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# Managing Analysis

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## Managing Analysis

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### Abstract

*The Intelligence profession requires effective management to function properly and professional discourse highlights the changing nature of intelligence work. Highlighted “failures” are linked to organisational structures and ethos, and proposals to address the problems include discussion of human and organisational factors with recommendations that address the issues. However, optimising the intelligence process may not be a simple case of applying management techniques as the work relies substantially on individual endeavour. Innovative management techniques are needed and these should be grounded in recognising the peculiar nature of analysis and the skill set required.*

*Keywords Intelligence cycle, intelligence analysis, management, training, selection*

### INTRODUCTION

Intelligence as a discipline has ‘a very rich spy literature that stretches from Buchan’s *Hannay* to *Le Carré’s Smiley*.’ (Robertson, 1999, p230) and personal memoirs such as Gehlen (1972), Copeland (1974), Mathams (1982), Wright (1987) and Jones (1998) support histories that include Kahn (1996), Urban (2001) and Garnett (2002) which give context to professional discourse such as Robertson (1999), Heuer (1999), Shukman (2000) and Cooper (2005) among others.

The ‘Intelligence Cycle’ comprises ‘direction, collection, collation/analysis and dissemination’ and highlights the cyclic nature where direction depends on previously disseminated intelligence. Inappropriate decisions based on intelligence may be due to many reasons outside the intelligence cycle and include personal, organisational and political matters.

Heuer (1999) addresses human aspects of intelligence analysis with recommendations to improve the quality of the analyst’s output and Cooper (2005) addresses organisational matters affecting intelligence analysts and users. Both address the selection and training of the analyst and make recommendations to improve the quality of the product.

While the recommendations are considered appropriate and well presented there are some concerns not explicitly addressed.

### INTELLIGENCE IN CONTEXT

#### Intelligence in History

Decision-makers have employed agents to discover and report necessary information to guide decisions, for example, Moses used spies (Num 13.16-27); SunTzu advised on employing spies (Hanzhang, 1987, pp. 126-127); Walsingham directed Tudor intelligence operations (Kahn, 1996); Wellesley employed agents including partisans (Urban, 2001).

War may result from both internal and external politics (Rapoport, 1976, p.118; Smith, 2005, p.58) and requires intelligence<sup>1</sup> based on information. Von Clausewitz suggests that information in war is contradictory, false or doubtful (Rapoport, 1976, p.162) and continues ‘*Lastly, the great uncertainty of all data in war is a peculiar difficulty...*’ (ibid. p.189) which foreshadows the problems of intelligence analysis.

In the ‘Information Age’ with the concomitant ‘Revolution in Military Affairs’ (RMA) the provision of adequate and relevant intelligence remains a problem. Leahy suggests ‘*four elements: technological change,*

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<sup>1</sup> Intelligence – from the Latin ‘Intellegere – to understand, perceive or realise’

*systems development, operational innovation, and organisational adaptation that together produce large gains in military effectiveness'* (Leahy, 1995, p.19)

Industrialised conflict required national resource organisation typified by the 1798 'Levee en masse' (Macksey and Woodhouse, 1991, p. 85) where large-scale conscription created armies of hundreds of thousands supported by a large proportion of the national means. Administration of such organisations exceeded individual endeavour, and colleges for military professional education (1802 onward) evolved (Macksey and Woodhouse, 1991, p.107) which developed specialised training leading to a permanent 'General Staff' to manage firstly, the details of turning orders into actions (Corrigan, 2004, p. 208) and secondly, preparing contingency plans. Staff work includes intelligence (Jomini, 1971, p. 254) and this was not restricted to an opponent or an immediate action but all possible players or eventualities.

Short notice demand for specialist knowledge is not uncommon in military history where, during World War 1, the British army expanded to fight a major European land campaign. Logistic management required a civilian railway manager be recruited to optimise British military railway operations in France (Corrigan, 2004, p. 317). A successful engineering business manager organised underground engineering that ultimately required millions of labour-hours (Barton, Doyle and Vandewalle, 2004, p. 57); and recruited civilian specialists and academic geologists (Barton et al., 2004, p. 72-73).

While armies downsized in peacetime, spying continued and took advantage of increased radio use with specialised global monitoring facilities (Pfennigwerth, 2006; Macksey, 2003) enabling substantial progress toward intelligence goals with application to conflict. (Kahn, 1996) Other initiatives included a register of scientific resources to enable efficient wartime mobilisation and the skills of many professionals were readily turned to intelligence activities such as Jones [physics] (Jones, 1998), Montagu [law] (Montagu, 1977), Delmer [journalism](Garnett, 2002) and Cotton [aerial photography] (Watson, 2002).

