set yielding the distribution shown by B, the 95% CI is now sufficiently tight ( $B_{ci}$ ) that the analyst can argue the signal is above the target and the decision-maker may undertake the planned action.

A problem would arise, of course, if the additional observations in going from A to B were not independent. Suppose they are simply the original observations repeated a number of times. Then the true distribution is still as given by A and the data do not support the position that the signal exceeds the target. But, if the distribution were represented as B, **as if new data had been collected** then the decision taken may not be the correct one – it certainly cannot be supported with the available data.

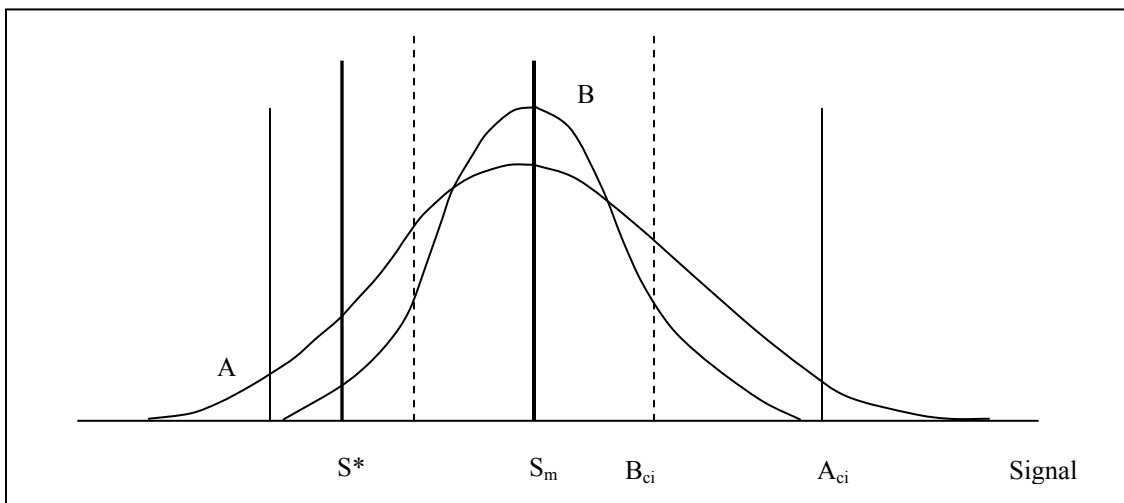


Figure 1 – The Decision (Stylized Distributions)

Repeated utterances of the same piece of information may be taken to imply multiple independent observations and to increase the “value” of the information. Such herding behavior

is akin to the speculative bubbles that arise in the financial markets. Evidence of bubbles and crashes is provided in both field and laboratory financial market data.<sup>16</sup> The bubbles persist so long as expectations of future price increases persist although the asset price exceeds the fundamental value. Typically, the bubble crashes when some trades take place below the bubble price as some traders perceive that the speculative bubble may be about to end and the remaining traders see this is a signal that the price increases will not persist into the future. Crashes are usually quite abrupt. In the information market the true (fundamental) value of the information may never be known or known only with a long lag after the decisions based on the information have been taken. Thus, the information gathering and analysis enterprise does not appear to have a mechanism that leads to crashes in the perceived value of the information. As a consequence, the value bubbles for information may persist for a very long time leading to further investment in the gathering of faulty classes of information.

A policy issue regarding the information is that as the information is passed up through the layers in the hierarchy it must be condensed since the number of persons at each level is smaller and thus the aggregate cognitive resources are likely falling as we move up the hierarchy. Summarizing the information is one means of reducing the information volume and the system for such summaries is likely a policy decision (from the top). The theory of sufficient statistics argues that we can condense information without losing information. For example, one could provide the entire probability density function of the observed data or one could provide distributional moments such as sending the mean and standard deviation ( $\mu, \sigma$ ). If the underlying distribution is symmetric (e.g., uniform or normal) such a reduced information package does not affect the overall quality of the information. However, if the underlying distribution is skewed,

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<sup>16</sup> There is considerable evidence of the underlying causes of asset price bubbles and crashes that have been obtained via laboratory markets (see Plott and Sunder, 1988).

characterized by long tails, or generated by sparse data, such summary reports will obscure potentially important data. Further, in many cases, summarizing information will require individual decisions, by lower level agents, regarding what should be left out. Such editing introduces the possibility of selective information transmission.

