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**The Case to Widen Defence Acquisition Research
Paradigms**

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Preface & Acknowledgements

Welcome to our Ninth Annual Acquisition Research Symposium! This event is the highlight of the year for the Acquisition Research Program (ARP) here at the Naval Postgraduate School (NPS) because it showcases the findings of recently completed research projects—and that research activity has been prolific! Since the ARP's founding in 2003, over 800 original research reports have been added to the acquisition body of knowledge. We continue to add to that library, located online at www.acquisitionresearch.net, at a rate of roughly 140 reports per year. This activity has engaged researchers at over 60 universities and other institutions, greatly enhancing the diversity of thought brought to bear on the business activities of the DoD.

We generate this level of activity in three ways. First, we solicit research topics from academia and other institutions through an annual Broad Agency Announcement, sponsored by the USD(AT&L). Second, we issue an annual internal call for proposals to seek NPS faculty research supporting the interests of our program sponsors. Finally, we serve as a “broker” to market specific research topics identified by our sponsors to NPS graduate students. This three-pronged approach provides for a rich and broad diversity of scholarly rigor mixed with a good blend of practitioner experience in the field of acquisition. We are grateful to those of you who have contributed to our research program in the past and hope this symposium will spark even more participation.

We encourage you to be active participants at the symposium. Indeed, active participation has been the hallmark of previous symposia. We purposely limit attendance to 350 people to encourage just that. In addition, this forum is unique in its effort to bring scholars and practitioners together around acquisition research that is both relevant in application and rigorous in method. Seldom will you get the opportunity to interact with so many top DoD acquisition officials and acquisition researchers. We encourage dialogue both in the formal panel sessions and in the many opportunities we make available at meals, breaks, and the day-ending socials. Many of our researchers use these occasions to establish new teaming arrangements for future research work. In the words of one senior government official, “I would not miss this symposium for the world as it is the best forum I've found for catching up on acquisition issues and learning from the great presenters.”

We expect affordability to be a major focus at this year's event. It is a central tenet of the DoD's Better Buying Power initiatives, and budget projections indicate it will continue to be important as the nation works its way out of the recession. This suggests that research with a focus on affordability will be of great interest to the DoD leadership in the year to come. Whether you're a practitioner or scholar, we invite you to participate in that research.

We gratefully acknowledge the ongoing support and leadership of our sponsors, whose foresight and vision have assured the continuing success of the ARP:

- Office of the Under Secretary of Defense (Acquisition, Technology, & Logistics)
- Director, Acquisition Career Management, ASN (RD&A)
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James B. Greene Jr.
Rear Admiral, U.S. Navy (Ret.)

Keith F. Snider, PhD
Associate Professor



Panel 4. New Acquisition Paradigms

Wednesday, May 16, 2012	
11:15 a.m. – 12:45 p.m.	<p>Chair: Elliott Branch, Deputy Assistant Secretary of the Navy (Acquisition and Procurement), Office of the Assistant Secretary of the Navy (Research, Development and Acquisition)</p> <p>Discussant: Lenn Vincent, RADM, USN (Ret.), Industry Chair, Defense Acquisition University</p> <p><i>Contracting as a Science</i> David Lamm, <i>Naval Postgraduate School</i></p> <p><i>The Case to Widen Defence Acquisition Research Paradigms</i> Kevin Burgess and David Moore <i>Cranfield University</i></p>

Elliott Branch—Mr. Branch is the executive director for acquisition and logistics management in the Office of the Assistant Secretary of the Navy (Research, Development, and Acquisition). He is the senior career civilian responsible for acquisition, contracting, and logistics policy that governs the operation of the Navy's worldwide, multibillion-dollar acquisition system. Mr. Branch is the principal civilian advisor to the Navy Acquisition Executive for procurement matters and the community leader of the Navy's contracting workforce.

Prior to assuming his current position, Mr. Branch was the first civilian director of contacts at the Naval Sea Systems Command (NAVSEA). In that role, he led one of the largest and most complex procurement organizations in the federal government. As the senior civilian for contracting at NAVSEA, Mr. Branch was responsible for the contractual oversight of the nation's most complex shipbuilding and weapons systems procurement programs. His duties involved the obligation and expenditure of approximately \$20 billion annually.

He is a member of the Senior Executive Service (SES). Members of the SES serve in the key positions just below the top presidential appointees. They are the major link between these appointees and the rest of the federal workforce. SES members operate and oversee nearly every government activity in approximately 75 federal agencies.

Mr. Branch spent time in the private sector, where he specialized in acquisition and project management education, training, and consulting for the federal workforce and its associated contractors. In this role, Mr. Branch was responsible for the design, development, delivery, and maintenance for a wide variety of course material ranging from project management to contract law. Mr. Branch's clients included Computer Sciences Corporation, QSS Group, BAE Systems, the Pension Benefit Guaranty Corporation, and the Departments of Defense, Energy, Justice, and State.

Prior to that, he served as the chief procurement officer for the government of the District of Columbia, where he was the agency head responsible for procurement operations, policy, and for formulating legislative proposals for local and congressional consideration. Mr. Branch led a staff of over 200 employees that supported over 40 city agencies, administered a \$15 million annual operating budget, and oversaw the placement of \$1.5 billion, annually, in city contracts.

Before joining the District government, Mr. Branch held various positions in the SES with the Department of the Navy (DoN). In 1993, he became a member of the SES as the director for the Shipbuilding Contracts Division, at NAVSEA. He next served as executive director for acquisition and business management for the DoN, responsible for policy and oversight of contract operations throughout the entire Navy. While in this position, he also served as project executive officer for



acquisition related business systems. In this role, he was responsible for the formulation and execution of a multi-year effort to transform the Navy's acquisition system from a paper-based system into one that made use of electronic technologies and methods. In this role, Mr. Branch was directly responsible for a portfolio of projects worth more than \$200 million.

Mr. Branch graduated with a Bachelor of Science degree in economics from the University of Pennsylvania and completed the executive program at the University of Virginia Darden School. He has received the Navy Distinguished Civilian Service Medal, the David Packard Excellence in Acquisition Award, the Presidential Rank Award for Meritorious Executive, and the Vice Presidential Hammer Award for Reinventing Government.

Lenn Vincent—RADM Vincent is the industry chair, Defense Acquisition University (DAU). An independent consultant, RADM Vincent uses his defense and industry experience, expertise, and perspective to advise the DAU management team, the OSD, the uniformed Services, and industry on matters relative to contracting, program management, logistics, and supply chain management. As a professor at the DAU, he presents views to foster a more viable and effective defense acquisition management system. An international educator, consultant, dynamic speaker, and respected government and industry leader, he has taught and/or consulted in contract management, capture management, project management, supply chain management, and leadership.

