Evolution of organizational ambidexterity in the public sector and current challenges of innovation capabilities

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ABSTRACT

This theoretical article aims to analyze the underlying challenges to the development of innovation capabilities in public sector organizations. Several papers have examined the specific barriers to innovation in the public sector. However, little is known about the root causes of these barriers. To fill this gap, we apply the concept of organizational ambidexterity, which refers to the ability of the organization to balance exploitation and exploration and resolve the resulting tensions. Based on a literature review of the development of innovation in the public sector (116 references), we trace the evolution of the ambidexterity of public organizations, following a three-period analysis. Our findings highlight the relevance and usefulness of the exploitation–exploration question, which underlies the development of innovation capabilities, and show that contemporary public organizations are meeting particular challenges regarding innovation.

Key Words: *Public sector innovation, innovation capabilities, organizational ambidexterity, exploitation, exploration*

RÉSUMÉ

Cet article théorique vise à analyser les défis inhérents au développement de la capacité d'innovation au sein des organisations publiques. De plus en plus de contributions s'intéressent aux freins à l'innovation dans l'administration. Cependant un cadre théorique permettant d'en comprendre les causes profondes manque. Pour y répondre, cet article s'appuie sur le concept d'ambidextrie organisationnelle, qui désigne la capacité des organisations à concilier leurs activités d'exploitation et d'exploration, malgré les tensions qu'engendre cette cohabitation. Sur la base d'une revue de la littérature sur le développement de l'innovation dans l'administration (116 références), nous retraçons l'évolution de l'ambidextrie organisationnelle dans le secteur public, en s'appuyant sur un découpage historique en trois périodes. Notre analyse met en lumière la pertinence et l'utilité de mobiliser le cadre théorique de l'ambidextrie pour identifier les défis qui sous-tendent le développement des capacités d'innovation dans les organisations publiques contemporaines.

Mots-clés : Innovation publique, capacité d'innovation, ambidextrie organisationnelle, exploitation, exploration

Introduction

Until recently, the public sector was perceived as far from innovative. The main role of the state was to provide the necessary legal and institutional stability to stimulate innovation in the private sector. Things have recently changed: the word "innovation" is nowadays at the heart of almost every public sector organization (PSO) agenda, and there are many initiatives and pieces of research that are contributing to a better understanding of this complex phenomenon (Emery et al., 2016; Kay and Goldspink, 2016; Christensen and Lægreid, 2016; Gieske, van Buuren and Bekkers, 2016).

Public sector innovation is a recent field of research (De Vries, Bekkers and Tummers, 2015). During the past few years, the literature on the subject has generally been concerned with highlighting the barriers to, and drivers of, innovation in the public sector (Wynen et al., 2014; Daglio, Gerson and Kitchen, 2015; Raipa and Giedrayte, 2014). Authors observe that PSO innovation is nowadays constrained by various *barriers* created by certain hard factors (such as legal frameworks, procedural constraints and red tape, and organizational structure), as well as certain soft factors (e.g. organizational culture).

In the literature on innovation in the private sector, some authors have argued that the innovation capabilities of organizations are constrained by one main tension. Lawson and Samson (2001: 384) write:

> Innovation capability is not just an ability to be successful at running a business newstream, or to manage mainstream capabilities. Innovation capability is about synthesising the two operating paradigms.

The synthesis of these two paradigms, *exploitation* (processing and refining the core production) and *exploration* (prospecting activities for new opportunities and innovation), is crucial for organizations (March, 1991). However, succeeding with this synthesis is hard for organizations, as exploitation and exploration rely on antagonistic systems and compete for scarce resources. Theories about the ability to overcome these tensions, and to exploit and explore simultaneously in an organization, use the concept of organizational ambidexterity (March, 1991; Gieske, van Buuren and Bekkers, 2016; Duncan, 1976; Raisch et al., 2009).

In the public sector, the ins and outs of organizational ambidexterity are generally under-researched (Cannaerts, Segers and Henderickx, 2016; Palm and Lilja, 2017; Deserti and Rizzo, 2014; Smith and Umans, 2015). However, the current barriers to innovation in the public sector are likely to be underpinned by this *nested paradox* of exploitation and exploration, since this is true for the private sector (Papachroni, Heracleous and Paroutis, 2016; Andriopoulos and Lewis, 2009). Indeed, PSO innovation capabilities rely on the collaboration of a multitude of stakeholders (Torfing, 2016), including those who are already involved in the daily business of the PSO, as well as resting on particular organizational configurations that enhance the development of every employee's *innovative work behaviour*, idea generation and realization (Bysted and Jespersen, 2014; Moll and de Leede, 2017). However, the PSO – and, more particularly, the street-level bureaucrats – should carry on delivering their daily services in an efficient and effective way. This efficiency of exploitation, as well as other main public service

values such as the core principle of equality of treatment, relies on standardized and well-monitored processes and structures that are, or at least appear to be, inconsistent with the development of innovation capabilities.

This article aims to understand these tensions by applying the concept of organizational ambidexterity. Therefore, the research questions are formulated as follow:

1. what tensions underpin the development of innovation capabilities in PSOs, and
2. how do PSOs deal with these tensions?

To do this, the research attempts to trace the evolution of the exploitation–exploration trade-off in PSOs. Currently, there is no research on the evolution of PSO ambidexterity, as the literature on this subject is recent (Cannaerts, Segers and Henderickx, 2016; Palm and Lilja, 2017; Deserti and Rizzo, 2014; Smith and Umans, 2015). Consequently, we shall infer this evolution from the evolution of the literature on innovation in the public sector.

This article is divided into three parts. The first part introduces the concept of organizational ambidexterity and discusses its application in the public sector. The second part describes the historical evolution of innovation in PSOs, by defining three historical periods. For each period, we characterize the space given to innovation in PSOs, the way innovation was perceived by scholars, the roles of different actors and the influencing paradigms and values of public administration. From the characteristics of these periods, we deduce the major trends at those times regarding the trade-offs for PSOs between exploitation and exploration. The last part considers the implications of this evolution of ambidexterity for the challenges to PSO innovation capabilities, and then the paper concludes.

Method

This paper is a theoretical analysis. The literature has been gathered using electronic databases (online public administration reviews and databases such as Web of Science[1] and Scopus[2]). We did not select a specific period for the publications because we aimed to observe the historical evolution. When this research started, the intention was to select only peer-reviewed articles and contributions. However, we decided to enlarge our literature selection to include books, book chapters, reports and theses, as many substantial contributions appeared to be made in these other forms. For each database, we started to search alternating combinations of key words: "innovation public sector" and/or "innovation management" and/or "innovation capabilities" and/or "public administration history" and/or "organizational ambidexterity public sector" and/or "exploitation" and/or "exploration" and/or "tensions" and/or "paradoxes".

After having eliminated the non-relevant documents, the result of this collection is a database of about 116 scientific references. From this corpus of documents, we could distinguish two groups: literature on ambidexterity and literature on public sector innovation. The first step of our literature review consists in structuring and restoring the collected references on the

[1] http://apps.webofknowledge.com/WOS_GeneralSearch_input.do?product=WOS&search_mode=GeneralSearch&SID=W18FLEngm2ljx912fJP&preferencesSaved=

[2] https://www.scopus.com/home.uri

concept of organizational ambidexterity in the public sector (the first group). In a second step, we focused on the second group of literature from which we distinguished three periods in the history of public sector innovation. Given the characteristics of each period, we inferred the main trends for PSOs regarding the trade-offs between exploitation and exploration. In a nutshell, this third part aimed to combine the first and second group of literature.

Organizational ambidexterity in the public sector, and tensions

This section is devoted to a literature review of the concept of organizational ambidexterity, and, in the second part, to organizational ambidexterity in the public sector.

The concept of organizational ambidexterity

The earlier literature on exploitation and exploration generally referred to these two concepts as mutually exclusive systems (Mothe and Brion, 2008). Indeed, the two systems are based on contradictory values and goals, such as efficiency for exploitation and innovation for exploration, and they compete for scarce resources (March, 1991). Having said that, authors have shown that emphasizing one of the two systems over the other leads to substantial difficulties for organizations. For instance, organizations that are overly oriented towards exploitation suffer from inertia (Benner and Tushman, 2003) and sub-optimal stable equilibria (March, 1991), while organizations mainly dedicated to exploration activities "are likely to find that they suffer the costs of experimentation without gaining many of its benefits" (March, 1991: 71). That is why March (1991) shows – in his seminal work – that organizations ought to operate a trade-off to allow them to balance their exploitation and exploration activities. This trade-off is particularly complex, as it implies a complete adaptation of the organization's strategies, cultures, structures and processes (Smith and Umans, 2015). The concept of organizational ambidexterity refers to the ability of the organization to balance exploitation and exploration and resolve the resulting tensions (March, 1991; Gieske, van Buuren and Bekkers, 2016; Duncan, 1976; Raisch et al., 2009).