### c) Bayesian Updating with Strong Priors

It is usual to apply Bayesian updating in the presence of uncertainty and sequential sampling. However, if the priors are strongly held it will require a large number of counter observations to generate an adjustment to a posterior that is significantly different. A consequence of the top-down approach to intelligence analysis is the existence of very strong priors on the probability that an assessment is true (see Blair, 2004). Since it takes many counter observations to result in a posterior that represents a substantial revision from the prior the budget for data collection will have to be large and the chance that an alternate theory will emerge is small.<sup>17</sup> As a consequence, the value of additional information is very low since it has only a minimal impact on the assessed probability of the event. This argument emphasizes the difficulty inherent in preventing single terrorist events. I note, again, that the ideal scenario would have had the U.S. correctly predict the attack and take steps to prevent it. But, in retrospect, the costs of the invasion of Iraq, including loss of life, are now at least equal to the costs of the attacks of 9/11.

What is more germane to the present discussion is that such Bayesian updating demonstrates the dangers associated with top-down directives that serve to establish strong priors. With, for example, a strong prior that Iraq possessed weapons of mass destruction the updating associated with new intelligence would be slow. It would take many observations of conflicting data to

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<sup>17</sup> Blair reports on several numerical exercises, which show the adjustment path for different sets of priors and error rates on new information. Blair applied the reasoning to the difficulty of predicting terrorist attacks such as occurred on 9/11. The issue is that with normal levels of priors of such an event it would take many dozens of (consistent) observations of new information to raise the posterior probability to a level that would make taking action against the perceived threat a sensible (cost-justified) strategy.

result in an assessment that Iraq did not, in fact, possess such weapons and that an invasion was not an appropriate strategy at the present time as Iraq did not pose an imminent threat.

#### d) Malfeasance Arising from Internal Competition

Within a hierarchical organization the reliance on promotion ladders or bonus payments introduces competition via rank order tournaments. Even absent such explicit relative payoffs, the possibility of preferred assignments will provide some form of rank order rewards for performance.<sup>18</sup> A recent and significant line of research regarding malfeasance in tournament settings involves the exploration of “influence activities”: behavior that arises when workers can influence the choice of superiors regarding who is promoted or otherwise rewarded in an organization through actions which are non-productive, ranging from ingratiation to bribery and sabotage of competitors (Milgrom and Roberts, 1988; Prendergast and Topel, 1996; Kim et al., 2002; and Chen, 2003). Such behavior is costly to the organization because it dulls a worker’s incentives to exert productive effort to win the tournament. The malfeasance I discuss here differs from influence activities because it does not derive from an agency conflict (i.e., the fact that the individual making decisions about whom to promote or otherwise reward benefits from the behavior at the expense of the organization).

Rather, “malfeasance” here will take the form of confirmation of the position of the agency through the reporting and analysis of information that is **not** incremental to the existing information but presenting it as new (augmented) information. Such competition will reduce the true value of the organization output but will be viewed positively unless the fact that the information is of no value is detected via an external audit and this result is made public.

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<sup>18</sup> Indeed, within the intelligence organizations the choice of assignments and locations may be one of the more powerful motivators since there are many highly undesirable assignments available.

Within the internal organization I focus on the incentives generated by a rank order tournament compensation scheme (such as promotion ladders) for two reasons. First, competing for promotion, bonuses, or other rewards is perhaps the most ubiquitous incentive mechanism within organizations, and second, tournaments have the characteristic that players' incentives to "cheat" depends not on the absolute gain from doing so but on the advantage cheating provides *relative to* competitors. Therefore, in an evenly matched tournament individuals can face a strong incentive to cheat even if doing so achieves only a small absolute output gain if this gain is sufficient to significantly increase their probability of winning. The opportunities for such malfeasance that arise in the intelligence organization may result in higher levels of incorrect intelligence and/or more frequent misreporting as divisions compete to produce the analysis (and information) desired by the most senior office (e.g., the President).

