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The Impact of Citizens' Knowledge On Public Administration: Exploring the Links in Three Social Movements

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ABSTRACT

The dissertation develops a conceptual framework linking social knowledge and public administration. Social knowledge is understood broadly as the knowledge used by people in various roles, including experts, ordinary citizens, and public officials, to solve social problems. Social movement knowledge is examined as one particular type of social knowledge. The conceptual framework used to study the relationship between social movement knowledge and public administration is a combination of several literatures: citizen participation, civic innovations, community of practice, policy learning, and knowledge production in social movements. The framework connects social movement, policy expert, and administrative knowledge through the processes of social, policy, and organizational learning. This dissertation further illustrates the complex dynamics of the relationship between these elements of the framework by presenting empirical evidence from three cases of social movements.

Observations from the three cases make several contributions to public administration scholarship. First, the analysis of the dynamics of movement knowledge production helps us understand how social knowledge enters the policy arena and thus becomes "visible" to policy-makers, how the character of its relationship to public policy changes over time, and whether the strategies of movement leaders and policy-makers depend on the dynamics of knowledge production. These insights inform the literature on collaborative governance by illuminating how knowledge production in social movements shapes knowledge interactions between movement knowledge and public sector actors. Next,

the dissertation highlights how the interactions between movement communities and public organizations prevent or facilitate the transfer of movement knowledge into public organizations at different organizational levels. The findings enrich the understanding of the influence of external knowledge networks on public organizations and contribute to the literature on knowledge management in the public sector. Finally, the analysis explores the role of movement knowledge in mediating the relationships between policy learning at the national level and organizational learning at the local level. In particular, it examines how movement actors might help bridge public policies and organizational practices. The dissertation ends with a new theoretical model to explain how the knowledge of citizens manifested in social movements affects public policy and the implementation of public policy.

The Impact of Citizens' Knowledge
On Public Administration:
Exploring the Links in Three Social Movements

by

Vadym V. Pyrozhenko

Dissertation

Submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy in Public Administration

Syracuse University
May 2012

ACKNOWLEDGEMENTS

If a dissertation can be compared to a tree of knowledge, this is a good opportunity to appreciate its numerous roots and branches. My advisor Rosemary O'Leary has given me the kind of guidance that only a seasoned researcher can provide. She taught me the value of the "so what?" question. She also taught me how to present my research efficiently and not to lose my personality in that efficiency at the same time.

From my first mentor Patricia Ingraham, I learned to see a big picture of the institute of public administration and its role in a democratic society.

My great teacher of American democracy Ralph Ketcham has always supported my spiritual exploration of the democratic ideal and has been my greatest intellectual influence. My teaching mentor Catherine Gerard listened to my ideas and helped me understand if those could be applied to the practice of public administration.

My committee members Jeremy Shiffman, Soonhee Kim, and David Van Slyke made my dissertation journey easier by showing me many road forks that I would otherwise not have seen. Alasdair Roberts and Jon Gant helped me at the initial stage of the dissertation. Vernon Greene's class on citizenship theory helped build my self-confidence in my ability to step beyond public administration. My colleague Isidor Wallimann shared my fascination with social movements and taught me many ways to apply sociology to community work. The interdisciplinary Goekjian seminar led by Peg Hermann exposed me to different ways of thinking about the same questions.

The Maxwell School's Department of Public Administration and the staff of the Program for Advancement of Research on Conflict and Collaboration and the Campbell Public Affairs Institute have been very helpful and supportive. I cannot thank them enough.

Social movement people – I owe you a lot. You listened to me, talked to me, and taught me. This is a dissertation on social movement knowledge and that knowledge is yours!

My very special thanks to my wife Alexandra. My tree of knowledge have been always watered and gardened with your love and emotional support.

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CHAPTER ONE: INTRODUCTION

The integration of social knowledge and public administration emerges as an opportunity and a challenge for scholarship. The strongest and most articulate statement of the role of social knowledge for solving social problems is offered by Charles Lindblom in his seminal book *Inquiry and Change* (Lindblom, 1990). Lindblom argues that social knowledge broadly understood as the collective knowledge of experts, ordinary citizens, and public officials is needed to address contemporary social problems because scientific and expert knowledge alone is not sufficient. He proposes the idea of *social probing* that encompasses a "broad, diffuse, open-ended, mistake-making social or interactive process, both cognitive and political" (p.7) as a solution to those problems the government is unable to solve. This Lindblom's view on the importance of social knowledge is even more relevant today as public administration scholarship has to deal with increasingly complex governance systems and practices (Kettl, 2002; Salamon, 2002) in the interdependent world with multiple wicked problems. The collaborative public management (CPM) approach (Agranoff and McGuire, 2003) places the dependence of public organizations on other actors often beyond their control as its central tenet. In this model, public organizations simply lack resources needed to deliver public services and thus have to collaborate with private and non-profit organizations. "Public knowledge" or manager practitioners' "jointly managed knowledge" has been recently added as another factor by the authors of the CPM model (McGuire, Agranoff, and Silvia, 2011), which supports Lindblom's idea of social knowledge as an opportunity for social problem-solving.

Lindblom's theoretical claim about the importance of social knowledge informs his methodological approach. In Lindblom's view, practice should guide theory. He sees the primary

challenge to realizing the potential of social knowledge in the social sciences' escape from lay knowledge. He insists that social scientists should be intelligent followers of social knowledge rather than gate-keepers of scientific knowledge, they should probe and keep their search open rather than aim for definitive answers. Due to the applied character of public administration and as indicated by the evolution of governance scholarship, in particular, practice shapes a great part of public administration theory. However, the scholarly inquiry should be expanded to include practices *beyond* public administration in order to grapple with the question of integration of social knowledge and public administration. In the model of open social inquiry advocated by Lindblom, the public administration scholar should follow social practices and the knowledge they generate with the goal of understanding how these practices and knowledge relate to public administration. Such an inquiry is consistent with Dwight Waldo's vision of an interdisciplinary public administration field having "a working relationship with every major province of human learning" (Waldo, 1984; p. 501). This vision is not limited to the abstract realm of public administration philosophy any more. The recent open government policies require public administrators to collaborate with citizens for the purposes of knowledge exchange. The immediate practical question for public administration field in relation to these policies is thus the same as this dissertation's topic: how do we understand the relationship between social or citizens' knowledge and public administration? Next, I will start by examining in a greater detail the open government approach as a major democratic and governance development also driven by social practices.

1.1. New models of knowledge production and open government

On January 21, 2009, the next day after his inauguration, President Obama signed the

Memorandum on Transparency and Open Government (TOGM). The memorandum declares the new Administration's commitment to creating "an unprecedented level of openness in Government" and establishing a system linking three principles, "transparency, public participation, and collaboration" (Transparency and Open Government, 2009). Using the metaphor of open gate, these three principles create a two-way traffic, an interactive communication between citizens and the government. *Transparent* government ensures that the gate is open. The Memorandum states that government information is "a national asset" to which citizens should have access. *Participatory* government lets citizens use the road. The Memorandum stresses that citizens possess valuable knowledge and federal agencies and public officials can "benefit from having access to that dispersed knowledge." *Collaborative* government envisions that citizens use the road in a way beneficial for the government and urges government officials to use "innovative tools, methods, and systems to cooperate … with nonprofit organizations, businesses, and individuals in the private sector" (Ibid).

The Memorandum extends the scope of collaboration quite radically from cooperation between government agencies and organizations from other sectors to collaboration with citizens. Particularly, to design new citizen participation programs, executive departments and agencies should solicit public feedback on how government can "improve opportunities for public participation in Government" (Ibid). Citizens' knowledge or citizens' "collective expertise and information" is highlighted by the Memorandum as a potential source and, perhaps, a driver of greater government effectiveness. The Memorandum makes three assumptions in relation to citizens' knowledge. First, citizens possess knowledge. Second, citizens are willing to share this knowledge with the government. Third, the transfer of citizens' knowledge into government

administration is possible. Finally, the government can tap into this knowledge to increase its efficiency and effectiveness.

The TOGM heralds a new agenda for the public administration field, the role of external citizens' knowledge for public organizations. This agenda reflects the increasingly knowledge-based nature of contemporary societies and economies. The interplay of several systemic factors supports the TOGM vision. These factors can be grouped into three broad types – political, social, and economic. Each group reflects important transformations in the production, integration, and the use of knowledge that are characteristic of contemporary information societies. They include more democratic knowledge exchanges between citizens and government, the emergence of new networked and social modes of knowledge exchange and production facilitated by new information and communication technologies (ICTs), and the recognition of knowledge management as a major factor affecting the firm's competitiveness.

Political factors reflect a trend towards the democratization of knowledge. Most political theorists agree that citizens' knowledge is important for the functioning of any political system. They disagree about how much of that knowledge is necessary and sufficient, however. Thus liberal (Schumpeter, 2008) and libertarian philosophers (von Mises, 1996) view knowledge about individual interests and preferences as sufficient for governance if effective political procedures and institutions exist. Republican and communitarian theorists disagree with that minimalist approach to citizens' knowledge and argue that citizens need civic education because more educated and virtuous citizens are capable of creating better governments (Wolin, 2006; Barber, 2004). Citizens' knowledge is paramount even in non-liberal political models. For

example, Marxist theorists see the knowledge about the conspiratorial mechanics of capitalist economic production as the basis for the political mobilization of the proletariat.

Traditionally, main disagreements between political philosophers about the role of citizens' knowledge result from their different views on the desirable balance of knowledge between citizens and government. The proponents of representative government maintain the "government by experts" view that confines knowledge about public affairs to governing elites, politicians and bureaucrats (Crozier et al., 1975; Zakaria, 2003). In contrast, advocates of direct democracy, "government by the people," believe that knowledge about governance should be more equally distributed as citizens have an unrealized potential for governance (Wolin, 2006; Barber, 2004). Representative and direct government models also presuppose different organizational arrangements. The representative liberal model relies on a strong but limited bureaucracy organized in accordance with the principles described by Weber and typical for industrial societies. This rational organizational model builds on the principle of hierarchy that reinforces knowledge disparities as expert knowledge concentrates at higher organizational levels. Bureaucratic expertise provides the primary source of administrators' power in society. According to Weber, only private business expertise is superior to bureaucratic expertise (Gerth and Mill, 1946). Direct democracy lacks a strong organizational foundation and rather represents a set of ideals reminiscent of preindustrial society, such as those inspired by the experience of ancient Athens and evoking a sense of community, Gemeinschaft (Tonnies, 2001). It emphasizes the values of autonomy, self-governance, and community.

Public administration scholars had maintained the representative liberal view in relation to

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citizens' knowledge, throughout most of the 20th century. In particular, they appealed to administrators' expertise to resolve the fundamental tension between democracy and bureaucracy. To defend against the accusations that bureaucracy was "thrice removed from direct democracy" (Mosher, 1968), they simply argued that administrative expert knowledge was necessary to make democracy work (Gulick, 1936) and insuring effective and efficient government. The criteria of effectiveness changed occasionally. For example, in the 1990s, public administration experienced a shift from traditional legal bureaucratic model emphasizing process fairness to a more flexible market-based model geared towards the needs of customers (Osborne and Gaebler, 1992). However, the view that administrators possessed sufficient expertise and resources to achieve their organizational goals remained constant. Essentially, the representative liberal model triumphed over the direct democracy model as active engagement of citizens has been seldom desirable and sought for by administrators.

In its vision of open government, the TOGM steps beyond this representative liberal view by urging public administrators to harness the forces of the post-industrial society (Bell, 1974). It pragmatically states that citizens' knowledge can increase government effectiveness and efficiency, and thus challenges core public administration premises. This statement turns the main argument against direct democracy and citizen participation on its head. In the past, many public administration scholars argued against direct citizen participation because they saw citizens as lacking technical expertise and knowledge (Roberts, 2004). In contrast, the Memorandum calls for a more participatory government just because it assumes citizens to be knowledgeable. The vision of open government does not necessarily radicalize democracy and does not lead to "government by people." Rather, it urges public officials and administrators to

better use citizens' knowledge in order to achieve specific government goals. This implies that public administrators' collaboration skills should be enhanced. In particular, President Obama has repeatedly emphasized that the government needs to learn how to use new collaborative Internet technologies to communicate with citizens in order to channel citizens' knowledge into the government. Essentially, the TOGM assumes that administrators might not possess sufficient knowledge and expertise any more. Therefore, the relationships between democracy and bureaucracy should be readjusted to take into account the new role of citizens' knowledge.

The *social* sources of the TOGM include the structural transformation of contemporary information societies towards network form (Castells, 1996) and towards social practices of distributed knowledge production (Gibbons et al. 1994; Nowotny et al., 2001). Beth Noveck, appointed by President Obama as the U.S. Deputy Chief Technology Officer for open government, redefines expertise as "scientific knowledge and popular experience" and claims that collaborative democracy relies on "self-selected peers working together in groups in open networks" (Noveck, 2009, p. 17). In particular, she refers to successful online social models of knowledge production. These new models of cooperation might be best exemplified by online collaboration projects such as Wikipedia and Linux (Benkler, 2006). The success of these projects tempted many scholars and practitioners to import online social collaboration practices into the public sector. Ideally, Government 2.0 would be interactive and driven by citizens (O'Reilly, 2010). Indeed, if citizens have what Shirky (2008) calls "cognitive surplus" and they want to spend part of their leisure time for public purposes, why shouldn't government use this asset to increase its effectiveness and efficiency? Why can't mass collaboration and "crowdsourcing" (Surowiecki, 2004) happen in the government if information and

communication technologies had made it possible elsewhere?

The TOGM explicitly states that citizens' knowledge is "dispersed" and implicitly refers to new forms of integration of this dispersed knowledge as well as emergent forms of production based on voluntary collaboration. More importantly, the rhetoric of the TOGM draws on open source values and ideas that originated and were refined within the open source movement aimed at democratizing knowledge production (Gay, 2002). Because all early attempts to describe the mechanics of Internet collaboration were driven by the need of the open source community to establish itself against the proprietary commercial practices (Raymond, 1991), most later literature on online participation had been dominated by ideas and principles initially developed by open source advocates. In a nutshell, open source philosophy highlights the value of open and participatory governance arrangements underlying collaboration of software developers. Many connections between the open source movement and Open Government agenda will be further explicated in one of the three cases in this dissertation. Suffice it to say now that, on many occasions, Vivek Kundra, the U.S. Chief Information Officer and Beth Noveck, the U.S. Deputy Chief Technology Officer for open government, used open source rhetoric and referred to open source experience.

From the *economic* point of view, post-industrial society represents a transformation from manufacturing to service-based economy that entails a much greater economic role of knowledge. This transformation involves a massive organizational reconfiguration of knowledge as it pushes the most important knowledge from the top of hierarchies to "knowledge workers" (Drucker, 1959), scientists, engineers, computer specialists, doctors, teachers – and further down

to customers or "prousers" who actively participate in product development (von Hippel, 1986). The public sector is undergoing similar changes both internally as civil service now employs more white collar workers than in the past,[1] and externally as administrators face increasingly more educated and knowledgeable citizens even though government continues serving many social groups that are poor and less educated.

Knowledge management in the private sector builds on the assumption that knowledge constitutes the main source of competitiveness in the contemporary business environment (Toffler, 1990; Drucker, 1993b). Organizational learning (Argyris and Schon, 1978; Senge 1990) has been proposed as a way to achieve such competitiveness. The main challenge in knowledge management involves knowledge integration for its consequent use by the firm. Since Hayek (1945) pointed out the problem of utilizing knowledge that is dispersed among many individuals, other scholars have added several additional problems in relation to knowledge integration. Knowledge management initially focused on managing individual knowledge and later evolved to include tacit individual (Polanyi, 1967) and tacit collective knowledge (Nonaka and Taceuchi, 1995). Knowledge governance literature (Amin and Cohendet, 2004), the most recent development in knowledge management, builds on the anthropological insight that all knowledge is embedded in social practices (Lave and Wenger, 1990) and examines the interaction between heterogeneous knowledge communities in relation to knowledge production.

Therefore, the emergence of new social practices of knowledge production constitutes the heart of recent political, social, and economic transformations underpinning open government.

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[1] The composition of the U.S. federal force has changed to include more knowledge workers. The percentage of federal workers in grade G-7 or below changed from 75 percent in 1950 to less than 30 percent in 2000 (James, 2002).

Linblom's idea that expertise and knowledge are distributed (Lindblom, 1990) across knowledge

networks has been central to these transformations. The TOGM recognizes that citizens'

knowledge represents a valuable asset that the government can utilize. Citizens' knowledge

includes individual and collective, expert and lay knowledge, as Vivek Kundra and Beth Noveck

make clear when they refer to online collaboration.[2] In addition to knowledge being increasingly

more socially distributed, the "useful" knowledge (Kuznets, 1965) also becomes "softer" and

less reducible to technologies.[3] Knowledge management scholars have greatly expanded the

initial technology-centered view on useful knowledge. They see knowledge as involving both

technologies and values (Nonaka and Takeuchi, 1995). The post-positivist insight that values

cannot be detached from the scientific inquiry has been applied by these scholars to

organizational issues in knowledge management such as organizational change that heavily

depends on managing human values. Perhaps, such a new understanding of knowledge as

involving the merging of technical knowledge and values best matches the democratic and

normative message of the TOGM. At the same time, the problem of the relationship between

citizens' knowledge is not limited to the post-industrial society. Thus Ober (2008) explains the

superior performance of the ancient Athenian city-state by its effective and democratic

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[2] In her speech on transparent government to Long Now Foundation on March 4, 2010, Beth Noveck explains the group-based character of collaboration between government and citizens as follows: "So the idea behind peer to patent was to take this problem of bureaucratic slowdown and inefficiency in the patent office and to marry to this idea of self selected expertise and create a process by which people could volunteer, self selected to work together not as individuals merely sending information to the government, but work together in teams and groups to help discover information that would help an examiner decide whether a patent truly deserve as 20 year grant of monopoly rights, the patent, is it truly non-obvious and novel as the law requires." (Noveck, 2010, fora.tv transcript).

[3] Traditionally, most sociology of knowledge studies limit useful knowledge to technologies. For example, Mokyr (2002) distinguishes between two types of knowledge, *propositional* knowledge (*episteme*), beliefs about natural phenomena and regularities, and *prescriptive* knowledge (*techne*), or knowledge about specific techniques. Useful knowledge is associated with the latter. Prescriptive knowledge contributes to economic performance and deals "with natural phenomena that potentially lend themselves to manipulation, such as artifacts, materials, energy, and living beings " (Mokyr, 2002; p.3). Inventions in mechanical engineering and physics best exemplify products of prescriptive knowledge. The positivist assumption about the possibility of separating the subject from the object of scientific inquiry underpins it methodologically.

knowledge governance.

1.2. Public administration and the challenge of external citizen's knowledge

The importance of social knowledge for social problem-solving is best articulated by Lindblom (1990). However, public administration scholars before and after Lindblom have argued in favor of citizens' knowledge. Raadschelders (2008) builds on Waldo (1984) and Lindblom (1990) in his theoretical call for the utilization by public administration scholars of different types of knowledge, such as practical wisdom and practical knowledge, in addition to scientific knowledge. Many citizen participation scholars have stressed citizens' knowledge as an important normative source of public service (Denhardt and Denhardt, 2007; Box, 1998). However, the empirical evidence about the effect of citizens' knowledge on public organizations has been very scarce to guide theory construction on the relationship between citizens' knowledge and public administration. The task thus consists in identifying and integrating those theories useful in examining the role of citizens' knowledge both at administrative and policy levels.

On the *administrative* level, citizen participation and knowledge management literature provide a starting point to address external citizens' knowledge in relation to public organizations. Actual citizen participation mechanisms and practices is a logical subject to examine how social practices affect public organizations. However, these practices were not designed for the purposes of knowledge exchange and they are also limited in achieving their main goal – sharing power with citizens. Most definitions of citizen participation stress sharing power. For example, Arnstein (1969) defines citizen participation as "a categorical term for citizen power." Also,

Roberts (2004) defines citizen participation as "the process by which members of a society (those not holding office or administrative positions in government) share power with public officials in making substantive decisions and in taking actions related to the community" (p.320). However, due to the unequal structural balance of power between citizens and bureaucrats, this precondition has seldom fulfilled. In the terms of the classical "ladder of participation" (Arnstein, 1969), actual citizen participation has most frequently been passive, which led to the lack of "authentic" citizen participation (King et al., 1998). As a result, it has been difficult to empirically assess the effectiveness of citizen participation (Roberts, 2004). This consensus about citizen participation practices contrasts the assumption of the TOGM about citizen participation – that public administrators are able to relinquish some of their control to citizens to realize the promise of the knowledge-based citizen participation and to increase government effectiveness.

Knowledge management literature is the next logical venue to examine the issue of citizens' knowledge external to public organizations. The research on communities of practice (Lave and Wenger, 1991) in the private sector (Wenger, 1998; Brown and Duguid, 1991) suggests that external knowledge should be and can be used by the firm (Amin and Cohendet, 2004). In the public sector, engaging citizens might help when addressing knowledge challenges related to "wicked" problems, according to Weber and Khademian (2008). Weber and Khademian (2008) argue that administrators should become good knowledge enablers who know how "to integrate disparate forms of knowledge into a workable knowledge" (p.342). However, the literature on knowledge management in the public sector (Mischen, 2007; Mischen and Johnson, 2008; Rashman and Hartley, 2009; Hartley and Rashman, 2007; Dawes et al. 2009) has been limited to

the studies of internal communities of practices and thus provides little guidance on how administrators might interact with external communities of practice.

On the *policy level*, participatory policy analysis and the literature on policy learning stress the importance of citizens' knowledge. Participatory policy analysis (Fischer and Forester 1993; DeLeon, 1997) is a normatively-driven approach offering "a more collaborative method of inquiry" (Fischer 1993; p.165). The latter involves cooperative relationships between citizens and scientists that incorporate citizens' experience and local knowledge. This method is effective when confronting "wicked problems" as it facilitates the development and consideration of alternative points of view. The literature on policy learning (Heclo, 1974; Sabatier, 1988; Sabatier and Jenkins-Smith, 1993, 1999) can potentially accommodate external citizens' knowledge. This literature examines how changes in the beliefs of policy coalitions affect policy changes. It opens a theoretical possibility for social knowledge to enter the agenda of advocacy coalitions and then shape public policy.

Finally, the literature on collaborative public management (Agranoff and McGuire, 2003) has been increasingly attentive to "public knowledge" or "jointly managed knowledge" needed by collaborative networks to address various challenges faced by public organizations (McGuire, Agranoff, and Silvia, 2011). Overall, the literature on governance, collaboration and networks (Lynn et al, 2000; Kettl, 2000; O'Toole, 1997; Eggers and Goldsmith, 2004) has paid insufficient attention to the functioning of loose citizens' networks[4] and primarily focuses on inter-

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[4] According to Lynn (2005) horizontal networks have not been addressed well: "the view of governance, popular in the literature, as increasingly networked and associational" remains at odds with most governance studies in public administration as the hierarchical, vertical and "top-down perspective" still dominates governance literature (p.174.) Consequently, if one assumes that governance means primarily *horizontal* governance, that is, involving networks

organizational and inter-sectoral relations. Several public administration scholars have emphasized the need in a greater collaboration with citizens (Box, 1998; Vigoda, 2002). In particular, the citizen-centered collaborative public management (Cooper et al., 2006) views citizen engagement as resulting in better governance outcomes. However, the empirical basis for the claims about the effect of external civic networks on government performance is still weak.

1.3. Filling the gap: examining external citizens' knowledge in new social movements in relation to public administration

This dissertation fills the gap in understanding the relationship between citizens' knowledge and public administration. Given the importance of social knowledge for solving social problems and for new forms of governance such as those symbolized by President Obama's open government policies, it embarks on the difficult conceptual challenge of integrating social knowledge (Lindblom, 1990) and public administration. Reconciling the "logic of civic engagement" with the "logic of modernization" (Nalbandian, 2005) is difficult. However, on a more optimistic note, "people in actual practice do or might accomplish useful inquiries into their problems" (Lindblom, 1990; p.ix) and thus actual practices might be a useful guide in probing for the relationship between citizens' knowledge and public administration. This probing should be interdisciplinary as Lindblom (1990) argued and, at the same time, at home with the field of public administration, as Waldo (1984) envisioned.

Therefore, inductive inquiry into social practices and civic engagement defines this dissertation's

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consisting of "a loosely coupled set of relations between the actors," and concerned with "co-ordination of actors' strategies and choices" (Klijn, 2008a), then governance continues to be an under-explored field. Horizontal governance involves highly complex phenomena that require substantial researchers' efforts to understand it properly.

approach. This inquiry benefits from the existing bodies of literature that had also followed the inductive approach advocated by Lindblom (1990). I draw on the literature on "civic innovations" (Sirianni and Friedland, 2001, Sirianni, 2009) to describe how "new citizen movement" in the U.S. (Boyte, 1980, Boyte and Kari, 1996) helped articulate different aspects of citizens' knowledge. I further connect this empirical literature with research on knowledge production in new social movements (Melucci, 1980; Buechler, 1995; Byrne, 1997) to build on theories established in sociology. I use one particular sociological approach, "cognitive praxis" (Eyerman and Jamison, 1991) to examine the process of knowledge production in three social movements. As part of analysis, I look at the role of public administrators and policy makers in that process through the lens of communities of practice (Lave and Wenger, 1991; Wenger, 1998; Brown and Duguid, 1991; Amin and Cohendet, 2004) and policy learning (Sabatier and Jenkins-Smith, 1993, 1983) literature.

In general, social movements represent a good empirical site to explore the relationship between citizens' knowledge and public administration. They epitomize perfectly the understanding of social inquiry by Lindblom (1990) as relevant, collective, pluralistic, and socially transformative. Social movements address big social problems, promote social change, and aim for the betterment of the society. They represent collective social phenomena and mobilize masses of people for social inquiry. Most importantly, they generate multiple knowledge, challenge traditional institutions and knowledge, and create a need in "mutual readjustment" (Lindblom, 1990).

New social movements (NSMs), have been selected here as a particular type of social

movements to empirically examine the link between citizens' knowledge and public administration for the following three reasons. First, knowledge production underpins identity processes and thus plays a central role in NSMs compared to the older social movements, such as the labor movement. NSMs are contemporary post-industrial collective forms of social practices and civic engagement driven by postmaterial values (Inglehart, 1977). Cultural and symbolical issues, such as environmentalism, gender, and ethnicity, serve to mobilize NSMs (Melucci, 1985; Buechler, 1995). New identities require the articulation of new practices and values to challenge more established institutions and values. Overall, middle-class educated white collar knowledge workers constitute the movement base in NSMs (Byrne, 1997).

Second, NSMs represent authentic forms of citizen participation (King et al, 1998) as they are less dependent on formal political institutions than the older social movements. At the same time, many NSMs, such as "the American communities movement" (Kesler and O'Connor, 2001), mobilize around community issues and thus the interactions of these movements with the government has been documented by public administration scholars. Essentially, NSMs utilize a "self-help" approach. The literature on social movements describes them as "practicing their own aim" (Della Ponta and Andretta, 2002). NSMs produce social change by producing and disseminating new knowledge rather than by directly influencing state authorities or political elites.

Third, NSMs are structurally similar to contemporary social practices of citizen engagement. They are typically very loosely organized as "networks of informal groups with weak internal coordination" (Della Ponta and Andretta, 2002; p. 253) with a high degree of spontaneity. The

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structure of NSMs differs from the Weberian structure. According to Byrne (1997), NSMs'
values "rather than a formal structure… hold social movements together" (p. 14). On the other
hand, NSMS are less emergent and ad-hoc than most forms of civic engagement because
participants in NSMs develop specific identities associated with that movement, which in turn
provides a basis for their consistency. In addition, NSMs aggregate social knowledge which
makes them a more convenient research subject. Compared to other decentralized social
networks, social movements are more transparent as they often have to articulate their structure,
strategies, and practices to mobilize supporters. Also, NSMs articulate how movements evolve
and learn over time. NSMs typically span over relatively long historical intervals, often decades.
All these characteristics make NSMs real-life laboratories of social knowledge production which
also open doors for the social scientist.

1.4. Defining citizens' knowledge in new social movements

Consistent with Lindblom (1990), the literature on civic engagement (Adler and Goggin, 2005;
Boyte, 1980; Boyte and Kari, 1996), civic innovations (Sirianni and Friedland, 2001, Sirianni,
2009), and new social movements (Eyerman and Jamison, 1991), I understand citizens'
knowledge as social knowledge of experts, lay people, and public officials. The conceptual
definition of citizens' knowledge as movement knowledge or "cognitive praxis" (Eyerman and
Jamison, 1991) is used in this research: "the concepts, ideas and intellectual activities that give
[social movements] their cognitive identity,... both the worldview assumptions... and the specific
topics or issues..." (p.3).

Compared to Lindblom's philosophical framework and the citizen participation normative, the

model of cognitive praxis provides a greater analytical depth on knowledge production as a dynamic process. Jamison et al. (1990) and Eyerman and Jamison (1991) distinguish four NSMs phases – movement awakening, movement building, movement specialization, and movement institutionalization. Each movement phase creates its unique configuration of cognitive praxis. All four phases describe the full cycle of knowledge production: from the emergence of new ideas, practices and worldviews at the movement awakening phase to the institutionalization of movement knowledge by the wider society at the movement institutionalization phase. Overall, the process of knowledge production involves different types of knowledge – lay and expert – as well as their mutual transformations in new social movements.

Citizens' knowledge is approached as a multi-dimensional phenomenon in this research. It is (1) individual/ collective; (2) expert/ lay; (3) institutionalized/ socially dispersed; (4) multidimensional (encompassing worldviews, practices, and techniques); and (5) dynamic. This understanding of citizens' knowledge is consistent with the literature on collaborative public management (McGuire et al., 2011).[5] At the same time, the cognitive praxis lens places a greater emphasis on lay knowledge embedded in loose movement networks and thus expands the empirical basis of citizens' knowledge beyond public organizations and public sector networks. Therefore, cognitive praxis makes it possible to examine the interaction of lay knowledge external to public organizations and expert knowledge inside public organizations.

1.5. Research questions

This dissertation focuses on social knowledge produced by new social movements as a specific

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[5] McGuire et al (2011) approach public knowledge as "the capacity to act" and as "fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information" (Davenport and Prusak 2000; p. 5; cited in McGuire et al., 2011; p.28).

empirical example of citizens' knowledge. It asks two broad questions: (1) what is the overall dynamics of knowledge production in social movements in relation to public administration and policies? and (2) how does movement knowledge affect public organizations and public policy processes?

The application of cognitive praxis approach to knowledge production in new social movements (Eyerman and Jamison, 1991) gives a big picture of interaction between a movement and public administration and policy institutions at different movement phases. It results in the following research questions:

1. How does movement knowledge change from movement emergence phase to movement institutionalization phase?

2. How do public policy institutions and public organizations interact with movements in relation to movement knowledge, at each movement phase?

The knowledge management literature on communities of practices (Lave and Wenger, 1991; Wenger, 1998) and policy learning (Sabatier and Jenkins-Smith, 1993, 1983) is used to further investigate the specific mechanisms of knowledge interaction between new social movements and public organizations at a community/ organization level. The following research questions will address these mechanisms:

3. What is the role of movement communities in the transfer of movement knowledge to the public policy arena and public organizations?

4. What are the opinions of movement leaders about the effect of movement knowledge on public organizations?

Finally, this study compares the influence of the characteristics of movement knowledge on knowledge interactions between movements and public organizations:

5. How do characteristics of movement knowledge affect the overall process of knowledge exchange between new social movements and public organizations?

1.6. Research contributions

The research makes several contributions to public administration scholarship. First, the analysis of the dynamics of movement knowledge production helps understand how social knowledge enters the policy arena and thus becomes "visible" to policy-makers, how the character of its relationship to public policy changes over time, and whether the strategies of movement leaders and policy-makers depend on the dynamics of knowledge production. These insights inform the literature on collaborative governance by illuminating how knowledge production in NSMs shapes knowledge interactions between movement knowledge and public sector actors. Second, the research highlights how the interactions between movement communities and public organizations prevent or facilitate the transfer of movement knowledge into public organizations at different organizational levels. The findings enrich the understanding of the influence of external knowledge networks on public organizations and contribute to the literature on knowledge management in the public sector. Third, the analysis explores the role of movement knowledge in mediating the relationships between policy learning at the national level and organizational learning at the local level. In particular, it examines how movement actors might help bridge public policies and organizational practices.

1.7. Cases selected

This research is an embedded case study (Yin, 2003). Knowledge production is examined in three NSMs: the sustainable community movement (SCM), the free and open source software movement (FOSSM), and the natural childbirth movement (NCBM) in two countries, the U.S. and Ukraine. At the local community level, the SCM case addresses one citizen-driven sustainability indicator project and its effect on consequent policy learning in Seattle, WA. The FOSSM case illustrates the interaction of one FOSSM community in New York City and the city government in the context of the NYC 311 system development. The NCBM case describes interactions between the NCBM community and maternity doctors in Dnepropetrovsk city, Ukraine.

The main rationale for selecting these three new social movements is to contrast the information technology-dependent FOSSM against much less technological NCBM and SCM (Research question 5). The TOGM and President Obama's open government policies primarily focus on digital technologies and online citizens' knowledge. This research thus makes a step forward by comparing different kinds of movement knowledge in relation to public administration and policy. Finally, each movement represents a knowledge-based social movement. Specific knowledge practices and products will be described as part of the analysis (research question 1). The three cities represent benchmarking cases of knowledge production, based on the opinions of key NSMs actors.

