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The Managerial Lineages of Neoliberalism

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Abstract

Managerialism is often depicted as a key practice of neoliberalism yet relatively little has been written by scholars of neoliberalism about the actual relationship between managerialism and neoliberalism. Usually subsumed under a functional reading of neoliberalism, managerialism has too often been understood simply as a means for neoliberal ends (i.e. to promote market rule or competition). This paper challenges this perspective on the grounds that it conflates practices that stem from two different historical lineages. As we show, managerial governance not only has a very different history than neoliberal theory, but it also rests on different principles. Its development can be traced back to the US defence sector in the 1950s and the pivotal role of the RAND corporation. On the basis of this historical perspective, we argue for the need to analyse managerialism on its own terms and make the case for considering the rise of managerial science as a paradigmatic shift in governance. In doing so, we show how managerial governance represented a radical rupture from previous management practices and show how it profoundly reshaped how we have come to understand governance.

Introduction

The ubiquity of management, bureaucracy and audit is central to the neoliberal experience (Gamble 2006; Cahill 2014; Mirowski 2014). It has led to a renewed interest in the phenomenon of managerialism (Locke and Spender 2011). The literature on neoliberalism commonly interprets it as an attempt to turn bureaucratic institutions into agents for the promotion and enforcement of market rule (Peck 2010) or competition (Davies, 2014). In reflecting on these phenomena, scholars have usually cast managerialism as an extension and intensification of neoliberal thinking (Hanlon 2017). The emergence of New Public Management (NPM) and 'audit culture', for example, have come to be read as hallmarks of neoliberalism with their emphasis on engineering and intensifying competition (Miller & Rose 2008: 109-110). As a result, managerialism is commonly perceived as a means to implement the neoliberal project. In the words of Styhre, 'one may quip that neoliberalism is the theory and management the practice' (2015: 89).

We challenges this conception by taking a historical perspective on the managerial turn associated with neoliberalism. As we show, the literature too often conflates practices that stem from two different historical lineages and which, while partially interlinked, responded to different sets of concerns. The development of neoliberal theory goes back to the 1930s and is usually associated with the thought-collective of the Mont Pelerin Society (Mirowski and Plehwe 2009). This network has traditionally been identified by the commitment of its members to create and consolidate competitive markets through institutional means (Foucault

2004, Mirowski 2013, Peck 2010). It has provided the public face of neoliberalism, linked to key figures such as Frederick von Hayek and Milton Friedman.

By contrast, we argue that contemporary practices of managerialism stem from innovations in the US defense sector in the early post war period that were linked to the influential RAND corporation (Mirowski 2002; Amadae 2003). This lineage is associated with the rise of systems analysis and game theory and a range of managerial techniques such as cost benefit analysis and programme budgeting. Though the literature on neoliberalism has overlooked the legacy of this lineage, a growing body of work has recently highlighted the importance of this history for the evolution of business schools (Augier and March 2011) economics (Mirowski 2002) political theory (Amadae 2003; 2016) public administration (Radin 2000) the American Federal State (Jardini, 2000; Berman, forthcoming) and urban planning (Light 2003).

Building on these rich contributions, we situate the innovations of RAND within a broader managerial history. Our aim is to demonstrate that they set the foundations for a new paradigm of governance that was characterised by its strong connections to management on two different levels. First, it relied on managerial *techniques*, basically using templates for optimising the allocation of resources as a way to frame the very practice of governance. Second, it was tied to systematic attempts to mobilise managerial *processes* at lower levels of an organisation, or, in the case of regulators, to harness managerial processes in firms or organizations they targeted, *in order to support the making of policy and the conduct of governance*. These two aspects came to define what we call here managerial governance, that is a practice of governance that not only took on a managerial outlook but which also depended on the establishment of managerial processes in the various social fields it sought to govern so as to enable its action. As we show, this approach had much more to do with empowering policy makers and top managers than with a neoliberal project focused on instituting markets, or market competition, as a tool of social regulation.

To present this argument, we focus on the formative stages of managerial governance, specifically the 1950s. Following a radical historicist approach (see Knafo and Teschke 2017), our aim is to place the historical lineage of managerial governance in perspective in order to better appreciate the radical rupture it entailed. We do not claim to describe managerial governance in its current forms, but to show where it comes from. Our argument thus proceeds in four steps. The first section addresses how the literature on neoliberalism has dealt with the phenomenon of managerialism, and argues that scholars too often normalise managerialism as an extension of the neoliberal project. The second section sets out our concept of managerial governance by demonstrating how the paradigm of governance pioneered in the US defense sector marked a radical departure from the practices of scientific management that had emerged at the beginning of the 20th century. The third section explains why this new form of governance required a more direct engagement with management and traces the ways in which management had to be reshaped in order to make it possible to align governance with management. Finally, we examine the central feature of managerialism under neoliberal governance, the idea of engineering competition, in order to show that this practice owes more to the lineage of managerial governance than to neoliberal theory as is usually assumed.

1. Engineering a Myth about Competition

Considering the voluminous literature on neoliberalism, it is surprising to see how little has been dedicated to the phenomenon of managerialism.² Despite frequent references to it, scholars of neoliberalism rarely engage in a sustained way with the rich literature on managerialism or public management. In what follows, we discuss two broad approaches to managerialism. The first is associated with scholars who come from a political economy background and who are usually interested in the way market rule is implemented through the diffusion of managerial practices. The second approach, Foucauldian governmentality studies, essentially turns the problem around by casting the focus on competition as a means of control. As we show, both approaches downplay the significance of managerialism because of the way they frame their analysis of neoliberalism by referring to neoliberal theory.

1.1 *The Pursuit of Competition and the Logic of the Market*

The political economy literature has often read managerialism as a means to pursue neoliberal goals, namely to promote and consolidate markets. It speaks of the way in which bureaucracy is mobilized to enforce and regulate markets (Robison 2009: 15). Colas, for example, refers to 'benchmarking, management auditing' as 'part of processes that are standardizing capitalist globalization (Colas 2005: 76), whilst Brenner, Peck, and Theodore see such techniques as underpinning 'market conforming regulatory incursions' (2012: 26). From such perspectives, managerial governance is thus often normalized as an 'effective' way to pursue or engineer competition and more generally entrench capitalism. In this way, the literature has come to emphasise the pro-active role bureaucracies, and more generally agents of governance, play in engineering new social relations that conform to the ideals of neoliberal theory (Graeber 2015).

Beyond these usual references to the role of neoliberal states in establishing the infrastructure for capital accumulation, scholars have also pointed to the way in which market competition has been turned into a means to reorganise the public sector itself. It is often mentioned, for example, that managerialism constitutes an attempt to rationalize state bureaucracies and impose new norms of efficiency and cost cutting (Hood and Dixon 2015). As a sustained effort to rationalise the public sector, NPM is often interpreted as a response to neoliberal claims that public bureaucracies are inefficient (Gamble 2006: 30). Managerialism would thus constitute a set of practices by which market principles are translated into tools of public administration and the state itself is made to act increasingly as a market actor (Firlie et al 1996), or more specifically as a firm (Davies 2014: 116). According to this perspective, practices of managerialism emanated from private corporations, and represent the imposition of a corporate logic to the public sector (Crouch 2011: 16). Management would then be carrying out the neoliberal project of entrenching market rule over all aspects of society (Peck 2010).