Andriopoulos and Lewis (2009) and, later, Papachroni, Heracleous and Paroutis (2016) investigated more carefully the sub-tensions (the "nested system of tensions") created by the main paradox of simultaneously carrying out exploitation and exploration. They classified those tensions into three categories: strategic intent (profit versus breakthrough), customer orientation (tight versus loose coupling) and personal drivers (discipline versus passion).

In terms of outputs, several studies show that organizational ambidexterity improves performance and innovation (Junni et al., 2013; He and Wong, 2004).

However, how do organizations deal concretely with ambidexterity: how do they overcome the main paradox of simultaneous exploitation and exploration?

Resolving this paradox can take two different forms: structural and contextual ambidexterity. Structural ambidexterity, also referred to as architectural ambidexterity, is a model in which exploitation and exploration are spatially separated into different structures, units, or sub-units (O'Reilly and Tushman, 2013; Gibson and Birkinshaw, 2004; Huang and Kim,

2013; Fang, Lee and Schilling, 2010). In this model, a higher organizational level is responsible for coordinating these structures and maintaining an overall consistency. Therefore, structural ambidexterity is mainly managed from the top down. The structures for exploitation and exploration are differentiated within the same organization, with each having its own processes, structure and culture (O'Reilly and Tushman, 2004), and, probably, different (sub-) organizational cultures (Schein, 2004). This differentiation (Raisch et al., 2009) can benefit the organization. According to several authors, the specialization of exploitation and exploration structures leads to increased efficiency in both activities (Junni et al., 2013), and safeguards the creativity of exploration from the dominant managerial cognition of mainstream activities (Jansen et al., 2009). That is why O'Reilly and Tushman (2004) argue that "the structure of ambidextrous organizations allows cross-fertilization among units while preventing cross-contamination". This argument is not shared by every scholar. Indeed, it is argued in the literature that the success of structural ambidexterity depends strongly on the integration of the different structures (Bledow et al., 2009; Raisch et al., 2009; Cannaerts, Segers and Henderickx, 2016). If integration fails, the cultural and structural gap between exploration and exploitation can create barriers to information sharing and to innovation diffusion, and can contribute to enclosing the different structures in silos (Birkinshaw and Gibson, 2004).

Conversely, contextual ambidexterity is a model in which each employee contributes to both exploitation and exploration in the context of their day-to-day work (Gibson and Birkinshaw, 2004; Birkinshaw and Gibson, 2004). The two systems are not spatially separated. Unlike structural ambidexterity, contextual ambidexterity is mainly characterized by bottom-up processes. The special feature of contextual ambidexterity is that it rests on the ability of the organization to provide employees with a particularly supportive work context. Based on the work of Ghoshal and Bartlett (1994) on organizational contextual dimensions, Gibson and Birkinshaw (2004) set out to examine the relationship between ambidexterity and four dimensions of organizational context, namely discipline, stretch, support and trust. Gibson and Birkinshaw (2004: 213) define those four dimensions as follows:

> Discipline induces members to voluntarily strive to meet all expectations generated by their explicit or implicit commitments. Establishment of clear standards of performance and behavior, […] and consistency in the application of sanctions contribute to the establishment of discipline. Stretch […] induces members to voluntarily strive for more, rather than less, ambitious objectives. Establishment of a shared ambition, the development of a collective identity, […] contribute to the establishment of stretch. Support induces members to lend assistance and countenance to others. Mechanisms that allow actors to access the resources available to other actors, freedom of initiative at lower levels, […] contribute to the establishment of support. Finally, trust is an attribute of context that induces members to rely on the commitments of each other. Fairness and equity in a business unit's decision processes, involvement of individuals in decisions and activities affecting them, […] contribute to the establishment of trust.

While discipline and stretch mainly enable efficiency and performance in exploitation, support and trust contribute to improved exploration activities. Therefore, Gibson and Birkinshaw (2004) argue that the most supportive organizational context for ambidexterity is the one that is simultaneously composed of, on the one hand, discipline and stretch, and, on the other hand, support and trust. In other words, a balance between exploitation and exploration at the

individual level relies on a balanced work context, encouraging performance management, formalization, creativity and risk-taking simultaneously (Brion, Mothe and Sabatier, 2010).

A third category of ambidexterity is sometimes mentioned in the literature: sequential ambidexterity. This refers to a model in which periods of exploitation and periods of exploration succeed each other (O'Reilly and Tushman, 2013; Chen and Kannan-Narasimhan, 2015). However, the concept of sequential ambidexterity has been contested. According to Gupta, Smith and Shalley (2006), alternations between exploitation and exploration, also referred to as *punctuated equilibrium*, relate not to organizational ambidexterity but more to temporal ambidexterity. Thus, this punctuated equilibrium can also create a balanced partition between exploitation and exploration. "While the sequential allocation of attention is generally perceived as an outcome of goal conflict and bounded rationality, it also results in a simplification of experiments in organizational change" (Levinthal and March, 1993: 98). We will not consider sequential ambidexterity here as a category of organizational ambidexterity, because our conception of ambidexterity relies on the effective organizational ability to manage exploitation and exploration *simultaneously* (Gupta, Smith and Shalley, 2006).

Organizational ambidexterity in the public sector

Research on organizational ambidexterity in the public sector is rather new (Cannaerts, Segers and Henderickx, 2016; Palm and Lilja, 2017; Deserti and Rizzo, 2014; Smith and Umans, 2015). In the same way as in the literature on the private sector, exploitation activities for PSOs refer to the processes of service delivery and improvement, while exploration activities for PSOs refer to the emergence, implementation and diffusion processes of radical innovation (Cannaerts, Segers and Henderickx, 2016). At this stage, a central question is: are there public sector specificities with respect to organizational ambidexterity?

The general differences between private sector and public sector organizations have been widely discussed in the literature, and it has been shown that PSOs exhibit many peculiarities in terms of goals and missions, structures, cultures, motivation and processes (Perry and Rainey, 1988; Boyne, 2002; Bryson, Crosby and Bloomberg, 2014; Rainey, 2011). With respect to organizational ambidexterity, the peculiarities of PSOs are less obvious, especially if one considers the heterogeneity of the forms, cultures and structures that are covered by the term PSO (see for instance the work of Smith and Umans, 2015).

Choi and Chandler (2015) consider that two peculiarities of public sector organizations may interfere with the way in which they deal with exploration and exploitation; these are the lack of competitive pressure and the response to political pressure. The lack of competitive pressure may lead PSOs to make a deficient evaluation of the need for change and the costs of change, with the result that they adopt an inappropriate division between exploitation and exploration activities. Political pressure can interfere with the status given to exploration in PSOs.

March (1991) showed that organizations naturally tend to favour exploitation activities, which are more certain and reliable than exploration activities in the short term. This preference for short-term success is exacerbated when resources are scarce, as may be the case for small PSOs (Deserti and Rizzo, 2014; Cannaerts, Segers and Henderickx, 2016) or PSOs suffering from budgetary cuts.

On the other hand, the literature on innovation in the public sector suggests that exploration is strongly associated with the concept of innovation, and it thus confronts the same hard and soft barriers as innovation in private organizations (see above : Daglio, Gerson and Kitchen, 2015; DiMaggio and Powell, 1991; Meyer and Hammerschmid, 2006). Additionally, O'Reilly and Tushman (2013) showed that structures in which decision-making processes are centralized, work processes are formalized (i.e. standardized), and division is particularly specialized promote efficiency but do not encourage innovation. This argument leads Cannaerts, Segers and Henderickx (2016) to assume that the structures of PSOs, which are often concerned with centralization, formalization and specialization, are often unfavourable to exploration activities.