As a vice president at American Management Systems and CACI International, RADM Vincent was responsible for working with senior Department of Defense and industry leaders to build long-term business relationships and to help identify solutions to acquisition, logistics, and financial management challenges. His strategic focus was an initiative to create an integrated digital environment that would extend the DoD's automated procurement systems into industry and into the DoD program management offices, in addition to implementation and training strategies for new products and service.

Prior to entering civilian life, RADM Vincent completed a distinguished career in the United States Navy, serving at both sea and ashore. He has over 30 years of broad based and in-depth leadership and management experience in acquisition, supply chain management, logistics, and financial management.

When he retired on August 1, 1999, at the rank of rear admiral, he was the commandant, Defense Systems Management College (DSMC). While in this position, he began an overhaul of acquisition education to include reform principles and technology-based distance learning.

Prior to leading DSMC, RADM Vincent had served as the logistics, ordnance and fleet supply officer for Commander-in-Chief Pacific Fleet, where he established policy and coordinated logistics requirements to support supply chain operations in the Pacific Fleet and Indian Ocean.

RADM Vincent was the commander of the Defense Contracts Management Agency (DCMA), a diverse worldwide organization of 19,000 people responsible for administration and oversight of over 400,000 contracts valued at \$800 billion. Concurrently, he also served as the senior acquisition executive responsible for procurement policy within the Defense Logistics Agency (DLA).

Some of his other contracting assignments included assistant commander for contracts at the Naval Air Systems Command; commander, Defense Contract Management Command International; commander, Defense Contract Administration Services Region, Los Angeles; contracts director at Navy Inventory Control Point, Mechanicsburg; contracting officer, supervisor of shipbuilding, Bath, ME; and contracts director Navy Supply Center, Puget Sound.

RADM Vincent holds a master's in business administration from George Washington University. He also is a Certified Navy Material and Acquisition Professional, and is DAWIA Level III certified in both Contracting and Logistics.

He is past-president of the National Contract Management Association and served on its board of directors as well as the following boards: Navy League National Capital Council; NDIA Washington DC Chapter; Board of Directors Procurement Round Table; and Board of Visitors, Defense Acquisition University.



The Case to Widen Defence Acquisition Research Paradigms

Kevin Burgess—Burgess is a senior research fellow at the Centre for Defence Acquisition, Defence Academy of the United Kingdom, Cranfield University. His key area of interest is the role played by inter-organizational networks in modern supply chain practices. [k.burgess@cranfield.ac.uk]

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Abstract

The rising importance of acquisition has generated a need to complement this development with a far wider research agenda. Historically, economic and commercial theoretical frameworks have dominated how procurement is conceptualised. While these conceptualisations will remain foundational in terms of measuring outcomes, they offer little by way of understanding the enablers, such as people, that facilitate the achievement of particular outcomes. Recent advances in public procurement practices have been sufficiently profound as to warrant a fundamental re-conceptualisation of what is meant by defence acquisition. In order to achieve a greater understanding of this re-conceptualisation, it will be necessary to both widen the range of topic areas examined and also expand the research paradigms employed. This paper concludes that an expansion in the range of research paradigms employed is necessary in order to better understand, account for, and integrate social science issues into the acquisition body of knowledge.

Introduction

Over the past three decades, many activities traditionally carried out by the military have been outsourced to the privately owned defence industrial base (DIB). This change has seen a movement away from procurement to acquisition. Under procurement, industry's role was limited to the provision of equipment, upgrades, and equipment-focused support services within transactional relationships, and industry's share of the budget focused on the Equipment Programme. Under acquisition, industry's role extended into non-equipment areas, with products and services previously supplied separately now being grouped into larger integrated packages. These new arrangements allowed industry to gain more than the Equipment Programme element of the defence budget. They also resulted in a greater dependence on industry for the design, delivery, maintenance, and on-going support of military assets which, in turn, required moving to a closer and more collaborative working relationship model. More recently, government has implemented many of the recommendations made in reports such as Gray (2009) and Levene (2011), which will result in an even greater outsourcing of activities traditionally handled by the military. The implementation of these successive and profound changes raises the question: Are the traditional research methodologies previously employed to examine procurement phenomena adequate for modern acquisition practices?

Background

The shift from procurement to acquisition was underpinned by two significant global events—the adoption of neoliberalism and the end of the Cold War. At the macro socio-political level, the adoption and implementation of a neoliberal ideology provided a justification and a rationale for greater outsourcing. Neoliberalism argues that free markets are able to deliver goods and services more efficiently than government agencies. This basic tenet led to the conclusion that government needed to change its role by reducing its intervention into the operation of free markets through activities such as deregulation,



privatisation of state-owned enterprises, elimination of international trade restrictions, and tax reforms. These tenets also led to the fundamental belief in a linear relationship which can be basically expressed as follows: the more government work done through markets, the greater the economic efficiencies achieved in the delivery of government services (Steger & Roy, 2010).

In the 1980s, the United Kingdom (UK) government gave expression to neoliberalism through a wide reform programme impacting across all arms of government, known most commonly as New Public Management (NPM) and to a lesser extent as *managerialism*. Events such as the Falklands war in 1982 and the continuation of the Cold War meant that the Ministry of Defence (MoD) was more able than most departments to plea a special case for exemptions from aggressively pursuing NPM reforms. The end of the Cold War in 1989 significantly reduced the perceived risk to national security. The government of the UK, eager to cash in the peace dividend, reduced the MoD's expenditure from 4.2% of gross domestic product (GDP) to 2.6%. In the post-Cold War environment, the government also raised its expectations on the MoD to implement NPM principles in order to save more money.

Another force that gained great momentum under the adoption of neoliberalism was globalisation. "Globalisation's exact meaning will continue to be the subject of debate among those who oppose, support or simply observe it" (Jeffery, 2002, p. 20). There is also considerable debate about when globalisation started and whether or not it is a good thing. For the purposes of this paper, globalisation is characterised by Bhagwati (2004) as the integration of national economies into the international economy through trade, direct foreign investment, capital flows, migration, and the spread of technology. "For better and for worse, globalization has become the most powerful force shaping the world's geopolitical landscape" (Cohen-Tanugi, 2008, p. 2). (See also MacGillivray, 2006; Suter, 2006; Trubek & Santos, 2006.) Globalisation appears to be on a strong upward trajectory. For instance, in 1999, 20% of world output was produced in global markets (\$6 trillion of the \$28 trillion world GDP). By 2029, it is predicted that 80% of the world output will be in global markets, which will represent \$73 trillion of the \$91 trillion world GDP, a twelve-fold increase in thirty years (Harris & Moran, 2000).