1.8. Outline of the dissertation

The remainder of this dissertation could be roughly divided into two parts: conceptual and

empirical. The conceptual part consists of two chapters. Chapter II reviews several bodies of literature: (1) civic participation and civic innovations; (2) knowledge production in NSMs; and (3) communities of practice and policy learning. Chapter III examines the overlapping areas in these three bodies of literature and suggests possible conceptual synergies. The empirical part consists of the methodology chapter (Chapter IV) and Chapters V-VII, which describe three new social movement cases (the sustainable community movement, the free and open source software movement, and the natural child birth movement, respectively). Based on these three cases, Chapter VIII compares the cases and discusses this dissertation's main findings and key insights about the links between citizens' knowledge and public administration. The final Chapter IX summarizes lessons learned from this study and suggests some directions for the future research.

CHAPTER TWO. LITERATURE REVIEW

This chapter provides the intellectual foundation to grapple with the question of integration of social knowledge and public administration by defining the main substantive elements of the inquiry. It reviews three bodies of literature: (1) citizen participation and civic innovations; (2) knowledge production in NSMs; and (3) communities of practice and policy learning. First, the theme of citizens' knowledge is explored in the context of citizen participation internal to public administration as well as in the context of civic engagement external to public organizations. Second, the literature on knowledge production in NSMs is reviewed in the search of more established theoretical frameworks to address the overall dynamics of movement knowledge as one particular example of citizens' knowledge. Third, communities of practice and policy learning literature provide a more nuanced view on the mechanics of knowledge exchange between NSMs and government at the administrative and policy levels.

2.1. Citizen participation and civic innovations: citizens' knowledge in action

2.1.1. Citizens' knowledge and citizen participation

Three rationales can be distinguished in public administration literature in relation to citizens' knowledge: citizenship, management and governance, and the institutional approach. These rationales parallel three general types of accountability in public administration: democratic (political), managerial, and institutional (legal) (based on Rosenbloom, 1983). Each rationale presupposes how much relative power citizens are allowed to exert on public organizations, what form this influence should take, and how much citizen knowledge input is desirable in relation to expert knowledge.

For example, those public administration scholars who maintain the normative citizenship ideal of "strong democracy" (Barber, 1984) argue that citizens should be more involved and should have more power and opportunities to participate in government and administration. In contrast, management-oriented scholars favor a less normative and more situational approach to citizen participation (Thomas, 1995). Yet another group of scholars combine democratic and managerial rationale (Box, 1998, Vigoda, 2003). Callahan (2007) summarizes existing "models of participation" based on different roles that citizens play. These models (Arnstein, 1969; Thomas, 1995; Vigoda, 2003) represent a continuum with citizens playing most active roles and having greatest power at one end and administrators having the greatest autonomy at the other end.

The *citizenship* rationale justifies greater role of citizens' knowledge on normative grounds. As early as in the 1980s, many U.S. public administration scholars responded to the growing citizen distrust and apathy in the U.S. by stressing new civic responsibilities of public administrators. The "recovery of civism" in public administration (Frederickson, 1982) aimed to increase the responsiveness of administrators to citizens. Public administration had to become "intimately tied to citizenship, the citizenry generally, and to the effectiveness of public managers who work directly with the citizenry," (p.502).[6] Ventriss (1987, 1989) steps further and recognizes the importance of mutual learning of citizens and public administrators. He argues that the public learning that happens naturally in communities should be linked to public administration to further the public's "capacity, maturity, and knowledge" (Ventriss, 1987; p. 37). Also, he stresses

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[6] The 1983 National Conference on Citizenship and Public Administration consequently specified the role of public administrators as "responsible citizens." Conference participants agreed that a greater "civic knowledge" was necessary to sustain a democratic way of life (McGregor and Sundeen, 1984). However, the knowledge gap between citizens and professional administrators constituted a major obstacle to the practice of citizenship in administration (Gawthrop, 1984). Therefore, administrators had a civic responsibility to actively educate citizens and to "harness the power of citizenship for constructive community action" (Cooper and Gulick, 1984; p.151).

the need for public administrators to learn from the public. Cleveland (1985) articulates the role

of citizens' knowledge in the information society and outlines such new phenomena as erosion of

hierarchies, greater openness in decision-making, and the obsolescence of ownership over

information.

During the 1990s, the field turned citizenship ideals of "deliberative democracy" (Habermas,

1984, 1989; Dryzek, 1990) into concrete citizen participation practices. Citizens' knowledge

appeared in the literature as both *passive* citizens' knowledge about their needs as customers of

government (Osborne and Gaebler, 1992) and more *active* citizens' knowledge about community

affairs which public managers could use as productive resource to advance "civic governance"

(Box, 1998). King et al. (1998) argue that "authentic public participation" in public

administration entails citizens' local knowledge about "what's better for the neighborhoods."

Based on their prior experience, they call for the creation of a shared base of knowledge and

learning centers where citizens and administrators could learn together and where common

knowledge can emerge. Hummel and Stivers (1998) argue that the American government "is not

a democracy of direct knowledge" (p.33). They propose the idea of "collaborative knowledge,"

knowledge that emerges from the dialogue between citizens and bureaucrats. In his discussion of

citizen governance, Box (1998) defines the "rationality principle." According to this principle,

governance structures should be designed to fit the knowledge of individual citizens and

practitioners.

Most recently, Denhardt and Denhardt have proposed a new theoretical and normative

framework of "the New Public Service," which "gives full priority to democracy, citizenship,

and service in the public interest" (Denhardt and Denhardt, 2007; p.189). It expands the intellectual foundation of public administration by highlighting critical theories, interactive models of community and civil society, New Public Administration principles, and postmodern theories of discourse. The new Public Service emphasizes that citizens can have "more long-term perspective based on their knowledge of public affairs and a sense of belonging, a concern for the whole, and a moral bond with the community" (Denhardt and Denhardt, 2007; p.79).

The *managerial* rationale stresses pragmatic aspects of utilization of citizens' knowledge. The field had become more attentive to citizens' knowledge in the 1990s. The idea that citizen engagement should be "integral to public management is a relatively new idea, a late-twentieth-century innovation" (Thomas, 1995; p1). Despite many practical challenges, new administrators' roles and skills as well as new administrative processes were described and developed to realize the ideal of active citizenship. The theoretical literature on participatory management (Follett, 1924) and organizational humanism (McGregor, 1960) stressed the importance of such managerial roles as collaborator, facilitator, and mediator. Public administration literature on network governance (Kettle, 2002) and collaborative public management (Agranoff and McGuire, 2003) provides many empirical insights how effective collaboration depends on the ability of administrators to facilitate shared learning and reach consensus between network participants. The literature on community building and citizen participation emphasizes these new roles even stronger (King et al, 1998; Nalbandian, 1999; Denhardt and Denhardt, 2000; Vigoda, 2002; Bingham et al., 2005).

The new managerial approach to citizen participation processes reflected the consensus about a

greater role of citizens' knowledge. Several scholars proposed more flexible citizen participation processes that could help balance "idealism" and "pragmatism" (Creighton, 2005). Cooper et al. (2006) proposes the model of "citizen-centered collaborative public management" that integrates five approaches to civic engagement and suggests how each approach can be assessed. Thomas (1995) develops a practical, balanced, and contingent theory of Effective Decision Model of Public Involvement, which combines "philosophy and practicality" of citizen participation, communitarian and market perspectives (p.30). Fung (2003) proposes eight "institutional design choices" or dimensions of civic engagement that help guide decisions of organizers of public deliberation. Bingham et al. (2005) creates research agenda on governance of citizen participation. Most of these approaches address citizens' knowledge as an important resource that public managers might utilize.[7] In addition, citizen-driven performance measurement approach (Callahan and Holzer, 2000; Ho and Coates, 2002, 2004; Callahan, 2007) builds on the idea that performance measures should reflect citizens' actual needs and preferences.[8]

The *institutional* rationale stresses the role of citizens' knowledge at the intersection of public administration and other institutions. The recent literature discussing those governance arrangements that have a greater structural space for civic engagement signals the role of

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[7] Thomas (1995) describes how the involvement of such public groups as Wilderness Society, Sierra Club and Audubon Society improved the "knowledge base" (scientific base) for decision-making in the Forest Service (FS). Creighton (2005) makes an important statement in relation to citizens' knowledge in the concluding part of his book: "The people who make up our communities and societies possess knowledge and skills that make our democracies work. But that knowledge and skill can atrophy through disuse. Public participation is a way to exercise the skills we need to sustain democratic society and build the base of knowledge that we need not just for the immediate decision, but for many decisions into the future. (p.244).

[8] This managerial approach has been incorporated into different institutional models of community governance (ex., Epstein et al. 2006) but can be examined independently as an example of the use of citizens' knowledge by managers to advance organizational goals. It started with a citizen-driven government performance project implemented by public administration scholars from Rutgers University at Montclair, NJ in the late 1990s. The project showed that citizens were able to understand performance measures and could develop both broader goals and specific performance indicators (Callahan, 2007). Overall, it did not succeed because, among many other reasons, it was initiated and organized by a group of academics (outsiders) and because elected officials withdrew their support for the fear of losing control over the process.

citizens' knowledge as an important driver of institutional changes. On the one hand, there have

been legal changes within the institute of public administration that have enabled and reinforced

deliberative practices of citizen participation in public organizations (Bingham, Nabatchi &

O'Leary, 2005). On the other hand, those public administration scholars writing on community

governance (Box, 1998; Epstein et al., 2006) call for a greater community freedom to change

governance structures by citizens, if needed. Citizens' knowledge and initiative are integral for

"citizen governance" (Box, 1998) and governing-for-results (Epstein et al., 2006).[9]

2.1.2. Civic innovations

The review of citizen participation literature above suggests that public administration scholars

have been aware of the role of citizens' knowledge and citizen capacity for action but were

limited in their research focus as they had to deal with the challenge of balancing administrators'

expertise and control with citizens' knowledge and control.[10] In contrast, many non-public

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[9] For example, Epstein et al. (2006) builds on the assumption that citizens' knowledge exists but should be developed to make citizens more effective agents of community governance-for-results practices. He describes five citizen roles (stakeholder, advocate, issue framer, evaluator, and collaborator) essential for community-problem solving, the first advanced governance practice in their list. In contrast to most citizen participation literature that focuses on what administrators do, Epstein et al. (2006) view broader community as the primary locus of action and citizens as primary agents. Citizens may use different forms of action including those provided by government (i.e. governmental citizen participation opportunities) or can create their own forms such as citizen committees. The authors provide the example of Jacksonville, Florida where community citizens developed new civic practices and established a new organization, the Jacksonville Community Council Inc. in 1975. The above five citizen roles help citizens better organize their learning process. Importantly, citizens understand the significance of learning and create programs such as "citizen academies" to learn how to listen, deliberate, and make choices, to transfer the knowledge, and to mentor new activists.

[10] Two articles by Strange (1972) and by Gittel (1972) that appeared in the anthology of citizen participation collected by Roberts (2008) exemplify this. Both articles were originally published in Public Administration Review journal in 1972, and thus represent the voice of the field. Strange (1972) summarizes the differences in the implementation of citizen participation between EOA Community Action and HUD Model Cities programs. He finds that in most EOA cities citizen participation was implemented by neighborhood centers that were relatively independent from local government. In contrast, Model Cities Program's citizen participation was highly controlled by the government that established specific procedures for citizen participation and also provided technical and financial support. He argues that government restricted citizen participation by using its funding authority and deciding the local program content. Finally, Strange (1972) suggests that citizen participation practices had spread because of institutional innovations within the civil society – not because of "participation in the sense of [government] control" (p.661). Similarly, in her discussion of urban school reforms, Gittel (1972) highlights the

administration scholars have assumed a more citizen-centered perspective on citizens'

knowledge. This section summarizes the literature on "civic innovations as social learning" in

the context of democracy revitalization (Sirianni and Friedland, 2001). It also draws on the

experience of the "new citizen movement" in the U.S. (Boyte, 1980).

Several books authored and co-authored by Harry Boyte provide empirical evidence of citizens'

ability to learn and develop mechanisms and institutions of civic learning' in order to address

public issues (Boyte, 1980; Boyte and Kari, 1996; Boyte, 2008). The book *Backyard Revolution*

represents one of the earliest intellectual reflections on the "new citizen movement" of the 1970s

(Boyte, 1980). It discusses the reasons why the movement emerged, its effects on the American

democracy as well as American political and intellectual life. The movement stresses the role of

new citizen institutions.

According to Boyte, free spaces[11] – or organizational space, autonomy, and cultural freedom to

experiment and learn – were necessary for citizens to learn the skills of citizenship and

democracy. A shared sense of ordinary people's potential was the precondition of such learning.

The attention to the history, focus on practical issues, and the application of knowledge about

community organizing such as that developed by Saul Alinsky were its important elements:

"members of a group learn a common history, compare problems and experiences, and develop

methods for common action through the spaces that they control, "own" and are able to shape

importance of community control to achieve more effective education. She argues that "administrative
decentralization" produces institutional change by giving citizens more control thus changing the balance between
"professionalism and public participation in the policy process" (p.684).

[11] Boyte writes that "the seventies opened a free democratic space through which formerly silent Americans have
learned that … ordinary people can learn the public skills necessary for exercising some control over their lives and
institutions and can rebuild community in an often depersonalized society" (p.43). The "free democratic space" was
to be found within the primary institutions of society – families, religious organizations, unions, neighborhoods,
clubs – and was to be created anew by transforming these institutions at the same time.

themselves" (p.37). The communication of individual transformative experiences to other citizens, learning by doing, and transferring the knowledge to other group members transformed older institutions that became new learning centers of citizenship and democracy.[12]

The book *Building America* by Boyte and Kari (1996) continues the discussion of contemporary civic engagement in the U.S. While the primary goal of *The Backyard Revolution* was to convince the reader that civic engagement was real, this book starts by acknowledging that "civic energy abounds" in America (p.5). The authors calls for a better understanding and appreciation of this "creative public activity" and proposes a concept of "public works" to connect citizenship and democracy with what citizens do – not just generally understood civic capacity or civic processes but also the concrete products of citizen efforts[13]. They define "public work" as the "work by ordinary people that builds and sustains our basic public goods and resources – what used to be called 'our commonwealth' " (p.16). Civic learning constitutes an important element of public works: "popular civic education … is central to building a democracy" (Boyte and Kari, 1996; p.9).[14]

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[12] Boyte gives many examples how citizens created new institutions to transmit knowledge to new members. The Midwest Academy established in an old Chicago church in 1972 offered a two-week training in community-organizing. Other similar centers include Organize school at the Citizen Action League, the Center for Urban Encounter in Minneapolis and St.Paul, and many others. Besides learning institutions that taught organizing skills, the new citizen movement produced other institutions. New economic institutions included community development corporations (CDC), community credit unions, and community cooperatives which altogether represented a viable alternative to market-based economic institutions. The blending of knowledge about community economics, ideas about neighborhood self-reliance, and ideals of community democracy fueled a new movement for people's technology and was reflected in the activities of the Institute for Local Self-Reliance created in 1973 to bring professionals and community organizers to develop and promote alternative technologies such as solar energy and rooftop gardens.

[13] Boyte and Kari believe that terms like volunteerism, citizen participation, and deliberative democracy, or social capital do not "convey the richness or name the importance of what citizens are doing" because they "largely focus on process, separating citizen efforts from what is actually created of produced of value" (p.6). They disagree with deliberative democracy theorists such as Habermas and left wing theorists who "put citizens in the role of outsiders and victims" (p.210). Instead, they believe that citizens are not excluded from "public creation."

[14] It represents both an end and a means to a renewed democracy. The democratization associated with public works depends on "people's own, largely self-directed learning, drawing strongly from people's cultures, traditions, and ways of life but also informed by larger civic concepts and lessons" (Ibid). Boyte and Kari (1996) view technocracy

The Citizen Solution, the most recent book by Boyte (2008), further sharpens the focus on civic

learning by making it even more practical and tangible. The book is written for citizens as a

resource for organizing effective civic action and civic organizations. It is based on the

experience of civic organizing in two cities with a very strong and innovative civic culture,

Minneapolis and St.Paul, and civic projects at the Humphrey Institute of Public Affairs. Each

book chapter ends with one lesson and tips on developing one civic skill. One lesson addresses

the role of "citizen professionals," from the perspectives of civic agency and the concept of

public works. It explicates the idea that "civil servants are themselves citizens, doing the people's

work" (p.15) by placing professional knowledge *inside* civic agency as its important integral

element. Boyte acknowledges the role of professional expertise but also adds that solving civic

problems requires wisdom – not just professional expertise: "Citizens professionals are proud of

their knowledge and the craft of their discipline, but they also know their limits... They recognize

that solving complex problems requires many sources and kinds of knowledge" (p.144).

Boyte (2009) further develops the question about a desired balance between civic and

professional knowledge. He argues that the technocracy and "the cult of expert" have "limited

[community] organizers' capacity to impact the larger society beyond their organizations, to

democratize the politics of knowledge, and to reconceive and rework institutions..." (p.16).

Boyte uses the language of complex adaptive systems to pursue his argument that civic

knowledge that emerges out of interactions of "self-directing agents" between each other and the

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and over-dependence on scientific knowledge as a threat to public work and civic education because they detach the sense of public purpose from work. They provide numerous examples of citizen initiatives in the American history where citizens' work both produced impressive results and increased participants' sense of public meaning and citizenship. People's institutions such as ethnic communities, settlement and neighborhood houses, and "schools for public life" have been such public spaces where people could practice and learn civic skills. At the same time, these institutions served self-help purposes addressing citizens' trivial needs.

environment is more complex than professional knowledge. He calls for a greater integration of this "living" knowledge into higher education and gives an example of the University of Minnesota, which created an Office of Pubic Engagement with the goal of incorporating "public engagement as a permanent and pervasive priority in teaching, learning, and research activities throughout the university" (p.29).

The above works by Harry Boyte represent a strong statement about the role of citizens' knowledge and civic learning in the contemporary American society. [15] Sirianni and Fridland (2001) expand the theme of civic innovation by utilizing a more rigorous qualitative research methodology.[16] The authors define the goal of their book as understanding "civic innovations as social learning extending over the past several decades and [exploring] their role in democratic revitalization" (p.8). They draw on three traditions to study social learning: policy learning, organizational learning, and participatory democratic theory. Sirianni and Friedland (2001) focus on such issues as urban development, environment, health, and journalism. The book provides many empirical examples of innovative civic practices and lists three major educational centers

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[15] Many other sources are available for a further discussion of citizens' knowledge. The works by such scholars as Benjamin Barber, Amitai Etzioni, David Mathews, and Robert Bellah are rich in ideas about citizens' knowledge. Also, it is worthwhile to mention several institutional initiatives, both academic and non-academic. Among them, the Committee for the Political Economy of the Good Society (PEGS), an academic community of scholars whose "goal is to promote serious and sustained inquiry into innovative institutional designs for a good society," publishes The Good Society journal and a book series. One edited PEGS book by Elkin and Soltan (1999) addresses the role of "citizen competence" for effective and sustainable democratic citizenship, from political theory point of view. The Kettering Foundation has been the nation's leading forum in civic practices. It supports research that "is conducted from the perspective of citizens and focuses on what people collectively can do to address problems affecting their lives, their community, and their nation" (The Kettering Foundation web-site). Finally, the National Civic League (NCL), America's "original advocate for community democracy" reinvigorates citizen democracy by fostering collaborative relationships between citizens and local government. NCL's All-America City Awards recognizes those communities that have succeeded in building good *civic infrastructure*, defined as "the ability of a community's voluntary, non-profit organizations, and citizens to work together for the purposes of community-making" (Wallis, 1996). Out of the twelve indicators of the Civic Index that measure the strength of the community's civic infrastructure, three indicators relate to civic knowledge: sharing information, educating citizens, and ongoing learning.

[16] It relies on interviews with 467 innovative civic practitioners conducted over seven years (1993-2000), field notes from 141 practitioner conferences, and 280 community action guides and manuals, as well as secondary sources.

behind the civic renewal movement (the National Civic League, the Kettering Foundation, and the Center for Democracy and Citizenship).

Therefore, the works by Boyte (1980, 1996, 2008, 2009) and Sirianni and Friedland (2001) reviewed above articulate a citizen-centered view on citizens' knowledge, drawing on the idea of civic agency and real-world examples of civic innovations. They suggest two conclusions in relation to the nature of civic knowledge and to the nature of inquiry about citizens' knowledge. First, citizens' knowledge is a complex, multidimensional and dynamic concept. On one hand, it refers to specific ideas and outcomes of civic practices, and on the other hand, it refers to the processes of critical reflection on those practices and outcomes. Knowledge as an outcome emerges as a solution to specific problems that citizen groups face within particular contexts. On another level, knowledge also emerges as the knowledge about processes and as a learning process. The relationship between these two forms of knowledge is reciprocal: citizens experiment with new ideas, learn from their experience, and then adjust the ways they see problems and set new goals. Transformative group and individual experiences constitute a part of such learning. This means that individual values might change over time which creates additional dynamism in citizens' knowledge.

Second, studying citizens' knowledge can be difficult as the researcher should be able to assume a citizen-centered perspective and tolerate many uncertainties resulted from the decentralized knowledge production, such as a lack of agreed upon definitions and the long time frames of civic knowledge. In other words, studying citizens' knowledge can be a life-long learning project where the researcher is involved in her object of research and is able to adjust her theories and

concepts. More importantly, as the researcher conducts her work, the researcher also observes, learns, and contributes to citizens' knowledge at the same time, and thus engages in a participatory research.

Summary

This section has reviewed citizen participation literature in relation to citizens' knowledge and non-public administration literature on civic innovations outside public administration. The literature on civic innovation suggests that a citizen-centered perspective can be a more productive way to look at citizens' knowledge conceptually than an administration-centered perspective. In particular, the authors who describe civic innovation provide genuine insights about citizens' knowledge and its different aspects. Even though civic innovations literature appears insufficiently theoretical and analytical it is valuable as a good practical introduction to citizens' knowledge. This literature understands civic learning and citizens' knowledge as a complex, multidimensional and dynamic phenomenon.

2.2. Knowledge production in new social movements

This section examines the "cognitive praxis" approach (Eyerman and Jamison, 1991; Jamison, 2001), one particular knowledge-based view on social movements. This approach places the complex dynamics of knowledge production in social movements into a historical context and suggests how social movement phases can be related to knowledge processes. Because the volume of research on social movements is enormous, I will start by describing my theoretical lens on social movements. First I explain the role of knowledge as a conceptual watershed separating the research on old and new social movements. Second, to illustrate what scholars of

social movements mean by "knowledge," I provide specific examples of the knowledge

produced by social movement actors in my discussion of the impact of social movements. Third,

to elaborate on the dynamic nature of citizens' knowledge, I discuss how the notion of social

movement *phase* relates to knowledge processes.

2.2.1. The theme of knowledge production in social movement studies

To address the question of knowledge production in social movements, it is appropriate to first

introduce a general conceptual map of social movements, a major sub-field in sociology and

political science. One could state without an exaggeration that knowledge production has not

been salient as a research theme in social movement studies (Eyerman and Jamison, 1991;

Casas-Cortes, 2008). Traditionally, most sociologists treat social movements as a phenomenon of

"contentious politics," that is, "collective political struggle" that involves government as a part to

contention (McAdam et al. 2001; p. 5). Their main interest in investigating conditions for the

emergence and success of social movements renders the theme of knowledge production

secondary to such themes as resource mobilization, political process, framing, and repertoires of

contention.[17]

The theme of knowledge production has been associated with one particular approach to social

movements that is known as "new social movements" (NSMs) (Melucci, 1980; Buechler, 1995).

It emerged in the 1980s and reflected the sociologists' concern that ideological and structural

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[17] According to Melucci (1996), traditional approaches see social movements primarily as responses to changes in political markets aimed at providing new opportunities for previously excluded social groups, often defined in the categories of class and race, that demand for "a different distribution of resources or for new rules" (p.7). This general structuralist thinking leaves little space for internal knowledge production because it conceptually frames deficiencies in political and economic systems as the most important driver for social movements as well as the main determinant of specific responses of social movement actors.

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explanations failed to address the cultural dimensions of social movements (Bourdieu, 1977, 1990; Jasper, 1997; Melucci, 1989). Initially a cultural critique of political mobilization theories, NSMs paradigm emerged as a domain with a major conceptual focus on identity processes in social movements and associated with those processes knowledge production.[18] In contrast to most movement studies, Melucci views NSMs not as readjustments to political market but as a much broader phenomenon that signals a radical transformation of our views of "the Earth as our homeland, … and our 'nature' as human beings" (p.7).

This "extraordinary cultural transformation of planetary society" (Ibid) shifts the conflict from the political arena to the cultural arena and further to cultural knowledge production. Major contemporary conflicts "involve the definition of the self in its biological, emotional, and symbolic dimensions, in its relations with time, space, and 'the other' " (p.9). Because contemporary societies heavily depend on individuals and groups with knowledge and information, conflicts emerge in those fields of social life with high information flows and high pressure from traditional institutions to incorporate "the rules of systemic normalcy" to new social views and practices (p.8). Frequently, the cultural contention involves deliberate distancing of social movements actors from political systems. This gives them relative autonomy necessary to pursue their practices which increasingly become connected with their everyday private lives. Therefore, knowledge processes related to processes of identity formation become an important marker of social movements in information societies, according to Melucci. Even though the NSMs school of thought clearly emphasizes knowledge production as central to its

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[18] Detailed conceptual comparison of old and "new" social movements is not a subject of this dissertation and has been conducted elsewhere. Suffice it to say, according to Alberto Melucci, who was largely responsible for the concept, NSMs represent not an empirical generalization about a clearly defined type of movements, "a unitary independent empirical object, but rather a different conceptual lens to study contemporary social movements" (Melucci, 1989).

paradigm, the importance of social movement actors' knowledge has been assumed by most sociologists.[19]

Although knowledge production has not been "a topic of central importance," (Eyerman and Jamison, 1991; p.162) there has been a consensus among most sociologists that knowledge matters for the mobilization processes in all social movements. Perhaps, NSMs scholars emphasize the role of *new* knowledge to a much greater extent than political mobilization theorists. NSMs actors produce new knowledge as they construct meaning and make sense of new social reality. Unlike the knowledge that is used for the purposes of internal mobilization, this knowledge might have an impact beyond a social movement if the society at large assimilates such knowledge as it has been the case with "green knowledge" produced by the environmental movement (Dobson, 2000). Also, it ensures "reflexive modernization" and helps highlight and mitigate the risks associated with "risk society" (Beck, 1992). Therefore, I chose NSMs as my specific conceptual approach to social movements because it better accentuates and articulates the role and the processes of knowledge production in social movements.

2.2.2. Cognitive praxis approach in new social movement research

How exactly do new social movement actors produce knowledge? As explained earlier, identity issues drive mobilization processes in NSMs. This happens when specific actors' values translate

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[19] Unlike older approaches, such as crowd psychology (LeBon 1960), that treat social movements as collective action characterized by irrational pathological behavior, both the advocates of NSMs approach and its opponents define social movements in terms of actors' meaningful behavior. As Melucci (1996) points out, social movement actors' behavior only appears unstructured because the institutions and individuals whose interests are threatened by movements frame the discourse in such a way that it labels them as "marginal, deviant, rootless, irrational." (p.18). Once one looks at the internal organization of collective action in social movements, the rationality of the movement actors – that is, their ability to select means to achieve specific ends – becomes obvious. As part of their research agenda, the resource mobilization scholars examine how leaders and movement actors make decisions, disseminate information, rationally calculate outcomes of their actions and campaigns, and how they accumulate knowledge, learn, and create (Jasper, 1997). Innovations in global social movements (Seel et al., 2000; della Porta and Tarrow, 2004) provide more evidence of the importance of knowledge for the success of collective action.

into specific practices. Many scholars argue that NSMs can be solely distinguished from older

movements (e.g. labor movement) by their salience of postmaterial values (Inglehart, 1977) that

constitute an important element of identity for many participants in contemporary social

movements.[20] Supposedly, post-material values result in specific kinds of knowledge. Values do

not directly lead to social action, however (McAdam, 1986). Swindler (1986) argues that culture

influences action by shaping "a repertoire or 'tool kit' of habits, skills, and styles from which

people construct 'strategies of action' " (p.273). She believes that culture's causal significance

consists not in defining the ends of action but in providing cultural components, such as ritual

practices, languages, stories, that are used by actors to construct their strategies for action.

Similarly, the "cognitive approach" developed by Eyerman and Jamison (1991) views culture as

instrumental to understanding by social actors of their own life experiences in relation to the

movement (della Porta and Diani, 2006). It articulates the importance of concrete dynamics of

"cognitive praxis" and stresses the idea that knowledge interests of social movements do not

exist as something readily available, off the history's "shelf." Instead, they represent a continuous

process of social construction of knowledge (Berger and Luckmann, 1967) – the processes of

"re-cognition" or "recurrent acts of knowing that go on all the time" (Eyerman and Jamison;

p.49)

In cognitive praxis approach, knowledge substantiates identity and specifies how identity is

linked to collective action. Eyerman and Jamison (1991) define knowledge broadly as "the

concepts, ideas and intellectual activities that give [social movements] their cognitive identity,...

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[20] Byrne (1997) argues that the predominance of NSMs actors' postmaterial values reflects new post-industrial social relations. Based on his study of several NSMs in Great Britain, he finds that, unlike older social movements, NSMs actors are mostly motivated by expressive cultural considerations. NSMs also differ in their demographic profile as NSMs supporters are primarily middle class, particularly being employed in the public sector, education, and "caring" professions (Byrne, 1997; p. 18).

both the worldview assumptions... and the specific topics or issues..." (p.3). This definition

includes both specific ideas and cognitive frameworks for the interpretation of those ideas. Based

on their studies of environmentalism in Sweden, Denmark, and Netherlands, Jamison et al.,

(1990) identify three dimensions of cognitive praxis – cosmological, technological, and

organizational – used to interpret individual ideas and practices in relation to movement actors'

identities. Cosmological dimension relates to sense-making and specific worldviews. Actual

practices and techniques of interaction and intervention represent concrete means by which

actors express their specific worldviews and constitute the technological dimension. The

organizational dimension refers to the ways "knowledge production is organized and distributed"

(Jamison et al. 1990; p.6). Altogether, these three dimensions specify "the cognitive identity of a

social movement" (Eyerman and Jamison, 1991; p.67) and represent "operational categories" of

"knowledge interests" (Habermas, 1972) underlying specific identities.

Jamison et al. (1990), Eyerman and Jamison (1991), and Jamison (2001) provide several

examples of knowledge production in new social movements. Most of them relate to the

production of green knowledge within the environmental movement. Green knowledge is based

on the ecological world view that stresses "the systemic interconnection of natural and social

processes" (Jamison et al. 1990; p.xi). It emphasizes green practices that might appear

commonplace at present, but which were very innovative at the early phase of the environmental

movement, in the 1970-80s. Jamison (2001) cites early experiments with renewable energy

sources, such as the Dannish Twind windmill built by amateurs, and with "environmentally

friendly" products in ecological communes in Norway and Finland, in the late 1970s. From the

organizational point of view, green knowledge often involves participatory and democratic forms

of knowledge production, such as non-hierarchical loosely structured associations and communities. Jamison et al. (1990) distinguish between contentious, success-oriented environmental organizations, (e.g., Greenpeace), and "value-added" groups and organizations that use knowledge production in order to change societal values by articulating alternative practices and by being personally authentic to green values, ideas, and lifestyles. Their argument substantially draws on those groups that fall under the second type.

Other examples offered to explicate the concept of "cognitive praxis" include the knowledge produced by the American civil rights movement and new feminist thinking in academia that was initiated by women's movements. With the case of the civil rights movement, Eyerman and Jamison (1991) illustrate that even a highly emotional and religious movement can be read "in a cognitive way" (p.165). The social gospel of the movement integrated religious and spiritual insights with legalistic elements, resulting in the knowledge of American society as fundamentally unjust. The technical dimension of knowledge included specific techniques of protest, particularly nonviolent direct action. The organizational dimension involved the "innovation of organized mass action" (p.124).

2.2.3. The impact of knowledge production in social movements on the society
Social movement scholars seldom address the contributions of social movements to social processes of knowledge production. Eyerman and Jamison (1991) regret that "the specific cognitive praxis of social movements … receive[s] little if any notice" (p.161). Overall, the theme of social movement impacts represents a "neglected area" in the literature on social

movements (Giugni et al., 1999).[21] The cognitive praxis approach to social movements fills this

gap in the literature on movement impacts. The discussion of "green knowledge" by Jamison

(2001) specifies how knowledge that initially emerged within the environmental movement later

became incorporated by institutions of contemporary society. By examining the detailed

historical trajectories of environmental movements in Sweden, Denmark, and the United States,

he describes how the environmental consciousness was internalized by these countries'

mainstream cultures and how environmental concerns consequently became integrated in many

aspects of social and economic lives of the three societies.

In particular, the process of incorporation has been associated with the discourse on

sustainability, i.e. "green business" strategies that combined "environmentalism and economics"

(p.6). Jamison summarizes the impact of environmentalism on the "establishment" as follows:

"activists and former activists have played important roles in processes of institutional and policy

reform, scientific and technological innovation and, on a more personal level, in changing

values, beliefs, feelings, and behavior" (p.10). The process of incorporation has not been a linear

progress, from social movement actors' point of view, however, as many environmental activists

struggled to prevent the commercialization of environmental values.

The effect of social movements on social knowledge has been further explored by other scholars.

