Special edition:
Security in prisons

Speaking truth to power: a review of the field of Intelligence Analysis

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Introduction

As a formal academic subject, Intelligence Studies has been something of a creature of the post-Cold War world, when previously heavily secret issues could start to be discussed more freely, and subsequent inquiries and investigations began to release ever more sensitive data into the public domain. It did not really gain significant traction as a formal subject other than in the historical studies realm, however, until the beginning of the twenty-first century and the 9/11 attacks that punctuated the change in the security landscape. Since then, it has become the subject of a small number of dedicated research centres — mostly, it has to be said, in the Anglo-Saxon world — and has increasingly featured as modules on Politics and Security Studies programmes across a wide range of universities[1]. On publishing, a good handful of peer-reviewed English-language academic journals are now dedicated to the study of intelligence, and all enjoy a very healthy number of submissions from diverse international contributors at the time of writing.

Within the subject, the study of intelligence analysis as an activity is one of several strands. It is also worth noting that the subject has tended to coalesce around two separate communities of interest and sets of considerations. On the one hand is the traditional, state-centric discussion of intelligence as a core element of machinery and policy in the national security state. This community fits comfortably with the traditional and established subjects of Politics and International Relations. In another part of the forest sits a much more practical and professional-focused community, in which recent and current intelligence practitioners feature significantly.

In this paper, I review the state of the nation of Intelligence Studies in terms of its shape and development, and the position occupied within it by considerations of intelligence analysis as a tradecraft. The general message is that this area of the subject remains vibrant and active, and is developing in interesting ways with the advent of massively expanding data and open-source intelligence opportunities. At the same time, there are different strands to the relevant scholarly and practitioner communities and these are not always as integrated as they could be. It is also the case that the practical application of intelligence analysis tradecraft tools and techniques has not always been evaluated as to its effectiveness, and could usefully be subjected to further research.

Learning from mistakes and failures — the traditional way

It is generally the case that the traditional academic approach to intelligence studies and to the question of intelligence analysis has been strongly grounded in the wider context of International Relations. Considerations of strategic foreign policy at times of state-centred military threat have often been the starting point for discussion. The Cold War itself was, of course, the archetypal state-centred military and diplomatic confrontation in modern history, and it is no surprise that the whole modern intelligence architecture in many parts of the globe was developed and shaped around its considerations. It is also the case that the lure of Cold War spy stories were a powerful draw for those generally interested in the secret world. Academically, many, such as Marrin have conceptualised intelligence studies as 'an academic complement to the practice of national security'[2]; and have long called for it to be taken seriously as a properly recognised academic discipline to rival established pursuits such as International Relations.

Intelligence Studies as an organised subject of academic discussion probably dates back to the 1980s, when a dedicated panel section was established at the large and prestigious International Studies Association (ISA) annual symposium. At around the same time the two hitherto pre-eminent peer-reviewed English

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1. In the UK, for example, significant centres in which Intelligence Studies can be studied in part or as a whole subject include Buckingham, Brunel, Aberystwyth, Leicester, Kings College London and Salford universities. Similar centres and courses are available in the US, Canada and Australia, but are few and far between beyond those countries.
2. Marrin, S. (2014). Improving Intelligence Studies as an Academic Discipline. *Intelligence and National Security*, 31(2), 1-14. P.1

language academic journals in the field, *Intelligence and National Security* and the *International Journal of Intelligence and Counterintelligence* were launched. The impetus for their parallel development on either side of the Atlantic was purportedly increased awareness of the activities of the intelligence services following the Pike and Church inquiries in the 1970s in the US[3]. This reflects the initial concentration both on what can be learnt from major strategic intelligence failures, and on the development of a critical view of the intelligence services in terms of being a sometimes problematic organ of state.

Writing at a similar time, Richard Betts noted that case studies of intelligence failures were very numerous in the academic literature[4]. As Wesley Wark subsequently noted in his analysis of the study of espionage in the early 1990s, the study of intelligence failures and strategic shocks provided an intellectual link between the traditional discipline of International Relations, and the emerging field of Intelligence Studies[5]. This, in turn, allowed largely Realist theorists such as Wohlstetter[6], Handel[7], Jervis[8], and the aforementioned Betts[9] to loom large in discussion, taking twentieth century case studies of strategic shock and surprise such as Pearl Harbor and the Yom Kippur War to frame thinking about how and why analysis goes wrong at the strategic level.

As Gill and Phythian[10] noted, the post-Cold War era saw much academic interest in inquiries into intelligence failures affecting the major episodes of conflict in the new era, such as the case for going into war in Iraq in 2003, and issues pertaining to terrorist attacks in Western cities including those of 11 September, 2001. The establishment of the Intelligence and Security Committee of parliament in the UK in 1993, and its subsequent detailed post-mortem examinations of major strategic intelligence failures (not to mention those of parallel government inquiries across the Anglo-Saxon world in particular) have provided rich new fodder for scholars and researchers of national security and the role that intelligence analysis plays within it.