However, the connections between managerialism and neoliberalism have rarely been subjected to historical examination. Instead, managerialism is usually assimilated within a logic of the market on the basis of vague references to the idea of competition; as if a discourse about intensifying competition through performance assessments should be read as an instantiation of a rationality of the market (see Hanlon 2017). This underpins a mistaken belief that managerial governance is in the same business of *promoting market rule* as neoliberal

thinkers claim to be (c.f. Mirowski 2013). By contrast, we argue that while managerial governance is replete with strategies to create and exploit competition, we should not equate this with market rule.

Interestingly, scholars sometimes recognise that the ‘commitment to technocratic managerialism was much more apparent than any faith in neo-liberal principles about trusting in markets to deliver. Markets were used as managerial tools in the pursuit of publicly determined objectives’ (Gamble 2006: 31). The market, or competition, is then depicted as something to be managed and harnessed for the purpose of policy making, rather than the opposite. But having recognised this point, few authors within this approach actually consider the possibility that managerialism may not be readily assimilated to neoliberal theory. Instead of reconceptualising managerialism on its own terms, they prefer interpreting the gap between neoliberal principles and managerial practice as an illustration of the instrumental nature of governance. In other words, they argue that if policies did not conform strictly to the principles of neoliberalism, it simply shows that neoliberal states were happy to drift away from the commitment to neoliberal principles when it suited dominant actors (see also Harvey 2005). We argue that there is a more specific reason for why managerial practice did not conform to neoliberal theory: the two had different origins, rested on different principles and led to different types of practices.

1.2 For Profit or Control? Governmentality and Managerialism

One set of arguments which have built more systematically on this gap between the claims and the actions of neoliberal governance stems from the work associated with governmentality studies (Rose, O’Malley, and Valverde 2006). Central to this approach is Foucault’s conception (2004) of the particular mode of governing under liberalism. It presents liberalism as a novel approach to government framed by its concern with limiting its direct intervention. This does not mean a retreat of the state *per se*, but rather new forms of governing that rely on actions at a distance in the form of incentives and calculative tools. Under neoliberalism, these take the form of techniques to engineer competition through various assessments of performance, they can intensify and manipulate the significance and pay-offs of competition. These so-called ‘technologies of the self’ enable authorities to enlist subjects in their own governance. According to Miller and Rose (2008), they make behaviour statistically predictable and consistent with capitalist governance despite an apparently less interventionist state.

There has always been, however, a certain ambiguity in the concept of governmentality stemming from the way authors like Miller and Rose conceptualise the relationship between political rationalities and their technologies (Lemke 2012: 191). It is common proposition in Foucault inspired works that discourses are inherently tied to practices and cannot be reduced to text. In other words, technologies and rationalities should be understood as two manifestations of the same process. But while the assumption remains that both play a role in the constitution of neoliberal governance, governmentality studies have tended to assign different registers to technologies and rationalities, clearly privileging the latter for the work of conceptualisation. Indeed, authors working from this approach frequently take *representations* of governance, most notably neoliberal theory, as proxy for political rationality and then use these representations to frame conceptually what managerial technologies are about. Neoliberal theory thus often ends up being placed in the same relationship to managerial technologies as more traditional understandings of the relationship between

theory and practice criticised by Foucauldians. For here it is the representations offered by neoliberal theory that are constantly referred to in order to explain what is distinctive about neoliberal governmentality (Lemke 2012; Miller and Rose 2008). By contrast, managerial technologies usually stand in the background of this conceptualization and are referred to as examples or means by which this rationality is deployed. They are usually taken to be more concrete and empirical manifestations of the abstract rationality and are clearly subordinated to them conceptually. We may know that auditing for example is a key technology of neoliberalism, but it stands as an example rather than a key element in understanding the very nature of neoliberal governmentality. As a result, little is done to actually displace the privileging of text over practice despite the intention of governmentality scholars.

Interestingly, this problem is often flagged by Foucauldians themselves (McKee 2009; Lemke 2012). It usually leads to an appeal for greater attention to be given to empirical cases with their complexities and contradictions. However, this rarely results in a more systematic re-conceptualisation. Attempts to mediate our understanding of neoliberal governance by taking practice more seriously usually end up being little more than a coda to a story already well-rehearsed. It is simply not enough to note that in reality there are various political rationalities at play (Collier 2009) or to emphasise the limits of these rationalities, notably the greater significance of resistance (McKee 2009), for this does not change the conceptual framing of neoliberal governmentality largely given by a reading of neoliberal theory.

The subordination of practice to theory in governmentality studies is reflected in the very way in which neoliberal governmentality is historicised. In keeping with Foucault's treatment of history, governmentality studies have focused more on juxtaposing political rationalities according to their respective 'dominant' periods, rather than tracing evolution and changes across them, or divergent developments across countries. This has made it difficult to think about the relationship between the history of ideas, most notably Ordoliberalism and the Chicago school, which are usually given central stage in these accounts, and the managerial technologies that are deployed with neoliberal governance. Managerial technologies, in fact, rarely appear in historical depictions, most of the time arriving on the scene as empirical examples once the stage has already been set by neoliberal theory. There is little work that establishes where these technologies come from or in what context they emerged in. They are rarely given a history. When they are, such as in Michael Power's (2007) analysis of risk management, this history is not explicitly articulated with that of neoliberal governmentality. In other words, it is not established how the history of these technologies changes or affects our reading of the development of governmentality in its neoliberal inflexion.

As a result of this flawed historicisation, governmentality studies tend to reify these technologies and too often take for granted their outcomes. This partly stems from the fact that this approach focuses on what governance is said to produce, namely *subjects* of governance, rather than its *agents*, the managers. The emphasis is thus placed on the ways in which managerial technologies shape incentives to enlist subjects into carrying out their own governance, as technologies of the self, through cultivating competition (Dardot & Laval 2014). From this perspective, managerial technologies represent a particularly efficient means to carry out an art of governing at a distance. By setting up a rich horizon of calculability, it is argued, governing authorities can manipulate incentives and lead subjects to internalize a set of norms. By contrast, we make no presumption as to what type of outcome (and subjects) managerial governance produces, nor do we assume that managerialism produces a so-called neoliberal subject. Instead we turn the focus back onto the agents enacting governance; a move which is particularly important in the case of managerial governance since it was

explicitly developed, as we later show, as a *science of decision making and largely designed as a means to empower managers and provide them with new forms of agency*.

In the end, governmentality studies continue to collapse managerial practices into the concept of competition, much like political economists do, even if they assign a different purpose to competition. Both over-determine their reading of managerialism with an unqualified notion of competition largely inherited from the rhetoric of neoliberalism; one which suggests that these practices are ultimately about the implementation of market rule.³ Yet competition can take many different forms. It should be the managerial technologies that inform us about the nature of competition, not the idea of competition which tells us what these managerial technologies are about. As we later show, the lineage of managerialism offers indeed a better account for the norms of competitions associated with neoliberalism than neoliberal theory.

2. The New Paradigm of Managerial Governance

Having shown how the literature normalises the relationship between managerialism and neoliberal governance by presenting the latter as a means to carry out the former, we now take a historical perspective to examine how governance did in fact develop a specific synergy with managerialism. Our aim is to establish that this relationship is more counterintuitive than often realised and that it has little to do with a neoliberal conception of the state as the ‘engineer’ behind market rule. Instead we focus on developments that took place in the United States in the 1950s and show how they gave birth to a new paradigm of governance which had a managerial outlook. The foundations for this was a new approach characterised by its use of managerial techniques, more specifically practices of optimisation, *for the purpose of developing overarching strategies or policies*. Optimisation techniques had long been considered as means to achieve a specified objective as efficiently as possible. But as we show, these were usually confined to a limited role and bore only a tangential relationship to matters of governance.