Three phases of ambidexterity: from bureaucratic to innovative public sector organizations

The objective of this part of the paper is to trace the evolution of the main trends for PSOs in terms of organizational ambidexterity. As the literature on public sector ambidexterity is recent (Cannaerts, Segers and Henderickx, 2016; Palm and Lilja, 2017; Deserti and Rizzo, 2014; Smith and Umans, 2015), there is no previous literature to assist us. Thus, we try to trace this evolution by creating the story of public sector innovation.

The modern history of public administration vis-à-vis innovation is, in our view – and based on our literature review – characterized by three different periods. These three periods are ideal or typical, and are meant to reflect the major trends. In the first period (up to the 1970s), also referred to as the *bureaucratic period*, innovation was simply not an option for PSOs. PSOs were mostly supposed, according to the Weberian model, to be predictable and stable. During the second period (first decade of the 21st century), public sector managers and scholars gradually grasped the importance of innovating for PSOs and not just supporting private sector innovation. Alongside the domination of managerial paradigms, innovation management in the public sector was embodied in standardized forms of R&D processes and other new public management (NPM) initiatives. Nowadays, the requirement to innovate is fully recognized by scholars, politicians and public managers (Sørensen, 2017; Emery et al., 2016; Gieske, van Buuren and Bekkers, 2016; Osborne and Brown, 2011). Innovation by PSOs relies on certain innovation capabilities, and these should be developed alongside operational capabilities.

First period: the bureaucratic model of innovation

The first period (up to the 1970s) is a period when – although we must use our imaginations here, as there is almost no empirical literature on this topic – the entire energy of PSOs was devoted to service delivery.[3] The traditional model of bureaucracy is rooted in the work of Max Weber (1956). According to Weber, a public administration must rely on principles such as "hierarchy, formal rules, uniformity, legitimacy, standardization of procedures, division of labour, impersonality, meritocracy and technical qualifications" (Lampropoulou and

[3] In this article, public service delivery refers to the classical public services delivery, not the special administrative units in charge of the conception of public policies.

Oikonomou, 2016: 3). These values were applied in every public administration in western countries up to the 1970s. This was a paradigm of rationalization and was afterwards called the *traditional model* of public administration (Peters and Pierre, 1998; Dunleavy and Hood, 1994).

Many approaches that came after Weber's model emphasized the need for standardization and rationalization. The main reason is that during this period public administration studies were strongly influenced by both the juridical and the industrial fields (Emery, 2009). On the one hand, the traditional European model of bureaucracy was influenced by legal approaches (Chevallier and Loschak, 1978), as the law was the main road to the legal–rational legitimacy of the state as defined by Max Weber (who had a doctorate in law). On the other hand, public administration (*public management* did not yet exist) in this period was widely influenced by industrial methods of standardization and productivity improvement, in the context of the *scientific management* first put forward by Taylor (1911). One can observe that between the 1920s and the Second World War there was a wide application of Taylor's management principles in the administration of private companies (Omnès, 2007; Gardey, 2008), as well as in many public sector organizations (Mercier, 2001). This phenomenon, called *administrative Taylorism*, led to the optimization and standardization of the operational conduct of public affairs. The advent of administrative Taylorism "signals the entry of tertiary activities into the era of rationalization" according to Pillon (2016: 1).[4] This *mechanistic* approach emphasized the need for the clarification of goals and the rationalization of processes (De Boer, Enders and Leisyte, 2007). Among others, the *rational goal approach* (during the first quarter of the twentieth century) and the so-called *internal process model* (which stresses the importance of continuity and stability) (Quinn et al., 2014) were classical approaches that are also impregnated by juridical and industrial approaches, and thus called for more standardization of production (Quinn et al., 2014; Abu, 1994) in administrative and clerical activities.

During this period, innovation in society was mainly the prerogative of business. The early works of Schumpeter (1935) show how important innovation was for firms, as survival and success within a competitive market was at stake. Indeed, Schumpeter clearly demonstrates that a country's economic growth depends on the innovativeness of its firms. Thus, the role of the state vis-à-vis innovation was, at that time, to provide the means and freedom to innovate and reinvent the domestic economy. This included massive investment in national scientific research, in the education of the workforce and in infrastructure (Sørensen, 2017). For Kattel (2015), during the Schumpeterian period "the role of the public sector in entrepreneurial innovation is twofold: first, the public sector can take on the role of the entrepreneur [e.g. in socialist countries]; second, innovations in business can also be 'called forth' by governments …"(2015: 11).

Given this position, there was almost no room for innovation *within* a PSO in the traditional bureaucracy model or in the subsequent approaches of this period. However, the fact that innovation as such was not perceived as a prerogative of public service does not mean that there was no novelty. In every country, big changes were undertaken at the policy level, mainly by political authorities through radical top-down processes (Hartley, 2005; Arundel, Casali and Hollanders, 2015). The top managers had little scope for contributing to these processes. They could only "influence how legislated change or ministerial directives [were] implemented"

[4] Translated from the French by the authors.

(Arundel, Casali and Hollanders, 2015: 1272). As well as that particular top-down approach, Kattel (2015: 17) explains that the old literature conceives of public sector innovations "in the most abstract sense related to public authority and legitimacy". Moreover, "innovations lead to evolutionary changes in constraints and enablers that are intrinsic to the public sector (rules, relationships, institutions)" (Ibid.). In brief, public sector innovations were oriented towards more bureaucracy, rigidity and legality. In addition, innovative behaviour of managers and civil servants *within* PSOs was, at best, controlled, but could even be considered as a kind of disobedience. Clearly it is a context in which public servants were not involved in innovation within PSOs, and nor were citizens, who could only put innovative ideas onto the agenda through the election of politicians but had little participation.

Exploitation and exploration during the first, bureaucratic period

From these indications, what can we say about ambidexterity in this period? The literature on innovation suggests that, during the Weberian period, public servants and managers were essentially devoted to service delivery. Thus, PSOs were mainly in charge of exploitation. At the same time, public sector innovations were mostly led by politicians through radical top-down processes (Hartley, 2005; Arundel, Casali and Hollanders, 2015). Therefore, public sector exploration activities were predominately processed outside PSOs. At this point, we can assume that the bureaucratic model was incompatible with any form of PSO ambidexterity. As described by Max Weber, bureaucratic structures were particularly centralized, formalized and specialized (Crozier, 1980, 1963; Merton, 1957). These structural characteristics were likely to promote exploitation and prevent organizations from innovating (O'Reilly and Tushman, 2013).

In this period of strict division between exploitation and exploration, creativity for innovation could be preserved quite easily from the influence of the managerial cognition in force in mainstream activities (Jansen et al., 2009). However, this model, in which PSOs were too strongly oriented towards exploitation, may have contributed to the hampering of innovation by developing inertia and sub-optimal stable equilibria (March, 1991; Benner and Tushman, 2003).

The second period: momentum towards the management of innovation in the public sector

In the 1980s, and more so in the 1990s, the idea of innovation *within* the public sector (and not only innovation *supported by* the public sector) gradually started to emerge in the public administration agenda (Borins, 2006; Osborne and Brown, 2011). However, this emergence of PSO innovation did not replace the earlier role of supporting private company innovation.

In this period, PSOs were expected to reinvent themselves, according to the seminal book of Osborne and Gaebler (1993). For many authors, the word *innovation* in this period became a fashionable and meaningless concept (Berkun, 2010; Kwoh, 2012). Furthermore, in the literature on the public sector, innovation was accused of being a *magic word* (Pollitt and Hupe, 2011). In spite of its socially desirable connotations (Gaglio, 2011), its definition in the public sector still remains fuzzy (De Vries, Bekkers and Tummers, 2015). However these critics fall short of giving a complete explanation of the concrete expansion of innovation in PSOs observed during this period (Sørensen, 2017). In particular, why does innovation emerge at this time in the public sector? Several concrete explanations can be found in the literature for why the ground shifted with respect to innovation in public administration.

First of all, the bureaucratic model was increasingly criticized by scholars. Merton (1957), for instance, showed that the bureaucratic model encouraged public agents to be overly prudent and oriented towards procedures, while neglecting the original goals of their administrations. According to Merton, this dysfunction led to an overly rigid model of public administration. Crozier (1980, 1963) showed how the impersonality and rigidity of task definition (described as an asset by Max Weber) certainly weakens communication between public servants and their hierarchies. In fact, a strict adherence to procedures affects interpersonal communication within a PSO. Crozier also showed how public servants can benefit from this dysfunction by reinforcing their positions of power within their organizations. Ultimately, the rigidity of PSO contributed to *blocking* society (Crozier, 1980).