Let  $x$  represent the agency's socially optimal level of intelligence (measured as a threat assessment) which we would consider as the "best guess" given available information. Let  $z$  represent the information (threat assessment) that is optimal (at the agency level) to report to the senior administration in the intelligence network. What is optimal here is determined by what the agency perceives is the objective of the senior administration. Depending on the priors of the senior administration we can have  $z > x$ ,  $z < x$ , or  $z = x$ .

Assume that the intelligence network is composed of  $N$  divisions, each of which has a designated manager with the responsibility of reporting the intelligence information (e.g., threat assessment) for his division to the senior administration. Let  $\hat{z}_i$  represent the threat assessment reported by the  $i^{th}$  division manager (where the hat denotes an estimate). We denote the true (and socially optimal) threat assessment for division  $i$  as  $\hat{x}_i$ . The agency chief reports the agency level threat assessment to the top-level agents as required for the daily briefing report. In order

to focus on the effect of division manager-level (and also by agency-level) decision-making, we assume that the agency chief reports  $\hat{z} = \text{average } \hat{z}_i$  as its input to the daily briefing report.<sup>19</sup>

By considering the information acquisition and analysis decisions of lower-level intelligence agents, the organization form introduces several opportunities for malfeasance. Even if the top-level bureaucrat wishes to report all intelligence information truthfully, malfeasance on the part of division managers may prevent him from doing so. Managers are said to be engaging in malfeasance or cheating if they overstate the reliability of the information and analysis conducted by their branch and/or fail to report contrary information.<sup>20</sup> Either action results in an overstatement of the threat level.

#### e) Malfeasance Arising from External Competition

Competition will exist across individual agencies within the intelligence industry when each agency perceives that its resources (budget, personnel, facilities) and/or influence will be enhanced by how its performance is compared with the other agencies.

The degree of external competition is the result of the implementation game designed by the top-level agent to whom the (potentially) competing bureaus report. It can be shown that the higher-level actors, perhaps political sponsors, can implement the level of competition they desire (Bagnoli and McKee, 1991). Faced with two individual agencies supplying the same output, the top level administration can design the incentive structure to induce either competition or cooperation across the individual agencies. Cooperation would entail producing information and analysis that confirms that produced by the other agency while competition would entail producing a different assessment from the information and analysis. Simply setting

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<sup>19</sup> The focus on the average here arises from the fact that the common threat is assumed by the top-down approach.

<sup>20</sup> In truth, the top-level administration may wish to be uninformed of the malfeasance since this provides “plausible deniability”.



up a budget game in which the agency shown *ex post* to be more correct may be sufficient to induce competition in the intelligence market (see Bagnoli and McKee, 1991).

### III. Some Evidence of Intelligence Failures Leading to the Invasion of Iraq

Given the nature of the institutional setting, there are little available data. What we have at this time is a record of a series of events and decisions based on the intelligence community assessments of the risks posed by Iraq. Only some of these are observable and I use these events to evaluate the arguments made above. Further, we have the WMD Commission report released in March of 2005, which provides some record (redacted subject to security issues) of the decisions and assessments.

At issue with the bottom-up approach is that it does not explain the coordinated intelligence errors we observed following 9/11. That is, a bottom-up approach would be characterized by observations of multiple (competing) arguments as each agent tried to advance his or her position by coming up with a unique output. In a bottom-up environment, competition will lead to differentiation. In a top-down environment, competition will lead to higher levels of output of the product desired at the top – convergence to a mean assessment.

I noted above that an organizing theory is required to analyze the mass of data collected by the intelligence community. For example, if the intelligence agencies are directed to monitor certain classes of communication, this directive is based on a theory that the persons or types of messages being monitored represent a threat and, even more so, that plans will be detected through monitoring these lines of communication. The same type of organizing theory that Jacob and Levitt used to detect cheating among public school teachers will be required here.

An observation consistent with the top-down argument is the recent shift in the U.S. relationship with allies. The current plan has been articulated as being to construct “mission-

specific” coalitions rather than to rely on traditional alliances (e.g., NATO and NORAD).