Conway (2006) examines the knowledge praxis in the Metro Network for Social Justice and the

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[21] In their recent textbook on social movements, Della Porta and Diani (2006) summarize social movement
outcomes by addressing policy changes primarily. The authors note that most studies focus on the production of
legislation. They further acknowledge the effect of cultural transformation produced by identity-based movements
on "thematization," or policy agenda-setting. They do not explicitly address the mediating role of the knowledge
produced by social movements on social change, however. Methodologically, it has been difficult to assess broader
social changes that social movements produce by affecting policy changes, because implementation capacity of
different states varies (p.232). It is even more difficult to assess culture-driven changes as these cannot be easily
defined – not to say measured.

effect of its participatory political education on coalition urban politics in Toronto, Canada. Casas-Cortes et al. (2008) offer three cases of "knowledge-practices:" the merger of technological and traditional knowledge of native communities in the Indigenous Environmental Justice movement in the U.S., the micro-politics of the Chicago's Direct Action Network, and the development of "reflexive forms of theorizing" in the Italian anti-globalist movement.

Hess (2005, 2007) discusses the impact of social movements on science and industry innovation. He applies the "conventionalist" approach to scientific progress (Kuhn, 1962), which questions the independence of scientific process from political and economic elites, to the question of "undone science" or systematically nonexistent research agendas, journals, conferences, and studies that were "never funded" (p.22) due to the influence of dominant scientific networks. In relation to technological change, he endorses the political economy view on technological progress that rejects the simplistic idea that efficiency provides the sole basis for technological innovation. Hess (2007) distinguishes between two following types of industry-oriented social movements: industrial opposition movements (IOMs) and technology- and product-oriented movements (TPMs). The former focus on the environmental remediation of environmental problems, while the latter "focus on innovation of design processes" (p.85). To develop his and Jamison's (2001) main argument that social movements "have a generative capacity," Hess focuses on TPMs as possessing such a capacity for change. The examples of TPMs he uses include organic, renewable energy, zero waste, smart growth, and responsible investing and consumption movements. The alternative technologies that these movements produced has enabled the success of small entrepreneurial firms which entailed the emergence of new market niches and the subsequent market recolonization as established industries shifted part of their

investments into new opportunities (p.166).

Therefore, the research by Hess (2007) supports the Jamison's (2001) argument that knowledge produced by social movements can extend beyond a specific movement and can become successfully incorporated into a broader society. As Melucci (1996) initially claimed, social movements should not be viewed as vehicles for promoting small adjustments in political markets. Instead, they may signal broader societal trends. Essentially, movement actors become agents of societal self-reflection and social inquiry. The works reviewed above (Jamison et al. 1990; Eyerman and Jamison 1991, Conway 2006, Casas-Cortes et al. 2008, Hess 2007) provide evidence how academics participating in social movements become avant-garde of such a self-reflection. This supports the argument that social movements can impact society indirectly through the knowledge they produce.

2.2.4. Movement knowledge and NSMs phases

This section reviews literature on periodization in social movements and elucidates how social movements' phases might relate to knowledge processes – creation, development, transfer, and application. It clarifies the rationale for selecting specific configurations of social movement actors' values, ideas, and techniques by grounding them in specific movement phases. The notion of social movements *phase* used by cognitive praxis approach helps illustrate the complex dynamics underlying knowledge production. The complexity consists in knowledge being the outcome and process at the same time. Cognitive praxis as a "process in formation" [22] views knowledge as dynamic, malleable, and interrelated, on the one hand. However, as the examples

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[22] Eyerman and Jamison (1991) see the "impermanent quality of social movements" as central to cognitive praxis approach because a "movement, by definition, lives and dies, or, more colorfully perhaps, it withers away as its cognitive project disintegrates into its various component parts and they become either adopted or discarded" (p.60).

of knowledge in the previous section indicate, it can also be constant, finalized, universal, and often marketable. Specific values and ideas that emerge as important outcomes at one phase often trigger new knowledge processes and new ideas at another phase.

This complex merging of knowledge outcomes and processes has to be addressed to answer a research question of this dissertation – how knowledge produced by social movements affects public administration and policy. The broad understanding of knowledge as evolving mixes of values, ideas, practices, and techniques does not inform which specific configuration of values, ideas and practices should be considered. A clear rationale for selecting specific configuration should be explained, therefore.[23] For this purpose, I will discuss how cognitive praxis approach conceptually links phases in social movements to knowledge processes – creation, development, transfer, and application.

Eyerman and Jamison (1991) claim that they have "made social movements visible in the social process of knowledge production" (p.161). The cognitive praxis approach focuses on knowledge as the main outcome of social movements. The knowledge they examined has been very diverse as the authors address both knowledge processes and outcomes, from the emergence of general environmental ideas and values to specific techniques. For example, Jamison et al. (1990) examine the history of environmentalism in Sweden, Denmark, and Netherlands with the purpose of describing how "new environmental consciousness" emerged, developed, and became incorporated in the three societies. On the other hand, Eyerman and Jamison (1991), Jamison (2001), and Hess (2007) also offer concrete examples of techniques and technologies produced

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[23] It might be tempting to focus on techniques and de-emphasize values, for example. However, this simplification would misrepresent complex actual knowledge interaction between citizens and administrators that always involve value conflicts.

by social movements, such as green technologies, non-violent direct action, and reflective theorizing techniques. These knowledge products seldom appear as final products in a rational process based on clearly defined means and ends. Instead, they emerge as a result of complex processes of social movements' evolution that involves movement phases (Eyerman and Jamison 1991; Jamison et al, 1990). Therefore, knowledge processes and outcomes are interrelated and an additional periodization of knowledge evolution makes clearer the overall picture of knowledge production in social movements.

The use of the concept of movement phase by the cognitive praxis approach follows a long tradition of research on social movements.[24] Eyerman and Jamison (1990) distinguish between four NSMs phases: awakening, movement-building, specialization and polarization, incorporation and marginalization. Their phases draw on the periodization by McAdam, (1982) who traced the history of black insurgency from 1930 to 1970. McAdam examines long-range political processes in the black movement in the U.S. His dynamic model of political processes views social movement as a "continuous process from generation to decline" (p.36). It describes the emergence of social movements as a gradual process involving the interaction between internal and external factors that include expanding political opportunities, indigenous organizational strength, and shared cognitions within the movement's activist groups.

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[24] Social movements are not constant and change over time. According to della Porta and Diani (2006), there is no single model explaining how and why social movements change. Some researchers argue in favor of an older evolutionary view according to which social movements emerge, coalesce and ultimately become structured around professional and formal organizations. The bureaucratization stage precedes the final stage of a movements' decline or death (Blumer, 1951). However, the evolutionary adaptation path only applies to some movements as specific institutional factors and resources, movements' organizational cultures, and their ability to use technologies can influence the direction of change in social movements, according to other scholars (della Porta and Diani, 2006). From a methodological point of view, this stage might be too expansive as a unit of analysis, and many scholars prefer to focus on smaller "episodes" for analytic purposes (McAdam, Tarrow and Tilly, 2001). Therefore, the literature on social movements generally views periodization of social movements as representing a convenient way to describe the histories of specific movements. At the same time, sociologists considered periodization to be a simplistic conceptual model of how social movements actually change over time.

Eyerman and Jamison (1990) apply McAdams' notion of stages to knowledge production. Chapters 2 and 3 of their book elaborate the conceptual framework of knowledge production. The authors see knowledge production as a collective process that involves the generation of new ideas, their selection, and their transfer. They compare this process to the process of innovation in general. However, they note that thinking about cognitive praxis as "a kind of product cycle, moving from discovery/articulation through application/specification to diffusion/institutionalization" should not presuppose "any mechanical logic" (p.57). Instead, it stresses the idea that cognitive praxis emerges over time. In particular, two phases – awakening and movement-building – highlight the idea that social movement actors both generate new ideas and "cognitive territories" that provide a space for actors' interactions in relation to specific ideas.[25]

Jamison et al. (1990) apply this framework to the study of environmental knowledge production in Sweden, Denmark and Netherlands. They describe how social movement actors' search for the articulation of new identities and values results in the development of specific political strategies that affect the choice of specific techniques and practices depending on political and societal contexts. Jamison (2001) traces the trajectories of several environmental ideas and practices from the time they emerged in the 1960-70s until the time they became incorporated by the broader society in the 1990s. He describes how the "seeds" that were planted on the cultural soil of the

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[25] These two phases also introduce temporal dimension into the model, as it takes time for social movement actors to generate and then evaluate their ideas. While in the first two phases cognitive praxis is expressive and internal to social movements, the later phases – specialization and incorporation – involve interactions between movement actors and external forces (such as individuals and institutions) in relation to ideas and practices that have already been "tested." Cognitive praxis becomes more instrumental and strategic in these two phases. The latter are also temporal, as they include the process of experimentation with different strategies to transfer the knowledge that, at this point, has been transformed into an already articulated identity and embodied into specific practices.

environmental movement became innovations in "sustainable development," a theme and discourse that represents the best statement of the institutionalization of environmental knowledge that emerged as a combination of "environmentalism and economics" (p.6). The reflection on the conflict between the environmental movement's early-phase visions, values, and goals and the actual ways these had been incorporated determines his entire analysis. This conflict also marks two broad periods of environmentalism. The first period relates to the emergence and consolidation of specific cognitive praxis that became a source of common identity for the movement. The second period involves the transformation and differentiation of that cognitive praxis into "institutional routines in industry, administration, and everyday life" (p.69). Jamison further divides these two broad periods into six phases of environmentalism: awakening, age of ecology, politicization, differentiation, internationalization, and integration (i.e. the movement's resistance to the already institutionalized green knowledge).

Based on Jamison's (2001) research, it can be said that the history of environmentalist ideas, practices, and values essentially can be described as a sequence of basic knowledge processes that include generation, testing, transfer, and application.[26] Also, among various movements' knowledge products, there can be identified some final knowledge products that have been institutionalized and supported by professional knowledge elites (which themselves might have emerged as a result of the movement). For example, "green businesses," such as organic food production or wind energy, have become commercialized by the consumer market and institutionalized academically by such fields as technology management and innovation studies that have been attentive to the relationship between technology and culture. At the same time, main ideas and practices of green business can be historically traced to the environmental

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[26] In his book, Jamison (2001) does not explicitly apply the notion of knowledge processes to environmental phases.

movement.

In reality, knowledge evolution in social movements is not linear as all four knowledge processes may take place at the same time. Consequently, final institutionalized knowledge products do not represent a variety of various ideas and practices that exist at the same historical stage. Jamison (2001) describes how different "cognitive regimes" coexist within a sustainability discourse and how new environmental ideas and cultures emerge that challenge the already established and institutionalized environmental views and practices. This conflict between emergent environmental ideas and those already established ones underlies the movement's concrete dynamics. Therefore, the model of knowledge processes helps describe knowledge production in social movements in general, but it cannot capture the actual variety of the different ways in which movement knowledge evolves. For the purposes of this dissertation it is important that some final institutionalized knowledge products can be identified that can be examined through knowledge processes lens – even though these final products might be seen as detrimental to the movement goals, from the point of view of movement actors.[27]

Summary

Based on the review of the literature on social movements, the cognitive praxis approach represents a good conceptual lens to study knowledge production in new social movements. It articulates three dimensions of movement knowledge – cosmological, technological, and organizational – and helps specify how specific knowledge processes, such as generation, development, transfer, and application, can be linked to social movement phases. Therefore, the

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[27] Jamison has repeatedly stated that we need more green knowledge and less green business. Therefore he would disagree with the idea that the linear knowledge processes model can be useful to represent knowledge production in social movements (see Jamison's personal web-site www.plan.aau.dk/~andy*)*

cognitive praxis lens helps produce a big picture of interaction between movement knowledge and public administration.

2.3. Communities of practice and policy learning

This section sharpens the discussion on citizens' knowledge by reviewing the literature on communities of practice and policy learning. Consistent with the characteristics of citizens' knowledge highlighted by citizen innovations literature and the literature on knowledge production in social movements, it pays special attention to collective, lay, and informal knowledge. First, I review the literature on communities of practices to acquire a deeper insight into existing social approaches to knowledge production. Second, "knowledge architecture," one theoretical framework that links knowledge of communities of practices and organizations, will be discussed. Third, I summarize the research on communities of practice in the public sector. Fourth, I review the literature on policy learning in the context of policy making in the public sector.

2.3.1. Knowledge management and communities of practice

Knowledge constitutes the main source of competitiveness in the contemporary business environment (Toffler, 1990; Drucker, 1993b). The main challenge of knowledge management involves knowledge integration by the firm. In particular, it has been difficult to integrate one specific kind of knowledge - "encultured" or dispersed, tacit, and group-based (Blackler, 2002).[28] To solve this problem, business management researchers had to turn their attention to those disciplines which have addressed tacit and collective forms of knowledge (Argyris and Schon,

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[28] See a typology of knowledge developed by Spender (1997). Spender's matrix is formed by two dimensions of knowledge: explicit or tacit, and individual or collective, and results in four types of knowledge.

1978; Senge 1990; Nonaka and Taceuchi, 1995). The anthropological lens on knowledge

production in communities of practice (Lave, 1988; Lave and Wenger, 1991; Orr, 1996) has been

used to address the knowledge embedded[29] in organizational practices, behaviors, and routines.[30]

A related notion of "epistemic communities" was introduced by Knorr Cetina (1981) in her study

of knowledge production in scientific laboratories.[31] Epistemic communities should be

distinguished from communities of practice.[32] Communities of practice are generally more self-

organizing than epistemic communities. Self-organization refers to the system's ability to modify

itself and organically evolve without any constraint of authority. *Autonomy* thus represents one

key characteristic of self-organizing.

Identity constitutes another key characteristic of communities of practice. Wenger (1998) defines

identity as social identity "because it is produced as a lived experience of participation in specific

communities" (p.151). By participating in community practices, individuals constantly

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[29] The notion of *social embedding* refers to the idea of "knowledge-as-practice" constituted in social settings (Lave, 1988). Knowledge-as-practice thus reveals the social dimension of tacit knowledge that resides in communities.

[30] Amin and Cohendet (2004) summarize knowledge management literature on communities of practices and examine the question why social anthropology of knowledge has triggered the creation of many knowledge management theories. They list several reasons why knowledge should be linked to social interactions. First, knowledge is not just communicated but also generated through communication. Second, sociality represents an important knowledge practice in its own. Third, new knowledge is a product of connections between agents, knowledge (both expert and lay) and goods. Fourth, knowledge can be cognized through visualization of social and material interactions (i.e. interactions with material objects such laboratory equipment). Fifth, useful knowledge emerges through ordering and alignment of social and material relations by the knowledge community.

[31] Knorr Cetina understands scientific process as constructivist and suggests that scientists not just "discover" objective knowledge but also create it collectively. She argues that scientific practice comprises localized efforts aimed at achieving "success" and seldom resembles the quest for "objective truth" (Knorr Cetina, 2000).

[32] Amin and Cohendet (2004) differentiate epistemic communities from communities of practice. These two types of communities are both distinct from project groups, functional groups, and teams in that they are more autonomous and self-organizing. According to Amin and Cohendet (2004), epistemic communities and communities of practice differ in the explicitness of their intention to produce knowledge: while the former explicitly set a goal of producing specific knowledge, the latter produce knowledge as a byproduct of their other activities. Similarly, Cowan et al (2000) distinguish two dimensions of knowledge: manifest/latent and codified/uncodified. They argue that tacitness can result from high costs of knowledge codification rather than the impossibility of such codification. They suggest that, unlike other scientific groups, epistemic communities rely on unarticulated knowledge but have a "commonly understood procedural authority" and a "mutually recognized subset of questions" (p.234).

renegotiate their identities, which are always "becoming" rather than fixed. Learning occurs at two interrelated levels: the level of the actual practice and the level of negotiated meanings and social sense-making of what is being learned. Identity processes create two tensions: between experience and competence and between individuals and the collective. A learning community draws on the tension between members' new experience and already recognized competence. The tension between individuals and the collective resolves as individual histories become aligned with those of the community and also by letting individuals contribute to the constitution of community's practice with "what they have been, what they have done, and what they know" (Wenger, 1998; p.215).

Therefore, the literature on communities of practice provides important insights on the role of social factors in knowledge creation. Its main strength consists in describing the actual workings of knowledge communities which are viewed by the advocates of the anthropological view of knowledge production as universal and reflecting the fundamental human condition of sociality. The main challenge with the social approach to knowledge production relates to the practical and theoretical problem of incorporating these self-organizing knowledge communities into the formal organization. As Wenger (1998) notes, "[l]earning cannot be designed... [as] it moves on its own... And yet there are few more urgent tasks than design social infrastructures that foster learning" (p.225). Similarly, Wenger and Snyder (2003) acknowledge the difficulty of integrating communities of practice with the rest of the organization as "the organic, spontaneous, and informal nature of communities of practice makes them resistant to supervision and interference" (2003, p.140). Next, I will discuss how the literature on knowledge architecture addresses this challenge.

2.3.2. Knowledge architecture

The literature on knowledge architecture (Wenger, 1998; Amin and Cohendet, 2004) addresses the challenge of integrating learning and knowledge in organizations and networks. Wenger (1998) proposes the metaphor of "learning architectures" to apply the insights of the literature of communities of practice to organizations.[33] The book *Architectures of Knowledge* by Ash Amin and Patrick Cohendet similarly places theories of communities of practice into the organizational context and, in addition, supplements them with an economic perspective,[34] thus providing a well-balanced view on knowledge (Amin and Cohendet, 2004).

Amin and Cohendet (2004) approach knowledge as a heterogeneous resource. In addition to two dimensions of knowledge already addressed by scholars, individual/collective (Argyris and Schon, 1978), and codified/tacit (Nonaka and Takeuchi, 1995), they propose a new dimension, "possessed" versus "practiced" knowledge.[35] While possessed knowledge has been addressed by

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[33] Wenger (1998) defines "design" as "systematic, planned, and reflexive colonization of time and space in the service of an undertaking" (p.228). He further elaborates on the dimensions and components of designing for learning. Four dimensions include participation/reification, designed/emergent, local/global, and identification/negotiability. Three components of design are engagement, imagination, and alignment.

[34] Amin and Cohendet (2004) stress the role of "knowing" in the organization and start with the anthropological insight that knowledge is essentially practiced "through the daily interactions and practices of distributed communities of actors" (p.xiv). They place the notion of knowing within the competency-based theories of the firm that see competence as the leading variable for understanding the organization of firms (Dosi andMarengo, 1994). The social approach to organizations and the idea that the firm is a social institution matches the competency-based view of the firm because the latter is interested in "the ways in which, for a given firm, knowledge is produced, absorbed, memorized, shared and transferred" (Amin and Cohendet, 2004; p. 96). In contrast, the traditional contractual view of the firm focuses on transaction costs and incentives and does not differentiate between knowledge and information – a key distinction in social theories of learning. Amin and Cohendet (2004) equally consider both social and economic theoretical frames and argue for a balance between the anthropological and economic perspectives on knowledge. They note that such a balance can be achieved in practice but not in theory. The authors consider three following theoretical approaches to knowledge: strategic-management, evolutionary-economics, and social-anthropology-of-learning. They believe these approaches to be "ontologically and epistemologically irreconcilable" (p.10).

[35] This dimension builds on the distinction between "knowledge" and "knowing" (Cook and Brown, 1999) that has also been a central tenet of the Pragmatist perspective and John Dewey, in particular. Knowing refers to something we do rather than something we possess. The latter may include any form of knowledge: explicit, tacit, individual, and group knowledge. Knowing has dynamic relationships with knowledge so that the "generative dance" between knowledge and knowing which ultimately leads to "bridging epistemologies."

traditional economic theories of the firm, understanding practiced knowledge should involve

softer social approaches. At the same time, Amin and Cohendet (2004) apply economic terms to

practiced knowledge.[36]

In relation to the practical problem of linking knowledge residing in heterogeneous

organizational forms (e.g., hierarchical organizations and informal communities), Amin and

Cohendet (2004) distinguish between two types of management: management by design and

management by communities. Management by design refers to traditional ways of aligning

employees' knowledge with the organizational vision, such as designing extrinsic incentives.

This top-down classic management approach does not stimulate knowledge creation. In contrast,

management by communities consists in supporting community practices and the soft

architecture of learning in communities by enabling a proper social environment.[37] The authors

point out at the limits of management by communities, such as parochialism and incompatibility

with the hierarchical imperatives. They ultimately argue for a balance between these two

management types. The right balance of management by design and management by

communities is especially needed when managing "communities of communities" (Brown and

Duguid, 1991) within the same organization or across different organizations.[38]

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[36] In particular, they note that "one of the main characteristics of communities is that they 'freely' absorb the *sunk costs associated with building the infrastructure needed to produce or accumulate knowledge*" (italics in the text) (p.118) and that the incentives schemes of communities are internal and "do not require (costly) external schemes to be implemented" (p.119).

[37] See the book *Cultivating Communities of Practice* by Wenger, McDermot, and Snyder (2002) for a description of specific activities that support communities of practice.

[38] Large organizations are well positioned to be creators of new knowledge and sources of innovation if "their internal communities have a reasonable degree of autonomy and independence from the dominant worldview" (Brown and Duguid, 1991; p.54). External communities such as suppliers and customers can also be sources of innovation, according to von Hippel (1988). Brown and Duguid (1991) suggest that architectures supporting communities should enhance autonomy of communities and their connectedness.

Amin and Cohendet (2004) propose two factors to conceptualize the interaction of heterogeneous communities: the degree of repetition of interactions and the quality of communications between different communities. The quality of communications greatly depends on the activities of "knowledge enablers" (Ichigo et al. 1998), third-party "go-betweens" (Nooteboom, 1999), and boundary-spanning informal networks that "help to intermediate linguistic transfer and the introduction of new practices" (Amin and Cohendet, 2004; p.124).[39] Finally, the authors note that in systems of distributed learning with no organizational hierarchies, such as the Linux community, the connectivity of networks is the most important governance goal. Also, the "management by content" (Knorr Cetina, 1999), or the manipulation of problem content, appears most relevant.

The work by Bart Nooteboom should be recognized as another contribution to a better conceptual understanding of the relationships between heterogeneous communities (Nooteboom, 1992; 2002; 2008; Bogenrieder and Nooteboom 2004). Nooteboom (2002) distinguishes between "exploitation" and "exploration" of knowledge. While the former refers to repetitive routines, the latter involves inventions or radically new knowledge. According to Nooteboom (2002), exploitation and exploration are interrelated and their interplay creates a "heuristic of discovery." Because each community has a unique history of exploitation and exploration and thus unique "absorptive capacities" (Cohen and Levinthal, 1990), when such a community interacts with other communities, they all experience what Nooteboom (1992) calls "cognitive distance." Cognitive distance refers to a difference in worldview, and "the mismatch of moral and

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[39] Amin and Cohendet (2004) propose that there are four types of corporate culture based on the degree of repetition of interactions (weak/strong) and the quality of communication (weak/strong). Where both factors are weak, traditional management by design should be preferable. On the other hand, if interactions are very frequent and the quality of communication is high (e.g., Silicon Valley), management by communities is the most appropriate.

motivational aspects of collaboration" (Nooteboom, 2008; p.130), thus hindering collaboration

between the communities. On the other hand, some cognitive distance should be maintained to

stimulate innovation. Therefore, Nooteboom (2008) argues for the right cognitive distance that is

large enough to stimulate innovation and small enough to enable collaboration.[40]

2.3.3. Knowledge management and communities of practice in the public sector

Most studies on knowledge management in the public sector [41] focus on the technologies that

enable knowledge-sharing to increase intra- and/or inter-organizational network effectiveness

(Eglene et al. 2007; Choi and Brower, 2006; Kim and Lee, 2006).[42] Knowledge management

theme has been salient in the context of communication failures involving failed cases of

collaboration between several government agencies that were required to deal with complex

problems such as domestic security (Markle Foundation, 2003), epidemic prevention, complex

environmental threats, emergency management, as well as in dealing with "wicked problems"

(Weber and Khademian, 2008). In their understanding of knowledge, most authors reduce

knowledge to information and data (Bate and Robert, 2002). At the same time, some e-

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[40] Nooteboom (2008) describes four types of communities – organizations, epistemic communities, communities of practice, and professional communities – and discusses different dimensions of cognitive distance (cognitive distance in competence, cognitive distance in governance) and characteristics of cognitive focus (reach, tightness, content, surface/deep level) within each community type. In addition, Bogenrieder and Nooteboom (2004) propose the criteria of structure, strength of ties, and content to further differentiate between different kinds of learning communities. All these analytical devices help conceptually examine the knowledge relationships between different communities, such as informal communities of practice and formal organizations.

[41] In the U.S., the theme of knowledge management policies emerged as important about four decades ago but became a major theme in public administration literature only in the 1990s following the attempts to imitate knowledge management practices in the private sector and also as a result of President Bush's Management agenda (OMB, 2002). In Europe, knowledge management has attracted even greater attention. See the 2003 OECD report for a summary of public sector knowledge management practices in 20 OECD countries.

[42] This primarily involves designing better communication systems often tied to specific communication technology solutions (Motsenigos and Young, 2002). Overall, knowledge management has been a part of a broader E-government research agenda that defined its central interest as the examination of the effect of Information technologies (IT) on government performance. This tendency has been driven by government spending patterns. Motsenigos and Young (2002) find that 78% (or about 30bln. dollars) of knowledge management budget in the U.S. was spent on IT services and software in 2001.

government scholars recognize the need to compliment "the strict focus on technological solutions to knowledge challenges" with the studies of social aspects of knowledge production (Fountain, 2003; p.23). Overall, social aspects of knowledge production have not received much attention in the literature on knowledge management in the public sector according to both Bate and Robert (2002) and the recent systematic review of the literature by Rashman et al. (2009).[43] Public management scholars often address knowledge as a multidimensional phenomenon but do not sufficiently recognize tacit [44] collective forms of knowledge. In addition, these authors limit their interest to knowledge transfer and rarely discuss the production of new knowledge (Bate and Robert, 2002). For example, Pardo et al (2006) recognize different dimensions of knowledge including tacit knowledge and build on the conceptual insights of the literature on communities of practice. However, they largely fail to address the tacit dimensions of their selected communities of practices [45] and primarily focus on explicit and codified knowledge.[46]

Another article by Bates and Robert (2002) examines the lessons from the Breakthrough

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[43] This systematic review was aimed to conceptually synthesize the existing literature on knowledge and learning. 131 papers were selected out of which 29 (22%) were related only to the public sector. Three groups of articles included classic, foundational and popularizing works.

[44] As the article by Schmidt (1993) suggests, public administration scholars' understanding of tacit knowledge does not differ from its understanding by business management authors and therefore, the problem consists in utilizing the concept of tacit knowledge rather than its construction. Schmidt (1993) applies four types of useful knowledge alternative to scientific knowledge to her analysis of the collapse of Teton River dam in 1975. The collapse was found to be caused by grout problems. Schmidt suggests that grouting is more like an art as it requires four kinds of knowledge: "a feel for the hole," "intimate knowledge," "passive/critical knowledge," and "a feel for the whole." She concludes by saying that "all kinds and sources of knowledge are not superior nor inferior but simply different ways of perceiving and organizing our limited understandings of a rich and complex reality" (p.172). Dvora Yanow (2004) lists a number of explanations why "local knowledge" of lower-level peripheral employees is disregarded by centrally-located managers.

[45] Based on one public sector innovation project that involved seven cases of public sector networks, they examine incentives, risks, barriers, as well as the role of trust in knowledge-sharing in two intra-organizational networks, the NYS Central Accounting System (CAS) and the NYS Office of Real Property Services (ORPS). Both projects involve creating centralized data-exchange system and were initiated by central agencies. In their successful case of knowledge-sharing, all CAS stakeholders were able to provide input into designing the centralized data system. By contrast, the unsuccessful case of knowledge-sharing in ORPS involved a failed attempt to exchange knowledge.

[46] This is obvious in the ORPS case where knowledge exchange did not happen as local property assessors decided not to support the centralized statistical model. For this reason it did not become clear what exactly knowledge assessors had. This is also true for the case of CAS where knowledge exchanges primarily involved the communication of shareholders' desires and needs – rather than broader knowledge. One of their interviewees noted that he was surprised with participants' "willingness to answer honestly." Honesty can hardly be associated with tacit knowledge. Instead it refers to knowledge that is explicit but kept in secret.

Collaboratives program[47] in UK, created to better adopt best healthcare practices and to improve the quality of services in the National Health Service (NHS). Based on their study of three NHS Collaboratives specializing in different medical services (cancer, mental, and orthopedic), the authors find that the Collaboratives have been considerably less successful than originally anticipated and planned. Bates and Robert (2002) draw on soft approaches to knowledge management in private companies and argue that social models of knowledge management might have been more effective in the Collaboratives program.[48] They recommend that NHS sets a goal of encouraging the development of its communities of practice in order to "ignite the spontaneous informal processes that create the energy for a successful change effort" (p.653).[49]

The empirical studies by Pardo et al (2006) and Bate and Robert (2002) suggest that it is difficult to research communities of practice in the public sector. I particular, it is difficult to identify those cases where such communities are effective because the "success" defined by a formal organization might differ from its understanding by an informal community of practice. In this respect, Pardo et al (2006) assess their case as successful at the expense of describing more nuanced interactions in their selected community of practice. In contrast, Bate and Robert (2002) assess their case as unsuccessful but are able to suggest thoughtful recommendations on how

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[47] Collaboratives created horizontal networks within the NHS that enabled professionals to learn from one another, in a bottom-up improvement process. The main goal of Collaboratives related to the need to collectively use individual and tacit knowledge that NHS professional possessed but did not share.

[48] Social models emphasize the social constructivist view of knowledge: "knowledge is not objective but exists subjectively and inter-subjectively through people's interactions, through working together, sharing knowledge, respect and trust" (p.649). The authors find that because of the lack of active informal communities of practice at the NHS the "blending of tacit and explicit knowledge and the need to convert and codify tacit knowledge" did not occur in Collaboratives as most knowledge exchanges in them involved codified knowledge only.

[49] They caution against the top-down approach of creating such communities due to its ineffectiveness. The soft managerial approach highlights the following four ideas: knowledge is much more than information, co-creation of knowledge should be stressed over knowledge communication, the tacit experience should complement the explicit evidence, and social learning communities should be enabled and supported. The learning communities should not be "directed" as they are "more like volunteer organizations" (p.659). Finally, Bate and Robert (2002) suggest that the process of collaborating needs to become "more equal, spontaneous, naturalistic and improvisatory, and less routine, hierarchical, structured and orchestrated" (p.660).

new knowledge can be produced by drawing on the conceptual insights of communities of practice scholars.

An even bigger challenge consists in incorporating the research on communities of practice and their informal knowledge into the existing theories of government performance. Three promising lines of inquiry in the public administration literature should be noted: examining public managers' attitudes favorable for softer knowledge management (Weber and Khademian, 2008), linking knowledge and policy implementation processes (Mischen 2007, 2008), and examining knowledge processes within the broader environmental contexts unique for public organizations (Rashman et al. 2009; Hartley and Rashman, 2007).

Weber and Khademian (2008) address the characteristics of the mind-set of a "collaborative capacity builder" (CCB) favorable for the creation and integration of new knowledge in networks that have to deal with "wicked problems." The role of CCBs consists in facilitating knowledge exchanges within the network to build and sustain collaborative capacity. Such knowledge interactions are needed to solve wicked problems or the problems that are unstructured, cross-cutting, and relentless. The authors state that "the focus on knowledge as intricately connected with practice" (p.337) distinguishes their work. Their understanding of knowledge as "socially mediated information" embedded in social practices draws on the works of Berger and Luckmann (1967) and Lave and Wenger (1991).[50] Therefore, Weber and

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[50] Because knowledge is inseparable from practices and people's identities and because each network participant defines – or knows – the problem differently, the challenge consists in integrating these disparate knowledges into "a useful, practical whole" (p.340). Weber and Khademian (2008) list six CCBs' commitments that frame such integration of participants' knowledge. One of the commitments involves a commitment to identify those citizen leaders that can serve as "key *nongovernmental* 'public' managers" or individuals who might not hold an official government position. They also modify the definition of managerial accountability: according to them, it should include responsibility "to integrate knowledge and identify new sources of knowledge that are valuable across the

Khademian (2008) express the view of managerial accountability that explicitly recognizes the value of citizens' knowledge when addressing wicked problems in network settings and, in addition, describe a specific managerial mind-set that is needed to integrate this knowledge.

The works by Mischen (2007) and Mischen and Jackson (2008) link knowledge management with policy implementation. While Weber and Khademian (2008) focus on CCBs, key knowledge enablers and facilitators, Mischen (2002, 2007) examines how knowledge inputs of street-level bureaucrats (Lipsky, 1980) or "local knowledge" at the lower organizational levels (Yanow, 2004) affect policy implementation outcomes. She argues that front-line actions in welfare agencies are shaped by bureaucrats' sense-making activities (their understanding of agency goals) and their beliefs (Sandford, 1999), knowledge creation, and decision-making activities in relation to the application of specific policies. Mischen (2007) draws on organizational learning theories (Choo, 1998) and finds that the success or failure in implementing a policy depends on aligning the agency mission to employees' beliefs, first. Second, tacit knowledge is critical for understanding new policy mechanisms. In the case of Pennsylvania's Department of Public Welfare, employees were able to implement a new policy before it had been written by drawing on their tacit knowledge, converting it into explicit knowledge, and then sharing it. Third, bureaucrats should be able to exercise discretion and use both espoused and actual decision-making practices of the organization. Finally, Mischen and Jackson (2008) highlight the emergent nature of communities of practices, which creates tensions within formal structures.

External democratic accountability mechanisms are one of the reasons why existing knowledge

network" (p.343).

management studies of public organizations have devoted little attention to social practices and self-governance. The skeptics of self-organized complex knowledge systems thus might be correct in accepting a realist perspective. On the other hand, the insights of the communities of practice literature on social embeddedness of knowledge might be applied to public sector networks too. Hartley and Rashman (2007) and Rashman et al. (2009) develop a broad model of organizational and inter-organizational learning and knowledge transfer that places "communities of interactions" at the center and also includes such elements as organizational politics and external policy contexts. At the same time, they note that knowledge creation in the public sector is "more likely to be a factor of policy implementation, rather than an explicit goal" (p.487).