In parallel to (or as a consequence of) the criticisms of the bureaucratic model, new paradigms emerge in this period to redefine the role of public administrations. As mentioned before, this is particularly the case for NPM and the injunction to *reinvent government* (Osborne and Gaebler, 1993). NPM was introduced in many countries in the 1980s, to varying degrees, and it questioned whether the traditional bureaucratic model *efficiently* provided *high quality* public services (Pollitt and Bouckaert, 2004). The reforms that were implemented brought private sector values and goals (such as efficiency, performance, and cost and audit orientation) to the public sector, along with the management practices of private firms (Diefenbach, 2009). Above all, the reforms increased the attention given to innovation as a way to achieve new public goals. "The new public management claims that some important results will flow from this agenda: innovative bureaucracies that provide better service, produced at lower cost by public servants whose morale has improved" (Borins, 1995: 122).

As can be seen from the above developments, the classical bureaucratic model gave little influence to public managers with respect to the way changes were implemented. Against this backdrop, NPM was adopted, partly "to give managers greater responsibility for implementing efficiency-enhancing innovations" (Arundel, Casali and Hollanders, 2015: 1272), but also to *make them manage*.

The spread of this NPM paradigm placed innovation as a central goal (although one of many) of PSOs. Others factors also explain this shift towards public sector innovation. Some of these explanations are grounded in what we might call *pull factors* (Torfing, 2016; Sørensen, 2017). Pull factors give new opportunities to PSOs in the face of potential changes. This is particularly the case in relation to the huge steps that were taken in the field of ICT. On the other hand, *push factors* refer to the new constraints that put pressure on PSOs and force them to change; examples of push factors are the following (adapted from Bason, 2010; Dean, 2015; Osborne and Brown, 2011):

- The budgetary cuts and downsizing exercises that have taken place since that period (Albury, 2005);
- An increase in citizens' expectations with respect to public administrations (Bason, 2010), including in relation to quality of service, customer orientation, responsiveness, etc;
- The obsolescence of the *one size fits all* model, and a need for service customization (Mulgan and Albury, 2003);

- PSOs not being attractive to potential employees (Emery, 2003);
- A deficient institutional legitimacy, partly caused by a lack of transparency and accountability (Fung and Wright, 2001; Hartley, 2005);
- New needs, in terms of inter-organizational cooperation, to deal with the growing numbers of wicked problems (Head and Alford, 2013) that it is difficult to solve without national and even international cooperation (tax policies, criminality, ecology, migration, etc.) (Sørensen and Torfing, 2012); and
- The necessity to adopt modern information and data management tools and methods (Rosenberg and Feldman, 2008).

All these changes have led to a new era for innovation in the public sector.

Even if innovation and continuous improvements were possible during this second period (up to the early 21st century), they were mainly still led and implemented by policy makers, frequently supported by efficiency-seeking managers, while civil servants and citizens continued to be partly excluded from the innovation decision processes (Hartley, 2005). It is worth noting, nonetheless, that citizens' opinions began to be increasingly consulted (through surveys, for instance – see Stipak [1980]). The claim that public servants became *empowered* thus has little empirical support (Kernaghan, 2000).

This period also witnessed the growing involvement of new actors in innovation processes: external consultants. Lapsley and Oldfield (2001) show that, in most countries and particularly Anglo-Saxon ones, external consultants have been widely involved during most reforms, leading to what Hood and Jackson (1991) termed the *consultocracy* (cited by Lapsley and Oldfield [2001]). The rationale behind resorting to consultants was the lack of internal competency to innovate. The involvement of consultants was in line with the growing demand for *management initiatives* within the public sector, a trend that was boosted by the NPM doctrine (Saint-Martin, 1998).

Although innovation processes became more incremental and more managerial (less radical and not just run by politicians), they were mostly developed in a top-down fashion. Concerning policy innovation for instance, Deyle (1994: 457) argues that "planning and analysis figure prominently in the conventional prescription for solving public policy problems and in the training and education of public service professionals – the planners, analysts, managers, administrators who play a role in the development and implementation of public policy innovation". For Golden (1990) this *policy planning model of innovation*, strongly inspired by the *rational planning model*, has been widely applied in the public sector (Boyne et al., 2004). According to the logic of this model, a PSO must manage innovation as a standardized process, following precise steps such as "clarifying and quantifying objectives, auditing the environment and the organization, generating policy options, selecting the best option, controlling implementation, and monitoring results" (Boyne et al., 2004: 330). Furthermore, this period is characterized by what can be called a classical R&D approach to innovation in public policies as well as in PSOs. In line with the specialization of public sector innovation activities in this period, the first decade of the twenty-first century witnessed the gradual emergence of public sector innovation think tanks. These *innovation labs* or *policy labs* are meant to bring new ideas and approaches to policy making (Wyden Guelpa, Genoud and Genoud, 2016).

At the organizational level, other types of innovative activities could emerge from a standardized framework, as proposed by the International Organization for Standardization (ISO) system and total quality management initiatives (Emery, 2009), mainly through *continuous improvement processes* (plan-do-check-act Deming cycle]).

Exploitation and exploration during the second, NPM period

The characteristics of this second period give various indications about how organizations tended to deal with exploitation and exploration. Indeed, during the second period, innovation openly became a prerogative of PSOs, through the different strategies employed by public administrations: think tanks, specialized services, project managers, etc. Innovation was run by specialists and managers, while street-level public servants were entirely devoted to service delivery. Indeed, this was also a period of simultaneous exploitation and exploration within PSOs, characterized by a logic of architectural separation, also referred to as structural ambidexterity (O'Reilly and Tushman, 2013; Gibson and Birkinshaw, 2004; Huang and Kim, 2013; Fang, Lee and Schilling, 2010). Thus we assume that this second period was particularly characterized by a global tendency of PSOs progressively to adopt structural ambidexterity (Chen and Kannan-Narasimhan, 2015).

As was seen above, structural ambidexterity can let innovation emerge within a PSO. In this model, innovation units are specialized and thus perform better (Junni et al., 2013); furthermore, their creativity is safeguarded from the so-called dominant managerial cognition of mainstream activities (Jansen et al., 2009; O'Reilly and Tushman, 2004). However, as argued by several authors, the success of structural ambidexterity depends on a good integration of the different complementary structures and sub-structures (Bledow et al., 2009; Raisch et al., 2009; Cannaerts, Segers and Henderickx, 2016). Indeed, in this second period, PSOs were exposed to the risk of a widening cultural and structural gap between their exploration and exploitation structures, leading to the development of barriers to information sharing and innovation diffusion, and the confinement of the different structures into silos (Birkinshaw and Gibson, 2004).

This progressive transition of a PSO from no ambidexterity to a kind of structural ambidexterity is, in our view, a general tendency. Many PSOs could have adopted radically different courses of development, or could have remained exclusively oriented towards exploitation. According to Choi and Chandler (2015), for instance, PSOs are still mainly oriented towards efficiency. Potential issues linked to the first period, a sub-optimal stable equilibrium, could still have affected some PSOs.

The third and current period: from innovation in the public sector to innovative organizations

We are now witnessing a second paradigmatic shift in public sector innovation. These conditions are new, particularly vis-à-vis two important dimensions of innovation: *why* and *how* a PSO should innovate.

Innovation goals (*why* an organization should innovate), which during the NPM period were mostly oriented towards efficiency and performance (De Vries, Bekkers and Tummers, 2015), are now becoming more diverse. During the so-called post-NPM period, innovation is

also thought of as a keystone for other goals such as political adaptation (Sørensen, 2017), state legitimacy (Christensen and Lægreid, 2016), or citizen trust and participation (Carter and Belanger, 2005). The post-NPM period is thus a period in which innovation is being done differently (*how* an organization should innovate). This is partly because the recent literature on public sector innovation benefits from a broader view of the phenomenon (De Vries, Bekkers and Tummers, 2015).

As time went by, scholars gradually grasped the importance of organizational characteristics for public sector innovation. Studies have shown that innovation is less a matter of implementing innovation processes than a matter of PSO innovativeness or *innovation capability* (Andrews, Beynon and McDermott, 2015). While an innovation can be implemented through standard top-down processes and classical organizational units devoted to R&D (as was previously the case), *innovation capability*, or the organizational ability continuously to generate and implement innovations, rests on the existence of collective initiatives supported by individual *innovative work behaviours* (e.g. opportunity exploration, idea generation, etc.) at all levels of the hierarchy (Moll and de Leede, 2017). Even if the rates are questionable, Getz and Robinson (2003: 134) assert: "in practice 80% of improvement ideas come from employees and only 20% come through planned improvement activities".