Specific, formal, alliances would serve as a constraint on behavior by making it necessary that the consistent group of countries arrive at the same assessment of threats. This constraint can be avoided if a country adopts a flexible approach to alliance formation. While some trust may be inherent in such a series of one-shot games, it is unlikely to be as effective a constraint over time. Such a major policy shift can hardly have been a bottom-up proposition. What this buys the US administration is agreement on intelligence reports from the countries wishing to be included in the current coalition.<sup>21</sup>

As I have noted, rejection of contrary evidence or advice is also consistent with the top down argument. Here we have some support from statements of Paul Wolfowitz to Congress in 2003. In arguing against Shinseki’s assessment of the troops required to secure Iraq (approximately 350,000 vs. the 135,000 the Administration argued) Wolfowitz maintained that Iraq would be an easier task than that confronted in Bosnia. Wolfowitz argued that Iraq did not have the history of ethnic divisions that characterized Bosnia. Evidently Dr. Wolfowitz had forgotten about the Kurds and the historic divisions between the Shiite and Sunni.<sup>22</sup> Recent evidence suggests that the latter divisions are being used to organize insurgency, even if it is not the cause. The Kurds continue to press for independence. The upshot is that far less domestic support is forthcoming in Iraq than Wolfowitz asserted would arise. In fact, it would appear that the historic factions are using the current situation as an opportunity to press their various claims and some might assess that Iraq could be heading toward a civil war. Here the cue from the top to the lower echelons resulted in not collecting and reporting on such opposing data.

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<sup>21</sup> This led some analysts to refer to the coalition supporting the invasion of Iraq as the “coalition of the coerced.”

<sup>22</sup> Wolfowitz holds a Ph.D. in political science from the University of Chicago and was previously the Dean of the School for Advanced International Studies (SAIS) at Johns Hopkins University. It should be noted that the U.S. had enforced a “no fly” zone to protect the Kurds in the period following the 1991 Gulf War. Awareness of the problem is highly unlikely. See Schmitt (2003).

A further instance of rejection of contrary information apparently occurred in the context of the supposed mobile biological weapons laboratories cited by Colin Powell in his testimony to the Senate. According to rank and file CIA personnel, the intelligence agents doubted the veracity of the information regarding these labs and had removed the section from Powell's briefing notes. When Powell testified, the text had been restored and when President Bush spoke on the issue, the information related was embellished further (see Warrick, 2006).

An institutional feature that conceals the source of the information is the result of top-level decisions (this is a policy decision since its role is to limit competition). As Bagnoli and McKee show, the political sponsor can implement the degree of competition desired. Thus, an observation that the individual agencies and sub-agencies are required by policy or rule to conceal the source of the information is evidence of administration's desire to control the eventual interpretation of the accumulated intelligence by limiting competition across agencies or departments.<sup>23</sup>

The WMD Commission notes that the failures were due to analytical shortcomings as "analysts were too wedded to their assumptions about Saddam's intentions." (p. 3). The Commission argues the result was the collection of too little data. However, if the organizing theory is not refuted by the data on hand, what incentive does the organization have to proceed to collect more data? For reasons argued above, it will take many counter observations in order to exert a meaningful change in the prior assessments of the agency management. In short, the assumptions regarding Saddam's intentions became the organizing theory for the data.

A key criticism made by the WMD Commission of the U.S. intelligence sector (noted by G&P) is the fact that intelligence data that are, in fact, not independent observations are treated as such because the institutional setting is designed to conceal the information regarding the

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<sup>23</sup> Although, it could be argued that such rules protect sources from unintentional leaks of their identity.

source of the information. Such institutional design is a policy decision made at the top levels. Implication of such policy is that the data appear to be more precise (smaller variance) than it actually has. The WMD makes this point (p14) when they argue that the Presidential Daily Briefings (PDBs) were characterized by their “drumbeat of repetition” which “...left an impression of many corroborating reports where in fact there were very few sources.” We saw in the previous section how a decision maker with an agenda could use such increased precision in the “data”. Recall, from the discussion of Figure 1, that the true value (within the acceptable CI) was not above the target value and so the planned action could not be justified with the available data.