In the UK, the Butler Inquiry into intelligence on Weapons of Mass Destruction[11] was comprehensive and detailed in its discussion of analytical factors that were causing problems in the post-Cold War era of new security threats and challenges. The report was influential in the sense that it led to the establishment of the new post of Professional Head of Intelligence Analysis (PHIA) within the Cabinet Office, with the aim of working across the disparate elements of the intelligence community and looking for opportunities to 'professionalise' intelligence practice. How successful it has been in so doing in subsequent years is difficult to assess from the outside. In the US, the establishment of the Office of the Director of National Intelligence (ODNI) at the same time had a similar remit to work across the broad and complex US intelligence community and to think about the analytical professionalisation of those who worked within it (among its general coordination and strategic assessment objectives). In Australia, the Foreign Intelligence Coordination Committee (FICC) that flowed from the post-Iraq Flood inquiry report of 2004 reflected similar thinking and objectives.

In some ways these developments were as much about the 'governance/policy' project, as Gill and Phythian described it[12] as they were about the business of analysis. The shock of Iraq for the Western intelligence coalition was as much about a suspected politicisation of the system, as it was about the capabilities of the analysts working within it. One can have the best analysts in the world, but if the machinery of processing intelligence judgements from analyst to policy-maker is flawed, then all can be for nought. The subsequent reorganisations were also partly about a recognition that the intelligence community itself can be a very political entity in terms

> the Butler Inquiry … was comprehensive and detailed in its discussion of analytical factors that were causing problems

3.   Van Puyvelde, D. and Curtis, S. (2016). 'Standing on the shoulders of giants': diversity and scholarship in Intelligence Studies. *Intelligence and National Security*, 31(7), 1040-1054. P.1040
4.   Betts, R.K. (1978). Analysis, War and Decision: Why Intelligence Failures are Inevitable. *World Politics*, 31(1), 61-89. P.61
5.   Wark, W. (1993). The Study of Espionage: Past, Present, Future? *Intelligence and National Security*, 8(3), 1-13. P.5
6.   Wohlstetter, R. (1962). *Pearl Harbor: Warning and Decision*. Stanford CA, Stanford University Press
7.   Handel, M. (1980). *The Diplomacy of Surprise: Hitler, Nixon, Sadat*. Cambridge MA, Center for International Affairs, Harvard University
8.   Jervis, R. (1976). *Perceptions and Misperceptions in International Politics*. Princeton NJ, Princeton University Press
9.   See n.4
10.   Gill, P. and Phythian, M. (2016). *What is Intelligence Studies? International Journal of Intelligence, Security and Public Affairs*, 18(1), 5-19.
11.   Butler, The Rt. Hon. Lord. (2004). *Review of Intelligence on Weapons of Mass Destruction*. Report of a Committee of Privacy Counsellors. HC 898. London, TSO
12.   See n.10, p.10

of rivalries and equities between members. Shifting the leadership of the community in the US from the DCI to the supposedly more independent DNI, for example, inevitably contained as much politics as practicality in its thinking. These are the many reasons why a critical study of intelligence machinery remains a critical component of Intelligence Studies, and why it arguably has to be considered as hand-in-glove with questions of analytical capability.

At the same time, there were valid observations in all of these inquiries, and other contemporaneous reports such as the 9/11 Commission Report in the US, about the adjusted considerations that twenty-first century intelligence analysts needed to have when considering the new threat landscape. The reports also provided a language for analysts to speak about the challenges and the potential solutions. Concepts such as institutional mindsets (or 'groupthink'), mirror-imaging, and a 'lack of imagination' when confronted with new threat actors such as international terrorists[13] all came more extensively into the parlance of analysts and scholars alike. They also helped to establish frameworks and structures for a myriad of analytical training programmes, whether aimed at newly installed intelligence agency staff, or at students and scholars involved with the subject as an academic pursuit.

> …intelligence analysis within academic Intelligence Studies is heavily dominated by a state-centred, foreign policy and national security approach to the challenges.