2.3.4. Policy learning

Policy learning represents one particular approach in public policy research (Heclo, 1974; Sabatier, 1988; Sabatier and Jennkins-Smith, 1993, 1999; Hall, 1993). It builds on the insight that innovations initially occur at the periphery and then, through feedback loops, create transformations of and learning by the greater system (Schon, 1971). Heclo (1974) was among the first to articulate how "political learning" occurs as a response to a social stimulus. He attributes changes in social policy not to a rational policy-making process but rather to the uncertainty within the policy system and to the changes in behaviors and strategic interactions of policy makers who learn from their experience in a given policy area. Sabatier (1988) and Sabatier and Jenkins-Smith (1999) develop this Heclo's insight by focusing "on the interaction of political elites within a policy community/subsystem attempting to respond to changing socio-economic and political conditions" (Sabatier, 1988; p.130) and propose a theoretical "advocacy

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coalition framework" (ACF) to address these interactions (Sabatier, 1988; Sabatier and Jenkins-Smith, 1993, 1999).

The ADF defines advocacy coalitions as consisting of "actors from a variety of institutions who share a set of policy beliefs" (Jenkins-Smith and Sabatier, 1999; p.9) and "show a non-trivial degree of coordination" (p.138). Policy change in a given policy subsystem occurs as a result of external factors, such as changes in public opinions, and/or internal factors related to the competition between different coalitions within the same policy subsystem. Common policy beliefs provide the principle glue of a coalition (Zafonte and Sabatier, 1998). Belief dynamics constitutes the major internal factor that drives policy changes in a policy subsystem, according to the ACF. Sabatier (1988), Sabatier and Jenkins-Smith (1993, 1999) distinguish between deep core beliefs or (often unconscious) "ontological and normative beliefs," policy core beliefs or "a coalition's normative commitments and causal perceptions," and secondary aspects of belief systems or ideas about more narrow and technical issues, such as causal factors, policy preferences, policy design, and desirability of participation by public versus experts (Sabatier and Jenkins-Smith, 1999; p.121-122).

The central argument of the ACF is that advocacy coalitions resist changing their beliefs. However, policy learning can alter secondary aspects of a coalition's belief system. Sabatier and Jenkins-Smith (1999) define policy-oriented learning as "relatively enduring alterations of thought or behavioral intentions that result from experience and/or new information and that are concerned with the attainment or revision of policy objectives" (p.123). In addition, inter-coalition policy learning can affect the changes of a coalition's policy beliefs if "very solid

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empirical evidence" is available (Ibid, p.125). In particular, such learning might involve

importing new topics by a coalition. Topic is one of the defining characteristics of policy core

beliefs and changing a set of topics is equivalent to changing policy core beliefs, according to the

ACF (Sabatier and Jenkins-Smith, 1999). Finally, common professional forums might facilitate

inter-coalition policy learning.

Summary

The theme of social learning as a prerequisite for knowledge production brings together the

literature on knowledge management and policy learning. The anthropological insight that all

knowledge is socially embedded predetermines their focus on integrating explicit and tacit

collective knowledge. Identity processes and belief dynamics within communities of practice

underpins knowledge processes within the community and also might affect formal

organizations. The literature on knowledge architecture suggests some ways to deal with the

problem of managing and integrating the heterogeneous knowledge residing in informal

communities and formal organizations. The literature on policy learning addresses the

mechanisms by which changes in belief systems of advocacy coalitions result in changes within

policy subsystems.

Summary of the chapter

To grapple with the question of integration of social knowledge and public administration, this

chapter has reviewed three bodies of literature: (1) citizen participation and civic innovations; (2)

knowledge production in NSMs; and (3) communities of practice and policy learning. Citizen

participation, communities of practice, and policy learning are well known literatures in public

administration. They substantiate the intellectual inquiry into the relationship between social knowledge and public administration by giving a range of theories and approaches. The third body of literature, knowledge production in social movements, is much less known to public administration scholars. As a social phenomenon, social movements represent a good empirical site to examine the relationship between social knowledge and public administration. Social movements challenge the state and the society by generating new knowledge, worldviews, and social practices. For this reason, it might be expected that social movement actors interact with policy actors and public administrators and that movement knowledge might affect these interactions. The next chapter will connect all three bodies of literature in order to identify the overlapping areas. While this chapter has provided an intellectual map to guide the inquiry into the relationship between social knowledge and public administration, the purposes of next chapter will be to specify the directions for such an inquiry.

CHAPTER THREE. THEORETICAL FRAMEWORK LINKING CITIZENS'

KNOWLEDGE AND PUBLIC ADMINISTRATION

This chapter examines the intersections between three bodies of literature reviewed in Chapter II – citizen participation and civic innovations, knowledge production in NSMs, and communities of practice and policy learning (Figure 1). Both conceptual and empirical connections will be discussed. The main goal consists in understanding how citizens' knowledge and public administration are linked, from the perspective of these literatures. In addition, the comparison of the literatures intends to justify why social movements have been selected as a particular empirical example of social knowledge. Based on the research gaps and opportunities identified, this chapter offers a theoretical framework used in this dissertation to study movement knowledge in relation to public administration.

3.1. Identifying synergies between the literatures

3.1.1. Knowledge production in NSMs and citizen participation & civic innovations:

Area 1

Based on the above review, the literature on citizen participation and civic innovations builds on a weak theoretical basis but provides good empirical examples of collective citizens' knowledge external to public administration. The literature on NSMs draws on civic innovations literature as an important empirical source.[51] The relationships between the two literatures have thus been

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[51] Theories of NSMs have drawn on many empirical cases of civic engagement that civic innovation scholars described and disseminated. In particular, many studies of contemporary social movements have theorized NSMs as ideologically and structurally different from old movements based on their studies of values and structures underlying contemporary civic engagement (Byrne, 1997; Jamison et al., 1990, Jamison, 2001). The same cases have been frequently described as examples of civic innovation or illustrating specific aspects of social movement dynamics. For example, civic environmentalism can be approached as one particular episode of the environmental movement or an independent civic innovation (Sirianni and Friedland, 2001). Another example is participatory budgeting practices, the most significant Latin American civic innovation. While a major textbook on social movements by Della Porta and Diani (2006) addresses participatory budgeting in the Porto Alegre experiment as

complimentary[52] even though few conceptual synergies have resulted.

Figure 1. Citizens' knowledge in three literatures
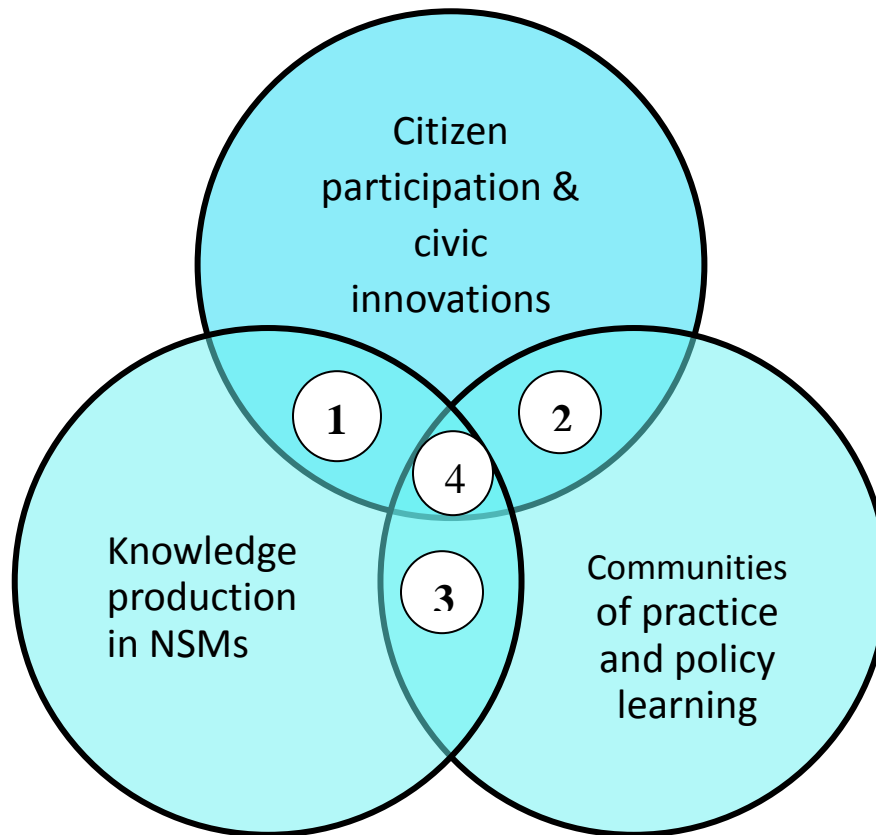
Civic innovations literature (Boyte, 1980, 2007, 2009; Boyte and Kari, 1996; Sirianni and

Friedland, 2001, Sirianni, 2009) has been primarily dominated by practical considerations and

has incorporated few theoretical insights of NSMs studies. Despite the fact that many civic

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related to the broader social movement dynamics, most civic innovation and public administration scholars consider these participatory practices independently of social movement theories.
[52] The bottom-up theorizing typical for the academic discourse on NSMs make the civic innovations perspective complementary to the theories of NSMs. Thus civic innovations authors themselves can be seen as intellectuals of social movements (Eyerman and Jamison, 1991) and therefore their views and ideas enrich the empirical basis of NSMs theories. For example, Harry Boyte who started his career as a field secretary to Martin Luther King and then became a leading intellectual of civic engagement in the U.S. would be considered a social movement intellectual by Eyerman and Jamison (1991).

engagement authors frequently use the term "movement" when they refer to specific civic groups in order to mobilize supporters for their specific ideas or projects,[53] they rarely use research on social movements. These authors commonly distance from the adversarial politics of traditional social movements and question their potential to promote collaboration in the society, a central theme in civic engagement literature.[54] At the same time, they have paid insufficient attention to NSMs and thus have not benefitted from the theoretical discourse on knowledge production in NSMs.

Both literatures give well-elaborated answers to the questions what constitutes knowledge and how this knowledge is produced. Civic innovations literature provide many examples of production of new citizens' knowledge that ranges from everyday local community issues to broader issues of institutional design. It approaches citizens' knowledge as a complex dynamic phenomenon linking processes and specific outcomes. Community development scholars give good analysis of citizens' knowledge in their discussions of civic capacity (Stone, 2001; Chaskin, 2001), which refers to community learning resulting from the community's prior experience of collaboration when solving specific problems. NSMs authors analyze movement knowledge with a greater theoretical and analytical clarity. In particular, the theoretical lens of cognitive praxis (Jamison et al., 1990; Eyerman and Jamison, 1991; Jamison, 2001) clarifies the difficult issue of

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[53] For example, Boyte (1980) proposes to speak about contemporary civic engagement as "new citizen movement." Similarly, Kesler and O'Connor (2001) refer to U.S. community-based initiatives and local groups in the 1990s as "communities movement." Frequently, using the term "movement" was aimed at promoting specific intellectual projects. For example, Amitai Etzioni initially envisioned his communitarian project as a movement that had to be modeled after the environmental movement (Etzioni, 1993; p.2). This rhetoric has helped advance Etzioni's goals as communitarianism has been considered by many scholars as being similar to mass movements (Portney, 2005) rather than an isolated intellectual project.

[54] For example, Boyte (1980) questions the applicability of social movement experience to contemporary civic engagement because the latter "is more down to earth, more practical and rooted in the social fabric" (p.xi). Similarly, Cooper (2006) notes the importance of social movements for civic engagement but looks at them through the lens of adversarial politics and, ultimately, denies them a potential to stimulate collaboration.

embeddedness of knowledge in social practices and also describes specific dimensions of

knowledge (cosmological, technological, and organizational). In addition, the NSMs scholars

describe how knowledge produced by movements changes at different movement phases.

Regrettably, social movement literature does not articulate well how citizens' knowledge links to

public administration. Traditionally, the theme of public policy implementation receives little

attention in social movement studies. The field of public administration has equally left out

social movements as a research subject external to the field.[55] As a result of this mutual isolation

of movements and administration, few studies linking social movements to public policy and

administration currently exist.[56] Because knowledge represents just one specific outcome of

social movements, there have been even fewer studies linking knowledge produced by social

movements and public policies and/or administration. The authors of cognitive praxis approach

[55] The intellectual history of public administration acknowledges social movements as the field's important source of values, ideas, and practices. In particular, the U.S. administrative history has been influenced by the progressive social movement and, more recently, by social movements of the 1960s. Progressive movement advocates applied scientific management ideas initially developed by Frederick Taylor to further democratic goals. New York Bureau of Municipal Research was key to transferring ideas about modern rational organization into the U.S. public sector in the 1910s (Schachter, 1995). Budgetary reform became one of the tools to transform the American politics and the government (Willoughby, 1927). Seemingly technocratic, progressive ideas were driven by passion for better democracy which progressives defined as more efficient democracy. They viewed efficiency broadly as a social value. As a U.S. President and a leading progressive intellectual, Woodrow Wilson interpreted social efficiency as necessary to liberate people's "vital energies" (Wilson, 1921). He understood human freedom as consisting "in perfect adjustment of human interests and human activities and human energies" (p.283). Unfortunately, the consequent development of the U.S. public administration field largely ignored rich influences of the progressive movement and has misrepresented its key values such as social efficiency. The field regained its interest in social movements as it absorbed some of the energy of social movements in the 1960s. The positivist, technocratic, and hierarchical view on public organization, particularly the idea that modern organization was an instrument of social control, was challenged by the advocates of "new public administration" (Frederickson, 1980). Described by Dwight Waldo as a reaction to societal turbulence, i.e. student anti-war protests and civil rights movements, NPA intellectually opened the field to the values of social justice and citizen participation. It can be said without any exaggeration that the social movements of the 1960s were instrumental in introducing citizen participation practices into public administration. The origin of the "maximum feasible participation" clause stipulated by the Economic Opportunity Act (EOA) of 1964 can be traced to prior social movements (Roberts, 2008). Boone (1972) argues that the origin of the clause was "the product of a natural evolution in the community action concept" (p.445). Specifically, "[T]he force of the civil rights movement...[was]...the genesis for a new call for "participatory democracy" (p. 446).

[56] An exception is the study by Giugni (2004) that examines the impact of three NSMs, ecology, antinuclear, and peace movements, on public policies in the United States, Italy and Switzerland. He considers both movements' direct outcomes and indirect consequences.

do address how interactions of social movements with the government change at different movement phases (Eyerman and Jamison; 1991; Jamison, 2001). Eyerman and Jamison (1991) and Jamison (1991) do not discuss how movement knowledge affects public administration or policy implementation, however.

In contrast, civic innovations literature has devoted considerable attention to citizen-administration interactions. Because most cases of civic innovations involve local community projects, the encounters between civic groups and local government have been more frequent and intensive. The character of these interactions has changed from adversarial in the 1960-70s to collaborative in the 1990-2000s. Citizen participation literature confirms this shift towards collaboration with citizens as an important administrative norm (Box, 1998; King at el, 1998; Vigoda, 2002; Denhardt and Denhardt, 2007). On the other hand, citizen groups also recognized the value of more collaborative relationships with administrators. Faced with practical community issues and problems, citizens learned how to turn administrators into their allies. This is reflected in the work of several civic engagement advocates who view public administrators within the frame of civic agency rather than being external to civic agency (Boyte, 2008; Strom, 2007). Stone (2001) similarly notes the blurring of the boundaries between the roles of administrators-as-experts and administrators-as-citizens. The analytical concept of civic capacity explicitly recognizes this phenomenon (Ibid). At the same time, the literature on civic innovations has been strongly normative and its interest in citizens' knowledge has been driven by bigger issues of civic education, citizenship, and democratic life.[57]

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[57] Harry Boyte's concept of "public works" informs some political theorists. For example, Elkin and Soltan (1999) refer to Boyte's work in their discussion of citizen competence.

Therefore, the following two synergies between civic innovations and NSMs literature can be identified to explore the links between citizens' knowledge and public administration. On the one hand, the civic innovations literature provides many empirical examples of collaboration between civic groups and administrators that the studies on NSMs can draw from. Importantly, its description of citizen-administrator interactions suggests that NSMs are more closely connected to public administrators than social movement authors would admit. On the other hand, NSMs theories of knowledge production enrich the literature on civic innovations with new theories, concepts, and analytical tools. In particular, the cognitive praxis approach can be used to conceptually describe specific examples of civic innovations by clearly defining its components. In addition, it examines a long-term evolution of civic activism and helps trace citizens' knowledge at its different phases.

Finally, one caveat should be addressed that relates to both literatures potentially being culturally-biased. On the one hand, all civic innovations literature reviewed above is U.S. based. On the other hand, the literature on NSMs draws on European political theories and critical theory in particular. It is possible that European social movements have been more incorporated into national political systems in Europe and thus the effect of citizens' knowledge on public administration might be different in Europe than in the U.S. For example, the German environmental movement and the Green Party have been an important part of the national political landscape. Consequently, the interactions between citizens and German bureaucrats on environmental issues[58] might have deeper impacts compared to the U.S. where environmental groups lack an independent political party. These national differences should alert a researcher towards specific mechanisms of citizen participation existing in a specific country. Also, the

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[58] See Hager (1995) for a discussion about the impact of German civic groups on German energy polices.

cognitive praxis lens has been used in comparative studies, including U.S. and European countries (Jamison, et al., 1990; Jamison, 2001). This indicates the appropriateness of the cognitive praxis in examining movement knowledge in relation to public administration in different countries.

3.1.2. Civic innovations, knowledge management, communities of practice and policy learning: Area 2

The juxtaposition of the civic innovations and knowledge governance literature results in the following issues or questions, both practical and theoretical. The practical issue relates to the question *who* needs citizens' knowledge and *why*? The theoretical issue relates to the question *how* citizens' knowledge can be governed. Knowledge governance literature treats knowledge as an important organizational asset and therefore, it would pragmatically frame citizens' knowledge as potentially valuable for organizations. Civic innovations literature similarly stresses the idea that "public works" (Boyte, 1980; Boyte and Kari, 1996) always involve concrete valuable results. Inspired by the U.S. democratic tradition, this literature locates these results in relation to the broader democratic society rather than specific organizations, however. In regard to the second issue, both literatures recognize the importance of learning processes in informal communities and suggest similar approaches to governing knowledge in communities.

From the point of view of civic innovations literature (Boyte, 1980, 2007, 2009; Boyte and Kari, 1996; Sirianni and Friedland, 2001, Sirianni, 2009), the answer to the practical question is straightforward: civic innovations and citizens' knowledge benefit citizens and are produced by citizens to deal with their everyday problems. From the democratic point of view, civic

innovations and public works advance democracy by energizing its contemporary direct democracy forms at the community level. The potential of civic engagement to contribute to community development and to advance democratic goals has been also recognized by public administration scholars. In particular, the literature on citizen participation reflects these scholars interest in citizens' knowledge as a factor in civic engagement (see Chapter II).

In relation to the theoretical question how citizens' knowledge should be governed?, collaborative governance has been proposed as a framework to bring together the resources of civil society to advance community goals (Sirianni, 2009) and the goals of public administration (Cooper, 2006 ; Epstein, et al 2006). Civic engagement authors normally assume strong autonomy of civic groups to realize their self-governance potential. However, most civic innovations authors also recognize the role of government as a "civic enabler" (Sirianni, 2009) which is also stressed by public administration scholars (Box, 1998; Denhardt and Denhardt, 2004). Within the public administration field, knowledge governance of citizens' knowledge is still an emerging field as indicated by the work of Khademian and Weber (2008) and McGuire et al. (2011). At the same time, collaborative governance framework and deliberative democracy experiments provide a foundation to develop new approaches to governing citizens' knowledge.

The literature on communities of practice has accumulated important insights on social learning processes and thus can inform these new public administration approaches. In particular, to further theorize processes within the collaborative governance framework, researchers can draw on the studies that have applied complexity theory and anthropological approaches to social learning. Both civic innovations (Boyte, 2009) and public administration authors have drawn on

complexity theory to addresses the complex nature of civic involvement in urban governance (Wagenaar, 2007) and organizational learning processes (Mischen, 2007, Mischen and Johnson, 2008). Morse (2004; 2006) uses sociological theory of communities of practice to create a community-centered approach to collaborative governance in public administration. He describes the need in creating dynamic relationships between "community learning" and "learning community" that should support collaborative governance. These studies build on such concepts as organizations as systems, self-organization, community, and communication which have also been central in knowledge management literature (Argyris and Schon, 1978; Senge 1990; Wenger, 1998).

Knowledge management literature reflects the growing appreciation by business management authors of diverse forms of knowledge including lay knowledge (Amin and Roberts, 2008). Initially preoccupied with those forms of knowledge that could increase organizational competitiveness, knowledge management authors have gradually accepted the view on knowledge as distributed throughout the entire society and exhibiting many aspects of "public goods." Consequently, they increasingly view the problem of mobilizing and governing knowledge as requiring the efforts of multiple institutions of society. The recent conceptual debate on the role of community (Amin and Roberts, 2008) reflects the growing awareness of the role of alternative forms of knowledge.[59] A constant theme in the studies of knowledge-based cities has been the role of cultural diversity for knowledge production. Creative cities stimulate

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[59] In their introductory chapter, Amin and Robert (2008) claim that the concept of communities of practice has dominated the literature on economic creativity and local economic regeneration "as a key resource to tackle these challenges" (p.13). Other book contributions by leading knowledge governance scholars address various aspects of knowledge communities. Two of them are relevant for the civic innovations perspective and include an economist's communitarian defense of the notion of community(Storper, 2008) and an examination of the links between knowledge-intense firms, communities, and "creative cities" (Cohendet and Simon, 2008)

the formation of knowledge networks which in turn provide many positive externalities for those firms located in such cities (Cohendet and Simon, 2008). Similarly, many examples of civic innovations draw on the diverse resources of cultural and ethnic civic groups (Boyte, 2008). Therefore, knowledge governance literature considers diverse knowledge as a potential asset of knowledge-intense firms. Knowledge management authors differentiate between different communities (Nooteboom, 2008; Amin and Cohendet, 2004) and different types of knowledge (Amin and Roberts, 2007) but do not conceptually distinguish lay and informal citizens' knowledge as a separate type. Therefore, they would address the question of how citizens' knowledge should be governed by specifying the type of knowledge involved and the type of community that produced that knowledge.

The discussion of the broader public policy implications of knowledge governance by knowledge management authors potentially brings together knowledge management theories and policy learning theories (Sabatier, 1988; Sabatier and Jenkins-Smith, 1993; 1999). These two sets of theories can be applied to such policy areas as information technology. For example, Amin and Cohendet (2004) argue that technology transfer policies should "address insights on community-based organization, industrial democracy, and network alignment as the core elements of learning" (p.138). Public actors' key role consists in brokering between different stakeholders to mediate between different kinds of knowledge, such as lay and expert knowledge, according to the authors. Intellectual property represents a major issue that needs to be addressed by public policies to support learning. In particular, patent mechanisms might not be appropriate for communities as they can hamper knowledge production and innovation. Also, Amin and Cohendet (2004) describe a policy challenge in relation to supporting learning communities that

differ in their maturity. Thus communities with "emergent relations" and few shared beliefs, norms, and standards, have high degrees of uncertainty and should be supported differently than communities with "consolidated relations." While the former require financing and reference standards, the latter need community-friendly property rights mechanisms that prevent the erosion of diversity and over-exploitation of the community by market forces.

Therefore, civic innovations can be incorporated into knowledge governance theme as a particular kind of knowledge. Knowledge management literature offers many conceptual tools to address both learning processes within civic groups and civic interactions between heterogeneous communities in relation to various kinds of knowledge. In addition, its academic affiliation with the field of business management and its grounding in organization theories can inform public administration scholars in their attempts to construct knowledge-based collaborative governance frameworks that include group-based civic engagement. On the other hand, the democratic ethos underlying civic innovations represents an asset that business management scholars have not addressed well. In this regard, public administration scholars have an additional knowledge asset that they can utilize – the civic capacity of the people – which the literature on citizen participation and civic innovations emphasizes strongly.

3.1.3. Knowledge production in NSMs, knowledge management, communities of practice, and policy learning: Area 3

The literature on civic innovations and the literature on citizen participation lacks a strong theoretical bases. In contrast, the literature on cognitive praxis of social movements, knowledge management, communities of practice, and policy learning are academically more rigorous. I

will summarize major similarities and differences between these literatures in relation to the question how citizens' knowledge is linked to public administration, first. Next, I will identify potential synergies between these literatures.

Systemic transformation of knowledge production in information societies

Many similarities between the cognitive approach to NSMs and social approaches to knowledge management result from their common roots in critical theory.[60] Recently, post-critical theorists have noted a transformation in knowledge production currently underway in information societies that, as they argue, has a systemic character (Gibbons et al, 1994; Melucci, 1996; Nowotny 2002). According to Nowotny (2002), knowledge production can no longer be associated with specialized scientific institutions exclusively. Instead, science, society, and culture have become "so 'internally' heterogeneous and 'externally' interdependent, even transgressive, that they had ceased to be distinctive and distinguishable" (p.1). Knowledge management literature builds on that insight and argues that ignoring this dispersed knowledge undermines the firm's competitiveness, in the long-term.[61] Similarly, Snyder, Wenger and Briggs (2004) argue that communities of practice can be an action model for government to leverage the power of networks to stimulate ongoing innovation and action learning. The literature on policy learning (Heclo, 1974; Sabatier, 1988) can be traced back to insights that societal innovation similarly occurs at the periphery (Schon, 1971), which has been later incorporated by the

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[60] In particular, Eyerman and Jamison, (1991) draw on the concept of "knowledge interest" developed by Jurgen Habermas. The social approach in knowledge governance literature builds around the concept of situated learning and communities of practice (Lave and Wenger, 1990) which, in turn, represent a further development of social practice theory that has "philosophical roots in Marx, Gramsci, … Stuart Hall..." (Lave, 2008).

[61] Brown and Duguid (1991) note the danger of ignoring external knowledge that resides in the firm's communities of practice which often cross the organizational boundaries: "If an organizational core overlooks or curtails the enacting in its midst by ignoring or disrupting its communities-of-practice, it threatens its survival in two ways. It will not only threaten to destroy the very working and learning practices by which it, knowingly or unknowingly, survives. It will also cut itself off from a major source of potential innovation that inevitably arises in the course of the working and learning" (p. 76).

organizational learning literature (Argyris and Schon, 1978; Senge 1990). The literature on knowledge production in NSMs documents many cases of new knowledge and technologies produced at the intersections of science and society, thus explicating the thesis about the transformation of knowledge production.

Network structure of new knowledge production

Information society can be properly called "network society" as its "dominant functions and processes … are increasingly organized around networks" (Castells, 1996; p.469). This strongly applies to knowledge production and innovation. NSMs and knowledge management literature pay considerable attention to the structural aspects underlying knowledge production. Jamison (2001) notes that, in the contemporary world, "social movements are perhaps best seen not as organizations but as networks, which are not as firmly or coherently coordinated as social movement organizations tend to be" (p.13). Many aspects of the network structure of NSMs have been addressed by other social movement scholars (Byrne 1997; Della Porta and Diani 1999; Della Porta 2002). Similarly, knowledge communities that are structured as networks with different degrees of coherence have been central to knowledge management literature. The literature on policy learning does not explicitly address the network structure of advocacy coalitions. At the same, "non-trivial degree of coordination" constitutes a key characteristic of advocacy coalition (Sabatier and Jenkins-Smith, 1999; p.138) and the ACF considers the issue of coalition composition, and how these coalitions emerge and evolve as very important. In particular, Zafonte and Sabatier (1998) explore how mechanisms of "weak" coordination work in advocacy coalitions.

In addition, NSMs and knowledge management literature give a similar answer to the question why loose networks are effective. This question is particularly relevant for NSMs that are lacking strong organization and are thus deprived of the "organizational weapon," a metaphor suggested by Philip Selznik in relation to older social movements (Selznik, 1952). The puzzle of effectiveness of loosely structured networks might be related to these networks being more adaptive and capable of generating local contextual and practical knowledge. Those studies that explain the success of social movements by their internal characteristics[62] emphasize the importance of "strategic capacity" that includes such elements as motivation, salient knowledge, and creative heuristic processes (Gantz, 2005). Based on his analysis of the environmental movement, Gerlach (2001) similarly argues that "segmentary, polycentric, and integrated networks" (SPIN) of civic activists are affective because of their highly adaptive nature. Knowledge management literature makes a case for networks having a highly adaptive nature even stronger as it articulates well how knowledge communities contribute to knowledge creation (Amin and Cohendet, 2004).

Embeddedness of knowledge in social practices

Both the cognitive praxis approach to social movements (Eyerman and Jamison, 1991, Jamison, 2001) and social theories of knowledge production in knowledge management literature share the idea that learning processes are embedded in social practices. The insight that learning is embedded and situated (Lave and Wenger, 1990) means that knowledge cannot be separated from practice. Also, the cognitive praxis approach and the research communities of practice view knowledge as encompassing both outcomes and processes. Perhaps, the knowledge governance

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[62] The majority of studies on social movements maintain a resource-dependence perspective – social movements succeed when favorable external conditions (resources and opportunities) are present.

literature articulates different typologies of knowledge and knowledge communities better than

the NSMs literature does. This is especially relevant if one looks at NSMs as "communities of

communities" (Brown and Duguid, 1991). On the other hand, the NSMs authors pay greater

attention to self-organizing aspects of social movement networks.[63] Also, business management

authors traditionally have a greater interest in knowledge outcomes such as technologies. The

research on policy learning does not make references to the concept of communities of practice.

However, the ACF "draws … heavily on research on cognitive and social psychology" (Sabatier

and Jenkins-Smith, 1999; p.130) to examine specific cognitive processes within coalitions.

Commoditization of knowledge

Although NSMs and knowledge management authors have similar views about knowledge and

how it is produced, they part in their interests in relation to specific knowledge phases. Similarly

to the authors of cognitive praxis, knowledge management authors maintain a long-term

perspective on knowledge because knowledge production spans long timeframes. At the same

time, they assume knowledge evolution to culminate when knowledge becomes a commodity.

The early stages of knowledge production are recognized by these authors as important but

secondary or even instrumental for the later stages when the market value of the knowledge can

be established.[64]

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[63] This reflects the variety of different organizational and governance models and approaches that social movement actors have invented. They include the model of "bazaar governance" (Raymond, 1994) developed within the open-source movement, feminist models of cooperation (Haraway, 1988), and the philosophical distinction between competition and cooperation used by many European environmental activists that was initially formulated by the Russian anarchist Peter Kropotkin.

[64] When discussing the evolution of the concept of communities of practice, Duguid (2008) notes that contemporary view on communities of practice as instrumental to organizational goals represents a deviation from the original meaning of the concept as initially proposed by Lave and Wenger (1990). Duguid (2008) argues that communities of practice represent "the site of a continuous struggle over 'continuity and displacement' " (p.4). However this view is marginal to the field of knowledge governance that is driven by more pragmatic organizational concerns.

In contrast, the authors of cognitive praxis are more interested in the early stages of knowledge production. The majority of social movement studies deals with the issue of movement mobilization (the question *why* movements emerge?) and thus view the initial internal and external conditions as very critical for the movement. The cognitive praxis approach also pays considerable attention to movements' early histories because early identity formation processes represent a major driver for movement emergence, consistent with the cultural approach to social movements (Melucci, 1980). In other words, NSMs emerge around identity issues that lead to certain practices, which in turn lead to knowledge that can be identified as such by non-movement actors. From the point of view of social movement scholars, the later movements' stages are not very interesting because movement mobilization is minimal and the movement is "dead." This situation is paradoxical from the perspective of knowledge: when the social movement's knowledge becomes institutionalized and has the greatest influence on the wider society social movement scholars lose an interest in examining that knowledge.

This entails another major difference between the two literatures that relates to the issue of conflict. Knowledge production appears largely uncontroversial to knowledge governance authors. In contrast, the NSMs literature provides ample evidence that knowledge production involves conflicts over values and power. This is true for all phases of knowledge production (Jamison, 2001). New social movements emerge from fundamental cultural conflicts that movements articulate. As the movement evolves, its activists propose different strategies. This entails reformulations of initial movement goals and often generates internal conflicts. More serious internal conflicts occur when movements groups choose between the strategy of challenging the society or incorporating into the society, as described by Jamison (2001) in

relation to the environmental movement. In this respect, green business practices can be seen by

different environmental groups either as a movement success or a betrayal of the original

movement ideals. Therefore, movement knowledge at later movement phases cannot be seen as a

result of a smooth linear knowledge production process as knowledge management authors

would assume. Rather knowledge production in social movements is a byproduct of interaction

of different movements groups which involve various levels of conflict.

Finally, the literature on knowledge production in NSMs informs the literature on policy learning

(Sabatier, 1988; Sabatier and Jenkins-Smith, 1993, 1999) on "factors affecting elite belief change

over time" (Sabatier and Jenkins-Smith, 1999; p.154). Internal dynamics of belief systems has

been a central determinant of policy change in the ACF. Also, the ACF recognizes the influence

of social movements on public opinions as another external factor leading to policy change.

However, the ACF research has not addressed how worldviews and values produced by new

social movements directly affect advocacy coalitions. The research on cognitive praxis examines

the formation of new professional groups at later stages of knowledge production (Jamison,

2001). It appears logical to admit that these professional groups might emerge as advocacy

coalitions, as the experience of the environmental movement suggests.