The decision to conceal the true names of sources may be sound for technical reasons but there are “workarounds” that could be employed and that surely must have occurred to intelligence supervisors in the past. That these have not been employed must be taken to be an explicit policy decision. If the fact that the information has only been repeated rather than is a new observation is known to only the most senior administrators then the “information” can be used in a manner that advances the agenda of the administrator.

An interesting response of the US was to disband the Iraqi military, leaving thousands of career military personnel unemployed. Retaining these personnel was an option and an intelligence question that should have been addressed was whether this should have been done. The cost of not retaining them is that the potential base of an established force is not available and, perhaps more importantly, there are now a large number of trained soldiers that are unhappy with the current administration who have little connection with the new administration and are potentially available to be recruited by the insurgents. On the other hand, the assessment may have been that these personnel would have been disruptive to the establishment of a new regime.

However, this decision seems to be at odds with the well-known dictum, “keep your friends close and your enemies closer.” In other words, it isn’t clear that there was any potential gain to the policy decision to disband the Iraqi military.

What about alternate behavioral hypotheses of intelligence failures? Consider the position advanced by G&P that the failures were due to a bottom-up organizational failure. If such were the case, we would expect to observe competing data and analyses being offered by the individuals within the organizations. While there may have been such opinions voiced at the lower levels (and there is some evidence of this), the information presented to the Congress and the people of the U.S. (and the world) by U.S. intelligence agencies was of a consistent story of Iraq’s buildup of WMD. It would appear that whatever competition may have been engendered among the various intelligence agencies resulted in the reporting of only corroborating evidence. While product homogeneity may be the result of perfect competition it is not consistent with markets in which individual “sellers” attempt to gain positional advantage. Such markets will produce a homogeneous product when there is a monopsony demander and said monopsonist has defined the product characteristics prior to its production. Thus, the intelligence market would be expected to produce heterogeneous intelligence information or at least analyses of the information. And, a bottom-up failure would not have produced the uniformity of opinion that characterized the PDB.<sup>24</sup>

One of the major intelligence failures associated with the invasion of Iraq was the extreme underestimate of the costs of the war in Iraq (Bilmes and Stiglitz, 2006). Despite counter

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<sup>24</sup> There is a view that argues that since the bureau “outlast” the political sponsor the bureau can impose its objectives. This ignores the inherent competition in the organization. For the bureau to persist in its objective requires that all of the agents within the bureau agree to not compete by providing the political sponsor what she wants. This is a prisoner’s dilemma game – each agent has an incentive to cheat on the agreement in order to obtain a positional advantage. The agreement may be enforceable if there is sufficient trust within each layer in the bureau (see Breton and Wintrobe (1982) for a discussion of the relative effects of horizontal and vertical trust). Otherwise, such enforcement is difficult. Once an agent has been promoted (rewarded by the superior), the rules within the public service make it very difficult to punish defectors in the future.

estimates from the CBO, the Administration argued that war would cost between \$50 and \$60 billion. Wolfowitz argued that Iraq could “really finance its own reconstruction.” Evidently the economic intelligence was no better than the assessments of the presence of WMD. At the time of the war, Iraq was facing considerable debt and the lengthy period of economic sanctions following the 1991 Gulf War had resulted in considerable economic slowdown. Bilmes and Stiglitz argue that postponing the war might have allowed for a more thorough assessment of the costs (as well as the existence of WMD). Despite Rumsfeld’s famous response that “you go to war with the army you have not the one you would like to have,” the fact is that the timing was really a policy decision as was the commitment of resources to the war. As Bilmes and Stiglitz note, the Administration has “explicitly tried to fight the war on the cheap,” by limiting the troop levels, and shortchanging equipment and body armor. In fact, the decision to rely heavily on troops drawn from the National Guard and the Reserves also lowered the budgetary cost of the war since the pay rates are lower for these troops than for the regular forces.