The rise of systems analysis in the 1950s changed all this. What would later evolve into a practice of managerial governance was founded on a wager that optimisation could be more than a technique for finding the best way to achieve a specific objective. It could be made into a framework for defining what should be the objective in the first place. This meant turning the conduct of strategy – traditionally associated with top levels of an organisation and often conceived as an art or intangibles, such as leadership –, into *a technical matter more akin to the managerial and applied practices previously associated with lower orders of the organisation*. In this section, we establish the novelty of this approach by comparing managerial governance to the management practices that preceded it, focusing on scientific management.

2.1 Scientific Management and the Separation of Management from Strategy/Policy

The rise of management as a proper expertise is usually linked to the emergence of scientific management. It is commonly said to have been set in motion in the second half of the 19th century with a wave of hirings of middle managers by rapidly growing US corporations (Chandler 1977). These new managers were often formally trained, as engineers or

accountants,⁴ and were expected to improve efficiency with their expertise through the use of measurement, benchmarking, and standardization (Hoskin and Macve 1994). They became a significant group by the turn of the 20th century and institutionalised their practices, notably through the creation of business schools, as an attempt to bolster their 'professional credentials' (Khurana 2007). In line with their predominantly engineering background, managers largely perceived themselves as technicians and saw management as a distinct expertise. It was a development that culminated in the rise of cost accounting in the early 20th century and often associated with Taylorism (Johnson 1975).

At the time, the identity of these managers was explicitly articulated in opposition to an idea of administration. The contemporary literature on scientific management, for example, mostly conceived this relationship in hierarchical terms, with administrators being seen as setting the broad policies or strategies of an organisation or business, while management was seen to be responsible for carrying them out. For example, Oliver Sheldon writes in his article on the rise of scientific management published in 1926, that

'administration is the function in industry concerned in the determination of the corporate policy [...]. Management proper is the function in industry concerned in the execution of policy, within the limits set up by administration [...]. Administration determines the organisation; management uses it' (cited in Stivers 2003: 217)

The distinction became etched in American writings that often distinguished between the term 'administration' and 'management' to demarcate the tasks of top officials or executives from the more applied expertise concerned with operational matters (Lynn, 2012: 19).

This hierarchical conception found its iconic representation in the M-form, a model of corporate organisation first pioneered by the DuPont corporation in the early 20th century and which was then widely diffused in the public sector from the 1950s onwards (McKenna, 2006). It was predicated on the strict separation of corporate divisions, which were tasked with managing operations, from headquarters, which were administering the firm. The motivation behind this organisation was to isolate strategy making from management, freeing top executives from operational concerns so as to allow them to focus on the bigger picture (Chandler, 1962).⁵

Such an arrangement was not simply fortuitous. There were good grounds to believe that one should separate administration from management. The applied techniques of scientific management were deemed appropriate for tackling concrete problems that could benefit from measurement and standardisation. This meant that managerial technologies were mostly expected to be deployed 'close to the ground'. They were directed at improving efficiency by calibrating operations and setting standards that could be used, for example, to control the labour process or address problems of logistics (e.g. in planning train journeys on a railway line). But this was always meant for 'lower' or 'middle' management and of limited use for top executives or officials whose tasks were to survey the general direction of an organisation, set broad objectives, and develop strategies (Lynn 2006). Decision making at the top level involved great complexity because of the wide array of variables in play and the considerable uncertainty involved. For this reason, administration was usually thought to require intangible leadership qualities that were often conceived in opposition to the mechanical and problem-solving approach of lower managers (Erickson, Klein et al. 2013). In particular, there was a premium given to managers with experience. Top decision makers were thus often selected from *within* an organisation after long years of apprenticeship. This was

thought to provide the best training, in the form of a deep understanding of the organisation along with a certain “know how” about the ways to improvise under specific and uncertain circumstances.

Before the 1950s, managerial techniques were not widely applied to the tasks of administration or decision making at the top level of an organisation. While they could serve the purpose of rationalising concrete operations, few imagined that they could come to terms with broader strategic considerations.⁶ For this reason, it was believed that a general education was most appropriate for future leaders because it made them more flexible and resourceful. The more applied education provided in business schools was usually deemed appropriate for lower level managers (Augier and March 2011). In the case of the Harvard Business School, somewhat seen as an exception as a business education ‘fit’ for leaders, the orientation of leadership towards practice was embedded in its distinct case study method. This approach set out to expose students to various ‘cases’ working through problems encountered by specific corporations in order to help students build a store of valuable experience to draw from (Fourcade and Khurana 2013).

2.2 *The Rise of Managerial Governance*

Against this historical backdrop, managerial governance can be read as an attempt to develop a new ‘expertise of decision making’ geared towards providing tools and techniques for top decision making; or, using the distinction established in the literature, *managerial tools for the purpose of administration*. It stems from a systematic attempt to reflect upon and format the very process of decision making so as to render it ‘scientific’- understood here as rigorous, formalised and technical. The tools and techniques that comprised managerial governance were explicitly pitted in opposition to traditional authorities, and framed as an attack against the so-called ‘privileges of experience’ and the trappings of ‘common sense’ (Schlossman, Sedlak and Wechsler 1998: 25). These technologies were meant to ground executive decisions in ‘objective facts’ through the use of analytical templates that exhibited quantitative and mathematical precision.

Behind this approach was the RAND corporation, a think tank established in 1948. Its purpose was to capitalise on the innovations in statistical analysis and military planning made during the Second World War. The war had seen scientists mobilised into service like never before to help organise and manage the war effort (Duarte 2012). This generated an unforeseen interdisciplinary effort at applied knowledge production. Under the incredible pressure generated by the war effort, scientists and administrators made a set of crucial innovations in the areas of logistics and planning. Particularly important was the emergence of Operations Research (OR), a term used to refer to a variety of methods for collecting and examining data on operations so as to determine the most effective way of carrying out a specific objective (Thomas 2015). It was used, for example, to optimise the design of bombers, the level at which they should fly, or the flight patterns for locating enemy submarines.⁷

RAND’s main achievement, and the foundation for managerial governance, was systems analysis. It represented an attempt to remould the tools of OR into a new science of war making (Amadae 2003). Using the classic distinction between tactics, as the means to reach a specific end, and strategy, which involved a broader reflection on the objectives pursued, one can contrast the more tactical and applied approach of OR to the strategic intent of systems analysis. Instead of simply optimising a given operation, systems analysis sought to model complex sets of variables involved in broad strategic decisions so as to help determine

which course to follow. In the words of Charles Hitch, a prominent RAND economist: 'learning about objectives is one of the chief objects of this kind of analysis' (cited in Wildavsky 1966: 299).