Civilian skills were used extensively with agents in occupied countries gathering intelligence and performing sabotage (Foot, 1984) though there were communications difficulties (Marks, 1998) compounded by the problems of recruiting, training and employing suitable agents (Buckmaster,1958) in the face of aggressive counter intelligence operations.

Scientific intelligence relied on human and technical sources to uncover scientific advances relevant to military operations (Jones, 1998) and many wartime organisations used non-traditional, civilian practices to meet operational needs, for example, a merchant banker initially administered the Special Operations Executive (SOE), and the American Office of Strategic Services was headed by a lawyer, though both had previous military experience. Both these organisations were absorbed into mainstream organisations post-war with associated losses of experienced staff.

The 'Cold War' altered intelligence service structures as they sought to deal with the massive Soviet Bloc opponent and global intelligence gathering used substantial resources. Johnson suggests that 60 to 75 percent of American intelligence resources, civil and military were directed toward the USSR (Shukman, 2000, p. 238) and used in the air (Burrows, 2001), sea (Sontag, Drew and Drew, 2000) and land (Connor, 1998). This massive investment in time, money and resources created structures that have been perceived as wanting in recent years.

### **Intelligence analysis**

Ongoing investment in military information technologies has generated a 'revolution in military affairs' which permits political direction at lower command levels that may alter system behaviour. For example, the 'Boyd Loop' comprising 'Observe, Orient, Decide, Act' models a closed feedback loop where the acquisition, assimilation, assessment supports action. Sensitivity to changes and latency are parameters noted in feedback systems and Gosling addresses the application of control theory to people systems (Gosling, 1994). While data exists in the hierarchy 'Data, Information, Knowledge, Wisdom' (Post and Anderson, 2000, p. 7), it may align closely with some aspects of the intelligence cycle (Figure 1).

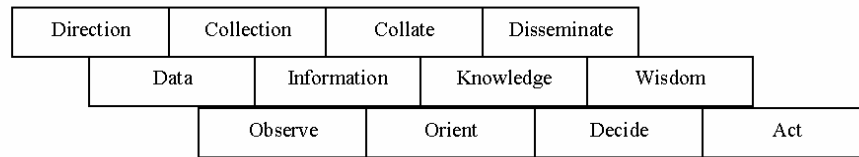


Figure 1 Bond diagram

The 'Intelligence Cycle' could also be treated as an 'industry' and the 'Warsaw Pact' fixation demanded expansion, career specialisation and structured management as the career officer took over from the amateur.

An approximation of 'industrial' may be found in early industrial management writers such as Fayol (management functions), Taylor with 'scientific management' (time economy) and Gilbreth with 'motion economy'.

While mass production can be very efficient, it may respond slowly to changes and 'de-skilling' or over-specialisation is entailed where cost-benefit decisions are a primary driver. Additionally, 'Just-In-Time' methods reduce available resources and inventory for economic reasons and increase reliance on other organisations. Rapidly occurring changes may expose limitations in structures and demand action within time constraints.

For example, currently, in Australia the shortages of skilled tradespeople may have resulted from many reasons that include poor perceptions of trade careers and short-term economies dictated by the economic bottom line. Temporary solutions have included 'head-hunting' skilled workers with increasing wages and conditions, expediting training and re-engineering processes to reduce the reliance on skilled workers and these practices can be less than optimal in the long term.

Recruiting skilled workers does not increase available resource levels and key staff may be enticed away; shortening training does not increase skill where experience on the job is needed; mass-producing 'skilled' workers may introduce employment instability and contribute to loss of experience through dissatisfaction and restructuring.

When the Soviet Union failed, restructuring the intelligence services was necessary and Heathcote suggests that the modern intelligence officer would now be thinking of '*crime, weapons of mass destruction, economics, industrial intelligence...*' (Shukman, 2000, p. 264). With the appearance of the non-nation group (NonNG), with international activities ranging from activism to terrorism, the threats are diverse and the pressures on intelligence services include wider coverage, faster response, more depth and perhaps, in the light of successful terrorist attacks, less tolerance of error.