#### IV. Policy and Institutional Remedies

G&P call for a new agency structure. Indeed Arrow (1974) notes that the administration of President Franklin Delano Roosevelt (FDR) established new bureaus to undertake the newly conceived social policy functions under the New Deal. Existing organizations have a code (short hand communication) that defines the information they collect. This code is defined from the top of the organization since this is the layer that must, by definition, process the most information and so must rely on a code in order to economize on effort. As Arrow notes, adding functions to an organization is impeded by the existence of a code within the organization. If the new function does not fit the existing code it cannot easily be accommodated. However, a new

intelligence organization will continue to receive its mission statement from the highest level in the Administration. A newly created organization is most likely to “buy in” to the Administration’s position since it owes its very existence to the Administration. In the same way that FDR’s New Deal programs required the newly created organizations to adopt the New Deal ideology, any newly created intelligence organization will adopt its Administration’s ideology.<sup>25</sup>

Another policy suggestion is to implement a requirement to tag (identify the source) information. This is clearly a top-level policy issue since it would place the source at risk. Under the current setting, the identity of the source of intelligence information is concealed except at the highest levels. Who would have known that all information re WMD was from a single source? Who would have had the clearances necessary to obtain this information?

Since the malfeasance we observed in the recent intelligence failures appears to have its roots in competition within and across bureaus it may seem that elimination or suppression of such competition would reduce the extent of the malfeasance. However, it would appear that we can never have zero competition. Absent some form of competition, the superior in the subordinate – superior relationship will be unable to motivate the subordinate. Recall that inherent in the bureaucratic organization is the inability of a superior to make spot exchanges with the subordinate in order to obtain effort. Even if we restrict the domain of competition to non-monetary items (job assignments, preferred vacation schedules, etc) the superior will find it essential to maintain some form of competition among the subordinates reporting to her.

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<sup>25</sup> The newly created Dept. of Homeland Security (DHS) is clearly consistent with this view. The director of DHS has strongly supported the Bush administration. The reward for such loyalty has been a significant expansion in resources through placing FEMA under the DHS director.

Turning to the issue of malfeasance at the division leader level, consider the conventional solution to internal malfeasance – division audits.<sup>26</sup> An “audit” of tournament behavior occurs with probability  $\eta$ , and if an audit occurs all players who cheated are discovered to have done so. Here  $\eta$  represents the intensity of monitoring activity undertaken by the tournament sponsor. If a player is found to have cheated he faces two possible types of sanctions. A cheating player is disqualified from winning the tournament and receives the payoff associated with finishing last. However, the player may face additional “outside” penalty in excess of any compensation at stake in the tournament. Outside penalties represent such factors as a negative reputation arising from being found to have cheated. Let  $r$  represent the outside penalty imposed on a player caught cheating. The contestant with the highest output who is eligible to win (i.e., not caught cheating) receives payoff  $w_1$ , those who do not win but are not caught cheating receive  $w_2$ , and a player caught cheating receives  $w_2 - r$ . Let  $s$  represent the payoff spread,  $w_1 - w_2$ .

As Gilpatric (2005) shows, the propensity to cheat is increasing in the prize spread and the number of contestants. Cheating is decreasing in  $\eta$  and cheating is reduced as the external penalty  $r$  is increased. The intuition is fairly straightforward. The expected return to cheating increases as the size of the prize differential increases. This can be damped by higher audit frequency for two reasons. First, even without the penalty, being disqualified results in a lower payoff. Second, with higher audit probabilities there is an increasing chance to win by default as the remaining contestants are caught and disqualified. An external penalty may be applied since this would allow lower frequency of audits and may economize on audit resources. Alm and McKee (2004) demonstrate that an agency with limited resources can increase compliance through the use of large penalties imposed on the most egregious transgressor and can economize

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<sup>26</sup> This section summarizes arguments made in Evans, Gilpatric, McKee and Vossler (2005) and see particularly Gilpatric (2005) for a full development of the theory.



on auditing costs by adopting a conditional audit based on deviation from the average behavior of the group.