There were two key aspects to systems analysis: its reliance on modelling social systems and its strategic framing of decision making. The first, modelling, was a response to the problem that had seemingly confined optimisation techniques to lower levels of an organisation, that is its apparent inadequacy to deal with complex and uncertain situations that were typical of strategy. By modelling a social system, it was hoped that one could peer into the future and simulate a range of possibilities that one may confront. This would allow strategists to experiment by manipulating different parameters in order to determine the pay-offs of different strategies and identify optimal courses of action. But scaling up optimisation so that it could speak to strategic concerns involved a high degree of mathematical proficiency. Systems analysis was tied to the proliferation of new mathematical techniques, most notably linear and dynamic programming, sequential analysis and a renewed interest in Bayesian statistics. This account for an important fact: most of its early architects were applied mathematicians (John Williams, John von Neumann, Edwin Paxson; George Dantzig; Warren Weaver; Abraham Wald; Richard Bellman), not industrial engineers or accountants as in scientific managerialism.

The mathematical framing of systems analysis fuelled a tremendous effort in quantification. The attempts to reflect on complex social and political concerns through mathematical tools required that everything one would wish to factor into a decision would ideally need to be translated into numerical values amenable to optimisation techniques. This emphasis on quantification was certainly not exclusive to managerial governance, having long been seen as a defining feature of modern administrations. But systems analysis had to go far beyond anything that could be directly measured. Targeting social aspects that were difficult to measure, let alone observe, meant that valuation of the performance of policies, strategies or technologies had to be achieved by combining data into various indexes or through creative substitutions, often using specific data as a means to peer into something much bigger that could not easily be quantified (e.g. using body counts to measure the performance of the US army during the Vietnam war). It led ultimately to an emphasis on social reporting, that is the construction of social indicators to assess performance on a range of social issues as a means to support policy making (Olson, 1969).

Building these indicators required a heavy reliance on statistics, but here again systems analysis veered away from the more expected route offered by the early developments of statistical science which had a big impact on other forms of policy modelling. The rise of frequentist statistics at the beginning of the 20th century had contributed to shifting policy concerns towards large aggregates and was directly tied to the rise of macroeconomics (c.f. Brinkley 1989) and welfare provision with various schemes of social insurance (Ewald 1996). These approaches were deemed inadequate for the more specific and localised decisions that systems analysts were interested in, such as what type of weapons system should be developed or where to locate military bases (Abella 2008). Thinking in terms of aggregates was not suited for the purpose of strategy where the focus is set on comparative and relative assessments. As a result, they turned away from the idea of manipulating statistical aggregates in the manner of Keynesian governance (Tribe 2015). Instead, they focused on data *about performance* as a way to assess how specific decisions would impact a broader strategic context. How to determine the efficiency of a specific fighter jet in combat when such a jet did not yet exist and the context of this combat was not yet set? The analysis and evaluation

needed for such decisions were often built through indirect assessments that helped provide different angles on a specific object (for example performance assessments of various features on similar planes) and help generate data to assess the expected performance of a future plane or the consequences of a given course of action.

The second feature of systems analysis was its framing of the problematique of governance in strategic terms. If managerial governance had simply involved using optimisation for the purpose of governance, it would have foundered under the weight of the task at hand. It quickly became clear that if the new mathematical tools bequeathed by OR were going to gain traction, they needed a new framing: the recasting of governance in strategic terms so as to put the emphasis on 'gaming' an opponent rather than pursuing the most efficient course (Amadae, 2016).

Central to this re-articulation of governance was the rise of game theory and its offspring rational choice theory which were both closely associated with RAND. They represented profound challenges for the traditional expectations of administration. Indeed, the study of games came with powerful counterintuitive insights such as the idea that what appears to be the best course in the abstract, according to absolute criteria of efficiency or pay-offs, is often sub-optimal in reality because of strategic considerations in dynamic and uncertain environments. This new strategic concern led to a focus on relative, rather than absolute gains and a growing interest in tracking competitors or more generally the environment in which organisations operate. While considerations of the context of operations had always been part of the administrative picture, the strategic revolution involved an explicit attempt to model and quantify this environment for the purpose of strategic decision making.

These two aspects of systems analysis make clear that it differed radically from scientific management. *This science of decision making emerged outside of managerial circles and was conceived by people who had little experience of management.* In fact, systems analysis was not initially devised with managerial intents (i.e. related to logistics or the supervision of labour). Developed in a think tank as a framework to look into weapon development, it targeted military strategy in a more advisory capacity. In that respect, it was driven by concerns with decision making rather than implementation or 'managing' in the traditional sense of the word. Conceived for top decision makers, it had more to do with governing than managing.

However, this disconnect with operations quickly became a significant source of criticism directed at systems analysis in its early stages, for example in relation to unrealistic costings (Novick, 1954). It forced its founders to increasingly engage with management in order that its attempt to use optimisation for the purpose of strategy and policy making be seen realistic. This opened the door for economists at RAND (Charles Hitch, Kenneth Arrow, Albert Wohlstetter, David Novick, Alain Enthoven) to gain great influence as they worked to consolidate the methodological foundations of systems analysis (Berman, forthcoming). *In the process they had to challenge the separation between strategy and management that had been consecrated by scientific management.*

3. Aligning Governance with Management

What characterises managerial governance is not a specific objective or policy but rather a framework and a set of technologies or practices to define objectives (or more specifically strategy/policy). It started as a science of decision making with the creation of

systems analysis, but quickly planners at RAND had to shore up their approach. The early development of a science of war raised numerous alarm bells and met repeated failures, such as two disastrous studies on bombers that marred the early years of RAND (Amadae 2003: 41-43). As systems analysts struggled with unrealistic assessments of performance and costs, they were repeatedly forced to provide quick fixes for an ideal of decision making which consistently failed to live up to their ambitions. To implement their approach, they needed ever more information about operations in order to know what resources were required and for what purpose. In other words, it became clear that optimisation at the top of an organisation could only proceed if it was in line with optimisation at the bottom. RAND researchers thus looked for ways to align strategy/policy with management, *so that the latter could be made to 'speak' more directly to the making of strategy and policy.*

These experiments with systems analysis would eventually give rise to managerial governance with its distinctive convergence of governance with management. It now lies behind many of the practices of governance we associate with neoliberalism such as shareholder value management (corporate governance) risk management (financial governance), natural capital management (environmental governance), and the broader set of practices rolled out in the public sector that revolve around auditing and performance management. While these are often normalised as means to control at a distance, such practices would have appeared largely a counterintuitive in the early post war era. As we have shown, the trajectory of managerial expertise had pointed in the opposite direction. Under scientific management, managerial expertise was geared towards improving efficiency and deployed close to the ground. The knowledge it relied upon, while serving the ends of the administration, was of limited use for the purpose of strategic decision making. As a result, it seemed functional to dissociate both so as to free administrators from managerial concerns related to optimisation. Having separated management from administration, all that was left was to make sure that management would remain aligned with the direction given by the administration. The main concern then was keeping a level of control over partly autonomous management.

It was this arrangement that had to be rethought by systems analysts in order to get what they needed from management. In what follows, we track the adjustments that were made to systems analysis in order to connect it more directly with management. As we show, it led to the development of two new features: the reconfiguration of governance as a distributed process of decision making, under the influence of cybernetic themes of computation and programming, and the development of a new practice of budgeting to structure this process of decision making. These not only reconfigured systems analysis, but the very nature of management.