It could also be said to be the case that the renewed emphasis on the skills development of analysts was following the path set by early pioneers such as Sherman Kent on the foundation of the CIA after the Second World War. A historian by training, Kent, whose name was posthumously applied to the CIA's central intelligence school, was a strong advocate of a scientific method for conducting intelligence analysis[14]. This included such notions as structured and forensic post-mortem analyses of intelligence failures to establish where the points of analytical failure had been. One of Kent's key disciples in the CIA during the Cold War was Richards J Heuer Jr, who worked for a period under James Angleton in the agency's counterintelligence section during the 'wilderness of mirrors' period of paranoia about Soviet deception and counter-espionage in the early Cold War. Heuer was himself a former academic of distinction in the area of philosophy, and became increasingly interested in psychology and its impact on the business of intelligence. I will return to Heuer's work below, but in the early period, one of his lasting legacies was a notion developed during the infamous Yuri Nosenko affair in the early 1960s, with which he was closely involved, that deception analysis had to be subjected to a structured, scientific approach, lest it fall prey to unstructured biases and prejudices[15]. This led to the development of the Analysis of Competing Hypotheses (ACH) technique, the authorship of which is claimed by Heuer in his 1999 book, the *Psychology of Intelligence Analysis*[16]. ACH synthesises the experience of early Cold War deception analysis and applies a basic Popperian scientific approach, to create the single best-known and probably most widely-used structured analytical technique of the modern era.

It is the case, therefore, that one strand of discussion about intelligence analysis within academic Intelligence Studies is heavily dominated by a state-centred, foreign policy and national security approach to the challenges. In this way, the traditional approach enjoys heavy and detailed overlaps with mainstream International Relations as a subject, and with related disciplines such as Foreign Policy Analysis and Security Studies. The focus here is as much on institutions as it is on individual analysts, in the sense of how intelligence organisations and agencies manage the business of intelligence gathering and interpretation, and how governmental machineries best deliver national security assessments.

There is nothing wrong with this approach per se, but it does carry some limitations. The main problem is that the field of view is somewhat limited to state intelligence agencies and their agendas. This means that wider members of the intelligence community, such as law enforcement and commercial intelligence organisations, receive lower billing in the thinking than the Western, Cold War behemoths of state intelligence.

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13. National Commission on Terrorist Attacks Upon the United States (2004). *The 9/11 Commission Report*. Washington DC, Government Printing Office. P.344
14. Davies in Heuer, R.J. Jr (1999). *Psychology of Intelligence Analysis*. Langley VA, Center for the Study of Intelligence. See Richards, J. (2010). *The Art and Science of Intelligence Analysis*. Oxford, Oxford University Press. P.122
15. Heuer, R.J. Jr. (1987). Nosenko: Five Paths to Judgment. *Studies in Intelligence*, 31(3), 71-101
16. See n.14

It also means that the focus can tend to be rather limited to the Anglo-Saxon worldview, and particularly to that of dominant actors such as the CIA and its veterans. Again, the suggestion is not that there is anything necessarily wrong with this per se or that there is not a great deal that can be learnt from these approaches: Kent, Heuer and the numerous other analysts who worked with and for them were undoubtedly highly significant thought-leaders in the whole domain of how to do intelligence analysis more effectively. However, as Lord Butler and others have told us, limited worldviews and institutional mindsets can sometimes lead to cognitive traps in our analysis. If we always look at a problem from one starting point, there could be analytical risks.

The wider Intelligence Community

For the reasons identified above, it is worth considering developments in the debate about intelligence analysis in the wider community beyond the traditional, state-centred intelligence agencies. Many of the debates and discussions in this wider community are led by a notable involvement of current and recent intelligence practitioners, and particularly (though not exclusively) in the law enforcement and military domains. Significant knowledge communities include the International Association for Intelligence Educators (IAFIE), which was established in 2004 following a colloquium at Mercyhurst College in Erie, Pennsylvania[17]. The emphasis of this group is much more about the professionalisation of intelligence practitioners through the sharing of best practice and networking amongst those in and around the business, than necessarily about academic reflections on the politics and governance of intelligence within states. With the exception of pandemic-hit 2020, the group has successfully held vibrant and well-attended annual conferences in the US, Canada, Australia and in Europe.

Other major communities of note include the Society of Competitive Intelligence Professionals (SCIP),

which, like IAFIE, is primarily a knowledge hub and networking organisation, but aimed at those working in commercial, rather than national security roles. The objectives of SCIP claim to be to 'increase members' impact through advancing ethical best practices, offering training and education in areas critical to professional effectiveness, curating innovative ideas, and cultivating a powerful peer community'[18]. Again, the strong practical focus of the group is very evident. Academic reflections on the nature of competitive intelligence occasionally appear[19], such as discussions about the effectiveness of the Economic Espionage Act in the US[20], but are relatively few and far between. Given the rising significance politically of economic and industrial espionage, there may be opportunities for greater cross-pollination of these communities and debates.