From a defence perspective, globalisation poses several challenges. First, it is a challenge to the sovereignty of the nation state—the dominant system established in Europe by the Treaty of Westphalia in 1648. Despite this factor, smaller states in particular are inclined to give up their independence in exchange for perceived greater economic and/or military security. Specific examples of such arrangements include the European Union (EU), the Association of South East Asian Nations (ASEAN), and the North American Free Trade Agreement (NAFTA). Second, globalisation increases risks for governments as they lose their monopsony position and, therefore, their ability to tightly direct defence industries around their own national needs and long-term interests. Capital intensive firms like military suppliers are abandoning reliance on a single market by pursuing global markets. For example, BAE, Britain's largest defence contractor, now obtains 60% of its revenue from the U.S. market. Accessing larger and more lucrative markets, breaking dependence upon a single sovereign governmental customer, defraying the risk posed by foreign competitors in local markets, and accessing both cheaper means of production and a wider range of emerging technologies are some of the reasons suppliers find it attractive to move away from single-nation markets. The net result is that national governments have potentially less control over these firms as they are motivated by shareholder wealth creation and not sovereign loyalty. Third, globalisation creates several challenges around sovereign capability. From a military strategy perspective in terms of securing supply lines, it is



generally more desirable to have as few interdependencies as possible outside of a nation's borders. Fourth, globalisation creates several issues with respect to knowledge management. It has the potential to both increase the risks in terms of ongoing supply chain support and create dependencies which provide the supplier with incentives and opportunities to behave opportunistically. However, when assessed within a neoliberal framework, the risks associated with sourcing from outside one's country are seen to be outweighed by the increased access to new technology, skills, and innovations. Even more critically, it is seen as the most effective means of achieving the primary strategic goal of NPM—*value for money* (VFM).

The VFM concept has considerable conceptual difficulties. For instance, accountants define it differently from economists (Flynn, 2005). Governments, however, tend to use the economic definition which covers not only the cost involved but also the opportunity cost. Under this arrangement it is always difficult to demonstrate how the money used in defence spending could not have delivered better value by spending it elsewhere. Despite conceptual difficulties, VFM has been central to the entire NPM approach across all sectors of national and local government. It became the central and defining focus for how defence and its suppliers should interact. In 2005, the then UK Secretary for Defence, Lord Drayson, made a statement to Parliament when discussing the Defence Industrial Policy that “value for money remains the bedrock of our commercial policy. Competition will remain a major element of that, but it will not be used when other tools, such as partnering, would deliver a better outcome, or where it would impinge on our operational sovereignty. The defence industrial strategy does not signal a move in the direction of protectionism” (Hansard, 2005, col. 1466).

The Secretary for Defence's quote in the previous paragraph illustrates some of the complexities that are involved with the application of NPM principles as applied to defence. Neoliberalism draws on neoclassical economics which, in turn, assume that free, competitive markets are the best way to generate the efficient use of scarce resources. Based on such assumptions, Lord Drayson's reference to competition is eminently sensible. The weakness, however, is that defence markets have not been conforming, and still do not conform, to competitive markets. The advent of open global markets has further reduced competitive markets to the extent that “70 percent of world trade is managed by just 500 corporations” (Elliot & Atkinson, 1998, p. 223). This pattern of concentration of power into fewer corporations has continued across all institutions, including the defence industry. Over the past decade, the growth of the major defence suppliers has been primarily from acquisition rather than organic growth. As in all capital intensive industries, the barriers to entry are massive and so gaining in size becomes a source of competitive advantage. The sophisticated technology associated with defence adds yet another large barrier to entry. In a market with fewer and more powerful players, it is hardly surprising that the then Secretary of Defence, while pushing competition as the ideologically preferable state, also noted the need to enter into commercial negotiations and partnering. The reality of these concentrated markets is not easily reconciled with assumptions of competitive markets being the means by which to deliver VFM.

While NPM initially conceived of VFM in cost savings terms, the ever increasing dependency on markets saw the concept of VFM expand to include being able to access leading edge battle-winning technology through the application of open innovation (OI). OI is defined as “a paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology” (Chesbrough, 2003, p. xxiv). OI has demonstrated success in defence with respect to smaller assets. For instance, *The Economist* (“Innovation,” 2009) reported that



the U.S. Air Force ordered 2,200 Sony PlayStation 3 videogame consoles which then formed the building block of a supercomputer. Soldiers in Iraq and Afghanistan used Apple iPods and iPhones to run translation software and calculate bullet trajectories. Xbox videogame controllers have been modified to allow control of reconnaissance robots and drone aircraft. Graphic chips that power PC video-cards are being used by defence firms to run simulations. In respect to the acquisition of large state-of-the-art assets, there is not yet conclusive evidence available to demonstrate that the MoD, or indeed the military of any western styled democracy, successfully employs OI principles in respect to large assets. The MoD's (2007) *Innovation Strategy: Creating a New Environment for Innovation Within the Defence Supply Chain* provides conclusive evidence of how the MoD has set about implementing a deliberate, clearly articulated, well-funded OI strategy. While the UK's military capability has always been heavily dependent on the strength of the defence supply chains, which are in turn supported by privately owned firms, this policy represents a major shift in terms of what assets, processes, and services the MoD should, and should not, retain. Previously, knowledge linked to innovation was seen as too important to outsource. Under the present arrangements, the emphasis has shifted from generating knowledge and innovations to how to remain an intelligent customer while possessing less knowledge.

In parallel with the aforementioned developments, or perhaps in response to them, the MoD has also adopted a new strategic planning philosophy known as *Through Life Capability Management (TLCM)*. The MoD defines TLCM as “the enduring capability to generate a desired operational outcome or effect, and is relative to threat, physical environment and the contribution of coalition partners” (MoD, 2007, p. 12). More recently, TLCM has been renamed *Capability Management (CM)*. The CM philosophy has radically altered how the MoD buys the goods and services needed to generate capability. The subtle, yet important, point is that the MoD's modern acquisition practices are based on contracting for capability rather than for an asset. These practices have moved the emphasis away from buying goods to buying services. The movement away from goods to services is consistent with a view being advanced in the marketing literature by Vargo and Lusch (2004). These authors argue the world has moved away from a Goods Dominant Logic (GDL) within an economic exchange, to a Service Dominant Logic (SDL) where value is co-created in the interactions between the customers' and suppliers' networks. Under SDL, goods are viewed as physical assets involved primarily in delivering services.

The work of Vargo and Lusch make it clear that the movement to buying services rather than goods is not unique to the military but, rather, is part of a much wider trend common to most industries. Under SDL, goods are considered as vehicles by which to deliver services. SDL is driven by an innate purpose of doing something for and with another party, and argues strongly that value is co-created in the interactions between the customers' and suppliers' networks. SDL is claimed to provide a complementary explanation of how to engage in improved supply chain management (SCM). SDL argues that SCM concepts of the 1990s were caught in a GDL perspective. Lusch (2011, p.14) claims that “SDL is aligned with Metz's (1998) observation that SCM is moving into a super role, which integrates the functions of marketing, development, product and customer service.” It is argued that the evolution toward partnerships and value creation networks in SCM demonstrate clear evidence of developments in line with SDL principles (Lusch, 2011; Tokman & Bietelspacher, 2011).