3.1 Computation and the shift from efficiency to information processing

In order to grasp the way in which systems analysts integrated managerial processes to their practice of decision making, it is important to start with their distinct framing of the question of information. For if the engagement of systems analysis with management was motivated by a need for information, RAND researchers were keenly aware that information was not a neutral thing. Influenced by game theory, their concern was not simply to produce information or 'make social processes visible', but much more strikingly to deal with the fact that information is a double edged sword: not only was it always partial, costly to generate and potentially overwhelming to handle, but it was also liable to manipulation. As a result,

information could no longer be seen as a static resource, but had to be treated as a process of communication that would impact in different ways the various segments of the decision making process. It was something fundamentally dynamic and best conceived as a signal.⁸

This problem contributed to a growing interest in the behavioural sciences and notions of bounded rationality (Erickson et al 2013). Aware that information would always be partial, RAND researchers sought to compensate for this problem by turning to organisational design, with computing showing the way forward. As Mirowski points out the 'problem of rationality and organisational efficiency became conflated with the problems of computer design and programming' at RAND (Mirowski 2002: 188). In that respect, rationality was increasingly conceived of as an organisational process, one which needed to exploit (or program) the organisational structures themselves in order to empower decision making. In the words of Herbert Simon: "organizations can expand human rationality, a view quite opposed to popular folklore in our society" (Simon cited in Mirowski 2002: 457).

In particular, programming became seen as a means to deal with the sheer complexity of the task at hand. Leading the way was the growing faction of economists at RAND headed by Charles Hitch, the director of the economic division. Hitch was generally suspicious about the possibility of settling complex issues of strategy solely at the highest levels of an organisation. According to him, the complexity involved in strategic decisions was such that there was no hope for the tools of optimisation bequeathed by OR to be able to deal with them at that level (Thomas 2015: 262). In response, Hitch and his collaborators (in particular, David Novick and Alain Enthoven) began breaking down the problem by assuming that decision making should be considered as a series of sub-optimisation processes feeding into larger ones (Hitch 1996). This meant conceiving of decision making in modular terms as a series of interlocking processes feeding into decision making at the top of the organisation.

The implication of this conception was that lower management would have to be integrated in some way into the very process of strategy or policy making. Or, to put it the other way around, RAND planners began to conceive the process of decision making increasingly *as a problem of information processing*; that is the very way in which information was processed came to be understood as integral to decision making itself. This blurred the lines between information gathering and decision making. For the latter was now understood as a collective and distributed process. It was a conception directly indebted to the rise of computing and programming; understood here as sequential procedures for dynamic and adjustable decision making. But, taking this sept raised another problem. For how to format decisions so that people at lower level of the organisation could *participate* in this distributed process of decision making even if they could not understand, or see, the big picture (Klein 2015). This would fuel the turn to budgeting.

3.2 Budgeting as Planning and the Rise of Cost-Benefit Technologies

To develop a baseline for this decentred process of decision making, the architects of managerial governance turned to budgeting as the lifeblood of an organisation. The process by which budgets are produced thus became a privileged means to integrate into a coherent whole what was now conceived as a diffused process of decision making. For budgeting offered the possibility of both setting the parameters for decision making at lower levels, particularly through costing practices that lower level managers would have to take into consideration, and conveying the outcomes of these decisions to higher levels of the organisation in the form of budgetary proposals/constraints.

The problem however for systems analysis was that budgeting had traditionally been separated from strategic decision making. It had mostly been conceived of as a tool for control in the form of line-item budgeting (Schick 1966). Its main purpose had been to track spending and limit problems associated with undue appropriation of resources. Since budgets were not organised according to specific purposes, there was no way to assess efficiency by tracking the use of resources in relation to specific goals. Scientific management took a step to address this problem by linking costs to functions to assess performance. It was an approach that culminated with the Hoover Commission in 1949 (Fesler 1957). Yet the focus here remained oriented towards the past with budgets largely seen as a means to *report* on performance rather than inform future decision making.

By contrast, managerial governance required moving away from an *accounting* perspective focused on reporting the uses of resources to a more dynamic *economic* approach, as a practice of optimisation, where valuation through budgeting was made into a tool for decision making. As Berman points out, this emerged out of an attempt to recast systems analysis as a practice of budgeting and was tied once more to the growing influence of economists at the RAND Corporation, notably Charles Hitch and Roland McKean (Berman forthcoming). They were concerned with developing a baseline for optimisation within systems analysis, often seen to be its Achilles' heel: the criterion that should be used to measure optimisation or more basically the denominator for the analysis. A source of strong opposition to systems analysis in its early stages was that it focused on reducing costs but disregarded losses in human lives (Benzhaf 2010). This brought to light the difficult normative choices involved in assessing performance for the purpose of making decisions. RAND analysts were aware that the various considerations in play were not easily reducible to a single baseline or expressed in monetary value, and realised that objectives associated with a strategy could often clash with one another.

As a means to address the problem, analysts re-appropriated practices of cost benefit analysis (CBA). CBA had been initially codified into a 'generalized formula' in the 1930s as a means to deal with large dam projects in the US. Its main aim had been to serve as a test to decide whether it was worth undertaking a dam project. In the 1950s, there was a big push to systematise CBA in order to consolidate this quantitative method for the comparative evaluation of proposed projects, expenditures, or regulatory activities (Campen 1986: 22). Researchers at RAND later became interested in CBA and worked to turn it into a technique of optimisation and a proper tool for decision making. In line with systems analysis, the goal was less to provide a decisive test (or a rule) for the undertaking of a specific project, than to offer a template to reflect on the options opened to decision makers in their pursuit of various, at times incommensurable, objectives. In short, CBA came to support a framework where 'explicit valuation is a part of the insistence of a rationalist approach, which demands full explication of the reasons for taking a decision, rather than relying on an unreasoned conviction or on an implicitly derived conclusion' (Sen 2000: 935). It became a vital bridge between decision making and budgeting that helped imbue decision making throughout an organisation with broader strategic significance.

These changes to budgeting had more to do with aligning the decisions made at different levels of an organisation in order to determine *which course to follow* rather than with intensifying performance per se. It reflected a new concern with finding ways for managerial processes to inform policy or strategy making. Within this framework, management thus evolved away from its traditional focus on discipline so as to emphasise accountability. The key difference was the recognition here that subordinates had to play a

bigger role and make decisions that would be of broader significance. In that respect, the turn to accountability was based on the notion that subordinates needed to take into account strategic considerations in their own decisions and then justify these decisions in relation to the criteria handed down by the administration.

Since the focus was set on information rather than discipline, managerial governance witnessed a multiplication of the performance barometers in order to maximise the information that top managers could use. While performance remained a concern, there was more interest in producing information about performance than in setting fixed standards that people had to live up to (Hughes 2003: 65). Measuring performance became primarily seen as a means to gain perspective, in the sense of providing information about units (e.g. a workers, a military unit, a department) so that one could flesh out the potential outcomes of alternative courses of actions.

By contrast, scientific management had sought to reduce uncertainty through ever more precise benchmarking and standardisation. This usually involved narrowing the baseline in order to enforce a standard of performance. For example, the rise of bigger and decentralised corporations with numerous divisions led corporate executives to adopt a financial baseline in order to make the activities these divisions commensurable (Johnson 1975; Fligstein 1990). This baseline served as a tool of supervision and a means to allocate resources in capital to well performing divisions (O'sullivan 2001). Yet the reductionist treatment of this financial bottom line meant that it often served a limited purpose for decision making, a fact that was raised by various critiques later on (Johnson & Kaplan 1987).