Therefore, the main synergy between NSMs and knowledge management literature might be

found if the interest of NSMs scholars in early stages of knowledge production is combined with

the interest of knowledge management authors in its later commoditization stages. On the one

hand, knowledge governance field can benefit from the access to those NSMs cases that describe

the early phase of knowledge production – the most uncertain and costly stage, from the point of

view of knowledge management. On the other hand, NSMs advocates can learn from knowledge

management and policy learning literature about the role of commercial knowledge as a source

of movement power. Finally, the NSMs and policy learning literature can sensitize knowledge

management scholars to the issue of conflict while NSMs authors can tap into the typologies of

knowledge and knowledge communities that build on more conventional and less movement-

centered approaches.

3.1.4. Identifying common issues and potential synergies between the three bodies of literature:

Area 4

The above examination of the intersection of the three bodies of literature results in several

generalizations about citizens' knowledge and its link to public administration.

Understanding citizens' knowledge

All three bodies of literature address knowledge as group-based, embedded in social practices,

and dynamic. They draw on the anthropological insight that knowledge is embedded in social

practices (Lave, 1988; Lave and Wenger, 1991). Knowledge as cognitive praxis implies dynamic

relationships between knowledge outcomes and learning processes. It encompasses several

elements, including values, practices, and techniques (Wenger, 1998; Eyerman and Jamison,

1991). These elements are also interconnected dynamically and driven by identity processes. The

cognitive praxis approach further describes several phases of knowledge production in social

movements: from knowledge emergence to knowledge institutionalization, which include several

transformations from lay to expert knowledge (Jamison et al., 1990; Eyerman and Jamison,

1991; Jamison, 2001). The literature on knowledge management and policy learning are

primarily focused on institutionalized knowledge.

Varieties of knowledge and knowledge communities

The three literatures offer many examples of actual knowledge communities: civic groups (Box, 1998; Epstein et al., 2006; Boyte, 1980, 2007; Boyte and Kari, 1996; Sirianni and Friedland, 2001, Sirianni, 2009), new social movement groups (Jamison 2001), organizational communities (Lave and Wenger, 1991; Brown and Duguid, 1991; Orr, 1996; Amin and Cohendet, 2004; Amin and Robert, 2008) and policy communities (Sabatier and Jenkins-Smith, 1999). In addition, knowledge management authors propose several typologies of knowledge and knowledge communities. The most common typology of knowledge builds around three dimensions of knowledge: individual/collective, tacit/explicit, and possessed/practiced (Nonaka and Taceuchi, 1995; Cowan et al., 2000; Blackler, 2002). Another typology specifies four types of situated knowledge such as craft-based, professional, expert/high creativity, and virtual (Amin and Roberts, 2008). Different types of knowledge communities of practice can be distinguished by the degree to which they share common norms, goals, and procedures, such as professional, epistemic communities, and communities of practice, or in relation to knowledge creation and application, such as exploration and exploitation communities (Nooteboom, 2002).

Process of knowledge production

All three literatures recognize knowledge creation as a process having long timeframes. Institutional civic innovations (Boyte, 1980; Boyte and Kari, 1993) and knowledge production in NSMs (Jamison, 2001) might take decades. Knowledge management authors share similar evolutionary view of knowledge reinforced by their interest in long-term and strategic learning

by the firm (Nonaka and Taceuchi, 1995; Amin and Cohendet, 2004). Civic innovations and NSMs authors focus on knowledge creation and describe the underlying social learning processes in civic or movement communities (Boyte, 1980, 2009; Jamison, 2001). Both groups of scholars consider the process of institutionalization of knowledge as inevitable but not advantageous for social change and for the advancement of democratic ideals. In contrast, knowledge management authors look at the earlier stages of knowledge production as only transitory and instrumental to the later stages when knowledge can potentially increase competitiveness of the firm or the society at large. Both the literature on knowledge management and policy learning consider the question how peripheral knowledge influences formal organizations and policy-making institutions as central to their research agendas (Wenger, 1998; Amin and Cohendet, 2004); Sabatier, 1988; Sabatier and Jenkins-Smith, 1993, 1999).

Link between citizens' knowledge and public administration

Different literatures approach the issue of citizens' knowledge from different disciplinary perspectives, examine different processes underlying the production and transfer of citizens' knowledge, and propose different rationales to explain why citizens' knowledge is important (Table 1).

Table 1. Perspectives on citizens' knowledge

Literature	Disciplinary focus	Key processes	Rationale	Authors/ works
Citizen participation	Public administration	Formal citizen participation, collaboration with citizen groups	Democratic/ managerial	Box (1998), King at el. (1998), Vigoda (2002), Denhardt and Denhardt (2007), Vigoda (2002), Cooper (2006)
Civic	Civil society	Civic engagement,	Democratic	Boyte (1980, 2007, 2009),

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innovations		community actions		Boyte and Kari (1996), Sirianni and Friedland (2001), Sirianni (2009)
Knowledge production in NSMs	New social movements	Identity processes, movement strategies and tactics	Political/ Social change	Jamison et al. (1990), Eyerman and Jamison (1991), Jamison (2001)
Knowledge management/ communities of practice	Organizations	Organizational and inter-organizational knowledge transfer	Economic	Lave and Wenger (1990), Wenger (1998), Amin and Cohendet (2004)
Policy learning	Policy coalitions	Interactions of policy coalitions	Political	Heclo (1974), Sabatier (1988), Sabatier and Jenkins Smith (1993, 1999)

The literature on citizen participation and civic innovations is driven by strong normative claims about citizens' knowledge. The authors share a common belief that existing political institutions should be more open to great citizen input. The literature on civic innovations provides examples of effectiveness of collective citizens' knowledge to increase the quality of democratic life. It further incorporates these practical examples into a normative theory of "public works," a conceptual framework on citizenship developed by Harry Boyte (Boyte, 1980; Boyte and Kari, 1996; Boyte, 2008). Citizen participation scholars blend the normative discourse on citizenship and managerial concerns. On the one hand, public administration authors stress the need in more authentic citizen participation (King et al, 1998) and public service that is more attentive to the value of citizenship and closer collaboration with citizens in general (Denhardt and Denhardt, 2004). On the other hand, they creatively blend managerial and democratic ethos (Pugh, 2004) of public administration by proposing theories of citizen governance (Box, 1998) and governing-for-results (Epstein et al., 2006) that highlight new ways by which democratic values might translate into concrete administrative outcomes. Collaboration with citizens (Vigoda, 2002; Cooper, 2006) should both promote citizenship values and result in better managerial effectiveness, according to these theories. Citizens' knowledge has been an important element of these new citizen-oriented theories of collaboration (Weber and Khademian, 2008; McGuire, et

al., 2011). Therefore, these recent attempts by public administration authors to blend citizenship and managerial discourse in relation to citizens' knowledge suggests the need in better understanding of mechanisms by which citizens' knowledge is produced and then transferred into public organizations.

The literature on knowledge production in social movements, communities of practice, and policy learning provide important theoretical insights on two related questions: how knowledge is produced and how it links to public administration. The answers to these questions that each literature gives are grounded in studies that are more rigorous and based on more established theories than citizen participation and civic innovations literature. The cognitive praxis approach takes a historic perspective to examine the full cycle of knowledge production in the environmental movement (Jamison et al., 1990; Eyerman and Jamison, 1991; Jamison, 2001). It describes well how movement knowledge undergoes several transformations from lay to expert knowledge and how movement knowledge impacts political institutions and societies at large by creating new belief systems and new social practices. The cognitive praxis focuses on identity processes as a driver of social learning processes. It offers several examples how these processes entail the emergence of new networks spanning movement groups and non-movement organizations, including business and public organizations. Importantly, Jamison (2001) focuses on knowledge processes as the determining factor affecting collaboration in these networks by offering a movement perspective.

The literature on knowledge management in communities of practice further elaborates the mechanisms of interactions between informal communities and formal organizations. Social

learning drives knowledge production in communities of practice. These knowledge

communities cross organizational boundaries and involve the interaction of different types of

knowledge: individual and collective, tacit and explicit, expert and lay knowledge, according to

this literature (Wenger, 1998; Amin and Cohendet, 2004). One important insight in relation to the

challenge of bridging external citizens' knowledge and public administration should be noted.

Public administration authors writing on collaboration and network governance commonly

assume a structural perspective. In other words, the existence of some structure is prior to the

processes within this structure, according to the theories of network and collaborative public

management (O'Toole' 1997, Agranoff, 2003). In contrast, communities of practice scholars

reject this approach as unproductive in relation to informal knowledge communities. Knowledge

communities are self-organizing and escape both traditional organizational logic and the

positivist logic of inquiry. In particular, most economic and organizational theories are

incompatible with the anthropological view on knowledge communities so that different theories

should be balanced rather than merged, according to knowledge governance authors (Amin and

Cohendet, 2004).

Therefore, the inquiry about citizens' knowledge in relation to public organizations should focus

on knowledge and knowledge processes rather than structures. Structures are secondary to social

learning processes and emerge as a result of social learning, according to both communities of

practice approach (Lave and Wenger, 1990; Wenger, 1998; Amin and Cohendet, 2004) and

cognitive praxis approach (Eyerman and Jamison, 1991). The implication of this insight for the

present study is that informal interactions between citizens and public administrators should be

examined in a great detail. This is consistent with the theories about the importance of

knowledge brokers for knowledge exchanges between knowledge communities and formal organizations (Ichigo et al. 1998; Nooteboom, 1999; Amin and Cohendet, 2004) and has also been recognized by public administration scholars (Weber and Khademian; 2008).

The policy learning literature addresses the politics of knowledge at the policy level. The authors of cognitive praxis address the question what happens when movement knowledge becomes institutionalized and inform the discussion about the ideological impacts of movement knowledge, in particular. However, they question whether the institutionalization and commoditization of movement knowledge actually benefits the movement (Jamison, 2001). They do not consider specific mechanisms by which movement knowledge affects policy-making. In this respect, the advocacy coalition framework (Sabatier, 1988; Sabatier and Jankins-Smith, 1993, 1999) gives additional analytical power when examining how institutionalized movement knowledge might affect public policy and implementation.

The above literature on knowledge production in social movements, communities of practice, and policy learning provide a holistic view on movement knowledge as a specific type of citizens' knowledge. Each literature highlights some aspects of movement knowledge not addressed by other literatures. For example, the communities of practice perspective alone cannot give a full picture of knowledge production in those communities that are part of social movements. The cognitive praxis perspective fills this gap. On the other hand, policy learning literature does not address interactions between movement knowledge and public administration on the organizational level. Therefore, concepts developed within communities of practice literature can supplement policy learning literature. Finally, combining all three literatures

provides a big picture of socially distributed knowledge (Gibbons et al. 1994) and how it affects

public administration through informal and formal channels. The normative literature on citizen

participation and civic innovations further places this bigger picture into a democratic framework

by explicating this framework at the example of movement knowledge.

3.2. The conceptual map linking movement knowledge and public administration

This section provides a short summary of the conceptual map proposed and then explains how

the map informs this dissertation research questions.

Figure 2. Knowledge triangle: linking movement knowledge and public administration
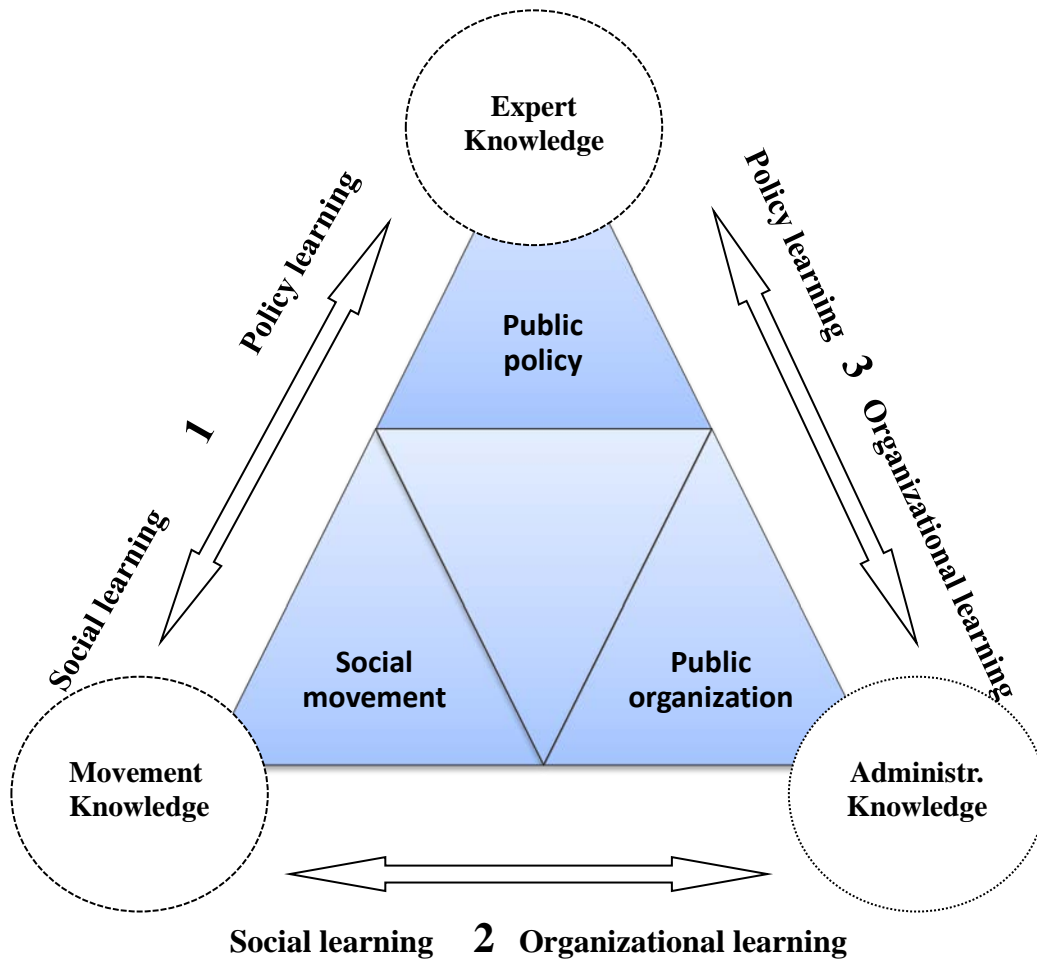
3.2.1. A summary of the map

Based on the conceptual insights of three literatures – knowledge production in NSMs, communities of practice, and policy learning – the following conceptual map linking movement knowledge and public administration is proposed (Figure 2).

The map illustrates the interplay and mutual influences of movement, expert, and administrative knowledge. Each type of knowledge has its own domain: social movements, public policy systems, and public organizations, respectively. Potentially, each type of knowledge is connected to other two types of knowledge through dynamic learning processes. In this study, I focus on the dynamics triggered by movement knowledge but keep in mind that this dynamics might be equally triggered by expert or administrative knowledge. In particular, I examine how identity processes in new social movements generate social learning processes that result in the emergence of new worldviews and practices (Eyerman and Jamison, 1991).

New practices and ideas influence the emergence of new policy agendas and create policy learning (Sabatier, 1988; Sabatier and Jenkins-Smith, 1993, 1999) dynamics (Arrow 1). This occurs as movement knowledge produces new niches of expert knowledge, which in turn leads to transformations in knowledge politics and changes in policy subsystems. On the other hand, movement knowledge directly affects public organizations (Arrow 2) as individual public administrators learn about new practices and start innovating. On this level, communities of practice (Lave and Wenger, 1991; Wenger, 1998) created by social movements mediate knowledge interactions between the movement and public organizations. In addition, public organizations and individual administrators might proactively communicate their organizational

learning about new practices to the policy level (Arrow 3) and specific advocacy coalitions in particular. The latter can also influence public organizations using formal channels. All learning processes – social, policy, and organizational learning – involve different kinds of knowledge identified by knowledge management scholars (Amin and Cohendet, 2004), such as individual and collective, tacit and explicit, formal and informal. Specific configurations of knowledge depend on movement phase, consistent with the cognitive praxis approach (Eyerman and Jamison, 1991).

3.2.2. Explaining how the conceptual map informs this dissertation's research questions

Research questions 1 and 2 address transformations of movement knowledge and their effects on public policy. The literature on the cognitive praxis of new social movements informs the inquiry by defining movement knowledge as driven by identity processes, embedded in social practices, and undergoing changes at different movement phases. Knowledge production at later movement phases is associated with the institutionalization of movement knowledge and entails the emergence of new advocacy coalitions that affect policy change through policy learning (Arrow 1). Three dissertation cases will describe these processes in detail, at each NSM's phase.

Research question 3 addresses the role of communities of practice created by social movements in the transfer of movement knowledge to public organizations. I will focus on the interactions between movement communities and public organizations at the local level (Arrow 2). In particular, the role of public administrators who participate in movement communities and become knowledge brokers and boundary spanners in their organizations will be analyzed. Research question 4 sharpens the discussion about the effects of movement knowledge on

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organizational learning of public organizations, based on the opinions of these knowledge brokers as well as other administrators. In addition, the analysis will explore the role of movement knowledge in mediating the relationships between policy learning at the national level and organizational learning at the local level.

Finally, research question 5 addresses the relationships between movement knowledge and public administration in different movements. The analysis of the sustainable community movement (Chapter V) is based on the qualitative data and existing studies by other researchers, including the studies on the environmental movement by the authors of the cognitive praxis approach (Jamison et al., 1990; Eyerman and Jamison, 1991; Jamison, 2001) and a study of one community of practice, the sustainable indicator project, and its effects on social learning in Seattle, WA (Holden, 2004; 2006a, 2006b). The cases of knowledge production in the free and open source software movement (Chapter VI) and in the natural child birth movement (Chapter VII) are new cases. Also, the author applies the cognitive praxis framework for both cases and the communities of practice approach to organizational learning at public organizations in the NCBM case for the first time.

Summary of the chapter

This chapter has analyzed the intersections between the literature on citizen participation and civic innovations, knowledge production in NSMs, and communities of practice and policy learning. Based on this analysis, none of the three bodies of literature alone is sufficient to explore the central subject of this research – the relationship between social knowledge and public administration. By examining the intersections between these literatures, this chapter has identi-

fied a number of synergies, including theoretical and empirical ones, to guide the inquiry. Theoretical synergies primarily relate to a better understanding of the nature of social knowledge and the social learning processes (cognitive praxis and knowledge governance literature) as well as the relationship between different kinds of knowledge in different structural contexts. Besides documenting the wealth of social knowledge in post-industrial societies, the comparison of empirical content of these literatures reveals the salience of social movements as one particular empirical site of social knowledge production. While it is not clear how social movement knowledge relates to other forms of social knowledge, movement knowledge is an appropriate initial subject representative of social knowledge, based on the three literatures. Importantly, social movement knowledge is more structured compared to ad hoc forms of social knowledge. Also, the inquiry into the relationship between social movement knowledge and public administration benefits from available theoretical tools, such as cognitive praxis. Finally, the chapter concludes by presenting a theoretical framework used in this dissertation to study movement knowledge in relation to public administration and explains how this framework informs each of the five research questions.

CHAPTER FOUR. METHODOLOGY

This dissertation is an exploratory research (Stebbins, 2001). Stebbins (2001) distinguishes between exploration and confirmation as two different types of inquiry. According to him, the goal of exploration consists in generating new ideas and connecting them together "to form grounded theory" (Glaser and Strauss, 1967). In contrast, confirmatory research aims at testing hypotheses based on an already existing theory. Citizens' knowledge is a little-known phenomenon within the public administration field and very few theories about the link between external citizens' knowledge and public organizations currently exist. Therefore exploration and the inductive reasoning is methodologically appropriate for this project. Exploratory method is also consistent with Lindblom's (1990) approach to scientific inquiry into social knowledge which he calls "probing."

One caveat associated with exploratory research should be addressed here. Similar to any exploratory studies, this research appears susceptible to the danger of becoming an isolated piece of work unconnected to main field's theories (Stebbins, 2001). This research is not immune to that danger. However, it is purely exploratory only in relation to public administration literature. In relation to other fields it should rather be described as a step away from exploratory to confirmatory (even though it is obviously much closer to the exploratory end of the continuum). In this regard, the typology developed by Shaffir and Stebbins (1991) might be useful to differentiate between phenomena that are little known, partially-known and better-known. Using this typology, citizens' knowledge represents a phenomenon that is little known to the public administration field and, at the same time, partially known to scholars from other fields. In particular, the three literatures reviewed in Chapters II-III have considered citizens' knowledge in

a great detail.[65]

In the remainder of this chapter, I will review specific methodological approaches utilized in the literature on knowledge production in NSMs, communities of practice, and policy learning. Based on these methodologies, I further develop a methodological framework which will be used in this exploratory research. Next, I explain how I have selected the three cases and describe my data. Finally, I describe case structure that I will follow when analyzing the three cases (Chapters V-VII).

4.1. Developing the methodological framework

4.1.1. Cognitive praxis methodology

The cognitive praxis approach to the study of knowledge production in social movements might be described as exploratory. As Eyerman and Jamison (1991) note, they "aim to be expansionist readers rather than reductionist analyzers" (p.61). The authors stress the importance of a deeper understanding of social movements and thus identify their approach as hermeneutic rather than positivist. Consistent with the main postulate of grounded theory that theory should emerge out of data (Glaser and Strauss, 1967), they understand the concept of cognitive praxis as embedded

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[65] In fact, both civic innovations and knowledge production in NSMs represent examples of "concatenated exploration" (Stebbins, 1992) in relation to citizens' knowledge. Stebbins (1992, 2001) understands concatenated exploration as a chain of exploratory studies that are linked together and potentially lead to grounded theory. He believes it to be a preferable way of exploration as it increases the methodological and theoretical rigor. Both civic innovations and knowledge production in NSMs literatures are individually concatenated. Each of these literatures draws on a series of exploratory studies written by the same group of authors over their lifetimes that also reflect different aspects of the same phenomena. In addition, these two literatures can be seen as mutually concatenated as they address similar phenomena from different disciplinary perspectives. From the point of view of the literature on civic innovations and knowledge production in NSMs, this research thus cannot be defined as exploratory. In particular, it adds few new insights about the nature of citizens' knowledge as I simply draw on the concepts available in these two literatures. At the same time, examining the link between citizens' knowledge and public organizations represents a novel theme driven by the needs of the public administration field. In the conceptual sense, the goal of this dissertation is to move the phenomenon from little-known to partially-known phenomenon (Shaffir and Stebbins, 1991) so that more rigorous public administration theories can be developed in the future.

within actual social movement practices.

The values, beliefs, and practices of the social movement represent the empirical foundation of cognitive praxis. The inquiry starts with the researcher following movement actors and observing how ideas emerge from the movement, according to Eyerman and Jamison (1991). At the same time the authors note that knowledge interests "do not present to us readyformed" (p.62) and instead have to be reconstructed in the context of a social theory. Because the phenomenon of knowledge is not given objectively, they draw on methods of critical reflection and admit that their distancing from the movements might be described as "qualified subjectivity." Eyerman and Jamison (1991) reject the idea that the researcher should or could be a neutral observer in relation to his/her object of study.[66] Jamison (2001) compares the cognitive praxis approach with the method of sociological intervention (Tourane, 1991). According to this view, the sociologist has to engage with social movement practices that she studies in order to understand the ideas that emerge. On the other hand, Eyerman and Jamison (1991) insist that the distance between the researcher and social movements should be maintained.

Eyerman and Jamison (1991) suggest two ways to maintain such a distance: using socio-cultural techniques of analysis, and applying a historical perspective. The authors do not elaborate on their socio-cultural methods in a great detail. As Klandermans, Staggenborg and Tarrow (2002) point out, the empirical examination of social movements from a cultural perspective represents a great challenge for sociologists. However, these methods can be discerned throughout the works of cognitive praxis authors (Jamison et al., 1990; Eyerman and Jamison, 1991; Jamison,

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[66] Jamison et al. (1990) explicitly state: "it is our contention that the theorist who seeks to characterize the new environmental consciousness must be a partisan, identifying with the movement while maintaining a distance from it" (p.x).

2001). Specific socio-cultural techniques that they use include participation observation, focus groups, interviews, and the analysis of movement documents. These techniques combine the documentation of and engagement with the researcher's individual cognitive praxis. In particular, the authors' personal life experiences with the environmental movement constitute one important source of data. Similarly, Cosa-Cortas et al. (2008) urge social scientists to study knowledge practices in social movements and stress that they "aim to follow social movement actors themselves, listening, tracing, and mapping the work that they do to bring movements into being" (p.28). Overall, socio-cultural methods provide an important basis in the cognitive praxis approach but its authors rely more extensively on their historical approach.

Eyerman and Jamison (1991) view social movements as process in formation, as transitioning "from one historical conjuncture to another" (p.60). History both shapes and is being shaped by movements. On the one hand, NSMs affect historical contexts through their praxis. As Melucci (1989) argues, they might symbolize societal transformations and also enable them. On the other hand, the meaning of each movement and each movement period is shaped by the larger societal and political contexts. The knowledge of social movements thus also changes as the movements pass through different phases. Hence the examination of knowledge necessarily includes the question how this knowledge changes at different movement phases. From the methodological point of view, maintaining a historical perspective helps avoid researcher's subjective biases. By looking at social movements in retrospective and by distancing from them through time, the researcher can better grasp them as an empirical phenomenon independent from the researcher's personal beliefs. In their historical method, Jamison et al. (1990) particularly draw on the work of McAdam (1982) who traces several phases of black insurgency from 1930 to 1970s.

McAdam, Tarrow, and Tilly (2001) would identify the comparative study by Jamison et al. (1990) as resembling the "trajectories of contention" approach that concatenates different social movement episodes around specific processes and mechanisms. In particular, the cognitive praxis authors concatenate different movement phases around the process of knowledge formation. At the same time, they draw on the cultural theory that stresses the phenomenological perspective on social movements or understanding the meaning of knowledge practices from the point of view of movement actors.

Summarizing the methodology used by the authors of cognitive praxis, it combines socio-cultural and historical methods of analysis. Socio-cultural methods help uncover the meaning of social movement practices, from the perspective of movement actors, and ensure that external theories are not arbitrarily imposed on phenomena under consideration. Historical methods are used to examine the evolution of cognitive praxis by placing it within specific historical and social contexts.

4.1.2. Communities of practice methodology

The literature on knowledge creation and collective tacit knowledge (Nonaka and Takeuchi, 1995) involves extensive theory-building and relies on exploratory methodology. Most empirical studies on knowledge creation represent case studies that utilize historical and qualitative methods to describe historical and social contexts of knowledge creation. For example, Nonaka, Umemoto, and Sasaki (1998) describe three cases of knowledge-creating companies (Sharp, National Bicycle and Seven-Eleven Japan). They use historical methods to illustrate their concept of the spiral of organizational knowledge creation. Also, they use first-person narratives

of key individuals to explain specific knowledge developments in each company. In another

study, Ichio, von Krogh and Nonaka (1998) use grounded theory approach (Glaser and Strauss,

1967) to address the issue of knowledge enablers. Their case of MYCOM company and its

TORIDAS project similarly relies on historical methods and interviews with the project's

leaders.

The literature on knowledge communities and knowledge architecture (Amin and Cohendet,

2004) uses a wide range of qualitative methods. Amin and Roberts (2008) develop a typology of

knowing in action based on their review of over 300 publications on communities of practice.[67]

Many empirical studies on knowing in action involve ethnographic methods because tacit

knowledge often has kinesthetic, embodied, and aesthetic dimensions, which are difficult to

address with other methods. The seminal work by Lave and Wenger (1991) on the activities of

several craft communities – Yukatan midwives, Vai and Gola tailors, naval quartermasters, and

meat cutters – is primarily ethnographic. The work by Orr (1996) represents a field study of the

daily practices of Xerox technicians. Wenger (1998) uses ethnographic methods in his detailed

description of claim processing at the company with a fictional name Alinsu. He "follows"

several Alinsu employees and focuses on organizational procedures and routines these employees

are engaged in during one specific working day.

Those studies that examine codified knowledge use less context-specific methods which do not

require prolonged engagement and in-depth immersion. This is true in relation to epistemic

communities which operate on the basis of common terminology, standards, and procedures and

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[67] The authors do not intend to provide a methodological review. However, they summarize the most important
studies that pertain to each of their four types of knowing in action and thus give a good overall picture of the
methodological landscape in this field.

are less dependent on the local contexts than craft communities. For example, Knorr Cetina, (1999) uses interviews to study scientific knowledge in epistemic communities. Creplet et al. (2001) similarly relies on interviews in their study of communities of business consultants. In addition, telephone interviews can be used to reach individuals who belong to the same epistemic community which is spread internationally. Many studies of virtual knowledge communities rely on more formal methods such as observation, content analysis, network analysis, and surveys which do not require active researcher's participation as most information is readily available in its digital form. For example, the study of three online technical communities by Wasko and Faraj (2000) uses network analysis, content analysis, and surveys.[68] At the same time, on-line communities are driven by social issues, such as common values and identities (Amin and Roberts, 1998) and thus cultural analysis methods are applicable too.

Therefore, the methods to study knowledge communities have been very diverse depending on the type of knowledge and knowledge communities. To make sense of these different methods, I suggest using the "methodology of complementarity" proposed by Arbnor & Bjerke (2009). Initially developed by the authors to study entrepreneurship, methodology of complementarity treats knowledge creation as a multifaceted process allowing for creative interpretations of "living reality" and, therefore, might be used as a broader methodological framework to summarize the literature on knowledge and knowledge communities. It distinguishes between methodological views, operative approaches, and methods. *Methodological views* include sets of philosophical ultimate presumptions about reality, as well as purposes, prerequisites, and results of research. Methodological views determine *operative approaches* which, in turn, affect the

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[68] First, the authors identify participants of a newsgroup, and map their interactions. Second, they use survey method. Third, they conduct content analysis.

researcher's choice of specific methodological procedures and *methods* used.

Three methodological views include the analytical view, the systems view, and the actors view. The analytical view implies explanatory research and stresses theory-testing. In contrast, the actors view aims at exploration and theory-building. The systems view falls in the middle of the continuum formed by the two other views. It stresses that subjective actors' meanings depend on specific contexts which cannot be easily generalized. The methodology of complementarity claims that three different views can "creatively supplement each other" (p. 329). Using the framework of the methodology of complementarity, most studies on knowledge creation combine systems and actors view. In the ethnographic studies by Wenger (1998) and Orr (1996), the actors view organically leads to the systems view. The studies of epistemic communities (Knorr Cetina, 1999; Creplet et al., 2001), and knowledge creation (Nonaka et al, 1998; Ichio et al. 1998), primarily gravitate towards the systems view to address social and historical contexts and rely on the actors view to a lesser extent.

In summary, most studies on knowledge creation and knowledge communities utilize the systems and the actors view, using the language of the methodology of complementarity. Specific methods are tied to a particular methodological view used. Hence those studies oriented towards actors view rely on ethnographic methods. On the other hand, those studies associated with the systems view tend to use the methods of historical analysis and more formal qualitative methods, such as network analysis, content analysis, and surveys.

4.1.3. Policy learning methodology

Most studies on policy learning (Heclo, 1974) have been associated with the advocacy coalition

framework (Sabatier, 1988; Sabatier and Jenkins-Smith, 1993, 1999). The advocacy coalition

framework represents an explanatory type of inquiry. It has been applied in eighty seven case

studies, including thirty four cases summarized by Sabatier and Jenkins-Smith (1993) and fifty

three applications identified by Weible, Sabatier and McQueen (2009). The majority of cases

involve environmental policy, followed by social, health, and economic policy.

Both qualitative and quantitative methods have been used by scholars to examine factors causing

policy change in these applications. Qualitative studies appear to dominate (Weible et al., 2009;

Sabatier and Jenkins-Smith, 1993).[69] Understanding how coalitions' belief systems affect policy

change constitutes the focus in the ACF. Sabatier (1988) notes three main methods to examine

belief systems within the ACF: elite surveys, expert panels, and content analysis of government

documents such as legislative and administrative hearings, as well as publications by interest

groups (p.147). Sabatier and Jenkins-Smith (1993) develop content analysis procedures and a

coding frame to measure longitudinal change in elite beliefs. This method has been used in two

quantitative studies (Jenkins-Smith and St.Clair, 1993; Sabatier and Brasher, 1993) and several

more studies since then. In addition to the methods used to examine belief systems, ACF studies

also rely on primary and secondary historical methods to describe external factors in a long-term

perspective (decade or more).

Policy learning of advocacy coalitions has been addressed as part of analysis in the ACF and as a

major factor explaining policy change. Weible at al. (2009) identify twenty ACF studies that test

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[69] Out of six cases studies, four cases use "primarily qualitative methods of data acquisition and analysis" Sabatier and Jenkins-Smith (1993; p.7). Two other cases are presented by the authors as quantitative. Weible et al. (2009) find that the following methods have been used in the ACF studies: interviews, content analysis, surveys, and observational methods (see Table 1, p.127). They note that 41 percent of applications "used methods that were unspecified and appeared to rely on unsystematic collection and analysis of existing documents and reports" (p.126).

hypotheses related to policy learning. Policy learning occurs as result of or directly causes policy change, based on their meta-analysis. Learning is important in the ACF, albeit very difficult to measure (Eberg, 1997). In terms of methodology of complementarity (Arbnor and Bjerke, 2009), policy learning scholars stress analytical view as the methodological ideal of the ACF. However, most ACF studies are much closer to systems view. Some ACF studies also rely on the actors view.[70]

4.1.4. Explanation of the methodological framework used in this research

Consistent with Stebbins (2001) and Glaser and Strauss (1967), this research can be defined as exploratory. This research utilizes multiple methodological views (Arbnor and Bjerke, 2009) and methods to address different dimensions of movement knowledge and its links to public administration. To capitalize on the insights of the three different lenses on citizens' knowledge – knowledge production in NSMs, communities of practice and policy learning – I borrow their methodological views and methods. In particular, I use the actors and systems views to address research questions 1-4 and the analytical view to address the research question 5.