Several forces appear to be in play with the MoD's move to services. First, NPM's preference to achieve efficiencies through engagement with markets encourages the notion of outsourcing the most expensive aspects involved with large assets—the through life support services. Second, the adoption of NPM has been accompanied by an increased



“privatisation” and “civilianisation” of the military. Numerous examples of an increase in this trend can be found. For example, in the first Gulf War, the U.S. forces had one contractor for every 50 soldiers. In the second Gulf War, the civilian to military ratio had increased to one for every ten soldiers (Avant, 2004). In 2009 the ratio of U.S. uniformed personnel to contractors in Afghanistan had risen to 1 to 1. The UK’s ratio as of 2009 was 1 to 0.35. In 2004, the U.S. Department of Defense (DoD) employed 700,000 civilians. In 2005, 20,000 military positions were scheduled to be transferred to civilian employment. In 2009, the ratio of uniformed staff to civil servants in the MoD was 2:1 and this ratio represents the strongest concentration of civil servants to uniformed staff in Europe. By contrast, France was 5:1. Third, the adoption and implementation of a CM approach to planning encourages contracting for bundles of services. Finally, the financial crisis has resulted in government directing the MoD to further downsize its staff numbers. Apart from being required to lose approximately 32,000 uniformed staff (7,460 Navy, 14,640 Army, and 9,820 Air-force), the MoD is also required to lose 25,000 of its 87,000 civil servants (Defence Analytical Services and Advice, 2010). As civil servants tend to provide support services, it is understandable that the activities they undertake would be prime targets for outsourcing. The picture is less clear as to what functions covered by uniformed personnel will be outsourced, but early indications are again that those functions considered to be “support” rather than “core” to theatre activities are more likely to go. In short, the MoD’s reduced funding has further forced it to move to market-based solutions in order to generate military capability.

In the past three years, the UK government has acted upon most of the recommendations of two major reports—the Gray (2009) report which was aimed specifically at acquisition reforms, and the Levene (2011) report which looked at a wide range of issues, including acquisition. Interestingly, both reports acknowledged that prior reforms had floundered because they had failed to adequately address various cultural issues. Gray stressed the need for a greater learning capability while Levene placed emphasis on the need for behavioural change. Both reports tended to repeat the recommendations of numerous prior reports. These included improving the use of traditional engineering control tools such as project management and a systems approach; greater discipline of financial controls; better alignment of accountabilities and responsibilities; and, unsurprisingly, more outsourcing of procurement activities. While previous reports had also made reference to the importance of addressing cultural issues in order to ensure successful reform implementation, both the Gray (2009) and Levene (2011) reports implied that the past reforms had floundered because they had tended to underestimate the importance of “people” factors. Both reports made reference to the need for greater professionalism among acquisition practitioners, as well the need to improve organisational learning capability (Gray) and to better align behaviours (Levene) with strategic aims. Both reports appeared to be advocating that the way to achieve “hard results” is through greater application of “soft skills.” In short, there is a need to engage more fully with activities that have been traditionally classified as falling under the social sciences.

When the aforementioned reforms are viewed as a whole, it is hardly surprising to conclude that strategic acquisition needs to engage with social science in order to be more effective. Outsourcing ever more military tasks to suppliers involves a move away from achieving results through command and control structures and toward greater reliance on contract management and administration. Employing an open innovation strategy requires greater working through social networks in order to create and diffuse the knowledge required to generate novel solutions. The inherently multidisciplinary nature of acquisition creates yet more motivation to work across conceptual divides as new knowledge and ideas are often generated within the spaces between disciplines (Hislop, 2009). The globalisation of markets and knowledge workers creates a strong case for greater cultural sensitivity in



order to obtain results. The loss of monopsony with key suppliers who now serve global markets suggests that as power can no longer be used to direct suppliers, there is a strong case to work more effectively within relationships. This shift in power is especially important when it is remembered that the MoD has a very heavy dependency on few suppliers operating in a non-competitive market place in order to source the bundles of services it requires to deliver capability. Teece et al. (1997) suggest that the most crucial knowledge assets are embedded in organizational routines. As outsourcing organizational routines therefore involves also losing embedded knowledge, a possible way to counter this risk would need to encourage greater openness and trust with suppliers in order to keep abreast of current knowledge. The issue of how to manage knowledge in an organizational context of decreasing internal knowledge workers creates several issues around how to remain an intelligent customer. Encouraging greater openness and trust with suppliers may yet provide a different means of remaining an intelligent customer. The fact that these relationships with suppliers are often very long term adds greater weight to the need to work in a cooperative and collaborative manner. Furthermore, if Vargo and Lusch's (2004) views are correct, then the move from GDL to SDL requires investigating a great deal of effort into integrating activities across social networks. For all of these reasons, the move towards greater acceptance and use of social science would appear to be self-evident. What is not evident, however, is that the introduction of social science in respect to research may prove to be problematic for defence acquisition because it challenges many of the foundational assumptions of both the military and wider governmental institutional arrangements.

Social Science and Acquisition

Science in its strictest sense is often viewed as an ideal pattern or paradigm of unfinished perfection: a discipline firmly based in observation, experiment, and measurement, all married to a logically integrated body of theory (Chua 1986; Hirschheim & Klein, 1992; Johnson & Duberley, 2000). Viewed in this sense, social science is not a science, nor is much else. If, however, science is conceived as a loose social institution of people who share a common interest in knowledge and the understanding of observable phenomena in a given area, who communicate their observations and thoughts, judge these observations and thoughts by shared criteria, and obtain their results by a diversity of common methods, then it may be possible to include social science as a science (MacRae, 1964). To date, the governance and management frameworks applied to both private and public institutions operating within modern western democracies are guided by a positivist (scientific) philosophy. This philosophical stance accepts the first view of science and generally rejects the second. On the surface, taking such a stance seems perfectly reasonable, arguing that to adopt the latter definition would open institutions up to an absence of standards of judgement that would then expose them to the dangers of mere ideology, propaganda, and indoctrination. However, this strong and enduring attachment to positivism creates potential difficulties for acquisition research wishing to embrace social science. The difficulty with definitions is not so much with what they describe but, rather, that in the process they also infer what should be investigated. This situation is further exacerbated by a paradigmatic definition of a research stance because it tends to not only direct what sort of methodologies should be used but also how they should be employed. The nub of the issue at stake is, therefore, not over which topics of research to examine (the military has generously funded research into social science topics for decades—Caforio, 2007), but rather how to do so. Positivism claims it is capable of exploring both “hard” and “soft” research topics—a point contested by many social scientists (Alvesson, 2002; Bhaskar, 1978; Collier, 1994; Flybjerg, 2006). To date, research in respect to acquisition has favoured the use of a positivist research paradigm for all topics.