With programming and budgeting, the 'scientific' approach to decision making under systems analysis thus gained a managerial component. It was a development that radically transformed management itself as reflected in the fact that systems analysis spurred the renovation of business studies in the late 1950s. The Ford Foundation, which had strong ties to RAND (Amadae 2003), was instrumental in replacing the old vocational model inherited from scientific management, and criticised for its lack of scientific grounding, with a new model of scientific research grounded in the ideas of systems analysis (Gleeson and Schlossman 1992). The new approach was pioneered most famously at the Graduate School of Industrial Administration (GSIA) at Carnegie Mellon University which became the poster child of the managerial revolution (Augier and Marsh, 2001). GSIA exerted a decisive influence, notably in remodelling the Stanford Business School, which later carried the seeds of the revolution as the leading business school from the late 1960s onwards (Gleeson and Schlossman 1995). Business schools would become a central channel for the diffusion of these ideas as suggested by the fact that business schools were producing a quarter of all graduate degrees awarded in the US by 1980 (Khurana 2007). It was also carried far and wide, notably in the public sector, through the agency of management consultancy, particularly after the 1980s.

4. The Transition to Neoliberalism and the Rise of Managed Competition

Having shown that the managerial turn of governance finds its roots in a new paradigm of governance that relied on optimisation techniques, and which later evolved in order to align governance with management, we now come back to the practice of 'engineering competition' so often associated with neoliberal managerialism. As we pointed out, it is often traced back to a project defined by neoliberal theorists on the basis of vague analogies to the Market. By contrast, we argue here that it owes more to managerial governance. Or more precisely, it

represents a legacy of systems analysis and the way in which it sought to use optimisation as a tool for governance. For systems analysis evolved into a practice of managed competition when it was first implemented in the 1960s; one which would strongly influence the neoliberal era.

A key turning point in this history was the nomination of Robert McNamara as Secretary of Defense in 1960. He brought with him many RAND researchers, most notably Charles Hitch, David Novick, and Alain Enthoven. In 1965, the new paradigm of governance was extended beyond defence and applied to other social areas (health care, education, social housing) with the roll out of PPBS to the rest of the administration (Jardini 2000). This created a great demand for analysts and researchers leading to what Berman presents as an emerging policy ecosystem (Berman, forthcoming). The need for analytical expertise fuelled the rise of a wide array of think tanks, research institutes, and the creation of schools of public policy in the late 1960s. While PPBS itself proved to be a failure and was abandoned, this experience changed the rules of the game as the policy ecosystem continued to develop the concepts of managerial governance. Many of the architects of managerial governance within PPBS thus went back to the drawing board to think about renovating education, public housing, and health care, providing much of the raw material that later became enshrined in the public management of the 1980s.

The idea of managed competition was born out of this experience. It was foremost a normative representation of managerial governance which was crafted to legitimise its practices. While systems analysis had first been implemented by extolling the virtues of powerful analysts able to use the tools of sciences to find the best strategies, the numerous failures of this approach forced systems analysts to scale back on what they promised to deliver. Increasingly they began to deflect criticisms by shifting the burden of responsibility back onto subordinates (Jardini, 2000). Describing a practice of governance based on data about performance as an attempt to manage competition was an easy way to place the responsibility for the outcomes of managerial governance back onto lower orders, as if administrators were simply neutral arbiters allocating resources to the divisions, organisations or firms that were performing well.

Yet managed competition remained firmly anchored in a framework of optimisation and was intended to empower managers rather than enforce market-like mechanisms. From the beginning, systems analysts had been suspicious about the logic of the Market believing it to be too coarse a tool to produce the right incentives and inadequate to deal with the problem of information that preoccupied them (Enthoven, 1993). For example, military authorities and military contractors were believed to be manipulating information for their own interests. As it would later play out in the field of health care, social housing and education, people asking for services were seen to be exaggerating their needs while those offering them were accused of exaggerating their costs. For this reason, the development of formal procedures of management were built on new techniques of costing and performance assessment, so as to compensate for *the inability of the market to correctly assess needs and provision costs*. The point of managed competition was not to 'let' competition choose winners and losers on the basis of performance. Instead top managers fully expected to *arrive themselves at a verdict on what performance indicators really meant and what their implications would be*. In line with the focus on accountability, it was a means to get information about performance so as to facilitate the decisions of administrators.

This produced a conception of competition that was far-removed from the legalistic and constitutional concept of competition inherited from Ordoliberalism or the normative

embrace of competitiveness as a social value that became associated with the Chicago School. The idea that a regulatory agency could be responsible for compiling information and taking decisions about what course to adopt was exactly the sort of apparatus that Hayek had so strongly decried in his *Road to Serfdom*. Indeed, the point about neoliberal theory, at least in its early stages, was that it systematically dismissed the ability of planners to substitute themselves for market processes.

If we have struggled to come to terms with the legacy of managerial governance, it is partly because the rhetoric of neoliberal theory was later re-appropriated by those promoting managerial practices of governance and who presented their framework as a means to produce 'market like logics'. There was nothing particularly new about this conceptual move. For the idea that allocating resources through a planned optimisation of resources was tantamount to implementing a logic of the market is a notion that comes from the early post war era. It is not something that was initially conceived by neoliberal theorists. It emerged in an age when planning and markets were not considered to be anathema to one another (Bockman 2011: 63). Researchers at RAND, in fact, relied on the claim that planned optimisation was mimicking the logic of the market as a convenient strategy to withstand the intense scrutiny of McCarthyism during the cold war and the distrust of planning. Later, public management was similarly built on the ability of managers to exploit a pro-market rhetoric of neoliberalism in order to promote practices of planning.

That engineering competition often has more to do with planning than with market competition can best be seen from the fact often noted by scholars that neoliberal governance is usually experienced as an intrusion of managerial authority. What is cast in normative claims about empowerment, ownership and participation usually leads to centralisation and oversight. This dual aspect of current practices of governance perfectly captures the commitment of managerial governance to integrate lower orders into governance as parts of the process of decision making. It often involved the promise of a greater say in the direction of an organisation (or in that of governance), but usually led to administrators having a greater say in operational matters. For the integration of more and more data about operations concerns into matters of governance usually meant that operations would be increasingly subject to strategic considerations. In the 1960s, it meant that military leaders had to justify their decisions in relations to various metrics and often risked seeing civilians at the Department of Defense override their propositions on the basis of abstract and numerical reasoning that seemed out of line with their own experience. This pattern would become a recurrent trope later reflected in NPM with the recurrent conflicts between managers and professionals (e.g. teachers, doctors, social care workers) who felt constantly undercut by managerial initiatives that seemed out of line with their own practices (Bezes et al, 2012).

Conclusion

As we have argued, the connection between governance and management that has become a defining feature of neoliberalism cannot be understood as the product of neoliberal ideas. It has too often been normalised as a means to intensify the efficiency of bureaucratic processes when this convergence reflects instead a more profound transformation in practices of governance. The literature on neoliberalism has missed this because it continues to direct its gaze towards neoliberal theory when framing the significance of managerial practices under neoliberalism. The result has been an inescapable paradox which continues to trouble this

literature: the fact that a discourse articulated as a critique of bureaucracy and the state ended up fuelling pervasive forms of managerialism. Unable to deal with this problem, the literature has often reified this contradiction as an effect of ideology (Peck 2010; Mirowski 2013), a proof of the self-contradictory logic of neoliberalism.