I use the nested case study approach or multiple-case embedded design (Yin, 2003) as my main methodological operative procedure (Arbnor and Bjerke, 2009). Table 2 illustrates three levels of analysis and specific methods utilized at each level to address research questions 1-4. Each case represents one NSM.

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[70] For example, the OCS leasing case by Jenkins-Smith and St.Clair (1993) finds that policy learning occurred as a policy broker, Secretary of the Interior Cecil Andrus, changed his opinion on the risks posed by drilling

Table 2. Explanation of the multiple-case embedded design

	Perspective	**Methodological view**	**Methods**	**Research questions targeted**
Level 1	National	Systems/actors	Analysis of secondary historical sources	1 – 2
Level 2	City network	Systems/ actors	Analysis of primary historical sources, interviews, participant observation	3
Level 3	Individual	Actors	Interviews	4

Analysis level 1 addresses a *national* social movement. I use historical and socio-cultural methods of the cognitive praxis to address the question how movement knowledge changes over time, and how public administrators and policy-makers interact with the movement in relation to movement knowledge at different movement phases (Research questions 1-2). Secondary historical sources will be used, such as the works of other authors on a selected social movement, as well as other documents. Analysis level 1 delineates a broad knowledge context. Analysis level 2 describes the fine mechanics of knowledge production in social movements by focusing on one social movement community in a selected city. At this level, those public administrators involved in the movement community are identified as part of the analysis. The question how movement communities mediate the transfer of movement knowledge to public organizations (Research question 3) is addressed at Level 2. I rely on primary historical sources, and multiple interviews to triangulate the data about the same historical events. Next, Analysis Level 3 looks at social movement individuals in a selected movement community. It further informs the answers to research question 4 on the effects of knowledge transfer to public organizations, based on the opinions of those public administrators connected to movement communities. I use

semi-structured and life-history interviews with key movement community actors as well as participant observation methods at Level 3. Finally, the comparison of three cases of different social movements informs the research question 5, how the links between movement knowledge and public organizations are different or similar in different social movements.

4.2. Case selection rationale

The case selection rationale addresses two interrelated issues: the theoretical choice of movement knowledge as a particular case of social knowledge and the empirical choice of specific social movement(s). First, the choice of the case of movement knowledge as representative of social knowledge has been made as a result of the synthesis of the three distinctive literatures in Chapters 2-3. The question of the relationship between movement knowledge and social knowledge has not been addressed yet because of the lack of comprehensive frameworks addressing the entire universe of social knowledge (at least within the three literatures). While the cognitive praxis framework is the most comprehensive frameworks among the three analyzed literatures, its empirical base is primarily associated with the environmental movement. Because the environmental movement has addressed just one fundamental human relationship, that of nature-culture, the cognitive praxis has narrowed down its base of social knowledge to the knowledge about technologies in relation to nature. It is obvious that other fundamental relationships exist and interweave, such as body-mind, self-other, which entail their own bases of social knowledge. It is also obvious that the attempt to delineate the entire universe of these diverse kinds of social knowledge might be scholarly attractive but ultimately useless from the point of view of social knowledge. Social knowledge viewed as *potentiality* simply escapes systematization. However, as Lindblom (1990), cognitive praxis, and civic innovations authors

claim, the value of social knowledge consists in its ability to solve social problems and produce social change and only secondarily to produce scientific theory. According to this logic, the role of the social scientist involves engaging and supporting the emerging social knowledge that has the greatest social value. The ensuing diversity of scholarly perspectives on which social knowledge is more useful prevents the "impairment" of social intelligence, which Lindblom (1990) identifies as the major problem of social science.

Second, the choice of a specific social movement is directly related to how social scientists should deal with the variety of social knowledge. Specifically, the social scientist should select those social movements that potentially generate socially useful knowledge. For example, Eyerman and Jamison (1991) argue that one should focus on "'significant' movements which redefine the history" (p.56). They mention three contemporary societal tensions: (1) between man and nature; (2) between sexes; and (3) between "slaves" and "masters" (Eyerman and Jamison, 1991). The environmental movement is significant because it has produced social knowledge related to at least one fundamental tension.

At the same time as the inquiry into social knowledge should protect the diverse base of social knowledge, it is subject to the danger of relativism and subjective judgment. While it might not be feasible to construct the universe of social knowledge, it is possible and desirable to have a "map" of social movements. Indeed, if research resources are limited and the researcher has to make choices about which movements to study then one has to make informed decisions about the value of different movements, according to the logic of significance. Ideally, we need to have a map of all new social movements to justify our choices. Unfortunately, constructing such a

map is beyond the scope of this research and the author is not aware of other scholars' attempts to produce such a map, including the scholars of new social movements. Given that the central subject of this research is social knowledge, it is thus appropriate to be open to diverse social movements as empirical sites of social knowledge. Most importantly, once any social movement is selected the findings obtained should be subject to critical reflection: does the nature of social knowledge (in addition to movement contexts) shape the answers to the research questions? The ultimate solution to this problem is having a great variety of empirical cases each addressing a different kind of social knowledge – not just movement knowledge. This can only be achieved as a result of the collective effort of many social scientists.

4.3. Case description

In this dissertation, knowledge production is examined in three NSMs: the sustainable community movement (SCM), the open-source movement (OSM), and the natural childbirth movement (NCBM), in three cities – Seattle, WA., New York, NY, and Dnepropetrovsk, Ukraine, respectively. Each movement represents an example of a new social movement that has produced useful social knowledge. The lens of new social movement is appropriate because the three movements involve strong identity processes and knowledge production. For example, the natural child birth movement is identified as a knowledge-based new social movement because movement mobilization and dynamics have been driven by identity and knowledge processes, which did not involve traditional movement tactics. All three movements are relatively institutionalized and their respective movement knowledge has been incorporated by societal institutions. This has allowed for a better understanding of the full cycle of knowledge production but has left out those movements in their early phases of knowledge production.

Finally, those movement communities have been selected at the analysis level 2, where the interactions between the community and public organizations have been documented as successful, based on the opinions of some movement leaders and administrators.

Each of the three movements has been significant in terms of the social knowledge they have produced. The sustainable community movement has been significant for public administration scholars as an example of bottom-up civic innovation (Portney, 2005; Epstein et al., 2006), an important empirical foundation of collaborative governance (Durant, O'Leary and Fiorino, 2004), and as the most recent development in environmental policy making and implementation (Mazmanian and Kraft, 1999). For public administration scholars, the SCM thus represents an empirical site to develop and test new theories of collaboration that involve both state and non-state actors. On the other hand, the authors of the cognitive praxis approach (Jamison et al., 1990; Eyerman and Jamison 1991; Jamison, 2001) assume a movement perspective on the SCM. The SCM case brings together state and movement perspectives on the same case of social knowledge. In particular, it highlights the conceptual and empirical links between movement knowledge, expert knowledge, and administrative knowledge (Figure 2).

The open source movement has redefined the fundamental relationship of ownership over the products of intellectual work. During the last five years the term "open source" has become a buzz word in business and government. In particular, President Obama's open government agenda has been driven by open source rhetoric and ideas. The natural childbirth movement in the former Soviet counties has been internationally less visible. At the same time it has been significant given the difficult post-Soviet social and economic realities. First, the movement has

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been an oasis of civic engagement in the countries that might be otherwise described as civil

society desert. Second, it has had an economic impact by creating a new market sector of

perinatal education, which helped many women to move into middle class.

Another criterion of movement selection has been my personal experience with a movement.

According to Stebbins (2001), the firsthand understanding of the object of study constitutes the

main prerequisite of any exploratory research. The importance of the author's prior involvement

with the movement analyzed has been similarly stressed by the authors of cognitive praxis. On

many occasions, they draw on their own involvement in the environment movement in their

discussion of knowledge production by NSMs. For example, the introduction to the book by

Andrew Jamison represents an autobiographic narrative about his life-long experience with the

environmental movement (Jamison, 2001). In terms of my involvement with each of the three

NSMs I have selected, it has been low in the SCM, medium in the FOSSM, and high in the

NCBM.[71] Therefore, each movement selected can be seen as a low hanging fruit as it was

convenient for me to select it. On the other hand, this might reflect the workings of social

knowledge that finds the researcher at the same time as the research finds the social knowledge.

Mystical as it might appear, this second situation is more in tune with the model of social inquiry

that Lindblom (1990) articulates.

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[71] I have participated intensively in the NCBM in Ukraine. I and my wife Alexandra have been involved as participants and then activists in the Club of Parental Culture of Dnepropetrovsk, by far the most influential informal group of people representing the movement in the city, from 1996 until we left for the U.S. in 2001 and then again in 2007-2009 when we reconnected with the Club. My wife represented the Club at the City Youth Council and I maintained a liaison with international groups interested in the Club and its large network, in 1998-2000. My involvement with the open-source movement has been less intense. I discovered the movement in 2006. The revolution in social media and new models of collaboration articulated by FOSSM leaders had stimulated my research interests. To understand the movement from inside, I switched to open source software (including the operational system on my laptop), developed personal connections to several advocates of open source, and also participated in two projects that might be described as open source. Finally, my involvement with the SCM has been limited. Even though I selected the case of Seattle to examine the link between civic engagement and government performance (my initial research focus) as early as in 2005, I did not personally participate in the movement.

Methodologically speaking, researcher's personal involvement with the object of study can be a double sword. On the one hand, it informs the research by providing otherwise unavailable data. On the other hand, it might create strong biases when answering research questions. This research is susceptible to such biases. I admit that I am sympathetic to the values promoted by the movements even oftentimes I am critical to specific beliefs and practices in each of the movements. Also, I admit that my personal beliefs might affect my inquiry. However, the benefits of my movement experience considerably outweigh its disadvantages. Most importantly, my experience with the movements helped check my theoretical biases of a public administration scholar. As a result of what I had learned about social movements, I was able to sharpen my inquiry as exploratory and grounded rather than explanatory and relying on available public administration theories. In fact, my experience challenged all my initial theories and I had to dispose of them one by one until I found such theories that were grounded (Glaser and Strauss, 1967) in movement experience. At times, I felt that these new theories were taking me too far from what I learned in my public administration doctoral program. In retrospective, linking movement knowledge and public administration has often put me into intellectual vacuum, which often turned out productive as I had to start over and over again both in my search of new theories and new interpretations of facts.

4.4. Data description

I collected the data on two cases, the FOSSM and the NCBM, and used academic research by other scholars to examine the SCM case. The sustainable community movement case illustrates the links between movement knowledge, expert knowledge and organizational knowledge, on the one hand, and social learning, policy learning and administrative learning, on the other hand, in

one movement. It thus "tests" the conceptual map described in Chapter III. In addition, I contrast the cognitive practice perspective on the environmental movement to the traditional public administration discourse on the environmental policies. Therefore, the SCM case combines empirical and conceptual analyses to inform a better application of the conceptual map to other two cases. The FOSSM and the NCBM cases follow the same scheme of analysis but represent empirical analyses primarily.

4.4.1. The sustainable community movement

The SCM in the U.S represents a part of a bigger environmental movement. To examine the links between movement knowledge and public organizations in the SCM, I relied extensively on the cognitive praxis literature. Eyerman and Jamison (1991) built their theory of knowledge production based on the experience of the environmental movement. The SCM has been historically embedded within the environmental movement and represents its late development, according to Jamison (2001). Therefore, in my analysis of the cognitive praxis of the SCM (Analysis level 1) I used both the data and interpretations of the authors of cognitive praxis, which set a model for the other cases. In my analysis of an SCM community in Seattle, WA, I rely on the empirical research by Holden (2004; 2006) who studied social learning triggered by a sustainability indicator project and used similar qualitative methodology. Therefore, the SCM case is primarily used to test the theoretical framework. I collected less empirical data for this case than for other cases. Rather the available data and previous studies have been applied to the new question of the relationship between social knowledge and public administration.

4.4.2. The free and open source software movement

The data on the FOSSM include: (1) secondary historical documents; (2) on-line public materials; (3) semi-structured interviews with FOSSM activists in New York City and several public officials; and (4) participant observation.

- *Historical documents* include secondary sources on the free software and open source movements, and academic publications

- *On-line* public materials such as individual and organization web-sites as well as on-line discussions of issues related to the FOSSM have been readily available due to the Internet-based nature of the FOSSM

- *Interviews* include fourteen unstructured and semi-structured interviews with FOSSM activists and public officials in 2009-2011 (see Appendix A).

- *Participant observation* of several FOSSM events including a Participation Camp unconference at New York University on June 15, 2009, a monthly meeting of 2600 hackers in the Citygroup Center lobby on January 7, 2011; a Transportation Camp uncoference at New York Law School on March 5-6, 2011. In addition, several video records of the meetings of NYC open source activists have been available on-line.

4.4.3. The natural childbirth movement

The data for the NCBM case include several sources: (1) historical documents; (2) semi-structured interviews with NCBM leaders and non-NCBM individuals; (3) participant observation; (4) my personal experience as an NCBM advocate in Dnepropetrovsk, Ukraine and (5) on-line public materials.

- *Historical documents* include secondary sources such as books produced by the NCBM,

publications about the NCBM, newspapers, and documentaries.

- *Interviews* include twenty five semi-structured interviews with NCBM leaders and maternity care administrators and physicians in Moscow (Russia), Dnepropetrovsk, and Odessa (see Appendix B).

- *Participant observation* of perinatal education training took place at Vozrozhdenie perinatal center in Moscow on June 11, 2008, at The Club of Parental Culture on February 01, 2008 in Dnepropetrovsk, and at the Stork perinatal education center on February 12, 2008 in Dnepropetrovsk. Besides, I attended a city conference on innovations in maternity care and perinatal education training in Odessa, Ukraine, on June 24-25, 2008.

- *Personal experience* includes my experience with two full perinatal education training (3 months) at the Club of Parental Culture in Dnepropetrovsk in 1997 and 1998 as well as my involvement as a club activist in 1998-2000. Finally, I attended full training (3 months) at Alye Parusa early child development perinatal center in Dnepropetrovsk in 2008.

- *On-line* materials including individual and organization web-sites as well as on-line forum discussions related to maternity care.

4.5. Case structure

Chapters V-VII present the cases of the SCM, the FOSSM, and the NCBM, respectively. First, each case starts with the big picture of each movement's cognitive praxis and how it developed over time (Analysis level 1; research questions 1-2). The chronology of each movement is divided into four phases – movement emergence, movement-building, movement specialization,

and movement institutionalization. Movement overview subsections further address movement values and practices, organizational forms, as well as the relationship between each movement and public organizations and policy-making groups at each movement phase at the national level.

Second, the next section of each chapter presents one movement community (Analysis level 2, research question 3). It provides an overview of community chronology, identifies key actors, and then examines the interactions between the community and local public administrators, including those administrators involved as community members.

Third, the final chapter sections address the opinions of public administrators and movement actors about the effects of movement knowledge on public organizations (Analysis level 3; research question 4). The discussion focuses on those public administrators involved in movement communities and also those having a history of interactions with the movement community.

CHAPTER FIVE. THE CASE OF THE SUSTAINABLE COMMUNITY MOVEMENT

This chapter links knowledge in the sustainable community movement (SCM) and public policy

and organizations. The SCM has been historically embedded within the environmental

movement (EM). It represents one particular form of institutionalization of the EM in the 1990s,

according to the authors of the cognitive praxis approach (Jamison, 2001; Jamison, 2008).

Section 5.1 of this chapter summarizes the history of the U.S. environmental movement and its

four phases identified by Jamison (2001). Next, the role of the EM principles and ideas in the

sustainable community movement is discussed. Section 8.2 looks at one particular SCM

community in Seattle, WA. It focuses on the case of Sustainable Seattle (S2), a SCM non-profit

organization that received international recognition for its efforts in developing sustainability

indicators. In particular, I will analyze interactions between S2 and Seattle city government in

relation to sustainability indicators. Section 8.3 examines the effect of sustainability indicators on

social and policy learning in Seattle, based on the opinions of S2 leaders and public and policy

officials. Next, it summarizes the conceptual insights about the effects of environmental

movement knowledge on public administration, based on the S2 case.

5.1. Overview of the cognitive praxis of the environmental movement

5.1.1. The history of the environmental movement

The history of the environmental movement can be broadly divided into four phases: emergence

(pre-1960s), movement-building (1970s), movement specialization (1980s), and movement

institutionalization (since 1990s).[72] Each phase is associated with a major shift in the cognitive

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[72] This periodization of the environmental movement synthesizes three periodization attempts by Jamison et al. (1990), Jamison (2001), and Jamison (2008). I primarily use the most recent periodization by Jamison (2008). To specify his "normalization" phase (1970-80s), I further divide it into movement-building (1970s) and movement specialization (1980s) phases, which is consistent with the earlier periodization by Jamison et al. (1990) and Jamison

praxis of the environmental movement. Because changes in the cognitive praxis happen

incrementally and gradually, the temporal boundaries of each phase are porous and largely

depend on authors' different interpretations of the importance of specific movement events. The

sustainable community movement is associated with the late phase of the environmental

movement, according to Jamison (2001).

Movement emergence, pre-1960s

During its emergence phase, the environmental movement creatively mobilized and recombined

several cultural and political traditions that had existed before the 1960s (Jamison, 2001).

Worster (1977) identifies two broad historical streams of thought, "imperialist" and "arcadian,"

that formed the ideological continuum of the environmental discourse about the relationships

between humans and nature in the U.S. in the 1960s.[73] Jamison (2001) proposes the intellectual

tradition of "human ecology" as the third ideal-type intermediary. He suggests that the separation

of nature and human society assumed by both imperialists and arcadians was effectively

challenged by social and cultural ecologists, such as Lewis Mumford.[74]

(2001).

[73] Imperialist tradition occupies one side of the continuum. It is associated with Francis Bacon's idea of useful knowledge aimed at conquering nature, Carolus Linnaeus' systematizing efforts, and the modern utilitarian efficiency approach. The rational and instrumental scientific method ideologically favored exploitative 19 century industrial technologies and reinforced the view on nature as a machine created by God for the human benefit. The imperialist science caused a backlash from "arcadians," those scientists who defended a more holistic view on science. In the view of Henry David Thoreau, a leading arcadian, overly narrow theories and classifications prevented scientists from acquiring the wealth of knowledge about the nature. Thoreau believed that more sympathetic, involved, and holistic approach would lead to a better science. Arcadian tradition thus occupies the opposite end of the continuum in the environmental discourse that formed during the first decade of the 20th century. During the 20th century, the environmental movement was equally influenced by the imperialist and arcadian traditions. The Progressive conservationism of the first Chief of the U.S. Forest Service Gifford Pinchot in the early 1900s and the energy-system technological analysis of the World Wildlife Fund in the 1960s represent examples of the influence of the imperialist tradition. The preservationism of the Sierra Club and the ecological alarmism of such writers as Rachel Carson who wrote the book *Silent Spring* (Carson, 1962) embraced the arcadian tradition (Jamison, 2001).

[74] Mumford defined the regional approach to development by describing ecologically-minded urban planning in his several books published in the 1930s. His human ecology method called for a synthesis of natural and social knowledge by focusing on a regional or community level. During the 1960s, human ecology was reinvented to

By the late 1960s, the creative reinvention of the above three intellectual traditions had resulted

in the emergence of a new ecological paradigm, environmentalism. This paradigm opposed the

industrial economic paradigm by articulating a range of new environmental problems such as

industrial pollution and urban sprawl caused by the unhampered quest for techno-economic

development. The previously unproblematic view of science was challenged by the philosophical

critiques of dominant modern technology and the role of professional scientists. Most

importantly, the emerging environmental worldview recognized the need in alternative

approaches to dealing with new ecological issues, a "different way of life and knowledge-

making" (Jamison, 2001; p. 72).

Movement-building, 1969-1979

The new ecological paradigm of environmentalism embraced various approaches to dealing with

environmental problems in the 1970s. These approaches ranged from political to cultural forms

and were shaped by different national contexts (Jamison et al. 1990; Jamison, 2001). In most

developed countries, various political initiatives were forged including green parties and

administrative reforms. The publication of the 1971 OECD report *Science, Growth, and Society*

placed the theme of environmental protection on the political agenda of developed countries. For

example, the United States established its Environmental Protection Agency in 1970 and the

Congressional Office of Technology Assessment in 1972. The environmental issues such as

nuclear energy in Europe and hydroelectric dams in India polarized national political

communities and resulted in new environmental policies (Jamison, 2001).

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embrace Murray Bookchin's political ideas about environmental social justice (Bookchin, 1963), Barry Commoner's examination of the subservient role of science in economic production and society (Commoner, 1966), and Paul Ehrlich's neo-Malthusian analysis of global challenges caused by population growth (Ehrlich, 1968).

Besides its policy influences, the environmental movement produced diverse cultural forms of protest including "songs, performance rituals, 'new age' music, environmental art" (Jamison, 2001; p.72). Some of these expressions evolved into large-scale "historical projects," utopian visions that entailed new practices: "environmentalism represented a practical utopia, a not-yet-existent realm of harmonious relations between human and non-human nature" (Ibid). A number of grass-roots environmental initiatives involved the development of alternative agriculture and renewable energy technologies. These technologies came under the name of "intermediary" (Schumacher, 1973) or "appropriate" technologies.[75]

The consolidation of the environmental movement became the main outcome of environmentalism in the late 1970s. The movement was able to combine different ecological traditions "into an integrative cognitive praxis" (Jamison, 2001, p.89). A new visionary ecological philosophy emerged that united otherwise very diverse environmental initiatives.[76] Most importantly, movement coherence was achieved as diverse environmental political and cultural initiatives blended into a common "organized learning experience in which theory and practice were combined in pursuit of a common collective struggle" (Ibid). Creative forms of protest such as alternative technologies of counter-culture communities coexisted with more political ones such as locally based environmental social justice opposition. At the same time as

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[75] Intermediary technologies creatively combined modern and traditional techniques and stressed small-scale production ("small is beautiful") and self-imposed limits on consumption. Appropriate technology enthusiasts organized public spaces and communes to explore and experiment with ecological engineering in the U.S. (Jamison, 2001). Kirk (2007) traces the origins of such common technologies as solar power, windmills, recycling and composting, to spiritually and technologically minded counter-culture communities of the 1970s.

[76] The Earth Day first held in the U.S. on April 22nd, 1970 reflected the popular support of the new environmental awareness and further strengthened the ideological unity of the movement. The pictures of Earth taken from the outer space graphically symbolized the fragility of the planet for Earth Day activists. They also symbolized the sense of unity within the environmental movement that was needed to address urgent environmental problems.

the environmental movement became united and coherent for a short decade in the 1970s, its

diverse social base became the source of movement differentiation during the 1980s.

Movement specialization, the 1980s

The fragmentation of the environmental movement became a corollary of the institutionalization

of the environmental cognitive praxis. What was a relatively coherent social movement in the

1970s, divided into a number of specialized niches in the 1980s. Professional environmental

organizations including university research institutes, non-governmental organizations and

government agencies started investing their resources and expertise into solving environmental

and energy issues. The process of professionalization was particularly strong in the U.S. as

environmentalism split up into various issue-specific environmental groups as early as in the

1970s (Jamison, 2001).

The neo-liberal ideology with its emphasis on deregulation, shifting the responsibility over

environmental policy decision-making to corporations, and strategic partnerships between

industries and universities reinforced the professionalization of the environmental knowledge in

OECD countries. It also justified the commercialization of environmentalism as policy measures

such as pollution control became profitable for major corporations (Jamison, 2001). In his

comparative analysis of environmentalism in Sweden, Denmark and the United States, Jamison

(2001) points out that the commercialization of environmentalism was the most intense in the

U.S. The Reagan administration's opposition to most of the prior federal environmental policies

as well as the powerful conservative anti-environmental movement greatly increased the need in

collaborative approaches between the government and the private sector. This strengthened those

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environmental groups that focused on collaboration with businesses.

The emergence of non-profit think-tanks contributed to the further movement professionalization. Organizations such as World Resources Institute and the Worldwatch Institute combined environmental research with journalism. By reaching out to the broader society through media they were able to successfully channel environmental knowledge towards specific policy agenda issues. Greenpeace exemplified another type of activist professional environmental organizations that used innovative communication technologies to implement radical political strategies. Green parties represented yet another type of organizations that, unlike Greenpeace, preferred to work within established political systems by cooperating with traditional political parties. In the United States, the impact of green parties has not been significant compared to European countries, such as Germany. On the other hand, environmental non-governmental think-tanks came to occupy a very active role in shaping environmental policies in the U.S. (Jamison, 2001).

As a result of movement institutionalization and its narrowing down to topic-specific knowledge, the environmental cognitive praxis became fragmented in the 1980s. The public space created by environmentalism one decade before had shrunk. Voluntary environmental groups had fewer opportunities to pursue collective struggle by developing alternative practices and technologies as their once common knowledge pool had decreased (Jamison, 2001).

Movement institutionalization, since the 1990s
The global sustainability discourse somewhat offset the centrifugal forces of fragmentation

within the environmental movement that jeopardized its remaining coherence as a movement, during the 1990s. The World Commission on Environment and Development (WCED) convened by the United nations in 1983 and the subsequent publication of its 1987 *Brundtland Report* internationalized the environmental agenda and opened doors to new stakeholders such as developing countries. As a result, it broadened the environmental framework to embrace different technical, political, and social approaches under the umbrella of "sustainable development," an ideology based on the idea that economic growth could be reconciled with environmental concerns. From the environmental movement perspective, sustainable development became "a major effort – or perhaps a last attempt – to combine the different ecological traditions into one overall perspective" (Jamison, 2001; p.94).

The global sustainable development framework integrated different interpretations of environmentalism and helped incorporate different environmental movement groups into the mainstream political and cultural life. Green business and environmental management – the "natural capitalism" (Hawken et al., 1999) – represent an example of the integration of ecology into industrial production. Besides this commercialized environmentalism, other environmental approaches drew from the early movement experience and knowledge by including social justice, local community, and sustainable livelihood groups (Jamison, 2001). Many local sustainable development groups emerged that enacted the slogan "think globally act locally." Consistent with the UN's sustainable development action plan Agenda 21, most European countries embraced public participation and bottom-up initiatives as part of their environmental policy implementation principles. In the United States, new approaches to environmental governance (Durant, Fiorino, and O'Leary, 2004) merged environmental policies with the

discourse of "civic environmentalism" (DeWitt, 2004). The recent "sustainable community"

movement has been recognized as an important theme in public administration (Portney, 2005).

Therefore, the intensification and deepening of state-society interactions around environmental

issues indicated that the environmental movement values and practices had been incorporated by

the mainstream society by the late 1990s.

5.1.2. Environmental worldview and practices

The original environmental worldview

The environmental movement is based on the philosophy of interconnectedness of nature and

humanity. Most historians of the environmental movement agree that this idea constitutes the

movement's ideological foundation. According to Dowie (1995), the term "environment" refers

to "all-inclusive category comprised of both human and natural habitats" (p.1). Jamison (2001)

proposes to think about the environmental idea as "human ecology" or the synthesis of the

natural and the social. Both Dowie and Jamison view environmental philosophy in contrast to

conservationist and preservationist philosophies – the progenitors of modern environmentalism.

The radical idea that environmental challenges could only be dealt by placing both nature and

society within the same framework challenged both conservationist and preservationist

approaches.[77] As a result of the new environmental thinking, new interdisciplinary approaches

emerged that connected biology, society, and economics. Such new disciplines as environmental

sociology, ecological economics, and environmental management owe to the holistic

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[77] The latter two viewed nature as a passive domain that had to be either managed more efficiently or protected. In contrast, the holistic environmental worldview brought together humans and nature as equally active agents of the same entity, by creating a "collective vision of solidarity with non-human nature – "partnership ethics' " (Merchant, 1999, cited in Jamison, 2001; p.125).

environmental philosophy of the 1960s, according to Jamison (2001).[78]

Therefore, the environmental worldview brought forward the interconnectedness between humans and nature as its overarching value. It created new ethical, cognitive, and organizational places to address different kinds of human-nature interactions. Three ecology traditions recombined by the environmental movement – managerialist systemic, arcadian, and human ecology – represent respectively "the systemic, the experiential, and the pragmatic" components of the environmental cognitive praxis (Jamison, 2001; p.130). These traditions ensured movement unity at its movement-building phase. However, as movement evolved this short-term unity broke in the 1980s, the traditions diverged and each tradition was further fragmented internally.

From human ecology to green business and sustainable development

The commercialization of environmentalism or "green business" represented the major trend in environmentalism during the 1980s, according to Jamison (2001). A wide range of "green businesses" developed that had not existed in the 1970s. These businesses capitalized on the

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[78] The new environmental worldview did not replace the earlier conservationist and preservationist or "imperialist" and "arcadian" traditions (Worster, 1977). Rather it transformed and embraced them in their new forms. According to Jamison (2001), the cognitive praxis of the environmental movement formed around human ecology but also included a creative recombination of imperialist and arcadian traditions. The imperialist tradition was strengthened by energy systems analysis that applied the advancements in cybernetics to economic predictions of the relationships between socio-economic development and natural resource use. The *Limits to Growth* report to the Club of Rome of 1972 represents an example of new systemic imperialist thinking. The arcadian tradition found its place within the environmental movement by defining the principles of participatory community-based ecology. *A Blueprint for Survival,* a program for small, decentralized, and de-industrialized ecological communities that was published by *Ecologist* journal in 1972, set a goal of creating alternative social arrangements where "man will learn to live with the rest of Nature rather than against it" (Goldsmith et al., 1972). Human ecologists synthesized the other two traditions by focusing on creating alternative or appropriate technologies (Kirk, 2007). Alternative technologies represented "the polar opposite of the large-scale, non-renewable, environmentally destructive technologies that the environmental movement had emerged to oppose" (Jamison, 2001; p.130). Kirk (2007) discusses experiments of environmentally-minded counter culture communities with new technologies such as wind and solar energy, septic tanks, and ecological design in the early 1970s.

advances in alternative technologies (Kirk, 2007) which created new market niches such as solar

and wind power, ecological design and planning, waste recycling, and organic food in the 1980s.

In addition, the parallel shift towards market-based approaches in environmental policy in the

U.S. (Mazmanian and Kraft, 1999) stimulated the growth of environmental consulting and

environmental assessment firms, which were often founded by former movement activists

(Jamison, 2001). The case of the Greening of Industry Network[79] described by Jamison (2001)

suggests that sustainable development represents a compromise between mainstream economic

values and the original environmental values articulated by movement leaders in the early 1970s.

Jamison believes that green business is not sufficient to solve environmental challenges, from the

environmental movement perspective.[80]

Therefore, the dilemma of environmental activism consists in the marginalization of the original

environmental culture after the environmental awareness had diffused into the wider society in

the late 1980s. On the one hand, the mainstreaming of environmentalism can be considered a

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[79] Jamison (2001) describes the case of the Greening of Industry Network (GIN), an international network of experts in sustainable technology development, as an illustration of the replacement of movement spaces and groups by more institutionalized and profit-oriented organizations. He focuses on the transformation in GIN's cognitive praxis by analyzing specific learning processes in the network with the goal of evaluating "the potential, as well as the limitations, of ecological modernization and of green business generally" (p.128). GIN started as a "technological nexus" and a learning space for academics, environmental consultants, policy experts, and businesses in 1989. Its main goal was integration of environmental and economic concerns by creating a dialogue on sustainable business practices and behaviors. According to Jamison's analysis, the network shifted its initial identity associated with the development of sustainable technologies to the focus on efficiency and business management in 1998. In particular, the science and technology academics represented half of conference participants in 1989, while most participants were from management schools in 1998. Most importantly, the initial network's concern with social assessment of technology became marginal and the discussion shifted to sustainability at the marketplace. Also, GIN's organizational praxis changed from an open participatory movement space for sharing new ideas and catalyzing new initiatives to a more formal and specialized business-like network. Summarizing the evolution of GIN's, Jamison concludes that it represents a case of "closing of autonomous [movement] space" within the broader context of "managerial 'reductionism'" (p.140). In terms of knowledge production, "the transition from movement to network has led to a shift from collective creativity to corporate learning" (p.144).

[80] He asserts as follows: "It is not that the [green] companies are doing nothing, for many are indeed doing a great deal; it is rather that the quest for sustainable development is being reduced or limited to those activities that can turn into profit" (p.124). Next, Jamison challenges the myth of economic and technological progress and argues that there is no evidence that environmentalism is "generally good for business" and consumers are ready to pay more for environmentally-friendly products or stop unattainable practices such as urban mobility (p.125).

success of environmentalism, from the pragmatic point of view. It is a success because the society at large adopts environmentalist practices. On the other hand, the dominant sustainability paradigm can be seen as a failure of the environmental movement to realize its original visions and values. Thus, green business represents the "infection" of environmentalism by a deadly "commercial virus" (p.124), from the perspective of critical ecologists.[81]

5.1.3. Organizational praxis of the environmental movement

The organizational praxis of the environmental movement has evolved from loose movement networks in the 1970s to professional formal organizations in the 1990s. Within this large historical trend, two environmental traditions – imperialist and arcadian – favored their own distinctive organizational spaces.[82]

The participatory organizational philosophy of the environmental movement in the early 1970s affected both imperialist and arcadian organizational spaces by changing their organizational status quo and by creating more open structures. Some older imperialist organizations embraced

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[81] Two opposing assessments of the paradigm of sustainable development by environmental activists above represent two cognitive regimes, "dominant" and "residual" (Jamison, 2001). Essentially, these regimes represent opposing intellectual reactions to the mainstreaming of environmentalism. Each regime has its distinctive characteristics and approaches to social action, agency, and preferred forms of knowledge. The dominant cognitive regime favors large-scale and global action, scientific and professional forms of expertise, and the managerial mindset. In contrast, the residual regime stresses local grass-roots action, and experiential and lay knowledge. Jamison proposes a third cognitive regime, the "emerging" one. Emerging cognitive regime builds on the strengths of both dominant and residual regimes but pushes for their transcendence and synthesis. For example, it recognizes the advances made by green business in changing corporate and consumer attitudes towards sustainability. However, it will also recognize that the myth of progress and "natural capitalism" might not be sufficient to accomplish true sustainability. In particular, Jamison argues that the emerging cognitive regime should revive and incorporate the ethos and the creativity of the environmental movement.