Consider a special case of the model in which three contestants compete in a rank-order tournament. Contestants play only the second stage of the game in which they choose whether or not to “cheat”. Players choose a distribution of output to report from two distributions, a “high” distribution and a “low” distribution. Cheating entails choosing the high distribution. Evans et al (2005) report the results of a set of laboratory experiments designed to test the predictions of the model in this stylized form. Their experimental data report that cheating falls as the audit probability increases and that the imposition of an outside penalty (beyond losing the tournament) reduces cheating as well.<sup>27</sup> These effects are consistent with the predictions of the model and suggest that the intelligence system could be improved via regular performance audits. And, this is the usual policy call (see Posner, 2006). However, the nature of the “business” suggests that audits will be difficult to undertake and we may not like some of the consequences. Specifically, in the intelligence sector, the fact that whether the information is true or false is not known with certainty makes it very difficult to audit division intelligence reports. It is not sufficient to audit, the review process must also detect malfeasance when it occurs. Imperfections in the audit process will have the effect of lowering effective audit rate and, thus, increasing the level of malfeasance in the tournament for any given objective audit rate.

Another policy suggestion is the use of “tagging” of the information with an identifier so that agents are aware that the information they are looking at is not “new” but is a repetition of already reported information. This has been opposed within the intelligence community. In general, each source is developed by an individual agent and is viewed as proprietary.

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<sup>27</sup> Evans et al did not investigate the effects of increasing the prize spread.

Solutions based on reducing external competition, such as mandating information sharing, will also likely fail here. McKee (1988) describes an empirical case study that shows that monolithic organizations simply substitute internal competition for the absence of external competition as per Breton and Wintrobe (1982). A policy solution aimed at reducing competition among intelligence agencies by, say, requiring integration into a single monolithic agency will have little or no impact since the single agency ultimately would report to exactly as many Administrations as does the current structure of multiple agencies, one. Hence, internal competition to provide the information consistent with the theory advanced by the Administration will simply replicate the current competition among agencies.

Would a more frequent assessment of the information improve the process? Probably not. First, the veracity of the information is often only known after a lengthy lag. Second, such audits will consume resources meant for collection and processing of new information. Third, this job is likely not attractive and so will not be of interest of the more qualified persons.

To this last point, the quality of the analysts is not the issue. The personnel currently in place are undoubtedly highly qualified. The issue that is argued here is that the institutional structure (the set of incentives) is not designed to encourage the promulgation of alternative theories of terrorist activities. The analysts do not control their own budgets and so are unable to commit the resources to data collection and analysis to evaluate alternative theories. Further, as I have argued, the incentives do not favor such independent thought.

So, why do good people maintain their affiliation with the organization? First, it is the only game. Second, there is the remote chance that the individual may be able to influence policy. Ever hopeful, highly qualified individuals continue to be attracted to the intelligence sector in their respective countries.

## V. Conclusions and Post-election Post Script

The story of intelligence analysis continues to unfold. At this point in time I am able to draw two lines of conclusions. First, the intelligence failures inherent in the WMD assessment and the invasion of Iraq were due to top down factors. The organizational design provides incentives for the agents in the lower levels of the bureau to compete by providing information and assessments that are desired by the upper levels of the bureau. As the quotation at the beginning shows, in the context of a different bureau, most agencies are called upon to provide information that is supportive of the position taken by senior administration. In the case of rising gasoline prices, President Bush is reluctant to eliminate the tax incentives his administration conferred upon the oil industry, so the message to the appropriate agency is to find no evidence of price manipulation by the industry.

Second, it is not clear how to fix this institutional structure. Placing FEMA under DHS may reduce the effectiveness of the agency responsible for disaster recovery while allowing DHS to absorb a substantial fraction of the FEMA budget without requiring Congress to approve this reallocation. After the terrorist attack, the world looks a lot like it would after a major natural disaster.<sup>28</sup> Thus, it would be useful to have FEMA, the agency with some experience in this arena, controlling the allocation of resources rather than having FEMA's resources under the control of another agency.

Moving from a reliance on formal alliances to mission-specific alliances removes potential checks and balances on the evaluation/interpretation of intelligence information.

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<sup>28</sup> At the most basic level, the recent flooding of New Orleans (following hurricane Katrina) could have been caused by a terrorist attack or a hurricane or an earthquake. The hurricane was likely a "best case" scenario for preparation and response in that we had several days warning and studies commissioned by FEMA showing the potential for such damage.