Much of the work that has recently been done on innovation in the public sector is multidisciplinary (in public administration, strategic management, sociology, etc.), and focuses on the conditions for (Daglio, Gerson and Kitchen, 2015) or antecedents of (DiMaggio and Powell, 1991; Meyer and Hammerschmid, 2006) innovation in PSOs. Specifically, five types of intertwined drivers are considered to be essential for the development of PSO innovation capabilities. These are organizational slack, openness to bottom-up initiatives, more flexible work arrangements, greater involvement by different actors, and an ability to overcome inter-organizational borders:

- Organizational slack refers to organizational flexibility towards the use of resources (Adkins, 2005). According to Behn (1988) and other scholars like Golden (1990), PSO innovation capabilities are stimulated when professionals use an "experimental process of groping towards goals that are loosely defined" (quoted by Borins, 2001) rather than when they work on carefully planned innovation initiatives. Therefore, the development of innovation capabilities is built on organizational slack, and it is notable that this was eliminated during the NPM period.

- The dominant top-down planning approach of NPM was able to generate innovations, but its effectiveness is contested by numerous studies (Golden, 1990). According to Sørensen and Torfing (2016: 118), "hierarchically organized public bureaucracies […] tend to produce innovations in-house and thus fail to tap into the experiences, resources, knowledge and ideas of relevant and affected actors." Besides, NPM "discouraged knowledge sharing across organizations and consequently acted to hinder some types of innovations" (Arundel, Casali and Hollanders, 2015: 1272) introducing the arguments of Hartley et al., 2013). Thus, the innovation capabilities of PSOs are partly the result of their openness to bottom-up initiatives.

- At the managerial level, PSO innovation capabilities rely on flexible work arrangements that empower public servants by stimulating innovative work behaviours. Moll and de Leede (2017) show how the new way of working, a work design with flexible work space and time arrangements, may promote employees' innovative behaviours such as idea emergence and opportunity exploration.

- In addition, the development of innovation capabilities relies on the PSO's ability to involve a large, complex and multi-layered network of internal and external actors, and sometimes also other organizations, in its innovation projects (Armbrustera et al., 2008; Camisón and Villar-López, 2014). Such networks are characterized by having no clear management structure or leadership (Lewis and Ricard, 2014; Varone, Ingold and Fischer, 2016). Often, numerous and varied stakeholders are engaged in the activities of a public sector organization, and this has inconsistent implications for innovation processes. Stakeholders can either be continuously consulted during a specific phase of the innovation project or, by contrast, may be closely involved during the whole project, as co-actors in public policies (Boyle, Slay and Stephens, 2010). This enlargement leads to a fragmentation of the *space* of innovation towards an ecology of actors (Dougherty and Dunne, 2011; Touati et al., 2016), who are involved in complex networks (Rhodes, 2013), collaborative innovation (Sørensen and Torfing, 2011; Torfing, 2016) or innovation systems (Kinder, 2013).

- Furthermore, innovation capability is based on the PSO's ability to break out of administrative silos. This inter-organizational dimension can be significant, since many institutional actors might be (mandatorily or optionally) involved in the project. Inter-organizational cooperation is also required since contemporary public problems are highly complex and wicked (Head and Alford, 2013). This inter-organizational dimension is all the more important in the public sector because citizens' expectations are often very varied and, in a way, integrated. For instance, an individual who moves to a neighbouring municipality requires services from different schools, tax administrations or health centres simultaneously (Kinder, 2003). Inter-organizational cooperation is often hard to achieve because institutional boundaries (and related practices, sub-cultures, etc.) can be extremely strong (Michaux, 2010).

In brief, PSOs have entered a third period for innovation. They are not only seeking to implement successful sporadic innovations but also to develop sustainable innovation capabilities. These innovation capabilities depend, in particular, on their capacity to have organizational slack, to be open to bottom-up initiatives, to set up flexible working arrangements, to involve many stakeholders and to cooperate with other organizations.

Table 1 gives a synthetic overview of the three periods covered by our analysis of innovation.

Table 1: Synthesis of the Three Periods of Innovation and Ambidexterity in PSOs

	Bureaucratic period (up to the 1970s)	**Managerial period (from the 1970s to around 2000)**	**Post-NPM period (from the first decade of the 21st century)**
Main characteristics of the period			
Innovation perception	No need	PSOs need to innovate	PSOs need to be innovative
Dominant paradigm	Classical bureaucracy	Managerial approaches	Post-managerial approaches Open governance
Fields of influence	Juridical and industrial	Business	Multidisciplinary
Dominant values	Hierarchy, uniformity, legitimacy, rules	Efficiency, effectiveness, performance	Public value, democracy, transparency, accountability
Main barriers	Bureaucratic rigidity	Silos, procedural constraints, resources, lack of organizational slack and of flexibility	Uncertain transition towards contextual ambidexterity
Key actors in public administration and public sector innovation			
Political actors	Legislative innovations	Legislative innovations	Legislative innovations, inter-organizational cooperation
PSO managers	Little room for implementation, dedicated to public service delivery	Autonomy to innovate within their own unit	Autonomy to innovate, ability to stimulate stakeholders to innovate, development of innovation capabilities
Front-line bureaucrats	Public service delivery only	Public service delivery only, partly involved in innovations	Public service delivery and innovation activities
Citizens	Passive users	User–customers	Users, customers and co-creators of public services
Ambidexterity and resulting challenges			
Main trends of ambidexterity in PSO as deduced from the literature	1. Little ambidexterity, mostly exploitation	1. Little ambidexterity, mostly exploitation 2. Tendency to adopt structural ambidexterity	1. Little ambidexterity, mostly exploitation 2. Tendency to adopt structural ambidexterity 3. Difficult transition towards contextual ambidexterity
Resulting challenges of the models of ambidexterity for innovation capabilities	1. Inertia due to the tendency to favour exploitation	1. Inertia due to the tendency to favour exploitation 2. Barriers to knowledge sharing and innovation diffusion; silo functioning due to the lack of integration	1. Inertia due to the tendency to favour exploitation 2. Barriers to knowledge sharing and innovation diffusion; silo functioning due to the lack of integration 3. Inadequate culture and structure for innovation capabilities due to the incomplete transition to contextual ambidexterity

Exploitation and exploration during the current period: the challenging transition towards contextual ambidexterity

Given the characteristics of this third period, what can be inferred in terms of organizational ambidexterity? Nowadays the literature on PSO innovation is beginning to look at innovation goals and management. PSOs are progressively developing their innovation capabilities, mainly for innovation performance reasons. However, innovation capabilities rely especially on the involvement of actors, such as street-level bureaucrats, who are not traditionally part of such processes. There is, from the organizational ambidexterity framework, an extension of exploration activities to all the individuals within a PSO. Thus, the current period is characterized by a general tendency for PSOs to adopt a kind of contextual ambidexterity (Gibson and Birkinshaw, 2004; Birkinshaw and Gibson, 2004).

However, we have seen in what has already been said that the success of contextual ambidexterity relies on the implementation of many and varied measures leading to a supportive organizational context. The context must balance discipline, stretch, support and trust (Gibson and Birkinshaw, 2004). This balance is complex and hard to achieve, especially because it requires deep structural and cultural changes in a PSO, and because these changes require resources. During the previous two periods, the structural configurations for exploitation by PSOs tended to be centralized, formalized and specialized (Cannaerts, Segers and Henderickx, 2016), while many cultural features in public administration were unfavourable to innovation (DiMaggio and Powell, 1991; Meyer and Hammerschmid, 2006). Consequently, we assume that the current tendency progressively to adopt contextual ambidexterity is creating very challenging tensions for PSOs.

PSOs are therefore living nowadays in a particularly difficult situation with respect to innovation. Barriers to innovation in the public sector, as emphasized by the literature, may be partially explained by this risk-averse cultural and structural transition towards contextual ambidexterity that puts PSOs in a position in which neither exploitation nor exploration can be optimally performed.

In Table 1 we can see the progressive accumulation of potential difficulties inherited from previous periods that indicates that PSOs should nowadays be particularly concerned about barriers, and that these barriers are underpinned by the trend over time towards ambidexterity.