Because the term *paradigm* is itself used well outside its original meaning, it is important to briefly define what is meant by the term with respect to research. A definition that remains close to Kuhn's original intent is that of a community of scientists who share "a constellation of beliefs, values, and techniques" that "circumscribe definitions of worthwhile problems and acceptable scientific evidence" (Chua, 1986, p. 602). Johnson and Duberley (2000) argue that there are at least three distinct research paradigms used in management research. A research paradigm is determined by the possible combinations of ontology and epistemology, as defined in either objective or subjective terms. Johnson and Duberley (2000) call epistemology the finding of "frameworks" of warranted scientific knowledge that act as a guideline for representations of what knowledge claims can be made. Ontology is defined by the same authors as the philosophy of being or what researchers think reality, being, and existence are. The point to be made for this present discussion is that positivism takes the position that there is an objective ontology and epistemology. Theorists who take a more critical stance argue that while there is an objective ontology (reality exists independently of the humans who observe it), we are limited in what we can discover about reality because epistemology is subjective and, therefore, flawed. Postmodernists reject any grand narrative that makes claims about truth and therefore take the view that both ontology and epistemology are subjective. Viewed this way, positivism is but one of many perspectives through which to explore the social world.

The implications of limiting acquisition research to a single paradigm are related in large part to how acquisition is defined. If acquisition is viewed, like management, as being best conceived of as an art and a science, then it opens up the paradigmatic debate. If it is seen as only a science, then continuation with status quo research arrangements may be adequate. However, as numerous reports (Gray, 2009; Levene, 2011; National Audit Office, 2009) to the MoD have stressed the importance of social factors, it seems the pure science stance is unsustainable. If, as many social scientists suggest (Bhaskar, 1978), positivism is poorly equipped to deal with complex social research matters, then its dominant use may also be limiting the development of the body of knowledge needed to inform and improve acquisition practices. At the heart of this dispute is the view that natural systems and social systems do not behave in the same way. Positivism is seen to assume a closed system view of the world, whereas social systems are seen to be open systems with constantly emerging properties (Collier, 1994). Natural sciences aim to discover and define laws that work across all contexts. Social science practised outside a positivist tradition is more likely to aspire to locating and describing tendencies that are highly context-dependent. The criticism, therefore, comes down to the claim that the ontological and epistemological assumptions of positivism create a conceptual blindness in the researcher as they impose a closed system view on a dynamic, non-linear, open, social system.

Given the importance of the term *system* in this debate, a brief overview of possible meanings that can be assigned to this term are explored. Jackson (2003) states "a system is a complex whole, the functioning of which depends on its parts and the interactions between those parts" (p. 3). This core definition applies to a vast array of different types of systems such as physical (e.g., river systems), biological (e.g., living organisms), designed (e.g., automobiles), abstract, (e.g., philosophical systems), and social (e.g., family). For the purposes of this discussion, the two dimensions of interest for defining systems are those that align with natural science (defined as technical ranging from simple to complex) and social science (defined as social broken into three types—unitary, pluralist, and coercive). Figure 1 is an adaptation of Jackson's work and classifies systems into six different types.



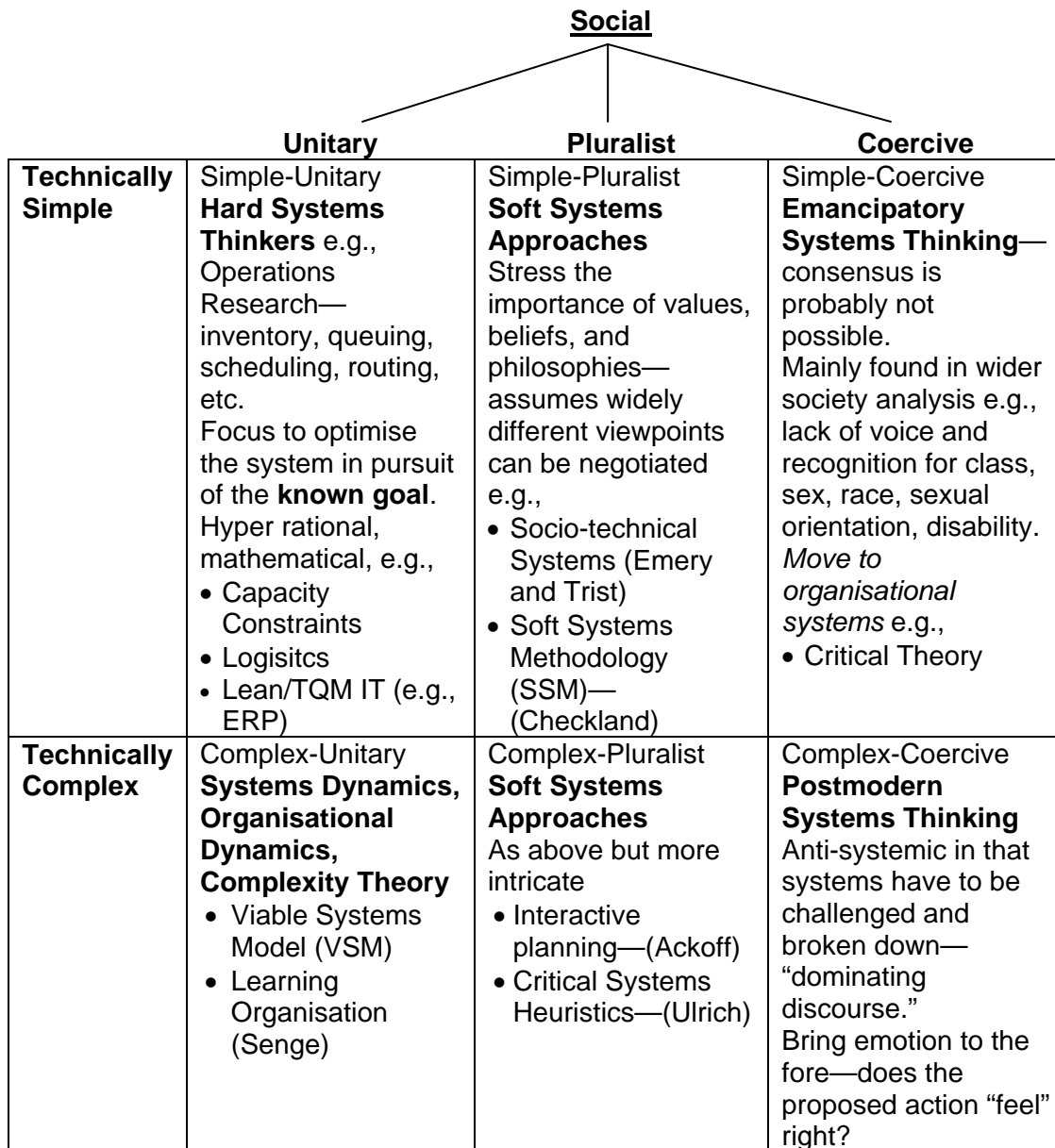


Figure 1. A Systems Theory Typology

The key point to draw from Figure 1 is that changes in either the technical or social dimensions alter the nature of the system under examination. Furthermore, as the nature of the system changes, so should the research paradigm being employed to investigate the system under inquiry. Therefore, exploring simple and complex systems may suit positivism. Investigation of simple and complex pluralist systems may lead to richer insights if a critical (objective ontology and subjective epistemology) research paradigm was employed. Research into simple and coercive systems may be best served by the use of a postmodernist paradigm. Social science researchers generally consider these distinctions to be extremely important as the paradigmatic stance taken is seen to have a profound impact both on what is found and how it is analysed.