The conclusions I reach are not encouraging. It is indeed, impossible to construct a neutral hierarchy in the sense that all organizations will derive their direction and focus from the top. Thus, intelligence will be manipulated through selective data collection and selective data analysis. Given the intangible nature of the output, and the necessary secrecy under which the intelligence agencies operate, it is difficult for those holding opposing views to challenge – there is little of no competition of the sort that will lead to opposing views. What is the payoff to presenting opposing views?

Many of the “failures” of the organization derive from the inevitable competition for resources (promotions, assignments, personnel) inherent in any hierarchical institution. It is the informal hierarchy rather than the formal hierarchy that affects the information aggregation, analysis, and evaluation.<sup>29</sup> Colin Powell on April 28, 2006 stated that he had argued for the use of a larger force in Iraq. Yet, despite his position (Secretary of State) and prior military experience his opinion was apparently ignored by the Administration. Assuming he did make such recommendation, this suggests that Powell really was “out of the loop”. If he believed the intelligence he reported regarding mobile bio-weapons labs he had less information than other members of the senior administration and, despite his command experience, his recommendation regarding the size of the force necessary to complete the mission was ignored.

Were the intelligence failures leading to the invasion of Iraq unique to the Bush Administration? Probably not. As I have argued, failures characterized in the WMD Report as “groupthink” are, in fact, the result of organization design that emphasizes the use of the budget to set the agenda (resource allocation), that depends on an organizing theory to drive the data

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<sup>29</sup> It has become popular for the press to lay the blame at the feet of Donald Rumsfeld. This is overly simplistic and likely wrong. While the considerable attacks on Rumsfeld raged on at the time of this writing, I note that he continued to be strongly supported by President Bush. Rumsfeld enjoyed this support because he was providing an output the Bush desires. Thus, replacing Rumsfeld would be expected to have little impact on the position taken by the current administration. And, we now have an empirical observation of this effect.

collection and evaluation, and emphasizes competition within and between agencies through the use of rank order tournaments to award promotions and superior assignments. These are general conditions in most bureaucratic structures. Certain characteristics of the Bush administration may have exacerbated the problem. Anecdotal evidence suggests that this administration is particularly unwilling to entertain opposing views and this makes lower level agents within the intelligence organization unwilling to proffer alternative theories of the evidence, alternative scenarios, or to even suggest that additional information be obtained. The Bush administration does not employ people with opposing views – there is no one to offer the “devil’s advocate” position. Could we invoke a search algorithm that would encourage the production of information relating opposing views? A more promising model may be to implement the “devil’s advocate” model such as used by Britain’s MI6 and to institutionalize such a unit in which superior opposition would be rewarded through advancement.

What policy remedies could be implemented? Is there an ideal structure that would involve separation of powers? Should intelligence be reported to Congress rather than the Executive? The intelligence community will likely oppose this solution since informing 435 Congressional Representatives (and 100 Senators), as well as their staff personnel, would certainly increase the probability of a leak.

Throughout this paper I have argued that the failure to predict the attacks of 9/11 was unfortunate but does not necessarily constitute the most important intelligence failure. The simple fact is that there are an extremely large number of potential targets in the U.S. and unless we wish to yield a great deal of individual freedoms it is unlikely that we will ever be able to drive the probability of an attack to zero. However, intelligence gathering and analysis that does not correctly inform us of the payoffs and the costs of actions undertaken in *response* to terrorist

actions may lead to costly policy mistakes and is more easily avoided since gathering more independent information is always an option. It is this latter class of intelligence failures that constitute the more egregious examples and demonstrate the role of the signals provided by the upper level administration.

The November 2006 election has changed the political landscape and the results we have already seen are those the above analysis would predict. Secretary Rumsfeld has resigned. Without the complete control provided by a Republican House and Senate, President Bush must appear to be changing policies regarding Iraq and can no longer implement the original agenda. A new Secretary of Defense has been appointed and the strategy regarding Iraq will be reviewed in light of the current situation. The actual policies will change; the constraints have been altered.

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