[82] The imperialist environmental tradition forged large strong organizations such as the World Wildlife Fund (WWF) that has been promoting conservation ideas since 1961. The World Wildlife Fund was modeled as a formal organization by its founders, which was consistent with traditional organizational forms of conservationism in the U.S. and the new "cybernetic language of ecosystems ecology and energy-systems analysis" (Jamison, 2001; p.80). In contrast, the arcadian tradition favored small participatory spaces to build communities of like-minded individuals. These spaces often reflected local traditions of democratic organizing, such as Danish People's High Schools or Gandhi's village movement in India.

the movement's democratic ethos by adjusting their organizational structure towards more open

forms allowing for a greater experimentation with new ideas. Other imperialist organizations

split and produced more movement-like activist organizations, such as Friend of the Earth

established by David Brown in "a protest against the conservatism" of Sierra Club in 1970

(Jamison, 2001; p.85). On the other hand, the arcadian tradition further validated the movement's

decentralized structure [83] as its legitimate organizational form.

While the decentralized movement structure determined much of the organizational

experimentation in the early 1970s, the formal organizational model became dominant during

movement professionalization and institutionalization during the 1990s. Jamison (2001) defines

the dominant organizational praxis of environmentalism in the 1990s as professional

environmentalism.[84] He views the professionalization and formalization of organizational praxis

as detrimental for environmentalism.[85] As a result of movement specialization and

professionalization, fewer public spaces are available for the ecological culture, according to

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[83] Environmental movement communities of the 1970s were intentionally organized as loose networks by its participants. For example, alternative technology communities challenged the model of traditional bureaucratic organization and experimented with small-scale self-governing forms of ecological design (Kirk, 2007). The *Whole Earth Catolog* became the new organizational space of alternative technology movement. The *Catolog* not just provided advice on self-built homes and other do-it-yourself projects but also helped articulate and made practically relevant such radical ideas as emergence and self-organization (Ibid). For example, a leading counter-culture intellectual Kevin Kelly formulated his principles of self-organization in his book *Out of Control* largely drawing from the experience of the ecological design movement (Kelly, 1994).

[84] Typically, non-governmental professional environmental organizations rely on staff rather than on volunteers, give preference to expert knowledge, such as legal, scientific, administrative, or commercial rather than lay knowledge, and focus on organizational growth and stability as their long-term goals. In other words, a typical environmental organization of the 1990s emulates the classical Weberian business model. In his discussion of the evolution of the Greening of Industry Network (see above), Jamison describes the forces underlying the transformation of a movement network into a more specialized and formal organizational space.

[85] According to Jamison, environmental non-profit organizations lose the broader environmental vision in their organizational race for survival and tight specialization. Green business can neither deliver on long-term sustainability promises in general. Both green business and environmental non-profits lack incentives for collaboration and, thus, do not fail to maintain a coherent environmental ideal that the early environmental movement articulated and sustained for a short-time in the 1970s. Similarly, green experts in academia fail to cooperate in developing a comprehensive program for the production of environmental knowledge. Therefore, professional environmentalism fails to meet the challenge of reestablishing "a sense of coherence in relation to all the increasingly disparate movements, networks, campaigns, and alliances" (Jamison, 2001; p.164).

Jamison (2001). He proposes a different direction for the environmental cognitive praxis that would synthesize lay and expert, informal and formal varieties of environmentalism.[86] The experience of civic environmentalism of the 1990s and the Local Agenda 21 in Europe includes some elements of such a synthesis. In particular, Jamison points at the role that "centrally placed public authorities" and individual "enlightened civil servants" play in the creation of bigger public spaces of renewed environmentalism (p. 172). These public spaces represent hybrid organizational forms that include both formal public organizations and networks of community environmentalists.

Therefore, the cognitive praxis of the environmental movement is based on the environmental worldview that has been realized through a series of transformations. Each transformation highlights specific values, social practices, and organizational forms (Table 3). The sustainable community movement is associated with the most recent transformation of the cognitive praxis during when it has become institutionalized and integrated by the wider society and state institutions.

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[86] Using his typology of cognitive regimes, both dominant and residual regimes produce increasingly too narrow worldviews and carve organizational niches that are too specialized and too fragmented. Dominant cognitive regime associated with the paradigm of sustainable development relies on professional institutionalized forms of expertise that target specific environmental issues while paying little attention to the bigger picture of environmentalism. Residual cognitive regime exemplified by the "militant environmentalism" of anti-globalist organizations or groups such as Earth First! and the Sea Shepard are inspired by a very different spiritual ideology of deep ecology (Merchant, 1999). At the same time they follow the same fragmentation and specialization patterns because environmental protest organizing had been already professionalized and perfected by Greenpeace. Jamison (2001) envisions emergent cognitive regime as a synthesis and transcendence of dominant and residual regimes. Emergent regime would include a public space, a "non-corporate [space] for social learning and cognitive praxis, … a public sphere, … for coming together, for sharing what we know, for discussing freely and critically the challenges that confront us collectively as communities and societies" (p.171).

Table 3. The overview of the cognitive praxis in the environmental movement

	Movement emergence	Movement-building	Movement specialization	Institutionalization
Chronology	Pre-1970	1970s	1980s	1990 – 2000s
Practices	Conservation, preservation, human ecology	Alternative technologies, ecological design, social justice	Green business, social justice	Green business, sustainable communities, social justice, and critical ecology
Values	Modern and traditional (imperialist and arcadian)	Environmental worldview: spiritual, cultural, and social harmony	Professional, economic, and democratic	Sustainable development
Sources of meaning	Intellectual, scientific, and spiritual	Spiritual, scientific, social, and democratic	Scientific, professional, economic, and democratic	Scientific, professional, economic, and democratic
Org. forms	Academic communities, formal conservation organizations	Informal movement communities, formal organizations	Formal organizations: think tanks and advocacy organizations	Collaborative spaces: formal organizations from all sectors

5.1.4. State-movement interactions in the sustainable community movement

Two discourses on state-movement interactions in the environmental movement

The interactions between the environmental movement and the state have been frequent and very intensive in the U.S. The literature addressing specific areas of interaction has been so large that only selected works summarizing general trends in state-movement interactions can be highlighted. At least two bodies of literature can be identified representing state and movement perspectives respectively, which have overlapped and differed at the same time. Thus the book by Mazmanian and Kraft (1999) represents a state perspective. It provides a good summary of the history of environmental policy in the U.S. by distinguishing between three "environmental

epochs."[87] The books by Dowie (1995) and Jamison (2001) represent a movement perspective.

These scholars recognize the influence of environmental policies on the movement dynamics as

important but view movement actors as main change agents in relation to environmentalism

(Dowie, 1995). For example, Jamison (2001) describes the role of alternative technology

movement in creating the movement's cognitive spaces in the 1970s.[88] Overall, public policy and

administration literature (Mazmanian and Kraft, 1999; Portney, 2005; Durant, O'Leary and

Fiorino, 2005) and movement literature (Dowie, 1995; Jamison, 2001) have created their own

environmental discourses. These two discourses share common themes but differ in their

ideologies, problem definitions, and suggested problem solutions.

For example, two big-picture books on environmental policies and movement environmentalism,

Mazmanian and Kraft (1999) and Jamison (2001) use the same decade-based chronology,

identify similar trends, and define collaboration between civil society and public agencies in

pursuit of sustainable development goals as the distinguishing feature of environmentalism in the

1990s. At the same time these authors' views differ in several important respects. First,

Mazmanian and Kraft (1999) maintain a strong state perspective on environmentalism and

neglect the role of environmental worldviews and values.[89] In contrast, Jamison (2001) gives a

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[87] The first epoch is characterized by the focus on regulation for environmental protection and command-and-control top-down policy approaches. The second epoch involved new policy approach that emphasized cost-effectiveness and better sensitivity to social and economic interests of community and business actors. Sustainability paradigm marked the third environmental epoch in the U.S. and has been associated with an "important change in values, public policy, and public and private activity that moves communities and individuals toward realization of the key tenets of ecological integrity…" (Mazmanian and Kraft, 1999; p.18).

[88] It would be incorrect to completely separate these movement spaces from the state. For example, even the counter-culture grassroots alternative technology and ecological design movements depended on the federal government funding for its futuristic projects. Kirk (2007) argues that the dependency on "the guardian model of federal funding" and the American political cycle weakened these movements as Reagan Administration cut its funding of environmental programs (p.216).

[89] The periodization of environmentalism by Mazmanian and Kraft (1999) generally assumes that "each epoch builds on that which preceded it" and that "the epoch approach attempts to … show the link between past and present (p.8). The authors also acknowledge that environmentalism emerged as "a social and political movement" in

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detailed account of the ideological origins of the environmental movement in the 1970s but does not address the role of the state as an active agent of environmentalism.

Second, the books give very different normative assessments of the trajectory of sustainable development.[90] Sustainable development represents a pragmatic reduction of the original environmental vision, according to Jamison (2001). In contrast, Mazmanian and Kraft (1999) understand sustainable development as the most integrative environmental approach. Third, Mazmanian and Kraft (1999) explain the major transformations in environmentalism as driven by policy failure and policy learning while Jamison (2001) explains them as a result of internal movement dynamics. Fourth, Mazmanian and Kraft (1999) view sustainability as a policy and a management problem that has to be solved by policy and administration experts primarily. In contrast, Jamison (2001) approaches sustainability as yet another mobilization framework and an opportunity to rebuild the initial ideological coherence of the environmental movement. Last and most importantly, Mazmanian and Kraft (1999) locate environmental knowledge within the environmental policy institutions and assume a paternalistic and top-down policy approach to grassroots civic environmentalism. In contrast, Jamison (2001) defines environmental knowledge as primarily concentrated in the movement. His model of knowledge production suggests the need to better integrate movement knowledge into the society. The idea that environmental

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the early 1970s. However, their discussion of the first environmental epoch focuses entirely on state actions (i.e. regulation) rather than on what movement actors had done. On several occasions, Mazmanian and Kraft (1999) speak about their three environmental epochs of policy-making as exhausting the description of the entire environmental movement. For example, they state: "This book seeks to present the map of each epoch and to explore how useful the mapping framework is in illuminating the unfolding of *the environmental movement* [Italics added - VP]" (p.9).

[90] Mazmanian and Kraft (1999) start their book by listing specific areas of progress in environmental policy, such as the progress in water, air, and land pollution, and then continue to address longer-term and broader issues such as sustainability. Essentially, they understand sustainability as an analytical category that has to be defined in reference to specific elements of which it is comprised. These elements or building blocks include specific policy areas. On the other hand, Jamison (2001) starts by providing a big holistic picture of environmentalism and its values and then defines sustainability in relation to that bigger picture.

knowledge can be reduced to policy issues and appropriated to policy experts would appear

misguided to him.

Making sense of state-movement interactions in the SCM

Two discourses in environmentalism suggest different understanding of the sustainable

community movement. Empirically, sustainable community movement has been very diverse as

it encompasses very different groups and initiatives ranging from recycling to sustainability

school education to community-driven indicators of sustainable development (Lachman, 1997).

Kesler and O'Connor (2001) frame these initiatives as an "American communities movement."[91]

Conceptually, the movement has been difficult to define as it lacks clear boundaries, does not

have an organizational center, and has not articulated its common movement purposes.[92] Two

discourses described earlier provide different state and movement perspectives, which should be

synthesized to better address this movement complexity.

In fact, both discourses suggest a need in such a synthesis. From the point of view of most

environmental policy scholars, sustainable community movement has already been shaped by

environmental policies. New environmental governance frameworks similarly reiterate the need

in "second-generation" collaborative results-based approaches (Durant, Fiorino, and O'Leary,

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[91] Kesler and O'Connor (2001) include Healthy Communities, Sustainable Communities, Community Building, Civic Democracy, Livable Communities, Safe Communities, and Smart Growth in their sample of U.S. community movements that had been most "influential over the past decade" (p.295).

[92] RAND researcher Beth Lachman agrees that the movement exists, in fact: "There is a sustainable community "movement" in the sense that hundreds of communities across the United States have found that piecemeal approaches to community issues have not been adequate for solving their problems. This realization has led many communities to embrace some version of the "sustainable community" approach to deal with their most pressing problems" (p.viii). At the same time, she notes that the movement exists in "a diffuse and uncoordinated form," each community uses its own definition of sustainability, and "many of the communities involved in sustainability activities are unaware of what other communities are doing along the same lines" (p.2).

2004).[93] These new approaches should incorporate movement discourse to inform actual

collaborative arrangements to a greater extent than most public administration and policy

scholars have allowed in the past.[94] In particular, understanding how environmental movement

knowledge is connected to policy and governance requires looking beyond traditional policy

areas.

From the movement perspective, the American civic environmentalism (DeWitt, 2004)

represents a particular development of the environmental movement of the 1990s associated with

the mainstreaming of environmental values and practices, on the one hand, and a parallel

reinterpretation of original movement values by a new generation of environmental activists, on

the other hand (Jamison, 2001). The sustainable community movement blends the grassroots

environmental initiatives typical for the early stage of environmentalism of the 1970s, green

business advancements of the 1980s, and the late institutionalized environmentalism of the

1990s. Many older-generation movement activists consider recent collaborative environmental

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[93] They include "reconnecting" with environmental and natural resources (ENR) stakeholders in order to build a "results-based sense of common purpose" and "coproduce consensus-based solutions" (Durant, O'Leary, and Fiorino, 2004; p.15). Meadowcroft (2004) examines the implications of deliberative democracy for environmental decision-making by focusing on the "meso" level of "interactions at the interface between state and society, … where state and society overlap and interpenetrate" (p.188). These interactions can be successful if deliberative group-based mechanisms exist and they match with contexts. According to DeWitt (2004), "civic environmentalism" or "the process of custom designing answers to local environmental problems" (p.219) represents a "bottom-up response to bureaucratic failure or gridlock, rather than an agency-led response" (p.221). He argues that civic environmentalism should be taken into policy consideration as a supplement for regulation.

[94] For example, Portney (2005) addresses the role of civic engagement efforts in sustainability initiatives at the city level and expresses his broader views on the movement. He believes that many sustainability initiatives are bottom-up and grassroots. At the same time he links the emergence of the sustainable communities to advances in governance: "the idea of sustainable communities is born out of an understanding of the importance of individual human behavior and the local governance context in which that behavior takes place" (p.580). Essentially, Portney reduces the intellectual basis of the movement to the failure of command-and-control federal regulation and the consequent shift in the thinking of policy experts. According to him, "[t]he concept of sustainable communities was originally derived in an attempt to account for a large number and variety of environmental and interpersonal impacts of economic growth that are not comfortably accommodated by neoclassical economic theory or practice. Sustainable communities have been thought of as mechanisms that can be used to redress the often negative or deleterious environmental and social effects of adherence to mainstream approaches to economic development" (p.580).

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policies as not comprehensive or effective enough when placed against early movement visions. They also view the collaborative techniques used by experts with suspicion.[95]

Jamison and Wynne (1998) further contrast two kinds of public participation in environmental collaborations. The technocratic ecological modernization favors the top-down approach to public participation. In this approach, the public "is given the role of the environmentally-conscious consumer, offered opportunities for ecological employment and the participation of the pocketbook" (p.15). In contrast, bottom-up approaches emanate "from locally-based initiatives, where forms of participation remain open-ended and highly diverse" and involve "experimentation with new forms of sociality and association" in the process of cultural expression typical to the early environmental movement (Ibid). Jamison (2001) argues that top-down and bottom-up approaches (or dominant and residual cognitive regimes) should be synthesized to produce "the 'hybrid' combination of the local and the global," of professional knowledge and local experience (Jamison, 2001; p.180).

Jamison further argues that hybrid knowledge embraces integrated and situated types of knowledge, which require creating cross-institutional sites of collective learning and combining knowledge and action. The "Mode 2" of university-industry knowledge co-production (Gibbons et al., 1994) represents one model of producing such hybrid knowledge. The environmental movement has been an important contributor to Mode 2. The main challenge with hybrid knowledge consists in applying the same holistic worldview, which the environmental movement

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[95] For example, Dowie (1995) notes that ignoring "the hazards of coercive harmony … [brought by] the 'win-win' rhetoric of alternative dispute resolution" might have led to the worsening of the environmental situation overall: "[w]in-win may mean less poison from a specific site, but it still means poison" (p.173).

has been based upon since its inception, to currently highly specialized cultures of environmental knowledge production. The existence of several conflicting cultures of knowledge production – bureaucratic, commercial, academic, and civic – complicates institutional solutions to hybrid knowledge, according to Jamison. Therefore, to utilize the full potential of collaboration, recent collaborative governance approaches in public administration and policy should integrate these different cultures, following Jamison's logic.

Policy learning and the SCM knowledge

The authors of cognitive praxis do not examine specific policy effects of movement knowledge. However, their discussion of movement specialization and movement institutionalization phases suggests that professional movement groups represent important brokers of movement knowledge in relation to public policy. Therefore it is logical to examine the link between movement knowledge and policy learning in ACF studies for the following reason. The ACF literature builds on the idea of peripheral learning (Schon, 1970) and political learning (Heclo, 1974). The ACF theory posits that policy learning by policy elite actors in advocacy coalitions causes policy change in policy subsystems (Sabatier and Jenkins-Smith, 1993, 1999). Policy learning can also occur across policy subsystems as elite actors learn by participating in professional forums. Finally, many ACF studies have focused on environmental policies (Sabatier et al., 2009).

The SCM knowledge integrates normative and substantive components of environmentalism, consistent with the cognitive praxis approach (Eyerman and Jamison, 1991). Sustainability policies similarly involve the combination of both substantive policy area knowledge and

normative knowledge as they depend on the social learning of environmental values by the public (Parson and Clark, 1995). The normative effect of SCM knowledge would thus be of great interest to ACF scholars. The challenge in connecting sustainability knowledge of the movement to public policy consists in the fragmentation of this knowledge that happens before it enters the policy arena. In other words, most often environmental policies are separate from social policies (Wallimann, 2011). Overall, ACF studies focus on narrow sustainability areas but fail to address sustainability as a comprehensive cultural, social, economic, and political framework. However, one ACF study examines how successful forest sustainability efforts in Canada depended on understanding of sustainability as a social problem rather than a scientific problem (Rayner, 1996). In this study those advocacy coalitions who adopted a more comprehensive view of sustainability were able to defeat older coalitions who viewed forest sustainability as sustainable timber production rather than ecosystem management. Also, the case of Sustainable Seattle (Holden, 2004) suggests that President's Council on Sustainable Development, a major advocacy coalition promoting sustainable development in the U.S., relied on Seattle's innovative experience of the SCM in integrating environmental, social, and economic indicators of sustainability.

Organizational learning and the SCM knowledge

The authors of cognitive praxis approach do not explicitly use the theories of organizational learning. However, in their discussions they give many examples of knowledge interactions between local community groups and public administrators. Jamison (2001) points out that public officials have to "socially innovate" to make public participation happen. He refers to the European experience and notes the role of local networks, such as climate action, renewable

energy, organic agriculture, and ecological design networks in successful transportation, urban planning, and local energy planning projects. Environmental consciousness is a precondition for such collaboration. In addition, public spaces of learning must exist, "a public sphere … for coming together, for sharing what we know" (Ibid). Jamison stresses the role of "enlightened civil servants" those bridge-builders able to "facilitate interaction across and among various social divisions and boundaries" (p.172). Social innovation by administrators thus implies skills of facilitation, knowledge sharing, and maintaining a common learning environment, as well as the overall commitment to environmental values.

The research by U.S. scholars on civic innovations (Sirianni and Friedland, 2001, Sirianni, 2009) and public works (Boyte and Kari, 1996) describes similar experiences and stresses similar skills (see Chapter 2). Several studies use the communities of practice theory (Wenger, 1998) to examine the links between "community learning" and "learning community" (Morse; 2004; 2006). Also, Weber and Khademian (2008) argue that administrators should become good knowledge enablers who know how "to integrate disparate forms of knowledge into a workable knowledge" (p.342). These studies suggest that there is a need in better understanding of the mechanics of knowledge exchange between movement groups and public administrators and policy-makers at the local level. The case of Sustainable Seattle presented next illustrates social and policy learning in Seattle.

5.2. The case of social and policy learning in Seattle

5.2.1. The environmental history and environmental community in Seattle

Seattle is a city where environmental history has been woven into the social and political fabric. The historian Matthew Klingle traces the history of Seattle through the lens of the "ethic of space" by making nature an active agent of this history (Klingle, 2007).[96] The ethics of space represent a comprehensive sustainability framework that can be used to construct Seattle's sustainability community.

Seattle has a great variety of environmental organizations, groups, and approaches. No coherent environmental movement with a common organizational core can be identified. However, all these environmental groups pursue the environmental agenda with the aim of creating a better place, a city or a neighborhood. For analytical purposes, these groups can be mapped along four types of types of environmentalism identified by Jamison (2001) – professional, community, militant, and personal.[97] Using this typology, all four types of environmental groups are present

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[96] He discusses how modernization forces transformed the Puget Sound region and also created new environmental and social problems in the 19th century. The urban engineering of the Progressive era "fused manipulation of the physical environment with socially responsible action" (p.87) and somewhat alleviated the environmental ills. Urban planning was used by progressives, such as R.H.Thomson, as a method to create a better city. This often involved the design and construction of urban parks to build more organic relations between the community and nature. Seattle citizens' sense of their connectedness with nature strengthened with the rise of mass consumption culture in the 1920-30s. Bertha Knight Landes, the first Seattle's female mayor, incorporated ecological elements into her vision of Seattle as "the larger home" as early as in the 1930 (Klingle, 2007). The water pollution challenges consolidated environmental mentality of Seattleites in the 1950s. The battle over Lake Washington proved that environmental issues entangled social problems. Several major companies, such as Boing, Bethlehem Steel, and Kenworth Motor Truck, as well as untreated sewage, created severe pollution problems for Lake Washington and its surroundings, where many expensive middle-class homes were located. The Municipality of Metropolitan Seattle (Metro), a new government agency, was established to protect the lake in 1958. It was the result of efforts of "influential middle-class citizens" and their fusing of "the old faith in engineering and reform with a new faith in ecology and environmentalism" (p.205). Lake Washington was saved and the quality of its water improved in mid-1960s. However, this was achieved by diverting all the waste to the Duwamish river, which ultimately caused its death. Because the Duwamish river used to supply Indians with fish, the victory over cleaning Lake Washington meant greater environmental inequality by proving that "environmental citizenship could be an exclusive club" (p.229).

[97] See Chapter Six in Jamison (2001) for a detailed discussion of the four types of environmentalism. Jamison traces the values and approaches of different environmental groups to their specific histories and the evolution of the

in Seattle. The discussion below highlights different versions of environmental cognitive praxis in the city and does not aim at giving a comprehensive view of each group. Also, it focuses on community environmentalism to illustrate the role of bottom-up citizens' knowledge, which is consistent with the research question 3.

The city's *professional* environmentalism, which refers to "mainstream environmental organizations" pursuing rational and purposive approaches (Jamison, 2001; p.157), comprises hundreds of different organizations, groups, and initiatives. A map of environmental organizations created by the Seattle Chamber of Commerce includes about forty private, non-profit and public organizations working on sustainability issues alone (Dream a Sound Future conference, 2010).[98] The Bullitt Foundation and the Brainerd Foundation represent two leading environmental foundations in the region. They work to strengthening the capacity of the region's environmental community.[99] Both Seattle Chamber of Commerce and the Bullet Foundation consider interconnectedness and community-building an important element of sustainability.

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environmental movement at large. This typology is instrumental to his concept of cognitive environmental "regime" that represents a movement intellectual's (Eyerman and Jamison, 1991) attempt to develop a more effective movement strategy. Jamison's discussion of dominant, residual, and emerging regimes suggests how different types of environmentalism should interact in order to more effectively promote the larger vision of the environmental movement.

[98] The scope of their sustainability projects varies from local to global and they address problems both issue-specific and overarching. Seattle Chamber of Commerce developed this map to bring all city sustainability initiatives together (http://www.youtube.com/user/SustainableSeattle#p/a/u/2/ykr_EbGFJmA last accessed June 28, 2011). In fact, the Chamber has been one of Seattle's major environmental actors. It self-identifies as "one of the most environmentally-progressive business organizations on the West Coast" (seattlechamber.com). The Chamber's mission has been "to educate businesses on strategies for economic growth while embracing new clean tech and sustainable practices."

[99] The Brainerd Foundation focuses on conservation projects and provides grants to "nonprofits, communities, and decision-makers to protect [the] region's air, land and water" (the Foundation's web-site). The larger Bullitt Foundation helps directs "the Pacific Northwest toward a sustainable future" (Ibid). The foundation has been a leader in sustainability efforts. Denis Hayes has been the foundation's President since 1992. As a National Coordinator of the first Earth Day in the early 1970s, he is recognized as a founder of the environmental movement in the U.S. His career path from a volunteer campus activist and organizer to a president of a major foundation illustrates the professionalization of the environmental movement and also suggests that national and local environmentalism are closely intertwined as Hays has been simultaneously a local and a national leader (Jackson, 1999).

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Those ICT organizations providing such interconnectedness constitute an important part of the SCM in Seattle.[100] In addition, expert knowledge organizations have a special role in the city's SCM.[101]

Seattle's *community* environmentalism, another type of rational, purposive, and argumentative environmentalism distinguished by its focus on democratic processes and local knowledge (Jamison, 2001; p.151), comprises many small informal organizations and groups such as the group of individuals interested in orchard mason bees (Mullekom, 2010). However, some community organizations have become "celebrities" in the SCM. For example, the organization called Sustainable Seattle (S2) is a SCM's world champion. Founded as a network of city activists inspired by the challenge of sustainability and seeking to initiate a civic movement in the early 1990s, Sustainable Seattle "is held to be the first 'Sustainable Community' organization" (S2 web-site). S2 became renown internationally when the United Nations Centre for Human Settlements gave it the "Excellence in Indicators Best Performance" award for its success in developing indicators of sustainable development (see section below for a detailed discussion). Nationally, the President's Council on Sustainable Development (PCSD), created by President Clinton in 1993, identified Seattle as a model of sustainable development because of

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[100] For example, Groundwire founded by the Bullitt and Brainerd foundations in 1995 defines its motto as "We connect the environmental movement" (groundwire.org). Groundwire does not specialize in environmental services. Instead, it focuses on information and communication technologies by offering "online tools and strategies [that] help groups build relationships that move us closer to a sustainable, renewable, vibrant planet" (Ibid). Groundwire Labs, the organization's research and development team, self-identifies as "part of the larger open source technology community." Its members view open source principles as promoting sustainability: "we are innovating for the good of the environmental movement by creating new technology to engage, organize, and mobilize people on behalf of the planet" (Ibid).

[101] Seattle hosts hundreds of organizations dedicated to the production and dissemination of knowledge. For example, Seattle's University of Washington is a global leader in environmental science: "We discover and share knowledge for the sustainability of our planet" (UW web-site). A RAND report identifies University of Washington as an important resource in the sustainable community movement (Lachman, 1997; p.29) as the University provides valuable technical assistance, education, and research to the local community.

the contribution of S2 (PCSD, 1997; p.96). The organization has been a model for environmental grassroots initiatives since then and its experience is still widely referred to (Holden, 2004; Holden, 2006).

Seattle's *militant* environmentalism, or organized environmentalism focused on "practicing environmental morality in public" (Jamison, 2001; p.164), does not emerge as very influential in relation to the city's overall SCM. However, it played a significant role during the World Trade Organization Ministerial Summit in 1999. The "Battle of Seattle" waged by anti-globalization organizations highlighted the differences in the tactics and values of different city's environmental groups. Militant environmental groups, such as Seattle Earth First! and Seattle Anarchist Response were most active supporters of the radical protest.[102] In contrast, several local environmental groups, such as the Coalition on Women, Religion, and Spirituality led by Earth Ministry,[103] opposed WTO but did not engage in radical tactics. [104]

Personal environmentalism, or the "practicing of environmental morality in private" (Jamison, 2001; p.168), has been an important feature of Seattle's everyday life. Most Seattleites are sensitive to the quality-of-life and environmental issues (Artibise et al., 1997). This environmental awareness is strongly grounded in the context of local politics and civic culture. Traditionally, environmental issues shape much of the local politics in the city (Klingle, 2007).[105] The city's civic culture has been characterized by issue-based activism (Gordon et al, 1991).

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[102] For example, Seattle Anarchist Response allied with the Direct Action Network, a national anarchist coalition responsible for riots and violence on city's streets

[103] See the organization's web-site http://earthministry.org/about/mission-history

[104] See the WTO History Project at University of Washington for details about 1999 WTO Summit (http://depts.washington.edu/wtohist/).

[105] For example, Seattle voters supported many expensive environmental projects, such as $350 mln public funding of city parks and community improvement projects, approved in 1968 (McRoberts, 2002, cited in Holden, 2004).

Also, many effective leaders have emerged from bottom-up community initiatives (Artibise et al., 1997). Combined with the history of populist environmental initiatives and strong bottom-up civic culture, personal environmentalism thus provides a resource pool for more purposive professional and civic types of environmentalism, using Jamison's terminology (Jamison, 2001).

Therefore, Seattle's vibrant environmental community comprises all four types of environmentalism identified by Jamison (2001). Seattle's different groups adhere to different environmental values and practices, which can be conceptually integrated under the ideological umbrella of environmentalism (Jamison, 2001) or the ethic of place (Klingle, 2007). The integration of the community also happens in reality as different community organizations stress collaboration to achieve a common vision of a sustainable city. The local government has been an important partner in these collaborative efforts. The initiatives to save salmon, Seattle's environmental symbol, included diverse sets of actors including government, industries, environmental groups, and Indian tribes (Klingle, 2007) exemplify this government's role as a partner. While communication mechanisms serve as community's veins, knowledge is its blood. Consistent with Seattle's image of innovative and environmentally-friendly city, all kinds of knowledge and innovation are praised by the community, be it backyard gardening, green energy, ecological homes, or environmental spirituality. One particular initiative that involved sustainability indicators will be discussed next as an example of the link between Seattle citizens' sustainability knowledge and local policy and administration.

5.2.2. Citizens' knowledge and public policy in Seattle: the case of Sustainable Seattle

The case of Sustainable Seattle (S2) (Holden, 2004; 2006a; 2006b) illustrates both the power of

citizens' knowledge and the challenge of transferring this knowledge to policy and

administration arenas. S2 initially emerged as a civic network of community activists organized

to confront the sustainability problem in Seattle in the early 1990s. It became a professional

organization in the 2000s. Indicators of sustainable development have been the organization's

main focus. S2 has succeeded in promoting the idea of indicators by disseminating several sets of

indicators that it developed in a democratic and bottom-up process during the 1990s. The

summary of S2 activities below is followed by the conceptual analysis of S2 knowledge

production. This analysis will bring together the conceptual insights of pragmatic social learning,

the framework used by Holden (2004), and those of cognitive praxis (Eyerman and Jamison,

2001) and will explore the synergies between these two approaches.

Overview of the history of S2 and its sustainability indicator project

The history of S2 started when the representatives from the Global Tomorrow Coalition (GTC),

an international think tank in Washington. D.C., introduced the Brundtland Report's sustainable

development agenda at the Seattle's civic forum held by University of Washington on November

27, 1990 (S2 web-site, Holden, 2004).[106] The discussion led to a series of meetings organized by

a group of sustainable development advocates.[107] During its formation phase,[108] the S2 group

brainstormed different definitions and components of sustainability.[109] In September 1991, the

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[106] The forum was organized by a number of environmental state agencies, the Institute for Public Policy and Management at UW, and environmental non-profit organizations. Individuals from government, business, and non-profit sector participated in the event. The GTC facilitators solicited participants' opinions on the issue of indicators of sustainable development (Holden, 2004).

[107] Several individuals who comprised the group's core included a city planner, two experienced facilitators, a minister of a spiritual ecological association, and other "smart activists" concerned with sustainability (Holden, 2004; p.188).

[108] The first follow-up meeting was supported by Seattle's environmental philanthropist Kay Bullet and occurred in February, 1991. After the planning committee had been formed, the group expanded as new people discovered the newly formed Sustainable Seattle Volunteer Network and Citizen's Forum.

[109] The group's initial lack of clarity in understanding the meaning of sustainability (or its "vagueness" as one of the

group defined the monitoring of sustainability efforts as its major goal.[110]

To develop specific indicators of sustainable development, S2 held a series of Civic Panel meetings in 1992 (S2 web-site). Participants[111] were asked to define key indicators of Seattle's, secondary indicators, and those indicators that would be "provocative and would capture people's attention" (Holden, 2004; p.193). Besides proposing individual indicators, panelists had to link different indicators from both their own interest area and also from other interest areas. As a result of these efforts, 99 indicators were selected across ten topic areas (S2 web-site). In addition, the commitment to the community and to the future became an important corollary to the Civic Panel meetings. According to Conlin, a leader of S2, indicators were useful as "conversation piece" that stimulated discussion and collaboration between diverse community leaders (Holden, 2004; p.195).