### Intelligence Failures

Notional intelligence 'failures' are apparently a lack of timely, relevant information on which to base a decision on matters of importance and have prompted discussion by practitioners that has yielded some insight into personal and organisational methods.

Richards J. Heuer, Jr. in '*Psychology of Intelligence Analysis*' addresses the mental machinery, tools for thinking and cognitive biases in analysis then concludes with recommendations for improving intelligence analysis. His conclusions discuss analytical processes for analysts and support for analysis management. The similarity to 'scientific method' in academic application is noted, though he mentions '*The realities of bureaucratic life produce strong pressures for conformity*' (Heuer, 1999, p93) and the time for mature reflection, discussion and analysis may be limited by rapidly changing events.

Cooper (2005) discussing '*curing analytical pathologies*' cites Heuer and suggests guidelines and principles, and further topics for attention. He suggests that the target is not the previous '*denied areas*' but '*denied minds*' (p40). His intent is to '*focus on deep cultural and process factors that affect intelligence efforts rather than on the superficial symptoms and manifestations of the failures.*' (Cooper, 2005, p. v) and includes understanding the differences between user and analyst to ensure agreement between them as the basis of an ongoing compact. His intended audience includes the '*makers and keepers of the analytical culture p.2*' who are most likely to effect the necessary changes and to benefit from them. Of note, Leahy (Leahy, 1995) seems to anticipate Cooper.

From analysis of the environment, Cooper *'disagrees with organisational changes as a cure to serious shortcomings'* (Cooper, 2005, pp. 11-13). The key observations include *'serious strategic intelligence failures'* resulted in *'reduced user confidence'*, problems are interrelated and the inappropriate *'collection paradigm'* allied to outdated analysis is based on a *'craft'* based approach relying on *'apprenticeship'* that is now inappropriate.

Conclusions include *'recognition and acceptance of seriousness'* of problems caused by practices and processes resulting in *'extremely dysfunctional analytic pathologies and pervasive failure'*.

*'Fundamentally different approaches'* in the complete Intelligence Cycle are required based on *'accurate diagnosis of the root causes of problems'* to *'create more effective "proof" and validation methods in constructing its knowledge'* and these changes need to be *'implemented within each agency and across the community'*.

Cooper suggests that more guidelines and tighter management are no substitute for analytic expertise, deep understanding, and self-imposed professional discipline from formal education and training complemented by experienced mentors and cautions that *'Neither curiosity nor expertise in an individual can be restored by directives from the top.'* . Cooper suggests it should come from an appropriate recruiting profile, effective training, continual mentoring at all levels, with time to learn and practice the craft of analysis individually and collaboratively and constraining the *'tyranny of taskings'* that prevents the analysts from exercising curiosity and pondering more than the immediate answer.

The essential components are:

1. a revamped analytic process
2. an entirely revised process for recruiting, educating, training and ensuring the professional development of analysts (including the essential aspect of mentoring)
3. effective mechanisms for interactions between intelligence analysts and users
4. a proper process for "proof", validation, and review of analytic products and services
5. an institutionalised lessons learned process
6. meaningful processes for collaboration within the intelligence community

Cooper summarises *'Furthermore, although implementing each of these processes separately would produce significant improvements in the quality of analysis, a more effective approach would be to mount a broad-gauged, systematic, and integrated effort to deal with the entire analysis process'*.

While this analysis may detect deficiencies or inefficiencies, it may yet lead to treatment of symptoms rather than causes.

### **Commentary on Cooper**

Cooper suggests that the intelligence analysis problems may be addressed by rigorous re-engineering of the processes and deprecates the craft-based approach and advocates academic structures as a means of managing analytical tasks.

Of interest, craft guilds predated the first universities and maintained trade standards and regulated employment (standard of living) by controlling admission. Essentially, trade training relied on an apprentice formally, legally bound to serve the master who had responsibility for the training, employment and assessment. Incremental instruction (mentoring) produced a trade practitioner able to perform meaningful work with minimal supervision who progressed by demonstrated competence in assessable work.

Apprenticeship completion meant acceptance as a *'journeyman'* (neither apprentice nor master) performing independent work and, generally, the journeyman sought work with different masters to develop new skills along with real-world experience. A journeyman could mentor but not keep apprentices until a masterpiece, accepted by existing *'Masters'* evidenced sufficient skill.

As scholars organised into *'schools'* the students who demonstrated competence were awarded degrees which led to post-graduate degrees. Only higher degree holders could teach undergraduates, manage learning establishments and develop professional standards.