Particularly in action-oriented domains such as the military, much of the thinking in recent times has been to connect the challenge of intelligence analysis with wider considerations of understanding and responding to increasingly complex, dynamic and asymmetric threats. In this way, not only are accurate intelligence assessments crucial, but so are the speed and efficiency with which these can be promulgated to those taking kinetic action on the ground: essentially the 'decision cycle' process. Thus, concepts such as the OODA Loop (Observe, Orient, Decide, Act) designed by the US Air Force Colonel John Boyd, have been developed and elaborated in increasingly complex ways, such as in Svendsen's recent paradigm of 'intelligence engineering'[21]. Within these models, intelligence (sometimes rendered as 'information' or even 'knowledge') is a critical component, but it is important to note that the models are as much about business processes as about the art of intelligence analysis itself[22]. This is an issue, and, indeed, a problem to a certain extent in other realms such as law enforcement.

Indeed, policing is a key area in which significant developments of both a practical and academic nature have unfolded in the area of intelligence analysis in

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17. https://www.iafie.org/page/About_Us
18. https://www.scip.org/page/About-Us
19. Colakoglu. T. (2011). The Problematic of Competitive Intelligence: How to Evaluate and Develop Competitive Intelligence? *Procedia Social and Behavioral Sciences*, 24, 1615-1623
20. Horowitz, R. (2001). SCIP policy analysis: Competitive Intelligence and the Economic Espionage Act. *Competitive Intelligence Review*, 10(3), 84-89
21. Svendsen, A.D.M. (2017) *Intelligence Engineering: Operating Beyond the Conventional*. Lanham MD, Rowman and Littlefield
22. Odinga, F.P.B. (2007). *Science, Strategy and War: The Strategic Theory of John Boyd*. Abingdon, Routledge. P.235

recent years. A significant driver was the rise of personal and social media data within the context of Information and Computing Technology (ICT), which offered opportunities both for better intelligence on targets, and for more efficient and 'intelligent' targeting of scarce resources in an age of public sector stringency. As early as the 1970s, there was recognition that new sources of 'information' would become critical to the business of law enforcement, as reflected in a statement by the National Advisory Commission on Criminal Justice and Goals in the US in 1973, calling on every law enforcement agency to 'immediately establish and maintain the capability to gather and evaluate information and to disseminate intelligence in a manner that protects every individual's right to privacy while it curtails organized crime and public disorder'[23]. Interestingly, there was recognition here of potential public anxiety over the extent of data surveillance; a point to which I will return.

By the 1990s, the New York Police Department was developing a new 'goal-oriented, strategic management process that uses information technology, operational strategy, and managerial accountability to guide police operations': a model which became known as Compstat[24]. Compstat was essentially a 'problem-oriented' mode of policing, in which analysis of data and 'science' were applied both to understanding the picture of crime in a particular area, and focusing resources and priorities on the key crimes which stood out as having the biggest impact on the community. There was a significant paradigm-shift here from traditional neighbourhood or community policing, which was driven by what officers on the ground encountered and addressed reactively. Around the same time in Canada, the Royal Canadian Mounted Police (RCMP) established a model called CAPRA (Clients, Analysis, Partnerships, Response, Assessment). This was driven by a similar recognition that 'community policing' was not necessarily very effective

in penetrating serious criminal or terrorist groups; a fact starkly demonstrated by the failure to anticipate the 1985 bombing of an Air India plane departing Vancouver by Sikh extremists[25]. Here again was a process of attempting to learn from intelligence failures, but in the law enforcement rather than state security realm.

In the UK, 'intelligence-led policing' (ILP) emerged at a similar time, initially driven by Kent constabulary, and later replicated in a number of other areas[26]. Initially called the Kent Policing Model, ILP was similar to Compstat in reflecting a strategic need to drive down crime statistics at a time when budgets were being squeezed. The model in Kent involved a combination of analysing statistics to develop a better geospatial view of where the key crimes were occurring, and prioritising incoming calls for service to more efficiently target the priority areas where the best dividends would be scored in reducing crime statistics[27].

Intellectually, the objectives of Problem-Oriented Policing (POP) and ILP would appear to be the same in the sense that they involve a conceptual refocusing of the analysis of security threat away from traditional and established processes, and towards a more holistic and dynamic view of the situation, using sophisticated data analysis as the fuel for the machine. Such thinking was reflected in Robert Clark's influential 'target-centric analysis' paradigm[28], in which a call is made to see each challenge from the problem outwards, rather than from the traditional top-down approach of tackling issues in accordance with bureaucratic process norms and stove-piped organisations. Particular reference is made to the traditional 'Intelligence Cycle' process model, believed to be originally established in the 1970s[29], which, claimed Clark, had inappropriately taken on 'almost theological' significance among its users whereby 'no-one questions its validity'[30]. Instead, he argued, in a post-Cold War world of greater dynamism,