Numerous reports have also made mention of the need for acquisition practitioners to be more professional. While these same reports have been less clear about what is



meant by the term *professional*, the wider literature on this topic makes it clear that professions have access to a body of knowledge which they develop and, in some cases such as law and medicine, often self-regulate. If the views of these social scientists are accepted, then it follows that acquisition, as a body of knowledge that is becoming increasingly dependent on social factors in order to deliver results, must also give far more consideration to the sorts of research paradigms it employs. Further, as acquisition activities would appear to operate in several of the systems defined in Figure 1, then there is a sound case to widen the range of research paradigms used in order to generate a greater array of insights. However, the findings of these various research initiatives will be squandered if the proponents of different paradigms do not have a means of effectively sharing information with each other. Without this ability, there is a risk that discussions will revert to the all too familiar paradigm wars and the trading of insults rather than insights. The challenge for acquisition is, therefore, not only to master being interdisciplinary in practice but also multi-paradigmatic in research activities. A small but increasing body of writers outside acquisition have been arguing for the need to put an end to the paradigm wars (Mingers, 2004). As a latecomer to this paradigmatic debate, acquisition has one distinct advantage—it may be able to use the insights previously gained from other bodies of knowledge, thereby avoiding these wars and moving on instead to the much needed task of multidisciplinary theory development.

Conclusion

The purpose of this paper was to investigate whether the traditional research methodologies previously employed to examine procurement phenomena were adequate for modern acquisition practices. The conclusion reached is that they were probably not. The reason being that despite the wide acceptance of the increasingly important role played by social factors in determining acquisition success, acquisition research had not expanded in the range of research methodologies needed to keep pace with these developments. These developments have been driven by multiple factors such as three decades of implementation of NPM combined with the end of the Cold War and the knock-on effects of the global financial crisis. The combined effect has been to fundamentally alter how the military can generate capability. The increasing dependence of the MoD on fewer, powerful, global suppliers for not only equipment but also an increasing array of services (including knowledge and innovations), and demand for greater professionalism among acquisition practitioners, means that the role of acquisition has become highly strategic and relevant to the sustainability of core military functions. Numerous reports suggest that in order for acquisition to be more effective, it must also become more adept in dealing with complex social systems. This requirement has, in turn, generated a need for more research into how to best engage with the social systems. The simplest, but by no means the most effective, solution would be to increase the research into these phenomena but not alter the research paradigm. The difficulty with maintaining this status quo research approach is that it is unclear how such an approach would lead to new insights. The suggestion advanced in this paper is that if the acquisition field wants to better understand the social factors involved in acquisition, it will need to engage more of the practices used in social science. This will require the employment of a wider range of research paradigms. Clearly, such a change in approach will generate a raft of fresh challenges with no guarantee of reward for effort. When weighted against the option of continuing with what has gone before, it appears that the acquisition field has little option but to widen the research paradigms employed. To do otherwise would likely ensure that the expectations currently being placed on the acquisition function can never be met.



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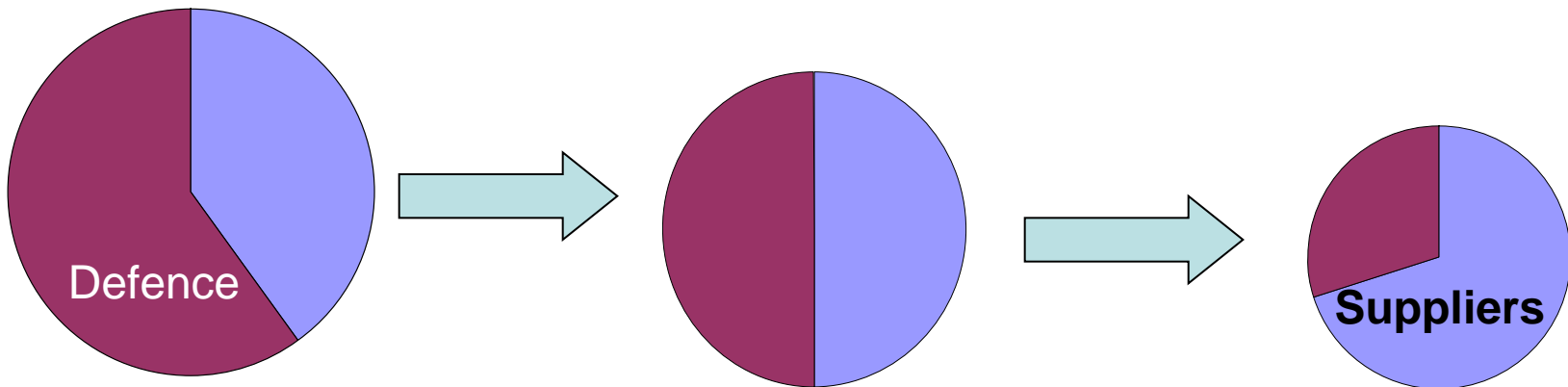
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The case to widen Defence Acquisition Research Paradigms

- *Kevin Burgess – Senior Research Fellow, Centre for Defence Acquisition, Defence Academy of the United Kingdom, Cranfield University.*
- *David Moore – Director Centre for Defence Acquisition, Defence Academy of the United Kingdom, Cranfield University*

Case to expand research methods

- Neoliberalism
- New Public Management
- Globalisation



Increasing critical interdependencies

- Increasing percentage of the defence budget going to suppliers within the context of an overall decreasing defence budget
- Capability management tends to move activities away from goods and towards services
- Command and control structures (internal) being replaced by contractual arrangements (external)
- Defence is increasingly dependent on suppliers for knowledge creation and leading edge technology (open innovation)

Research agenda has not kept pace with shifts which are so great as to change the nature of how war can be conducted