Conclusion

Nowadays PSOs are focused on the development of their innovation capabilities, and this development implies deep structural, cultural and managerial adaptations. In this article, we have sought to identify the underpinning challenges of these adaptations, and the strategies deployed by PSOs to overcome these challenges. To do so, we applied the concept of organizational ambidexterity to trace the evolution of the trade-off for PSOs between exploitation and exploration. In a nutshell, the answer to the first research question is that PSOs innovation capabilities are importantly underpinned by a tension related to the necessity to run two antagonistic types of activities, exploitation and exploration, simultaneously. Besides, the concept of organizational ambidexterity (second research question) enabled us to point to an

underlying mechanism that is now being applied in PSOs and is making the development of their innovation capabilities even more complex: a difficult transition towards some sort of contextual ambidexterity.

This difficult transition, along with all the tensions inherited from the past, raises several potential issues for PSOs today; these include an inertia arising from the tendency to favour exploitation, barriers to knowledge sharing and innovation diffusion, silo functioning due to the lack of integration, and, finally, a deficient culture and structure for innovation capabilities because of the incomplete transition to contextual ambidexterity. It is worth noting that these issues are not to be observed in every PSO. This article does not aim to generalize but rather to identify and develop preliminary discussions related to the theoretical elements. This is certainly the main limitation of this article. Furthermore, there could be a bias caused by the overrepresentation of Anglo-Saxon references in comparison to other public administration traditions where the situation regarding ambidexterity might be different. Another limitation could be the lack of empirical investigation to corroborate or to illustrate the findings. Besides, even though the concept of ambidexterity is particularly well suited to analyse the trade-offs between exploitation and exploration, one could have applied an alternative theoretical framework. The concepts of organizational evolution and path dependence (Pierson, 2000; Mahoney and Thelen, 2010; Thelen, 1999) for instance, could also have been applied as they help to understand how challenging it could be for an organization to move from exploitation to exploration activities, or to shift from one model of ambidexterity to another.

Our contribution enriches the current literature on PSO innovation by questioning the real challenges faced by the public sector. As was demonstrated, the authors of several papers have tried to analyse the specific barriers to innovation in the public sector at the organizational, team, or individual level (De Vries, Bekkers and Tummers, 2015; Torugsa and Arundel, 2016; Raipa and Giedrayte, 2014). However, none of these papers offers the necessary theoretical distance to allow an understanding of the root causes of the barriers to the development of innovation capabilities. In that sense, this article enriches the literature on organizational ambidexterity in the public sector, a field that remains largely unexplored (Cannaerts, Segers and Henderickx, 2016; Palm and Lilja, 2017; Deserti and Rizzo, 2014; Smith and Umans, 2015). Future researches on innovation capabilities in the public sector must seize the importance of these underpinning tensions. A diagnosis of the tensions between exploitation and exploration and of the strategies to overcome them could be particularly relevant in case studies on innovation for instance. In addition, this paper offers a three-period framework that can enable further analyses of innovation in PSOs.

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References:

Abu, Zayed Mohammed. 1994. "Total Quality Management: the Case for the Public Sector: a Comparative Study of the Implementation of Total Quality Management in Three Health Care Organizations." PhD Dissertation, Public Affairs and Policy, Portland State University.

Adkins, Paul S. 2005. "Organisational slack resources, the definitions and consequences for business flexibility and performance: an empirical investigation." PhD Dissertation, Aston University, UK.

Albury, David. 2005. Fostering Innovation in Public Services. *Public Money & Management*, 25(1): 51-56.

Andrews, Rhys, Malcom J. Beynon & Aoife M. McDermott. 2015. Organizational Capability in the Public Sector: A Configurational Approach. *Journal of Public Administration Research and Theory*, 26(2): 239-258.

Andriopoulos, Constantine & Marianne W. Lewis. 2009. Exploitation-Exploration Tensions and Organizational Ambidexterity: Managing Paradoxes of Innovation. *Organization Science*, 20(4): 696-717.

Armbrustera, Heidi, Andrea Bikfalvib, Steffen Kinkela & Gunter Laya. 2008. Organizational innovation: The challenge of measuring non-technical innovation in large-scale surveys. *Technovation*, 28: 644–657.

Arundel, Anthony, Luca Casali & Hugo Hollanders. 2015. How European public sector agencies innovate: The use of bottom-up, policy-dependent and knowledge-scanning innovation methods. *Research Policy*, 44(7): 1271-1282.

Bason, Christian. 2010. *Leading Public Sector Innovation. Co-creating for a better society*. Edited by Policy Press at the University of Bristol. Bristol, UK: Policy Press.

Behn, Robert D. 1988. Management by groping along. *Journal of Policy Analysis and Management*, 7(4): 643-663.

Benner, Mary J. & Michael L. Tushman. 2003. Exploitation, Exploration, and Process Management: The Productivity Dilemma Revisited. *Academy of Management Review*, 28(2): 238-256.

Berkun, Scott. 2010. *The Myths of Innovation*. Sebastopol, CA: O'Reilly Media.

Birkinshaw, Julian & Christian B. Gibson. 2004. Building ambidexterity into an organization. *MIT Sloan Management Review*, 45(4): 47-55.

Bledow, Ronald, Michael Frese, Neil Anderson, Miriam Erez & James Farr. 2009. A Dialectic Perspective on Innovation: Conflicting Demands, Multiple Pathways, and Ambidexterity. *Industrial and Organizational Psychology*, 2(3): 305-337.

Borins, Sandford. 1995. The new public management is here to stay. *Canadian Public Administration*, 38(1): 122-132.

Borins, Sandford. 2001. Public Management Innovation. *The American Review of Public Administration*, 31(1): 5-21.

Borins, Sandford. 2006. The challenge of Innovating in Government. 2nd edition. Washington, D.C.: IBM Center for the Business of Government.

Boyle, D., J. Slay & L. Stephens. 2010. Public Services Inside Out: Putting co-production into practice. London, UK: Nesta, the LAB, NEF.

Boyne, George A. 2002. Public and private management: What's the difference? *Journal of Management Studies*, 39(1): 97-122.

Boyne, George A., Julian S. Gould-Williams, Jennifer Law & Richard M. Walker. 2004. Problems of Rational Planning in Public Organizations. *Administration & Society*, 36(3): 328-350.

Brion, Sébastien, Caroline Mothe & Maréva Sabatier. 2010. The Impact Of Organisational Context And Competences On Innovation Ambidexterity. *International Journal of Innovation Management*, 14(02): 151-178.

Bryson, John M., Barbara C. Crosby & Laura Bloomberg. 2014. Public Value Governance: Moving beyond Traditional Public Administration and the New Public Management. *Public Administration Review*, 74(4): 445-456.

Bysted, R. & K.R. Jespersen. 2014. Exploring Managerial Mechanisms that Influence Innovative Work Behaviour: Comparing private and public employees. *Public Management Review*, 16(2): 217-241.

Camisón, Cesar & Ana Villar-López. 2014. Organizational innovation as an enabler of technological innovation capabilities and firm performance. *Journal of Business Research*, 67(1): 2891-2902.

Cannaerts, Nele, Jesse Segers & Erik Henderickx. 2016. Ambidextrous design and public organizations: a comparative case study. *International Journal of Public Sector Management*, 29(7): 708-724.

Carter, Lemuria & France Belanger. 2005. The utilization of e-government services: citizen trust, innovation and acceptance factors. *Information Systems Journal*, 15(1): 5-25.

Chen, Roger R. & Rangapriya P. Kannan-Narasimhan. 2015. Formal integration archetypes in ambidextrous organizations. *R&D Management*, 45(3): 267-286.

Chevallier, Jacques & Danièle Loschak. 1978. *Science administrative. Tome I : théorie générale de l'institution administrative*. Paris, France: Librairie générale de droit et de jurisprudence

Choi, Taehyon & Susan M. Chandler. 2015. Exploration, Exploitation, and Public Sector Innovation: An Organizational Learning Perspective for the Public Sector. *Human Service Organizations: Management, Leadership & Governance*, 39(2): 139-151.

Christensen, Tom & Per Lægreid. 2016. "Organizational innovations and multiple forms of accountability in the post-New Public Management era " Pp. 290-309 in J. Torfing and P. Triantafillou (Eds.), *Enhancing Public Innovation by Transforming Public Governance.* Cambridge, UK: Cambridge University Press.