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23. DoJ 2005 US Department of Justice, Bureau of Justice Assistance (2005). *Intelligence-Led Policing: The New Intelligence Architecture*. Washington DC, BJA paper NCJ 210681
24. Ibid p.57
25. De Lint, W. (2006). Intelligence in Policing and Security: Reflections on Scholarship. *Policing and Society*, 16(1), 1-6. P.2
26. Ratcliffe, J. (2008). *Intelligence-Led Policing*. Cullompton, Willan
27. Richards (2010) see n.14. P.80
28. Clark, R.M. (2007). *Intelligence Analysis: A Target-Centric Approach*. Washington DC, CQ Press
29. Quarmby, N. and Young, L.J. (2010). *Managing Intelligence: The Art of Influence*. Sydney, The Federation Press. P.13
30. Clark (2007) see n.28. P.11

unpredictability and the knowledge economy, it seemed to make sense to see each problem as unique and potentially different from those encountered before. The formulaic and production-line epistemology of the Intelligence Cycle was described by Hulnick[31] as 'not a very good description of the ways in which the intelligence process works'.

So far, so good in terms of fitting with the injunctions of inquiries in which a lacking imagination and institutional mindsets were seen as problems that had bedevilled intelligence analysts. However, experience has shown in the UK and almost certainly in other jurisdictions that the management benefits of ILP in terms of reducing costs, targeting dwindling resources and generating beneficial metrics, have been prioritised higher than the analytical uplift implied by a shift to ILP. In a sense, the 'intelligence' part of Intelligence-Led Policing may have been neglected. In his extensive analysis of ILP, typified in the UK by the initially much-heralded National Intelligence Model (NIM), James suggests that attempts to 'shift the policing paradigm, usually have fallen far short'[32]. Again, organisational and governance problems are seen to have a big effect on the ability to improve analytical capability, in the shape of a 'resistance to change' amongst the established detectives who are fearful that data analysis is not proper policing[33]; and further problems in the lacking profile of intelligence work within the police hierarchy and woefully poor database and computing capabilities at the local level[34]. The NIM has proved itself to be more of a management model, than one focused on upskilling analysts (in some ways, a corollary to the OODA Loop in military thinking). On the training front, an empirical survey of policing intelligence practitioners in the UK found that a significant proportion found their intelligence training to be lacking or too 'rudimentary', perhaps reflecting the 'low status' accorded to intelligence work within

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the organisation[35]. There is also perhaps further evidence here that the PHIA model has not yet had much discernible impact on the law enforcement parts of the intelligence community in promulgating best practice, if that were its intention.

Intelligence analysis tradecraft

All of these institutional and organisational issues aside, the discussion of intelligence analysis tradecraft has been a healthy area of debate and publication in recent years. Indeed, it is probably fair to say that a small industry has grown up around teaching and training analytical techniques and approaches. Much of this has been driven by current or recent practitioners of intelligence, who have been able to bring their experience to bear on what does and does not work well in solving today's security challenges.

At this stage, it is worth returning to the personality of Richards J Heuer Jr, and to recognise his highly significant presence within the practice of developing intelligence analysis approaches. The aforementioned ACH technique, claimed Heuer, 'helps an analyst overcome, or at least minimize, some of the cognitive limitations that make prescient intelligence analysis so difficult to achieve'[36]. Here we see recognition of the pivotal role that mainstream psychology has played within debates about intelligence analysis, and particularly that promulgated by Daniel Kahneman and his close friend and colleague, Amos Tversky[37]. Central to the discussion are notions of 'cognitive biases' in judgement and decision-making. These are assumed to occur in all cultures and walks of life, but have a particularly important impact for those making significant assessments based on sometimes problematic information: a good description of the role of the intelligence analyst. Heuer himself acknowledges that his work on cognitive biases was very significantly informed by the work of Kahneman and Tversky, and

31. Hulnick, A.S. (2006). What's Wrong with the Intelligence Cycle. *Intelligence and National Security*, 21(6), 959-979. P.959.
32. James, A. (2013). *Examining Intelligence-Led Policing: Developments in Research, Policy and Practice*. Basingstoke, Palgrave Macmillan. P.192
33. Ibid p.194
34. Ibid p.194-7
35. James, A., Phythian, M., Wadie, F. and Richards, J. (2017). The Road Not Taken: Understanding Barriers to the Development of Police Intelligence Practice. *International Journal of Intelligence, Security and Public Affairs*, 19(2), 77-91. P.84
36. Heuer (1999) see n.14. P.95
37. Kahneman, D. (2011). *Thinking Fast and Slow*. London, Penguin

particularly their paper, 'Judgement under Uncertainty: Heuristics and Biases', published in the journal Science in 1974[38].