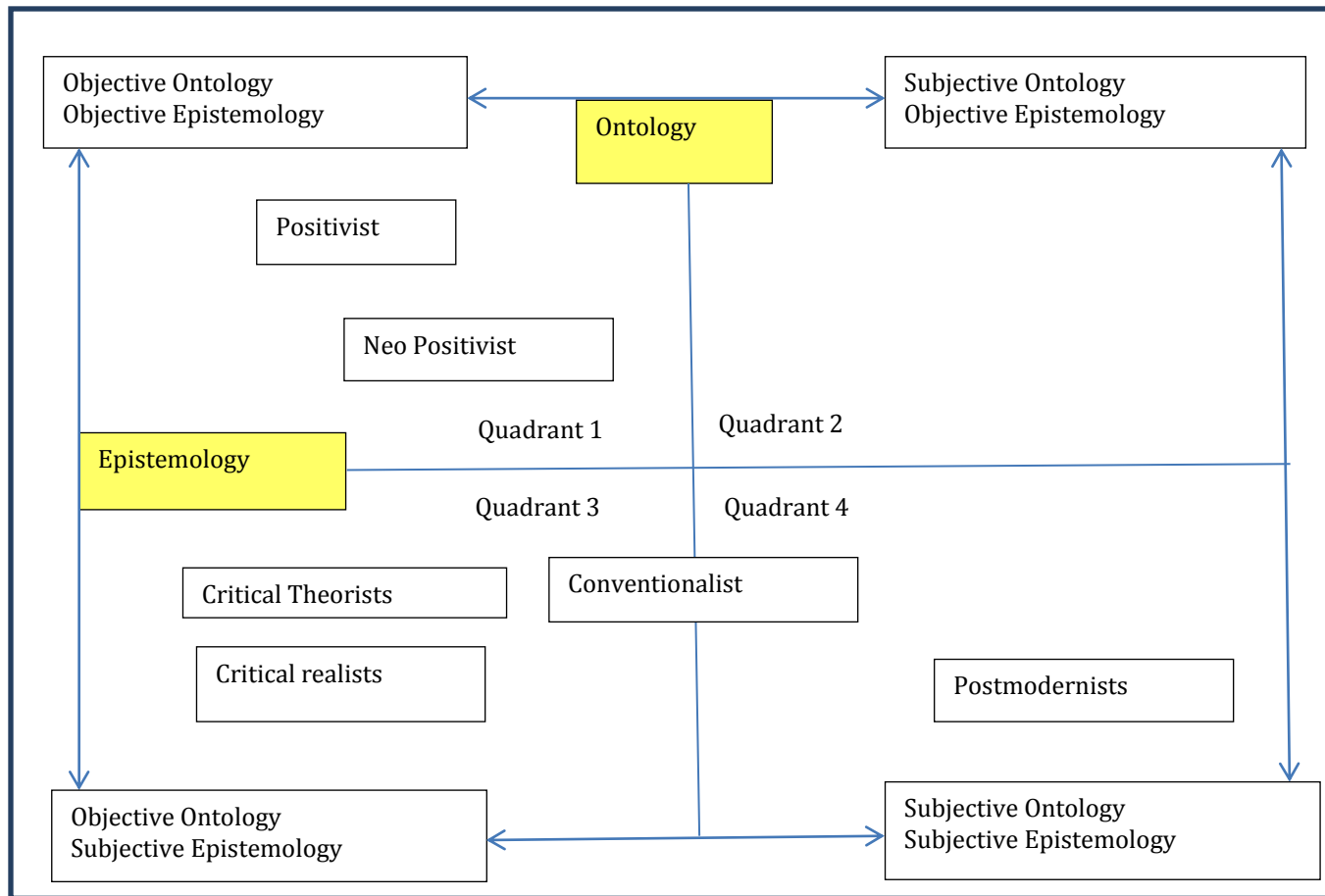
Key issues associated with changes in acquisition practices

Acquisition will become increasingly dependent on social science research in order to meet stakeholder expectations

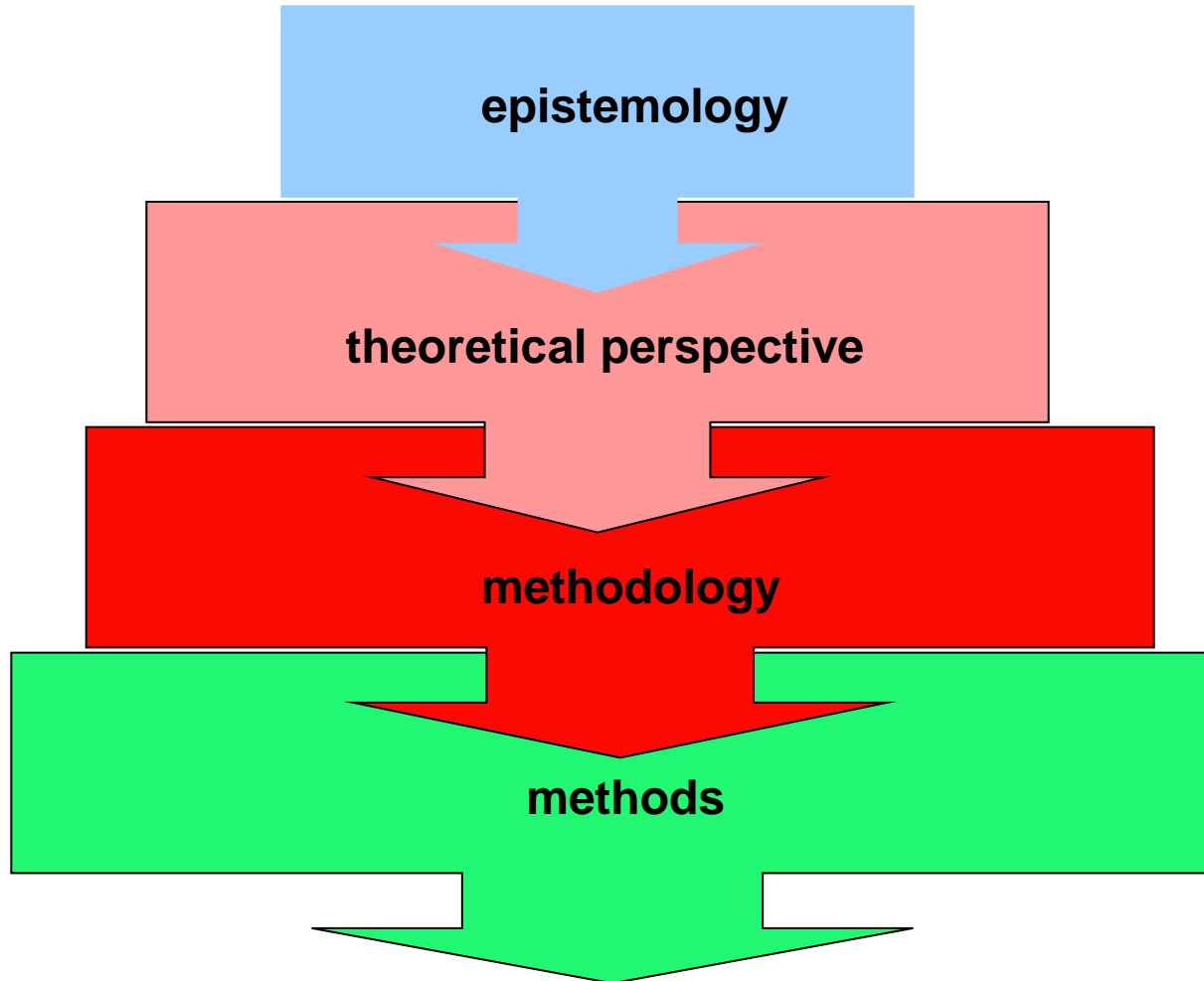
Many of the key enablers for acquisition fall under “soft skills” e.g. trust, cooperation, open innovation, contracting for complex service bundles, etc

Research Methodologies Used – have tended to operate from a single paradigm which is not well equipped to deal with social issues.