Crozier, Michel. 1963. *Le phénomène bureaucratique : essai sur les tendances bureaucratiques des systèmes d'organisation modernes et sur leurs relations en France avec le système social et culturel*. 8^0 vols. Paris, France: Ed. du Seuil.

Crozier, Michel. 1980. *La société bloquée*. Paris, France: Point-politique.

Daglio, Marco, Daniel Gerson & Hannah Kitchen. 2015. "Building Organisational Capacity for Public Sector Innovation." OECD Conference : Innovationg the public sector: from Ideas to Impact, Paris, France.

De Boer, Harry F., Jürgen Enders & Liudvika Leisyte. 2007. Public Sector Reform in Dutch Higher Education: The Organizational Transformation of the University. *Public Administration*, 85(1): 27-46.

De Vries, Hannah, Victor J. J. M. Bekkers & Lars Tummers. 2015. Innovation in the public sector: A systematic review and future research agenda. *Public Administration*, 94(1): 146-166.

Dean, Tony. 2015. *Building Better Public Services: A guide for practitioners*. Victoria, Canada: Friesen Press.

Deserti, Alessandro & Francesca Rizzo. 2014. Design and Organizational Change in the Public Sector. *Design Management Journal*, 9(1): 85-97.

Deyle, Robert E. 1994. Conflict, Uncertainty, and the Role of Planning and Analysis in Public Policy Innovation. *Policy Studies Journal*, 22(3): 457.

Diefenbach, Thomas. 2009. New Public Management in Public Sector Organizations: The Dark Sides of Managerialistic "Enlighthenment". *Public Administration*, 87(4): 892-909.

DiMaggio, Paul J. & Walter W. Powell. 1991. *The new Institutionalism in organizational analysis*. Edited by W. P. Powell and P. J. DiMaggio. Chicago, IL: University of Chicago Press.

Dougherty, Deborah & Danielle D. Dunne. 2011. Organizing Ecologies of Complex Innovation. *Organization Science*, 22(5): 1214-1223.

Duncan, Robert B. 1976. "The ambidextrous organization: Designing dual structures for innovation." Pp. 167-188 in R. H. Kilmann, L.R. Pondy and D. Slevin (Eds.), *The management of organization design: Strategies and implementation.* New York, NY: North Holland.

Dunleavy, Patrick & Christopher Hood. 1994. From old public administration to new public management. *Public Money & Management*, 14(3): 9-16.

Emery, Y. 2009. Apports essentiels du management de la qualité au renouveau du modèle bureaucratique. *La Revue de l'innovation dans le secteur public*, 14(3): 1-24.

Emery, Yves. 2003. *Renouveler la gestion des ressources humaines*. Lausanne, Switzerland: Presses polytechniques et universitaires romandes.

Emery, Yves, Anne Rousseau, Armand Brice Kouadio, Bertrand Meunier, Laurence Johannsen & Susan M. Nielsen. 2016. Towards innovative public services: A framework for the development of the innovation capability of European Public Administrations. EUPAN, MFPRA, EIPA, IDHEAP.

Fang, Christina, Jeho Lee & Melissa A. Schilling. 2010. Balancing Exploration and Exploitation Through Structural Design: The Isolation of Subgroups and Organizational Learning. *Organization Science*, 21(3): 625-642.

Fung, Archon & Erik O. Wright. 2001. Deepening Democracy: Innovations in Empowered Participatory Governance. *Politics and society*, 29(1): 5-41.

Gaglio, Gérald. 2011. *Sociologie de l'Innovation*. Edited by Presses Universitaires de France, *Que sais-je*. Paris, France: PUF.

Gardey, Delphine. 2008. *Écrire, calculer, classer: comment une révolution de papier a transformé les sociétés contemporaines, 1800-1940*. Paris, France: Découverte.

Getz, Isaac & Alan G. Robinson. 2003. Innovate or Die: Is that a Fact? *Creativity and Innovation Management*, 12(3): 130-136.

Ghoshal, Sumantra & Christopher A. Bartlett. 1994. Linking organizational context and managerial action: The dimensions of quality of management. *Strategic Management Journal*, 15(S2): 91-112.

Gibson, Christian B. & Julian Birkinshaw. 2004. The Antecedents, Consequences, and Mediating Role of Organizational Ambidexterity. *Academy of Management Journal*, 47(2): 209-226.

Gieske, Hanneke, Arwin van Buuren & Victor. Bekkers. 2016. Conceptualizing public innovative capacity: A framework for assessement. *The Innovation Journal: The Public Sector Innovation Journal*, 21(1): 1-25.

Golden, Olivia. 1990. Innovation in public sector human services programs: the implications of innovation by "groping along". *J Policy Anal Manage*, 9(2): 219-48.

Gupta, Anil K., Ken G. Smith & Christina E. Shalley. 2006. The Interplay Between Exploration and Exploitation. *Academy of Management Journal*, 49(4): 693-706.

Hartley, Jean. 2005. Innovation in Governance and Public Services: Past and Present. *Public Money & Management*, 25(1): 27-34.

He, Zi L. & Poh K. Wong. 2004. Exploration vs. Exploitation: An Empirical Test of the Ambidexterity Hypothesis. *Organization Science*, 15(4): 481-494.

Head, Brian W. & John Alford. 2013. Wicked Problems: Implications for Public Policy and Management. *Administration & Society*, 20(10): 1-29.

Hood, Christopher & Michael W. Jackson. 1991. *Administrative Argument*. Ann Arbor, MI: Dartmouth Publishing Company.

Huang, Jimmy & Hyun J. Kim. 2013. Conceptualizing structural ambidexterity into the innovation of human resource management architecture: the case of LG Electronics. *The International Journal of Human Resource Management*, 24(5): 922-943.

Jansen, Justin P.J., Michiel P. Tempelaar, Frans A.J. van den Bosch & Henk W. Volberda. 2009. Structural Differentiation and Ambidexterity: The Mediating Role of Integration Mechanisms. *Organization Science*, 20(4): 797-811.

Junni, Paulina, Riikka M. Sarala, Vas Taras & Shlomo Y. Tarba. 2013. Organizational Ambidexterity and Performance: A Meta-Analysis. *The Academy of Management Perspectives*, 27(4): 199-312.

Kattel, Rainer. 2015. What would Max Weber Say about Public-Sector Innovation? *NISPAcee Journal of Public Administration and Policy*, 8(1): 9-19.

Kay, Robert & Chris Goldspink. 2016. Public Sector innovation: Why it's different. edited by Governance Leadership Centre: Australian Institue of Company Director.

Kernaghan, Kenneth. 2000. The post-bureaucratic organization and public service values. *International Review of Administrative Sciences*, 66: 91-104.

Kinder, Tony. 2003. Mrs Miller Moves House: The Interoperability of Local Public Services in Europe. *Journal of European Social Policy*, 13(2): 141-157.

Kinder, Tony. 2013. "Innovation in an inter-organisational context." Pp. 317-331 in S.P. Osborne and L. Brown (Eds.), *Handbook of Innovation in Public Services.* Northampton, MA: Edward Edgar Publishing.

Kwoh, Leslie. 2012. "You Call That Innovation? Companies Love to Say they Innovate, but the Term Has Begun to Lose Meaning." *The Wall Street Journal*. http://www.wsj.com/articles/SB10001424052702304791704577418250902309914.

Lampropoulou, Manto & Giorgio Oikonomou. 2016. Theoretical models of public administration and patterns of state reform in Greece. *International Review of Administrative Sciences*, 0(0): 1-21.

Lapsley, Irvine & Rosie Oldfield. 2001. Transforming the public sector: management consultants as agents of change. *European Accounting Review*, 10(3): 523-543.

Lawson, Benn & Danny Samson. 2001. Developing Innovation Capability In Organisations: A Dynamic Capabilities Approach. *International Journal of Innovation Management*, 05(03): 377-400.

Levinthal, Daniel A. & James G. March. 1993. The myopia of learning. *Strategic Management Journal*, 14(S2): 95-112.

Lewis, Jenny M. & Lykke M. Ricard. 2014. Innovation capacity in the public sector: Structures, networks and leadership. Rotterdam, Netherlands: LIPSE working papers Erasmus University.