As discussed above, Heuer's lynch-pin ACH model uses classical Western scientific theory as enunciated by Karl Popper[39]. This takes as its basis that perhaps the most pervasive and damaging of all cognitive biases, the 'confirmation bias', is best mitigated by a process of scientific discovery and evaluation that attempts to disprove hypotheses based on available evidence, rather than to seek to prove and favour a naturally favoured hypothesis. This allows the analyst to overcome confirmation bias (that is, a strong tendency to show that the analyst is right about their instinctive judgement of a situation), and to ensure that 'evidence' is properly and objectively assessed in forming a judgement. This approach forms the basis of testing new drugs and vaccines to destruction before they can be released to the public, for example. In the world of intelligence, where information and data may be selective, missing, faulty, and — on occasion — deliberately deceptive, this would seem to be a very valid prescription.

ACH is one of many structured techniques that purportedly help analysts to overcome innate cognitive biases and to ensure a more scientific approach to their analysis. It also allows for uncertainty to be properly assessed in making judgements, and to make sure that the policy and decision-makers know exactly what the analysts are, or are not telling them. In 2010, Heuer and Randolph Pherson collaborated in the publication of 'Structured Analytic Techniques for Intelligence Analysts'[40]. This book, in its third edition at the time of writing, represents a compendium of analysis techniques, some of which Pherson — another veteran of the US intelligence community — had previously published as a 'Handbook of Analytical Techniques'. As well as ACH, these include variations on established techniques such as mind-mapping, brainstorming and red teaming; and new techniques such as 'quadrant crunching' and 'what if?' analysis. The techniques have been supplemented with compendia in which the techniques are applied to case studies of recent intelligence challenge, showing how they could be implemented in practice[41]. Refreshingly, these do not include the rather time-worn cases of major strategic surprise such as Pearl Harbor or the Cuban Missile Crisis; but more recent and specific cases of crime, espionage, and cyber activity.

The language of SATs (Structured Analytic Techniques), as they have become known in the intelligence community, has been developed and adapted by others. The Canadian Association of Security and Intelligence Studies (CASIS), for example, has developed the notion of 'SMATs', or Structured Analytical Models, Approaches and Techniques, to provide the framework for analytical training courses[42]. These include not only the practice of SATs, but also techniques for presentation and communication of the results of the analysis, such as graphical intelligence summaries ('Grintsums') and the 'bottom line up front' (BLUF) technique. Indeed, training and exercising of techniques using simulations of real-world scenarios, which can be used in professional or academic environments alike, have been the subject of a number of recent publications and courses, such as two recent volumes by Lahneman and Arcos[43].

There is, therefore, a considerable amount of discussion, writing and training being undertaken in various parts of the world on how to improve the tradecraft of intelligence analysis, using a framework of cognitive considerations. Much of this is driven by an essentially 'CIA school' of thinking. A question that could be asked is: how effective is this training in improving analytical performance? As a recent study by

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38. Heuer (1999) see n.14; Tversky, A. and Kahneman, D. (1974). Judgment Under Uncertainty: Heuristics and Biases. *Science*, 185(4157), 1124-1131

39. Popper. K. (1935). *Logik der Forschung* (The Logic of Scientific Discovery). Vienna, Verlag von Julius Springer. First English edition published 1959 by Hutchison and Co.

40. Heuer Jr., R.J. and Pherson, R.H. (2010). *Structured Analytic Techniques for Intelligence Analysis*. Washington DC: CQ Press

41. Beebe, S.M. and Pherson, R.H. (2015). *Cases in Intelligence Analysis: Structured Analytic Techniques in Action*. Washington DC, CQ Press

42. https://casisvancouver.ca/smatcourse/

43. Lahneman, W. and Arcos, R. (eds. 2014). *The Art of Intelligence: Exercises, Simulations and Games*. Lanham MD, Rowman and Littlefield; Lahneman, W. and Arcos, R. (eds. 2019). *The Art of Intelligence: More Exercises, Simulations and Games*. Lanham MD, Rowman and Littlefield

Whitesmith[44] highlighted, there has been very little evaluation of whether and how techniques such as ACH actually work in generating better analytical outcomes. In her empirical study of a group of UK-based intelligence analysts, the worrying conclusion was that 'ACH had no impact on belief acquisition and no reducing effect on the occurrence of confirmation bias'[45]. Similarly, a study in the US found that, while use of SATs such as ACH by the intelligence community had increased, especially following the Iraq inquiries of the early 2000s, there appeared to be very little evidence of mechanisms for measuring whether they were effective in delivering improved analytical outcomes[46].