As we have argued, the difficulty of connecting managerialism with neoliberal theory stems from the fact that they emerged from two different historical lineages. Current managerial practices go against many core principles of neoliberal theory and as a result it is not surprising that the writings of neoliberal theorists should be of little help in grasping managerialism. More often than not, neoliberal thinkers *count on the market to solve the difficult practical problems that concern governance*. As a result, neoliberals such as Friedman, Hayek or early public choice theorists have very little to say about management and managerial techniques.

Looking at the history of systems analysis offers a more promising lens to examine this managerial turn – whether we are interested in the growing reliance on thick analytics to shape strategic decision making or the attempts to use budgeting as a means to structure the decisions of subordinates (or the targets of governance). Studying the diffusion of managerial governance can teach us about why governance has taken an increasingly managerial aspect and why we have witnessed the multiplication of managerial processes under neoliberalism, as governance came to rely increasingly on managerial processes for making decision about policies or strategies.

Bibliography

- Abella, Alex (2008), *Soldiers of Reason: The Rand Corporation and the Rise of the American Empire* (New York: Harcourt).
- Amadae, S. M. (2003), *Rationalizing Capitalist Democracy: The Cold War Origins of Rational Choice Liberalism* (London: Chicago Press University).
- Amadae, S. M. (2016), *Prisoners of Reason: Game Theory and Neoliberal Political Economy* (Cambridge: Cambridge University Press).
- Augier, M. and March, J. (2011), *The Roots, Rituals, and Rhetorics of Change: North American Business Schools after the Second World War*, Stanford: Stanford University Press.
- Banzhaf, H. S. (2010), 'Consumer Surplus with Apology: A Historical Perspective on Nonmarket Valuation and Recreation Demand', *Annual Review of Resources Economics*, 18 (2), pp. 1-25.
- Berle, A. and Means G. C. (1967), *The Modern Corporation and Private Property*, New York, Harcourt, Brace & World inc.
- Berman, E. P. (Forthcoming), *Thinking Like an Economist: How Economics Became the Language of U.S. Public Policy* (Princeton: Princeton University Press).

- Bezes, Philippe, Didier Demazière, Thomas Le Bianic, Catherine Paradeise, Romuald Normande, Daniel Benamouzig, Frédéric Pierru, Julia Evetts (2012) 'New public management and professionals in the public sector: What new patterns beyond opposition?', *Sociologie du travail* 54 (2012) : 1-52.
- Bockman J. (2011) *Markets in the Name of Socialism: The Left Wing Origins of Neoliberalism*, Stanford, Stanford University Press.
- Brenner, N., Peck, J. and Theodore, N. (2012), 'Neoliberalism Interrupted', in D. Cahill, L. Edwards and F. Stilwell (eds.), *Neoliberalism: Beyond the Free Market* (Cheltenham: Edward Elgar), pp. 15-30.
- Brinkley, A. (1989), 'The New Deal and the Idea of the State,' in Fraser, S. & Gerstle, G. (eds.), *The Rise and Fall of the New Deal Order, 1930-1980* (Princeton: Princeton University Press), pp. 85-121.
- Cahill, D. (2014), *The End of Laissez-Faire? On the Durability of Embedded Neoliberalism*, (Cheltenham: Edward Elgar Publishing).
- Chandler, A. (1962) *Strategy and Structure: Chapters in the History of the American Industrial Enterprise* (Cambridge: MIT Press).
- Chandler, A. (1977), *The Visible Hand: Managerial Revolution in American Business* (Boston: Harvard University Press).
- Colas, A. (2005), 'Neoliberalism, Globalisation and International Relations', in A. Saad-Filho and D. Johnston (eds.), *Neoliberalism: A Critical Reader* (London: Pluto Press), pp. 70-80.
- Collier, S. (2009), 'Topologies of Power: Foucault's Analysis of Political Government beyond "Governmentality" Theory', *Culture & Society*, 26 (6), pp. 78-108.
- Crouch, C. (2011), *The Strange Non-Death of Neoliberalism* (Cambridge: Polity Press).
- Dardot, P. and Laval, C. (2014), *The New Way of the World: On Neoliberal Society* (London: Verso).
- Davies, W. (2014), *The Limits of Neoliberalism: Authority, Sovereignty and the Logic of Competition* (London: Sage).
- Duarte, P. G. (2012), 'Not Going Away? Microfoundations in the Making of a New Consensus in Macroeconomics', in P. G. Duarte and G. Tadeu Lima (eds.), *Microfoundations Reconsidered: The Relationship of Micro and Macroeconomics in Historical Perspective* (Cheltenham: Edward Elgar), pp. 190-239.
- Erickson, P., Klein, J., Daston, L., Lemov, R., Sturm, T. and Godin, M. (2013), *How Reason Almost Lost its Mind: The Strange Career of Cold War Rationality* (Chicago: University of Chicago Press).

- Enthoven, A., (1993), 'The History and Principles of Managed Competition', *Health Affairs*, 12 (suppl 1), pp. 24-48.
- Ewald, F. (1996), 'Philosophie de la précaution', *L'Année sociologique*, 46 (2), 383-412.
- Ferlie, E., Pettigrew, P., and Ashburner, L. (1996), *The New Public Management in Action*. Oxford ; New York: OUP Oxford.
- Fesler, J. (1957), 'Administrative Literature and the Second Hoover Commission Reports', *The American Political Science Review*, 51 (1), pp.135-157.
- Fligstein, N. (1990), *The Transformation of Corporate Control*, (London: Harvard University Press).
- Foucault, M. (2004), *The Birth of Biopolitics*. (London: Palgrave).
- Fourcade, M. and Khurana, R. (2013), 'From Social Control to Financial Economics: the Linked Ecologies of Economics and Business in 20th America', *Theory & Society*, 42 (2), pp. 121-159.
- Gamble, A. (2006), 'Two Faces of Neo-liberalism', in R. Robison (ed.) *The Neo-Liberal Revolution: Forging the Market State* (London: Palgrave).
- Gleeson, R. E. and Schlossman, S. (1995), 'George Leland Bach and the rebirth of graduate management education in the United States, 1945-1975', *Selections*, 11 (3): pp. 8-46.
- Gleeson, R. E. and Schlossman, S. (1992), 'The Many Faces of the New Look: The University of Virginia, Carnegie Tech, and the Reform of American Management Education in the Postwar Era', *Selections*, 8 (4), pp. 9-28.
- Graeber, D. (2015) *The Utopia of Rules: On Technology, Stupidity and the Secret Joys of Bureaucracy Hardcover* (London: Melville house).
- Hanlon, G. (2015), *The Dark Side of Management: A Secret History of Management Theory*, (London: Routledge).
- Hanlon, G. (2017), 'The First Neo-Liberal Science: Management and Neo-Liberalism', *Sociology Online First*.
- Harvey, D. (2005) *A Brief History of Neoliberalism* (Oxford: Oxford University Press).
- Hibou, B. (2012) *La bureaucratisation du monde: à l'ère néolibérale*, Paris: La Découverte.
- Hitch, C. J. (1996), 'Management Problems of Large Organizations', *Operations Research*, 44 (2), pp. 257-264.