Research Paradigms



Basic Elements of Research Process



Source: Crotty, 2004. The Foundations of Social Research

Basic Elements of Research Process

- Epistemology: the theory of knowledge embedded in the theoretical perspectives and thereby in the methodology.
- Theoretical Perspective: The philosophical stance informing the methodology and thus providing a context for the process and grounding its logic and criteria.
- Methodology: the strategy, plan of action, process or design lying behind the choice and use of methods to the desired outcomes
- Methods: the techniques or procedures used to gather and analyse data related to some research question or hypothesis

A Systems Theory Typology

Participants

Unitary

Pluralists

Coercive

Simple

Simple-Unitary
Hard systems thinking e.g. Operations Research, inventory, queuing, scheduling. Focus optimise system in pursuit of known goal. Hyper rational, mathematical e.g. Lean, ERP, Capacity Constraints

Simple-Pluralist
Soft Systems Approaches
 Stresses the importance of values, beliefs and philosophies –assumes widely different views can negotiated
 Examples would include:
 Socio-technical Systems

Simple-Coercive
Emancipatory Systems Thinking – consensus is probably not possible. Mainly found in wider society analysis e.g. lack of recognition for race, gender, class, disability, and sexual orientation.

Systems

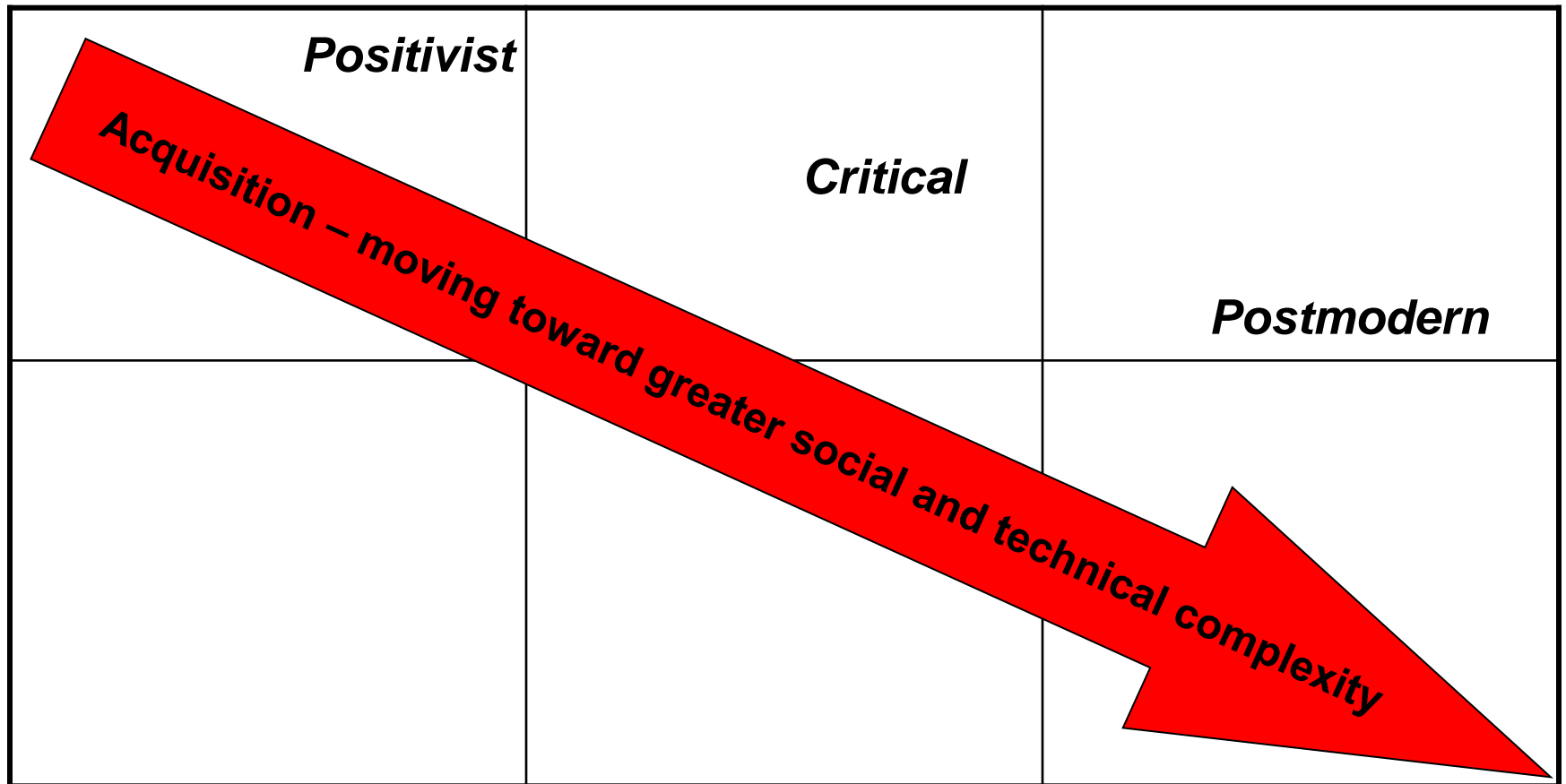
Complex Unitary –
 Systems dynamics
 Organisational Dynamics
 Complexity Theory
 Examples
 •Viable Systems Model (Stafford Beer)
 •Learning Organisation (Peter Senge)

Complex-Pluralist
Soft Systems Approaches
 As above but more intricate
 Interactive planning – (Ackoff)
 Critical Systems Heuristics – (Ulrich)

Complex-Coercive
Post-Modern Systems Thinking
 Anti-systemic in that systems have to be challenged and broken down – “dominating discourse”.
 Bring emotion to the fore – does the proposed action “feel” right

Complex

Research Challenges for Acquisition



Conclusion

- Acquisition will ultimately be measured by its ability to deliver capability
- The enablers for acquisition, while not ignoring the “hard” systems, will increasingly have to depend upon “soft” systems to generate results
- Generating the understanding needed in the “soft” systems will require a widening of the range of research paradigms and methods used in acquisition