While the term *'profession'* originated in the *'holy orders'* that a medieval scholar could attain, the term now has wider, secular meaning. Jackson and Powell suggest a *'profession'* shows four characteristics, firstly, the work is skilled and specialised, substantially mental and requiring theoretical and practical training. Secondly, the practitioner is committed to certain moral principles that go beyond normal standards of honesty and service.

Thirdly, a collective organisation that regulates admission and upholds standards by setting examinations, codes of conduct and ethics. Fourthly, has a high status in the community. (Jackson and Powell, 1982, pp. 1-2)

Of interest, Cooper, does not explicitly mention academic curios such as tenure and 'publish or perish'. Tenure brought academic stability where an appointee could be dismissed for holding views unpopular with power holders, yet a dissenting view was not always a bar to further service or promotion. However, in practice, academic activities are carried out in human societies and are subject to many non-academic pressures.

Informal publication of academic work through collegial (peer) review permits knowledgeable comment and while formal publication outside the collegial group may demonstrate excellence, its use in measuring performance may be contentious as the drive to publish regularly or prematurely may affect quality.

In page 44, under 'management and oversight' there is the statement '*There should be toleration of first errors, but no tolerance for repeating the same mistake; being wrong will happen, but failing to learn should be subject to sanction.*'

The definition of an 'error' and appropriate 'sanction' will be subjective and while peer review may trap egregious errors, the complexities of intelligence analysis subject to volatile user requirements may not be readily subject to review. Assessment may be inadvisably applied to match a desired point of view or with complex problems, perhaps neither first nor second answer is close. Ultimately, the '*toleration of first errors*' is subject to personal value assessments outside analyst control as a supervisor may control resource allocation and promotion, and a user may control departmental resource allocation.

Regardless of Cooper's proposals, the desire to add '*discipline*' to analytical processes and avoid repetition of previous errors may inculcate new error avoidance schemes that expedite careers and, eventually, return to 'corporate risk avoidance' and monolithic behaviour typified in 'get with the program' and 'don't rock the boat'.

#### Scientific Method

Mathams, writing of Australian Intelligence analysis, states that assessment is '*... no simple or routine activity but a highly skilled and subtle task.*' (Mathams, 1982, p.8) and Jones, citing his 1947 report, cautions '*You must remember that Intelligence depends more than anything else on individual minds and individual courage.*' (Jones, 1998, pp.523-524) His recommendations for a post-war scientific intelligence service were not taken up and Aldrich is critical of the resulting tri-service organisation and suggests that the damage was only corrected in the mid-sixties (Aldrich, 2002, p.220).

The 'Scientific Method' based on observation, hypothesis, experiment and analysis is used to generate reproducible knowledge (Chalmers, 1982, p.1) and replaced adherence to accepted masters such as Aristotle when insuperable limitations were discovered, yet the freedom to question established '*wisdom*' was opposed by vested interests such as the church.

While lauded by practitioners for its efficiency in generating new knowledge, it is subject to criticisms by Kuhn and Popper among others, (Chalmers, 1982, pp. 89-90) however, it is suggested that the 'scientific method' merely formalised what was long understood about real-world problems and is widely used by many people with neither trade nor academic qualifications.

#### Staffing

Given another 'Pearl Harbour' event requiring the rapid acquisition of capabilities, regardless of the physical resources needed, staffing will remain a problem and while recruited staff develop skill and experience, 'industrialisation' of intelligence may not be efficacious in rapidly changing environments.

The 'industrial' approach has been found wanting in less than monolithic circumstances and 'economies of scale' or procedural options may force a problem into inappropriate forms.

The 'competition' approach relies on rewards sufficient to convince people to strive, 'Money' is a popular motivation, yet it may not be a panacea and 'Status' only works for those who value position. Competing organisations striving to produce the best product for the customer rely on incentive yet competition may be deleterious to the product and the organisation.

The 'Hero' approach requires the appearance of a uniquely gifted individual to take control and solve the problems by decree. The 'Hero' is a powerful myth that may be poor substance and rare to manage analytical intelligence.

The 'serendipity' approach relies on highly motivated and uniquely qualified individuals to find the most effective use of their skills and this may not be reliable.

The 'Olympic' approach relies on selecting candidates at an early age and rigorously training them over years and this may falter on the difficulties in selecting suitable persons for development as analysts.