Mahoney, James & Kathleen A. Thelen. 2010. *Explaining Institutional Change: Ambiguity, Agency, and Power*. Vol. xiii. Cambridge, UK: Cambridge University Press.

March, James G. 1991. Exploration and Exploitation in Organizational Learning. *Organization Science*, 2(1): 71-87.

Mercier, Jean. 2001. *L'administration publique: de l'école classique au nouveau management public*. Québec, Canada: Presses de l'Université Laval.

Merton, R.K. 1957. *Social Theory and Social Structure*. Glencoe, IL.

Meyer, Renate E. & Gerhard Hammerschmid. 2006. Changing institutional logics and executive identities. A managerial challenge to public administration in Austria. *American Behavioral Scientist*, 49(7): 1000-1014.

Michaux, Valery. 2010. Innovations à l'interface entre institutions publiques, para-publiques et privées dans le cadre des politiques publiques préventives concertées : le cas de la prévention des licenciements pour raison de santé. *Management & Avenir*, 5(35): 210-234.

Moll, Florian & Jan de Leede. 2017. "Fostering Innovation: The Influence of New Ways of Working on Innovative Work Behavior." Pp. 95-143 in Jan De Leede (Eds.), *New Ways of Working Practices.* Bingley, UK: Emerald Group Publishing.

Mothe, Caroline & Sébastien Brion. 2008. Innovation : exploiter ou explorer ? *Revue française de gestion*, 7(187): 101-108.

Mulgan, Geoff & David Albury. 2003. Innovation in the Public Sector. London, UK: Cabinet Office, Strategy Unit.

O'Reilly, Charles A. & Michael L. Tushman. 2013. Organizational Ambidexterity: Past, Present, and Future. *The Academy of Management Perspectives*, 27(4): 324-338.

O'Reilly, Charles A. & Michael L. Tushman. 2004. The ambidextrous organization. *Harvard Bus. Rev.*, 82(4): 74-81.

Omnès, Cécile. 2007. *La gestion du personnel au Crédit lyonnais de 1863 à 1939: une fonction en devenir (genèse, maturation et rationalisation)*. Bruxelles, Belgium: P. Lang.

Osborne, David & Ted Gaebler. 1993. *Reinventing Government: How the Entrepreneurial Spirit Is Transforming the Public Sector*. New York, NY: Plume Book.

Osborne, Stephen P. & Louise Brown. 2011. "Introduction: innovation in public services." Pp. 1-11 in S.P. Osborne and L. Brown (Eds.), *Handbook of Innovation in Public Services.* Northampton, MA: Edward Edgar Publishing.

Palm, Klass & Johan Lilja. 2017. Key enabling factors for organizational ambidexterity in the public sector. *International Journal of Quality and Service Sciences*, 9(1): null.

Papachroni, Angeliki, Loizos Heracleous & Sotirios Paroutis. 2016. In pursuit of ambidexterity: Managerial reactions to innovation–efficiency tensions. *Human Relations*, 69(9): 1791-1822.

Perry, James L. & Hal G. Rainey. 1988. The Public-Private Distinction in Organization Theory: A Critique and Research Strategy. *Academy of Management Review*, 13(2): 182-201.

Peters, B. Guy & John Pierre. 1998. Governance Without Government? Rethinking Public Administration. *Journal of Public Administration Research and Theory*, 8(2): 223-243.

Pierson, Paul. 2000. Increasing Returns, Path Dependence, and the Study of Politics. *American Political Science Review*, 94(2): 251-267.

Pillon, Thierry. 2016. Retour sur quelques modèles d'organisation des bureaux de 1945 à aujourd'hui. *La nouvelle revue du travail*, 9.

Pollitt, Christopher & Peter Hupe. 2011. Talking About Government. *Public Management Review*, 13(5): 641-658.

Quinn, Robert E., David Bright, Sue R. Faerman, Michael P. Thompson & Michael R. McGrath. 2014. *Becoming a Master Manager: A Competing Values Approach*. Edited by John Wiley & Sons. Indianapolis, IN: Wiley.

Rainey, Hal G. 2011. Sampling Designs for Analyzing Publicness: Alternatives and Their Strengths and Weaknesses. *Journal of Public Administration Research and Theory*, 21(suppl_3): i321-i345.

Raipa, Alvydas & Vidmante Giedrayte. 2014. Innovation Process Barriers in Public Sector : A Comparative Analysis of Lithuania and the European Union. *International Journal of Business and Management*, 9(10): 10-20.

Raisch, Sebastian, Julian Birkinshaw, Gilbert Probst & Michael L. Tushman. 2009. Organizational Ambidexterity: Balancing Exploitation and Exploration for Sustained Performance. *Organization Science,* 20(4): 685-695.

Rhodes, Mary L. 2013. "Innovation in complex public services systems." Pp. 332-359 in S.P. Osborne and L. Brown (Eds.), *Handbook of Innovation in Public Services.* Northampton, MA: Edward Edgar Publishing.

Rosenberg, Howard & Charles S. Feldman. 2008. *No Time To Think: The Menace of Media Speed and the 24-hour News Cycle*. New York, NY: Bloomsbury Academic.

Saint-Martin, Denis. 1998. The New Managerialism and the Policy Influence of Consultants in Government: An Historical–Institutionalist Analysis of Britain, Canada and France. *Governance*, 11(3): 319-356.

Schein, Edgar H. 2004. *Organizational Culture and Leadership (3rd ed.)*. San-Francisco, CA: Jossey-Bass.

Scherkenbach, William. 1990. *Management : la route de Deming*. Paris, France: Economica.

Schumpeter, Joseph A. 1935. *Théorie de l'évolution économique. Recherches sur le profit, le crédit, l'intérêt et le cycle de la conjoncture*. Paris, France: Dalloz.

Smith, Elin & Timurs Umans. 2015. Organizational Ambidexterity at the Local Government Level: The effects of managerial focus. *Public Management Review*, 17(6): 812-833.

Sørensen, Eva. 2017. Political innovations: innovations in political institutions, processes and outputs. *Public Management Review,* 19(1): 1-19.

Sørensen, Eva & Jacob Torfing. 2011. Enhancing Collaborative Innovation in the Public Sector. *Administration & Society*, 43(8): 842-868.

Sørensen, Eva & Jacob Torfing. 2012. Collaborative Innovation in the Public Sector. *The Innovation Journal: The Public Sector Innovation Journal*, 17(1): 1-14.

Sørensen, Eva & Jacob Torfing. 2016. "Collaborative Innovation in the Public Sector." Pp. 115-116 in Jacob Torfing & Peter Triantafillou (Eds.), *Enhancing Public Innovation by Transforming Public Governance.* Cambridge, UK: Cambridge University Press.

Stipak, Brian. 1980. Local Governments' Use of Citizen Surveys. *Public Administration Review,* 40(5): 521-525.

Taylor, Frederick W. 1911. *Scientific Management*. New York, NY.

Thelen, Kathleen. 1999. Historical Institutionalism and Comparative Politics. *Annual Review of Political Science* 2: 369-404.

Torfing, Jacob. 2016. *Collaborative Innovation in the Public Sector*. Washington, D.C.: Georgetown University Press.

Torugsa, Nuttaneeya & Anthony Arundel. 2016. Complexity of Innovation in the public sector: A workgroup-level analysis of related factors and outcomes. *Public Management Review,* 18(3): 392-416.

Touati, Nassera, Jean-Louis Denis, Corrine Grenier & P. Smits. 2016. Implementing Spaces to Favor the Emergence of Ecologies of Complex Innovation in the Public Sector: An Empirical Analysis. *Administration & Society*.

Varone, Frédéric, Karin Ingold & Manuel Fischer. 2016. "Administration et réseaux d'action publique." Pp. 115-140 in D. Giauque and Y. Emery (Eds.), *L'acteur et la bureaucratie au XXIème siècle.* Québec, Canada: PUL.

Weber, Max. 1956. *Wirtschaft und Gesellschaft*. Tübingen, Germany: Mohr.

Wyden Guelpa, Anja, Christophe Genoud & Patrick Genoud. 2016. Agences publiques d'innovation: évolution ou révolution? *Société Suisse des Sciences Administratives*: 11-23.

Wynen, Jan, Koen Verhoest, Edoardo Ongaro, Sandra van Thiel & COBRA-network. 2014. Innovation-Oriented Culture in the Public Sector: Do managerial autonomy and result control lead to innovation? *Public Management Review,* 16(1): 46-66.