What this may mean is that an ideology of industrialised training of new and existing analysts using the established understanding of cognitive challenges, and a set of formatted structured techniques, are now being undertaken by bureaucracies — especially in the Western world — without too much evaluation as to the effectiveness of the approach. This statement may appear a little uncharitable in that there is clearly a great deal of well-designed and rigorous training and discussion going on with practitioners, much of it commendably using relevant and useful examples of current security threats. It is also the case that such techniques never promised to 'fix' the problems, but merely to raise the awareness and mental agility of analysts. But, from a philosophical point of view, the whole epistemology of the approach is based on a standard, orthodox Western scientific model, and an unquestioning use of that approach may itself be mitigating against challenge and alternative hypotheses, to some degree. In some ways, structure could be said to be a strange bedfellow for creative analysis in uncertain environments. The answer is probably that continual evaluation and challenge needs to be undertaken, especially by current practitioners who are best placed to see how well or otherwise the techniques translate across from the training room to the workplace.

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The internet age

The final piece of the jigsaw is that presaged by the US National Advisory Commission on Criminal Justice and Goals in the early 1970s about the importance of data analysis to the business of intelligence. The authors of that report could barely have anticipated the spectacular and exponential rate at which data availability would grow subsequently, and the opportunities it would offer to intelligence analysis.

There are several dimensions to these developments which are driving and shaping the debate on intelligence analysis. The first is a growing recognition that social media exploitation can and should be a new and important part of intelligence tradecraft. Indeed, Omand, Bartlett and Miller[47] and Dover[48] have contributed usefully to thinking of a whole new strand of tradecraft under the rubric of SOCMINT. It is clear that Big Data exploitation, whether it be of social media or a host of other sources of data, offers tremendous new opportunities for analysing complex networks and possibly even working more proactively in an anticipatory sense to predict threats. At the same time, there are contrary risks in the new landscape. Some of these are to do with adversaries using social media themselves to undermine democratic societies (a notion of the 'weaponization' of social media)[49]; while other concerns relate to the ethical questions of privacy protection in what many critics might characterise as a creeping 'surveillance state'[50].

There seems no doubt that modern intelligence analysis increasingly has to take account of disinformation in all its guises. This is not the first time in history, of course, that propaganda, deception and 'psychological operations' have been used in

44. Whitesmith, M. (2020). *Cognitive Bias in Intelligence Analysis : Testing the Analysis of Competing Hypotheses Method.* Edinburgh, Edinburgh University Press

45. Ibid p.213

46. Artner, S., Given, R.S. and Bruce, J.B. (2016). *Assessing the Value of Structured Analytic Techniques in the U.S. Intelligence Community.* National Defense Research Institute, RAND Corporation. P.1

47. Omand, Sir D., Bartlett, J. and Miller, C. (2012). Introducing Social Media Intelligence (SOCMINT). *Intelligence and National Security*, 27(6), 801-823

48. Dover, R. (2020). SOCMINT: A shifting balance of opportunity. *Intelligence and National Security*, 35(2), 216-232

49. Ibid p.216

50. Richards, J. (2012) Intelligence Dilemma? Contemporary Counter-terrorism in a Liberal Democracy. *Intelligence and National Security*, 27(5), 761-780. P.766

intelligence environments: such phenomena have a long history dating back to the beginnings of mass communication. But the sheer scale of contemporary information environments and the speed and ease with which messages can be spread and consumed, all mean that the modern intelligence analyst needs to have extremely heightened awareness and capability in how to spot and mitigate disinformation and the effect of such phenomena as 'hybrid warfare'[51].

Particularly since 2013, when Edward Snowden's revelations broke about the scale of data surveillance on both sides of the Atlantic, the concerns of civil libertarians in democratic states have increasingly focused on data surveillance techniques and the 'proportionality' of them (to use the parlance of the European Convention on Human Rights). This has led, in turn, to legislative developments, such as the passing of the Investigatory Powers Act (IPA) in the UK in 2016, which attempts to more clearly delineate the roles and remits of intelligence services in this field, and indeed of key stakeholders with whom they work, notably the large communications and internet service provider companies (CSPs and ISPs). The new regulations have not necessarily satisfied the critics: the IPA is commonly known in some quarters as the 'Snooper's Charter'[52]. But at least, perhaps, there is some degree of public debate about what a democratic state should rightly do in the era of Big Data exploitation for national security purposes.

These concerns, of course, are not necessarily immediate issues for intelligence analysts undertaking their mandated duties, since appropriate checks and balances should be in place to ensure properly authorised investigations are taking place. But again, there is a strong argument to say that the contemporary intelligence analyst needs to be fully cognisant of ethical risks and threats in the exploitation of Big Data in pursuit of security outcomes, and these need to shape the thinking, approaches and assessments. It is also the case that the study of ethics

> the modern intelligence analyst needs to have extremely heightened awareness and capability in how to spot and mitigate disinformation and the effect of such phenomena as 'hybrid warfare'.

rightly remains an important element of academic Intelligence Studies.