The 'monastic' or 'Castalia' (Hesse) approach to nurture skills may produce many skills that are not relevant to the overall theme.

The 'preparatory' approach has costs and time scales, for example, in academic environments, where a researcher preparing a thesis may work more than 80 hours per week for months, the costs of creating skilled researchers are immense and regardless of organisational structure or method cannot readily be expedited.

Regardless of the methods of locating staff, it is apparent that the personal motivation of scientists, engineers and researchers, in or out of uniform, resulted in long hours willingly undertaken.

#### Management

Civilian managers concerned with promotion and remuneration may direct corporate efforts into aggrandisement and control information flow to their superiors that may affect the operational goals. Alternately, civilian managers who support the 'workers' may be perceived as not effectively supporting their superiors and attract sanctions that may include loss of pay, position or reputation.

Military management has its own problems and Dixon (1976), discussing the '*psychology of military incompetence*' looks at the mindset errors that may affect autocratic leaders. This may suggest shortcomings in long-term professional experience though the military have many years of experience in this matter coupled with appropriate assessment schemes based on effective training and experience regimes.

Boisot recognised that there are varying forms of organisation: fief, clan, bureaucracy and market and suggests that '*R&D departments are managed like fiefs*' (Boisot, 1987, p. 117) where the leader leads by innate skill and experience in the work. He notes that fief structures are rarely institutionalised and tend to mutate into bureaucracies (Boisot, 1987, pp. 95-97). He suggests that a production department is likely to be a bureaucracy where structure and planning are required and a manager uses hierarchical knowledge and position to control subordinates.

Recalling Jones' aphorism on minds and courage, the development of suitable intelligence assets may require changes that Heuer, Cooper and others may not have envisaged.

#### SUMMARY

Both Heuer and Cooper address the problem in a logical and effective manner but may have consciously limited the scope to the achievable. While the recommendations may be implemented with celerity, the people involved may be subject to great turmoil and may pose the major problem.

What is apparent is that the problem of developing and maintaining an intelligence service requires many skills including organisation. The analyst is just a part of the intelligence cycle and the analysis is sufficiently complex to require skill and experience with appropriate support. These problems have been analysed and discussed by many though the problem may be not so much the organisational culture but the greater national culture.

As a simplistic observation, American culture may appear to the outsider as competitive, exploitative and goal oriented, and if these are pervasive characteristics then the problems may be more deeply seated than Heuer and Cooper suggest. While competition may be seen in a positive light in business operations, it may not be always appropriate and the notion that 'value' is positively linked to reduced costs and increased output requires examination.

Supervision relying on inappropriate metrics exerts subtle pressures on the analyst and the analysis. For example, inappropriate feedback circuits may create problems such as slow response ('over-damping') and failure to reach a steady state promptly ('oscillation') (Gosling, 1994) and additionally, any task not contributing to numeric goals or unmeasurable with approved methods may not be officially undertaken.

Cooper's conclusions and recommendations are accepted yet the amount of change necessary in individuals already in the system and the effects of the changes on both them and the system may be difficult to predict.

There is a strong sense of 'now the problem is defined and a solution proposed it should be rigorously implemented without delay'. This appears at odds with the suggestions of more reflective methods requiring personal dedication and understanding. Implementation lacking in-depth understanding of requirements may result in adherence to form rather than function to the detriment of the work.

Allowing for necessary bureaucratic practices, flexible implementation of management structures may include incentive and motivation methods; 'journeyman' work where analysts are able to learn from other masters (secondment); part-time work (similar to a defence reserve) where experienced persons are retained and suitable individuals pre-trained; 'sabbatical' leave for study purposes among others. Many of these may already exist though the list is not prescriptive.

## **CONCLUSION**

Inappropriate management structures, corporate practices and the 'tyranny of tasking' contribute to unsatisfactory intelligence analysis. While changes in direction or target nature may require intelligence process changes, intelligence analysis is a specialised and human skill that may not be available in desired quantities where required. The deprecated 'apprenticeship' structures remain appropriate subject to removal of impediments to practitioner development and effective management of intelligence analysis. Recruitment and development of suitable persons must address many issues and may include atypical management structures to manage variable workloads. Common initial training either in-house or in a tertiary setting may permit analysts to move to other areas as required. Analytical culture within a team may be very difficult to maintain when the focus is on production and meeting user expectations. Understanding of the strengths and weaknesses of intelligence analysis is essential to all participants and acceptable behaviour needs to be codified.

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