- Hood, C. (1995), 'The "New Public Management" in the 1980s: Variations on a Theme', *Accounting, Organizations and Society*, 20 (2/3), pp. 93-109.
- Hood, C. and Dixon, R. (2015), *A Government That Worked Better and Cost Less?: Evaluating Three Decades of Reform and Change in UK Central Government* (Oxford: Oxford University Press).
- Hoskin, K. and Macve, R. (1994), 'Reappraising the Genesis of Managerialism: A Re-examination of the Role of Accounting at the Springfield Armory, 1815-1845', *Accounting Auditing & Accountability Journal*, 7 (2), pp. 4-29.
- Hughes, O. (2003), *Public Management and Administration* (Basingstoke: Palgrave Macmillan).
- Jardini, D. R. (2000), 'Out of the Blue Yonder: The Transfer of Systems Thinking from the Pentagon to the Great Society, 1961-1965', in A. C. Hughes and T. P. Hughes (eds.), *Systems, Experts, and Computers: The Systems Approach in Management and Engineering, World War II and After* (London: MIT Press), pp. 311-358.
- Johnson, H. T. (1975), 'Management Accounting in an Early Integrated Industrial: E.I. Dupont de Nemours Powder Company, 1903-1912', *Business History Review*, 49 (2), pp. 185-204.
- Johnson, H. T. and Kaplan, R. (1987), *Relevance Lost: The Rise and Fall of Management Accounting*, (Boston: Harvard Business School Press).
- Klein, J. L. (2015), 'The Cold War Hot House for Modeling Strategies at the Carnegie Institute of Technology', *Working Paper Series No. 19*, Institute for New Economic Thinking.
- Knafo S. and B. Teschke (2017) 'The Rules of Reproduction of Capitalism: A Historicist Critique', *Working Paper Series No. 12*, University of Sussex Centre for Global Political Economy.
- Khurana, R. (2007) *From Higher Aims to Hired Hands: The Social Transformations of American Business Schools and the Unfulfilled Promise of Management as a Profession* (Oxford: Oxford University Press).
- Light, J. (2003) *From Warfare to Welfare: Defense Intellectuals and Urban Problems in Cold War America* (Baltimore: John Hopkins University Press).
- Locke, R. R. and J.-C. Spencer (2011) *Confronting Managerialism* (London: Verso).
- Lynn, L. (2006), *Public Management: Old and New* (London: Routledge).
- Lynn, P. (2012) 'Public Management', in B. G. Peters and J. Pierre (eds), *The SAGE Handbook of Public Administration*, (London: Sage).
- Lemke, T. (2012), *Foucault, Governmentality, and Critique* (London: Routledge).

- McKee, K. (2009), 'Post-Foucauldian Governmentality: What does it offer Critical Social Policy Analysis?', *Critical Social Policy*, 29 (3), pp. 465-486.
- McKenna, C. (2010) *The World's Newest Profession: Management Consulting in the Twentieth Century*, Cambridge University Press: Cambridge.
- Miller, P. and Rose, N. (2008), *Governing the Present: Administering Economic, Social and Personal Life* (Cambridge: Polity).
- Mirowski, P. (2002), *Machines Dreams: Economics becomes a Cyborg Science* (Cambridge: Cambridge University Press).
- Mirowski, P. and Plehwe, D. (eds) (2009), *The Road from Mont Pèlerin: The Making of the Neo-Liberal Thought Collective* (Cambridge, MA: Harvard University Press).
- Mirowski, P. (2013), *Never Let a Serious Crisis go to Waste: How Neoliberalism Survived the Financial Meltdown* (London: Verso).
- Novick, D. (1954) *Efficiency and Economy in Government through New Budgeting and Accounting Procedures*, Santa Monica: Rand Corporation.
- Olson, M. (ed.) (1969) *Toward a Social Report*, Washington: US Department of Health, Education and Welfare, Washington..
- Peck, J. (2010) *Constructions of Neoliberal Reason* (Oxford: Oxford University Press).
- Power, M. (2007), *Organized Uncertainty: Designing a World of Risk Management* (Oxford: Oxford University Press).
- Radin, B. (2000), *Beyond Machiavelli: Policy Analysis comes of Age* (Washington D.C.: Georgetown University Press).
- Robison, R. (2006), 'Neo-liberalism and the Market State: What is the Ideal Shell?', in R. Robison (ed.), *The Neo-Liberal Revolution Forging the Market State* (London: Palgrave), pp. 1-19.
- Rose, N., O'Malley, P. and Valverde, M. (2006), 'Governmentality', *Annual Review of Law and Social Science*, 2: 83–104.
- Schick, A. (1966), 'The Road to PPB: The Stages of Budget Reform', *Public Administration Review*, 26 (4), pp. 243-258.
- Schlossman, S., Sedlak, M. and Wechsler, H. (1998), 'The 'New Look': The Ford Foundation and the Revolution in Business Education', *Selections*, 14 (3), pp. 8-28
- Sen, A. (2000), 'The Discipline of Cost-Benefit Analysis', *The Journal of Legal Studies*, 29 (2), pp. 931-52.

Stivers, C. (2003), 'Administration versus Management: A Reading beyond the Boundaries', *Administration & Society*, 35 (2), pp. 210-230.

Styhre, A. (2015), *The Financialization of the Firm: Managerial and Social Implications*, (Cheltenham: Edward Elgar).

Thomas, W. (2015) *Rational Action: The Sciences of Policy in Britain and America, 1940-1960*, (London, MIT Press).

Tribe, K. (2015), *The Economy of the World: Language, History, and Economics*, (Oxford: Oxford University Press).

Wildavsky, A. (1966), 'The Political Economy of Efficiency: Cost-Benefit Analysis, Systems Analysis, and Program Budgeting', *Public Administration Review*, 26 (4), pp. 292-310.

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² In focusing on writings about neoliberalism, we do not deny the existence of a rich literature on various aspects of this managerial governance, notably a wide range of publication on 'New Public Management' (Lynn 2006; Hood 1995). However, these developments have rarely been articulated from a historical perspective and register only tangentially in debates on neoliberalism.

³ Even elaborate accounts of management theory, such as Will Davies fascinating *The Limits of Neoliberalism*, conflates both by casting managerialism as part of a new regime of violence organised around the norms and imperatives of competitiveness. Managerialism is read here as a technocracy that is unaccountable; a new regime of violence that values leadership and where decisions are no longer in need of proper justification because of the imperative of competition (Davies 2014: 145).

⁴ Managerialism is also at times associated with the separation of ownership and management, which became particularly marked in the 1920s. This is a different development which has more to do with the question of control over the corporation, rather than the techniques of governance (Berle and Means 1932).

⁵ In a similar way, the rise of modern bureaucracies since the late 19th century was predicated on the need to separate bureaucracy from policy as a means to ensure the efficiency of the former. This very separation explains the strong synergies between scientific management and these modern bureaucracies that Max Weber wrote about (Hibou 2012 ; Hanlon 2015).

⁶ It is noteworthy that those who did champion a broader vision of scientific managerialism usually hoped that the growth of knowledge would eliminate uncertainty thus making it possible to apply more 'mechanical' ways of thinking (Stivers 2003: 218).

⁷ OR was initially developed in Britain but the enthusiasm for it in this country dissipated with the end of the war, as academics returned to their universities and discussions around 'scientific planning' came to be associated with socialism (Kirby 2003).

⁸ Leading the way on this path was von Neumann himself who immediately went beyond game theory after the publication of *Theory of Games and Economics Behavior* co-written with Oskar Morgenstern. In the 1950s, his work gravitated towards a theory of automata which lent great emphasis to a broader reflection on the role of information and the processes of its communication (Mirowski 2002).