In the meantime, the explosion of data in the contemporary era means that Open-Source Intelligence (OSINT) is developing an increasingly influential role in the business of intelligence analysis, and challenging the notion that intelligence should be a fundamentally secret affair[53]. Increasingly, organisations outside of the intelligence services themselves are proving themselves to be thought-leaders and pioneers of analytical tradecraft in the complex and challenging world of online information exploitation. Organisations such as Bellingcat, who claimed to have independently exposed the Russian GRU agents at the centre of the 2018 Sergei Skrijpal poisoning using OSINT techniques[54], are likely to become significant actors in the development of analytical tradecraft and best-practice. All elements of the intelligence community will probably do well to partner with such actors in effective ways, or at least to capitalise on their approach.

Conclusions

This review of the evolution of debate and discussion of intelligence analysis has highlighted two distinct communities of interest around the subject. The first community preceded the second in its evolution and has been characterised by a set of discussions and debates driven very much by state-centred concerns arising from the Cold War era. This area of the debate has a close relationship with the traditional academic disciplines of International Relations and Politics, to which it sees Intelligence Studies as an important adjunct, if not an emerging academic discipline in its own right. An analysis of major strategic intelligence failures in areas of foreign policy and military confrontation have driven the thinking about analytical tradecraft and its weaknesses, and the application of traditional academic theories has been a much-used conceptual framework. Intellectually, scholars with a varying degree of relationship with the major Anglo-Saxon intelligence

51. Wither, J.K. (2016). Making sense of Hybrid Warfare. *Connections: The Quarterly Journal*, 15(2), 73-87
52. Mitchell. S. (2013, April 25). Lib Dems block 'snooper's charter'. Retrieved September 20, 2020, from https://www.alphr.com/politics/22986/lib-dems-block-snoopers-charter/
53. Glees, A. (2015). Intelligence Studies, Universities and Security. *British Journal of Educational Studies*, 63/3, 281-310. P.283
54. Bellingcat (2019, June 28). *The GRU Globetrotters: Mission London*. Retrieved September 20, 2019 from https://www.bellingcat.com/news/uk-and-europe/2019/06/28/the-gru-globetrotters-mission-london/

agencies forged in the Second World War and Cold War, headed to a significant degree by the CIA, have tended to set the academic agenda and claimed it to be the rightful shape and form of traditional Intelligence Studies. In the post-Cold War era, this agenda has established a language and framework for thinking about strategic intelligence analysis tradecraft and approaches, with the various governmental inquiries into the 2003 Iraq War debacle proving themselves to be highly influential in framing the contemporary debate.

The second key community is a much more practical and practitioner-focused group, which focuses more on practical applications of intelligence analysis techniques and principles to current security challenges. Military and law enforcement are particularly strong in this community, and, to a lesser extent, other practitioners such as those engaged in business or 'competitive' intelligence.

It is not the case that these communities are entirely distinct and never intersect. There are many colloquia and conferences where elements of both happily come together and discuss the issues, such as the major ISA annual conference. At the same time, there are separate gatherings and sometimes separate discussions that characterise the two groups. In a sense, Intelligence Studies is a classic interdisciplinary concern with multiple connections, sometimes spinning off into International Relations, and sometimes into other disciplines such as Criminology and Psychology.

Despite their differences, there are three factors that intersect across both communities and unite them in certain ways. One is the inescapable link between organisational and governance issues, and the business of analysis. As the Iraq War showed, the first can be as pivotal as the second in causing a major intelligence failure in the system. In policing, models such as the NIM aimed at structuring the new era of advanced data analysis have ended up being more about management of organisations and processes than about honing and improving the analytical function. Considerable problems in integrating high-value intelligence analysis into policing organisations and fully delivering on the erstwhile promises of intelligence-led policing still need to be addressed. At the same time, seeing the analytical function in complete isolation from organisational factors will continue to be a poor prescription for the wider intelligence community.

The second key factor is the way in which social media data and open-source intelligence can and should be integrated into the intelligence function, across the board from tactical to strategic intelligence. In some ways, private analysts outside of the official intelligence community are lighting the way here as well as government analysts themselves, and it is probably the case that this needs to be recognised and acted upon, perhaps in a spirit of more dynamic partnering across and outside of government.

The final key factor is the big pitfall in all domains of settling into a standardised and bureaucratised way of thinking about intelligence analysis and structuring training approaches and techniques in accordance with unquestioned principles of Western scientific method, without necessarily thinking enough about the evaluation and development of those methods to deliver solid and demonstrable security dividends. Further research on how well or otherwise the structured analytic techniques actually work in the contemporary intelligence workplace will continue to be essential in moving towards the objective of developing excellent analysts able to meet the challenges of the twenty-first century.