Following the Civic Panel meetings, S2 narrowed down the list of 99 indicators to include only 20 indicators with the purpose of their consequent dissemination within the community in 1993 (S2 web-site). These indicators had to be fundamental to three dimensions of sustainability (environmental, social, and economic), understandable, feasible (based on available data), and provocative. For example, the indicator "salmon returning to spawn" was selected as meeting all

founders summarized it) was paradoxically seen by its participants as the group's main asset (Carroll, 2002, cited in Holden, 2004; p.188). Group members believed that a change was needed but questioned the utility of limiting the sustainability challenge solely to environmental issues. Instead, the group sought for a broad and inclusive democratic process to integrate the dimensions of environment, economy and social progress within one holistic framework (S2 web-site; Holden, 2004; p188).

[110] Other goals included educating about sustainability, providing a public forum about the meaning of sustainability, promoting sustainability as a criterion in city planning, and establishing collaboration towards sustainability, identifying and linking local sustainability initiatives, and building a more sustainable way of life (Diers, 2002, cited in Holden, 2004; p.190)

[111] Three groups of panelists included local government officials, leaders of non-profits, and active citizens. Altogether over 150 individuals participated in the process that included both small group discussion around ten particular areas of interest and large group discussions. The discussion in each small group was facilitated by trained volunteer facilitators (Holden, 2004).

these requirements. For each selected indicator, an overall trend had to be constructed that would

illustrate whether the sustainability was improving in that particular area. Finally, the group

believed that indicators had to be linked together: "Connectivity is key to making this process

truly reflect sustainability" (S2 1993 Memo cited in Holden, 2004; p.198). For example,

indicators related to salmon reflected all three dimensions of sustainability: environmental

(quality of water), social (as a symbol of the Northwest also important to Native Indian tribes),

and economic (important for fishing industry).[112]

After S2 produced several indicator reports that showed both positive and negative indicator

trends in Seattle area over the period from 1995 to 1998, it gained media attention as a pioneer in

sustainability indicators (S2 web-site). This recognition came as S2 leaders presented their

indicator project at several national and international meetings and conferences in U.S. and in

Europe.[113] In particular, the U.S. President's Council on Sustainable Development (PCSD)

invited S2 to present its work at 1994 Seattle meeting (S2 web-site; Holden, 2004). S2 was

consequently recognized by PCSD's Communities Task Force as one of 10 benchmarking

community initiatives. Besides the presentations S2 leaders gave around the nation and the

world, indicator reports (priced for 10 - 15 dollars) sold both locally and internationally and thus

helped spread the word. The S2 marketing strategy focused on organizing intensive media

campaigns upon every updated publication of indicator reports (Holden, 2004).

Starting from 1996, the history of S2 has been marked by the transfer of the idea of indicators to

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[112] Holden gives the example of "wild salmon returning to local streams to spawn" as an indicator of "a linked set of issues, including water quality, aquatic ecosystem health, stormwater runoff, vehicle usage, and a host of socioeconomic variables related to automobile and other types of pollution" (Holden, 2004; p.92).
[113] See Holden (2006) for a list of 22 presentations given by S2 leaders (p.189).

the broader social and political environment. The diffusion of sustainability indicators involved a paradox: according to the opinion of most S2 leaders, the organization received by far more recognition nationally and internationally then it did locally (Holden, 2004, 2006). Holden (2006) questions this S2's challenge in "becoming a prophet in one's own land" (p. 254) by examining specific mechanisms by which the idea of indicators diffused in Seattle and King County. She identifies three generations of Seattle's county/region, city, and nongovernment indicator projects that had built on the local legacy of S2. Each generation is analyzed by her according to the impact of sustainability indicators on collaboration, policy linkages, and power-sharing, the three dimensions of social learning in Holden's conceptual framework.

Holden (2006) finds that second-generation projects,[114] such as Seattle city's Comprehensive Plan, demonstrated the drive for comprehensive sets of indicators to explicitly link broader environmental, economic, and social issues to planning policies. At the same time they showed little commitment to collaboration and power-sharing.[115] The third-generation projects used collaborative public participation processes in generating indicators. Both expert and non-expert (qualitative and local) forms of knowledge were utilized in defining specific indicators, which contributing to final indicators reflecting the actual "big" picture of the community trends. Fourth-generation projects utilized more selective collaborative design processes that targeted a narrow but a well-defined group of policy-making and opinion leaders. These projects assumed "a new level of power and influence" by linking indicator targets to specific city departments

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[114] Holden (2004, 2006) defines S2 projects as first-generation indicator projects.
[115] Holden notes that the 2003 City of Seattle Comprehensive Plan indicator report strengthened accountability, mechanisms, however. As the city defined how specific goals and implementation tools could affect different sustainability trends, the project became additional information source useful for policy analysts and citizen group (Holden, 2006).

responsible for reaching these targets (Holden, 2006; p. 263).[116] Therefore, the fourth-generation projects show the greatest (among the four generations) degree of power-sharing as policy-makers accepted the legitimacy of indicator projects. According to Holden, these projects provide the evidence that Sustainable Seattle has left a local legacy of sustainability indicators and had catalyzed the processes of policy learning in the late 1990s. The local impact of S2 on policy learning thus questions "the common wisdom that the farther one sits from Seattle, the more likely one is to consider S2 an influential project" (p. 254).

S2 case through the conceptual lenses of cognitive praxis and social learning

The S2 experience with indicators of sustainable development described above enlarges the empirical basis of the cognitive praxis approach (Eyerman and Jamison, 1991; Jamison, 2001) used in this dissertation. In particular, it illustrates how a community group also identifying with the environmental movement generated and then disseminated its knowledge of sustainability indicators both locally and internationally, at the late institutionalization phase of the environmental movement. In addition, the analysis of S2 by Holden (2004, 2006) suggests new conceptual insights about knowledge production in environmental movement organizations in general. The philosophical framework of pragmatism and the concept of social and policy learning constitute the theoretical used by Holden (2004, 2006). This lens differs from the cognitive praxis approach. Therefore, by juxtaposing the two conceptual lenses it is possible to articulate both the merits and the limitations of cognitive praxis in relation to movement organizations. This is important to do because the authors of cognitive praxis (Eyerman and Jamison, 1991; Jamison, 2001) primarily use movement as their main unit of analysis and pay

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[116] For example, the nongovernmental organization Northwest Environmental Watch (NEW) focused on a limited number of indicators most useful for catalyzing immediate action by policy-makers, which would also be informed by a sense of interrelatedness of environmental and social issues.

less attention to the lower levels of knowledge production such as individual movement

organizations, which is one of the goals in this dissertation.

It is appropriate to apply the cognitive praxis approach to the experience for S2 for the following

three reasons. First, knowledge production constitutes a key feature of the S2 case. Holden

(2004, 2006) explicitly defines her theoretical framework as social learning. Her main research

question relates to the impact of sustainability indicators – conceived as an idea and a practice –

on the broader community. She also uses the innovation diffusion theory (Rogers, 2003) to

examine specific mechanisms of indicator diffusion in Seattle. Second, S2 should be defined as a

movement organization. Holden treats S2 as a civic group turned into a professional organization

and does not consider its connection to the larger environmental movement. However, it is

obvious that S2 represents a movement organization. S2 mission explicitly states the

organization's intention to increase the coherence of the environmental movement by promoting

collaborative practices among movement groups and also by developing more effective strategies

of communicating environmental values to the broader public.[117] Third, the chronology of S2

coincides with the institutionalization phase of the environmental movement knowledge

described by the cognitive praxis theory (Jamison, 2001). S2 has been directly tied to the

sustainable development paradigm which marked the institutionalization movement phase in the

1990s. Its leaders were inspired by the idea of sustainable development that had been promoted

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[117] The section "Who We Are" of the S2 website explains this as follows. "The environmental movement has been a success in many ways, but its biggest failure was in its lack of focus on humanity, diversity, social justice, and renewable living. We cannot reasonably expect everyone to change their lifestyles because it is the "right thing to do," but we must make the stakes more human, more tactile. The environment is counting on us of course as the only creature on the planet who can actively do large scale stewardship, but for most people that message comes off as too esoteric and not based on on-the-ground facts. If you tell a person that they should advocate for stricter building codes because of the environmental effect on old growth forests, you will get some response. But, if you tell someone that the connections between the types of chemicals we use in housing and childhood asthma or stunted growth, you may reach even more people" (S2 web-site).

internationally, as evidenced by the S2 early history. Also, S2 initiative received a quick acceptance among the advocates of sustainable development, which would have been impossible without the prior international efforts to build the sustainability agenda.

The cognitive praxis lens contributes to a better understanding of the S2 case. The longer historical perspective on the environmental movement maintained by the authors of cognitive praxis offers two main advantages. First, cognitive praxis highlights the ideological grounding of S2 knowledge in the environmental worldview. The success of the S2 built on the prior achievements of the environmental movement including an already mainstreamed environmental worldview and a plethora of various groups and organizations that sustained this worldview in Seattle. [118] As S2 leaders stressed, their strategy involved collaboration with other environmental groups. The S2 indicators helped monitor joint sustainability efforts in order to further spread environmental values (S2 web-site). S2 indicator project represented an important innovation that Holden examines by applying innovation theories to S2 case. However, S2 has been more than just a technological innovation. The cognitive praxis definition of knowledge as worldviews, values, ideas, and practices reframes S2 experience as knowledge where environmental worldview is deeply connected to environmental practices so that the latter cannot be analyzed as separate from the former.

Second, S2 sustainability indicators can be seen as an example of *movement* knowledge rather

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[118] The role of the environmental ideology for the emergence of S2 is one of the issues that Holden has not addressed. She places the S2 experience within Seattle's civic and environmental contexts and also discusses the influence of Global Tomorrow Coalition on the emergence of S2 in 1991(2004, 2006b). However, one can question whether one civic conference would have been enough to catalyze S2 had not sustainability ideas and practices were previously articulated, refined, and disseminated by the environmental movement. In fact, Holden notes that "many of those involved in S2 were well connected to the international sustainable development movement, giving the indicator reports a good deal of word-of-mouth publicity" (Holden, 2006b, p.189).

than *local* knowledge, from the point of cognitive praxis. The bigger picture of the environmental movement constructed by the authors of cognitive praxis (Jamison et al., 1990; Eyerman and Jamison, 1991; Jamison, 2001) helps locate the S2 successful experience within the internal movement dynamics rather than an isolated case of local community activism (Portney, 2003; 2005). The view shared by the majority of S2 leaders that "the farther one sits from Seattle, the more likely one is to consider S2 an influential project" (Holden, 2006; p. 254) is symptomatic of the importance of the movement cognitive environment as a reference point for judging the success of S2. Holden (2004, 2006) leaves this external cognitive environment unexamined and focuses on the local impacts of S2 indicator projects instead.[119]

Finally, the analysis by cognitive praxis of internal movement dynamics can be applied to the S2 case. In particular, Jamison's analysis of the professionalization of environmentalism during the movement fragmentation phase (1980s) (Jamison, 2001) can inform the discussion of the professionalization of S2. S2 formed as a civic group and a volunteer network committed to sustainability agenda in 1991. S2 leaders envisioned the role of their group as a catalyst of social action rather than a professional organization.[120] In S2 heyday as an internationally recognized pioneer in sustainability indicators in 1993-1997 (Holden, 2006b), the three S2 coordinators, or the "willing triumvirate," [121] ran the group on a volunteer basis and also heavily relied on other volunteers to develop the indicators. In the mid-1990s, S2 became more fragmented, specialized, and professionalized. As result, core S2 members had to spend more efforts on organizational

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[119] Holden defines the goal of her research as follows. "In this dissertation, we ask how deep these measures delve into the institutional and social learning processes of a city. For sustainability indicators to represent deep measures, they must tie concerns of sustainable development to the urban environment full of species, institutions, and structures and to and to the enduring goals of justice and democracy." (Holden, 2004; p.2).

[120] According to S2 web-site, S2's "creativity, energy, and innovative ideas are still referenced today as a formative spark in the sustainability movement" (S2 web-site).

[121] Richard Conlin, a YMCA employee, Alan AttKisson, an editor of a sustainability-oriented magazine, and Nea Carroll, a professional facilitator, emerged as S2 main leaders in 1991-1993 (Holden, 2004).

issues, such as bringing diverse S2 groups together, than on sustainability goals per se (Holden, 2006b). The ensuing group's transformation initiated by S2 trustees aimed at creating an organization "with staff and board support" with an independent financial infrastructure[122] and a new director position (Holden, 2006b). As a result of this organizational transformation the initial volunteer network, an "amoeba-like organism with a certain level of complexity and a very clear goal," (Carroll cited in Holden, 2006b, p.195), became more like a professional non-profit organization. Holden (2006) notes that a "downturn in activity in energy" has been a corollary of this S2 professionalization.

Holden (2006) views the professionalization of S2 as a common challenge that many innovative civic groups face when transitioning to more professional organizational forms. By placing the S2 organizational history against initial S2 vision, she raises doubts whether the late evolution of S2 into a "tightly managed nongovernment organization governed by a board of professionals" helped advance the broad sustainability agenda, of which the S2 indicator project has been the most visible but not the most important in terms of end goals of sustainability (Holden, 2006; p.198).[123] The conflict between S2 early goal of catalyzing the community collaboration centered on sustainability and the consequent fragmentation, narrowing down, and professionalization of S2 addressed by Holden (2004; 2006) mirrors the bigger internal dynamics within the environmental movement. With its detailed account of this dynamics, cognitive praxis can provide an alternative explanation of S2 evolution. In particular, while the S2 as "a volunteer-based 'amoeba' with a groundswell of support" (Carroll, cited in Holden, 2006b, p.195) is more

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[122] S2 had relied on Seattle's YMCA Metrocenter from 1991 to 1996 (Holden, 2006b).
[123] The recent S2 organizational readjustments suggest that the organization has been able to return to its original mission: "Sustainable Seattle's mission is to be a positive catalyst and resource for positive change. We accomplish this mission by working with diverse individuals, communities, businesses and government agencies to build awareness, assess progress, and take action on collective sustainability goals" (S2 blog).

effective as a creator of environmental knowledge, the S2 as a professional non-profit organization might be more suitable to further mainstream its sustainability indicators. The advantage of cognitive praxis thus consists in validating the S2 early chaotic and non-expert phase as constructive for knowledge production in the long-term, which contradicts the literature on organizational effectiveness that Holden implicitly uses as a conceptual reference in her analysis of S2 (Holden, 2006).

S2 knowledge and policy learning

On the other hand, the study of S2 by Holden adds to the cognitive praxis literature by specifying the mechanisms of movement knowledge transfer at the local level. Jamison (2001) identifies "community environmentalism" as one of the most important types of contemporary environmentalism, because it can ideally contribute to rebuilding the initial ideological unity of the environmental movement. However, the authors of the cognitive praxis primarily focus on the movement level as their main level of analysis and pay insufficient attention to how cognitive praxis actually works at the lower community and organizational levels, which might not be feasible given their very broad movement perspective. For the purposes of this dissertation, Holden's research focus on the community and organization levels thus represents a valuable supplement to the cognitive praxis framework because it helps trace how movement knowledge interacts with local public policy arena and public organizations.

In particular, the discussion of the impact of S2 sustainability indicators on social and policy learning in Seattle by Holden (2004, 2006a) highlights two mechanisms by which S2 indicators became incorporated by the Seattle policy community: professionalization of indicator approach

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and informal channels of indicator diffusion. The sustainability indicator approach originated in a lay community and then was gradually recognized as legitimate by professional policy communities.[124] Social indicator approach was not a new idea, at that time, as many policy science scholars had advocated the use of non-economic indicators to measure social development since 1960s (Innes, 1990). However, the idea of indicators as a planning tool to monitor very broad set of sustainability efforts that also crossed government and civic society domains was very innovative and represented a policy change. The challenge of making indicators work on the policy level, thus involved the efforts of S2 leaders to build the legitimacy of their project among local policy-makers by capitalizing on the credits obtained from experts outside Seattle.[125] This occurred as the experts learned about the value of the indicators for the bigger community.

The authors of advocacy coalition framework (Sabatier 1988; Sabatier and Jenkins-Smith, 1993) would probably identify S2 as a case of policy learning that involved policy change towards more collaborative policy and administrative arrangements and caused by learning of key advocacy coalition actors. In fact, Holden (2004, 2006b) uses policy learning as one of her conceptual lens. Her study contributes to the ACF literature by describing informal mechanisms of policy learning. S2 positioned itself as a volunteer network with an interest in sustainability. It lacked formal authority and had to use informal channels of influence to spread the indicators to the policy level. Holden (2004) provides many examples of informal knowledge interactions

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[124] Few S2 leaders had formal expertise in policy evaluation or related areas when they first came up with the innovative idea of measuring sustainability efforts in 1991. Steve Nicholas, an early S2 member, was an exception as he held a Seattle City planner position and had a background in policy and planning (Holden, 2004; p.168).
[125] A 1992 Sustainable Seattle newsletter explained this as follows. "The point is that a sort of ping-pong effect began [after S2 first introduced its project in 1992]. 'Experts' in other places gave us more legitimacy in the eyes of locals, which convinced the local establishment to notice us more positively, which gave us more legitimacy, and so forth. Being all-volunteer and self-appointed, we needed to cultivate legitimacy in this way, and a bit of it was conscious, but a lot of it was luck and coincidence" (cited in Holden, 2004, p.211).

between S2 members and individuals with formal authority and power.[126] Many informal

exchanges were highly serendipitous. For instance, County King Executive Ron Sims became

one of the influential early adopters of sustainability indicators after his wife, a Metrocenter

YMCA board member, learned about S2 initiative while attending an S2 presentation and then

persuaded Sims to read the indicator report (Holden, 2004). In a sense, all these individuals

represented an informal community of practice (Wenger, 1998) with a shared interest in

sustainability, even though Holden does not use the communities of practice theory.

5.3. The effect of S2 knowledge on public policy and administration in Seattle

The central question raised by Holden is whether sustainability indicators developed by S2

affected sustainability policies and behaviors in Seattle and "how deep these measures delve into

the institutional and social learning processes of a city" (Holden, 2004). This question is

important because the progress towards sustainability depends on the concerted activities of

policy-makers and citizens. In particular, if S2 sustainability indicators truly reflect issues and

trends that are relevant for the community, then the community wants to know if these indicators

really inform sustainability urban policies. In a sense, the democratic process selected by S2 to

develop the indicators made it a democratic imperative to raise this question.

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[126] The involvement of government officials as participants in the internal process of S2 indicator development has been one example. Steve Nicholas, a Seattle City planner, had participated in S2 activities starting from 1991. As one of the planners responsible for Mayor's Environmental Action Agenda and Urban Environmental Management Program, Steve Nicholas learned from this experience that a lack of coordination among Seattle's eighteen departments authorized to deal with environmental policies represented a major challenge. Nicholas promoted more collaborative approaches to sustainability when he became the head of Seattle's Office of Sustainability and Environment (Holden, 2004). Also, two S2 members, Richard Conlin and Jan Drago, who had not been government officials at the time when they joined S2 later became City Council members (S2 web-site, Holden, 2004). Conlin had been a key member of the S2's "willing triumvirate" until he decided to leave his formal position at YMCA Metrocenter and his informal position as a S2 co-leader in 1996. As a City Council Member, Conlin continued advocating for sustainability indicators. For example, he arranged the presentation of new S2 director Lee Hatcher at the City Council in 1998. This presentation was attended by Mayor Paul Schell and received "very positive comments from the council and the mayor" (Sustainable Seattle 1998 (8 June) Board Meeting Minutes, cited in Holden, 2004; p.211).

To answer the question about the impact of the indicators, Holden examines the opinions of different actors and finds a great diversity in their responses. On the one hand, many public officials were skeptical about the impact of S2 on policy-making. For example, Jeb Brugmann, the Secretary General of the International Council for Local Environmental Initiatives (ICLEI), an "association of over 1220 local government members who are committed to sustainable development" (ICLEI web-site), has been critical of S2. Brugmann believes that S2 failed to produce policy change because of its status as a non-profit organization "without connection to major institutions, generally, and the City's strategic and statutory planning processes, specifically" (Brugmann cited in Holden, 2004; p.5).

On the other hand, many government officials praised S2 for its innovative efforts and noted the effect of the indicator approach on government operations. Thus Steve Nicholas, a Seattle's city planner and a S2 founder, says that the city benefited from S2 indicator project in developing its own comprehensive planning process because these two projects "were ... happening at the same time and they really fed off each other" so that the holistic approach to sustainable development became "very deeply infused in the City's Comprehensive Plan" (Nicholas cited in Holden, 2004, p.210).

To make sense of these different opinions of Seattle's public officials, Holden uses the conceptual lenses of social learning (Dewey, 1929; 1935) and policy learning (Sabatier, 1988; Sabatier and Jenkins-Smith, 1993, 1998) when assessing the impact of S2. She admits that her policy evaluation framework is "unconventional" as it does not address those policy effects associated with "new policy documents produced" (Holden, 2004; p. 9). Holden argues that S2

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has been an important catalyst of social and policy learning in Seattle. She assesses the S2 innovation as successful by examining its subsequent diffusion based on the testimonials of S2 members and "official and opinion leaders" (Holden, 2004; p.342). To a large degree, Holden reconstructs the story of S2 innovation diffusion based on the anecdotal evidence provided by S2 members themselves, which might bias her findings.[127] She also relies on testimonies of other sustainability actors in Seattle, such as Northwest Environment Watch (NEW).[128]

Prior socialization into the sustainability culture appears one of the prerequisites of social learning by policy actors and public administrators, according to Holden.[129] Participation in community networks helps internalize environmental values and knowledge. Those public administrators who, like Steve Nicholas, have experienced sustainable indicator project as valuable are likely to identify its effects on public organizations as positive. At the same time, the majority of Seattle government employees[130] did not participate in S2 activities and were critical about S2 indicators. In fact, government employees represented a group of the harshest critics of S2.[131] They questioned the legitimacy of S2 and were concerned that indicators work would be

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[127] The S2 group interacted with many local leaders and was directly or indirectly involved in many collaborative projects as a consultant or a participant. S2 members had an intrinsic interest in the information about indicator diffusion that they shared and integrated to further promote S2 goals.

[128] One methodological caveat associated with collaborative learning espoused by S2 should be addressed, which Holden does not bring up. The S2 never intended to claim its innovation as its intellectual property and embraced an open approach instead. Other nonprofit organizations such as Northwest Environment Watch (NEW) were able to build on S2 experience and promoted their own indicator approaches in a more focused and a closed way. Had NEW leaders refused to give credit to S2, it would have been very difficult to objectively establish the S2 legacy in NEW projects and even more difficult to establish the S2 legacy in those projects that branched out from NEW. The legacy of movement knowledge is especially difficulty to trace when this legacy is primarily associated with cultural legacy, or the continuity of specific sets of values and worldviews.

[129] She finds that innovation facilitates social and policy learning if key leaders perceive this innovation as personally valuable. For example, County Executive Ron Sims became the advocate of indicators after he had personally experienced the value of indicators.

[130] Holden conducted 29 interviews with city and county government employees.

[131] Other groups surveyed by Holden included opinion and government leaders, civil society and media, and businesses (Holden, 2006b).

too burdensome and distractive of their own objectives.[132] This reaction of the majority of Seattle government employees suggests that it is difficult to correctly identify the effect of movement knowledge on public organizations by focusing on formal public organizations alone and neglecting informal interactions of administrators and movement communities as most public policy and administration theories do.

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[132] For example, when promoting the new King County Benchmarks program that involved developing and monitoring individual Benchmarks indicators by all county departments, the program founder Cynthia Moffitt encountered strong resistance from government employees: ". . . it's very interesting that to me, working within government, a lot of people don't see the value of indicators . . . It's just a cultural change that we have to make, that we haven't made . . . A lot of people think: 'Well, if I'm just doing a good job, what does it matter whether we track it and give it an A,B,C?.' . . so they don't use this work" (Moffitt cited in Holden, 2006b, 271).

CHAPTER SIX. THE CASE OF THE FREE AND OPEN SOURCE SOFTWARE MOVEMENT

This chapter links knowledge in the free and open source software movement (FOSSM)[133] and public policy and organizations. It examines the influence of open source principles on open government rhetoric during the institutionalization movement phase. Section 6.1 provides an overview of the movement's history in the U.S. and describes how its cognitive praxis changed over time. Section 6.2 focuses on the FOSSM community in New York City, NY. It discusses the role of the community in developing the NYC 311 service. Section 6.3 examines the effect of FOSSM knowledge on public policy and administrative practices, from the perspective of public administrators and NYC movement activists.

6.1. Overview of the cognitive praxis of the free and open source software movement

6.1.1. The history of the FOSSM

Movement emergence, the 1950s - 1970s

The free and open source software movement can be traced back to the computer developer innovation subculture that emerged at MIT in the late 1950s. This subculture became known as "Hacker Ethics." Steven Levy defines a "hack" as a technical solution "imbued with innovation, style, and technical virtuosity" in his book *Hackers: The Heroes of Computer Revolution* (Levy, 2001; p.23). The honorary title of a "hacker" was awarded by the community to its most brilliant peers. Hacker Ethics praised sharing and openness among computer technologists. The famous hacker principle "all information should be free" was instrumental in promoting technological innovations. Together with the "hands-on" attitude, hackers' creativity and motivation to

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[133] "The free and open source software movement" represents an umbrella term that embraces several related movements, including the free software movement, the open source movement and the recent open data movement.

"improve the machines, and to improve the world" (p.7) ultimately materialized into such tangible hacker products as ARPAnet, a communication network funded by the Department of Defense and a prototype of the Internet, and the first personal computer assembled by the members of the hacker Homebrew Computer Club Steve Wozniak and Steve Jobs in 1976 (Levy, 2001).

Movement-building, the 1980s

The commercial success of hacker products produced major disagreements between leading hackers in the 1980s. The issue whether hacker products could become proprietary divided the hacker community. A small group of hackers revolted against market forces because the latter challenged the Hacker Ethic's principle that "information should be free." Richard Stallman, an MIT leading hacker, decided to create a new organizational space – a social movement – which he named the "free software movement" (FSM). He started the movement by writing the *GNU Manifesto* in 1983. Stallman stated that he needed help to write a complete UNIX-compatible software system. The system would emulate UNIX, an operating system that was designed by AT&T hackers and became fully commercial in 1983 (Weber, 2004; p.40). Unlike UNIX, Stallman's operating system would be free for all. He gave it the name "GNU," a recursive acronym which, in the hacker giddy logic, stood for GNU's Not Unix.[134]

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[134] Stallman explains why he believed GNU had to be free: "I consider that the Golden Rule requires that if I like a program I must share it with other people who like it. Software sellers want to divide the users and conquer them, making each user agree not to share with others. I refuse to break solidarity with other users in this way. I cannot in good conscience sign a nondisclosure agreement or a software license agreement. For years I worked within the Artificial Intelligence Lab to resist such tendencies and other inhospitalities, but eventually they had gone too far: I could not remain in an institution where such things are done for me against my will" (Stallman, 1985).

Movement specialization, the 1990s

Stallman's movement-building GNU project strengthened the hacker community. The next generation of hackers stood on the shoulders of his Free Software Foundation (FSF) by using the quasi-legal principle of "copyleft," which prevented the commercialization of the code once it was created by a hacker as a free code. At the same time, hackers such as Linus Torvalds and Eric Raymond decided that Stallman's copyleft rule restricted hackers' freedoms. Torvalds organized a collaboration of volunteer developers on the Linux operating system project in 1994. Linux became a major operating system later in 1996 (Raymond, 1999). Raymond developed an ideological foundation of the open source movement (OSM), the successor of the free software movement. Unlike Stallman's FSM that promoted a moral cause and shunned commercialization, the OSM set the goal of remaking the commercial-software world "in the image of the hacker culture" (Raymond, 1999; p.25). Those developers who favored collaboration with the private sector chose the term "open source" software that was more marketable than the term "free software"[135] and the movement was consequently renamed by them as the "open source movement."

The commercialization of the movement split the hacker community.[136] Raymond, a hacker and

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[135] Raymond learned from his efforts to promote Linux software in the private sector that the term "free software" sounded like anathema for corporate executives. The effective marketing campaign of Linux thus had to rebrand the free software movement (FSM): "our success after Netscape would depend on replacing the negative FSF stereotypes with positive stereotypes of our own – pragmatic tales, sweet to managers' and investors' ears, of higher reliability and lower cost and better features" (p.206). The term "open-source" emerged as a compromise. It was adopted by the participants of the Free Software Summit organized by Tim O'Reilly on April 7, 1998 (http://press.oreilly.com). A press conference held during the summit was attended by reporters from major newspapers such as *New York Times* and *Wall Street Journal*. In a few weeks, Linux leaders Linus Torwalds and Eric Raymond received wide national publicity. "Open source" became the free software movement's new identity and a marketing brand.

[136] Richard Stallman disagreed to compromise his moral principles. In particular, he opposed to the business-like agenda of open source advocates: "For the free software movement, however, nonfree software is a social problem, and the solution is to stop using it and move to free software" (Stallman, 2009). In contrast, Eric Raymond

the hacker culture's main ethnographer, redefined the new movement identity around the Linux success. According to him, Linux became a triumph due to the voluntary mass collaboration of programmers, a collaboration model he named "bazaar" (Raymond, 1996). He contrasted the bazaar model with the "cathedral" model, which stood for the traditional hierarchical model of organization based on proprietary contracts. Raymond's idea of bazaar as an effective collaborative arrangement became the main identifier of the open source movement.

Movement institutionalization, 2000s

During the last decade, FOSSM cognitive praxis has been incorporated into the mainstream society. The FOSSM adjusted its philosophy and values to fit the socio-technological potential of the Internet. Open source software became a market success in the early 2000s, after large corporations such as Mozilla, IBM, and Oracle started investing into Linux. Subsequently the open source movement changed its focus from *software* to Internet *data*. "Open data" rather than "open source" has increasingly become the movement's new identity. Tim O'Reilly, the CEO of O'Reilly Media, Inc., reframed the meaning of open source practices to capture the new potential of Internet. He argued that open source movement had caused a paradigm shift in the society but FOSSM leaders failed to understand the most important movement's contribution.[137] For O'Reilly, the real value of open source was the open data that the Internet generated: "the

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questioned Stallman's moral crusade as the right strategy for the movement: "Big win, big score that gave us mainstream visibility and credibility from investors came not from bottom-up evangelism ... but because one strategist on the top saw the power in that method...and imposed that vision on everybody underneath him" (interview with Raymond, Revolution OS documentary).

[137] Raymond publicly rejected the idea of applying open source principles to other than software domains (music, books) because these new domains were different, did not require debugging, and also because he did not want to "weaken the winning argument for open-sourcing software by trying it to a potential loser" (Raymond, 2002; p. 226). However, at about the same time he expressed his skepticism to open data, new companies emerged that ultimately determined how open source principles would be actually implemented beyond the FOSS movement. In particular, Google was incorporated in 1998. Wiki on-line encyclopedia and the World of Wordcraft, the most popular massively multiplayer online role-playing game (MMORPG), both started in 2001. All major social media companies (Friendster, LinkedIn, MySpace, Facebook) were created in 2002-2004.

frontier of open source is actually open data, not open code" (Williams, 2003). He referred to the experience of a few successful companies, including Google and Amazon, which used both open source software and open source principles in order to capitalize on their users' data (Ibid).[138]

The incorporation of the FOSS movement practices by the society through commercial means came at a cost for the movement: "[it]…sounds like a victory for open source, but it could easily be a defeat" (Williams, 2003). As business companies adopted FOSSM practices, the concept of open source had been stripped of its moral message and, ultimately, became independent from the movement. Many companies that shape the mainstream discourse on open source, such as Google Inc., do not identify with the FOSSM. At the same time, the recent technologies have created a new space to realize core Hacker Ethics values – personal autonomy, sharing, and decentralization. Open data or open content projects such as Wikipedia have revived these core FOSSM values by expanding to non-software areas. The emerging open data movement can be viewed as a new movement or an offshoot of the FOSSM. While its future remains unclear, it stands on the shoulders of the movement and profits intellectually from its legacy. This legacy includes both technological and ideological parts. Technologically, interactive Web 2.0 tools initially developed by hackers provide a foundation for the further development of open data principles (Benkler, 2006). Ideologically, the open data movement embraces the value of openness for granted, as one's fundamental right and a universal principle.[139]

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[138] Google Inc., Amazon.com Inc., eBay Inc, and Yahoo! Inc. companies use open-source ideas to build their communities but use them for commercial reasons. For example, Amazon.com has developed one of the best peer-review systems which contributed to the company's success. Also, these companies use open-source software to cut costs of doing their core business. Thus Google's several million servers use free Linux operating systems, which saves the company billions of dollars (the cost of alternative server software offered by Microsoft ranges from 1000 to 2000 dollars per server).

[139] It is highly symbolical that the Wikipedia article on open source explains it as a universal model of collaboration rather than a history-specific concept. The term "source" in "open source" refers to the content rather than software code. The article lists several open source applications in various societal domains, such as academic research,

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6.1.2. FOSSM values and practices

The cognitive praxis of the FOSSM has been defined by Hacker Ethics. The principles of this ethics have remained fundamentally the same throughout the movement's fifty-year history. Movement leaders often disagreed about specific movement strategies. However, their different views never challenged the movement's core identity and its hacker culture values. Hacker values have been the main movement resource that shaped how and why specific movement practices developed.

Hacker Ethics

Levy (2001) identifies the following principles of Hacker Ethics: openness, hands-on, decentralization, meritocracy, and aesthetics. [140] Hacker culture can be described as a strong participatory meritocracy. [141] It ensured that the young technologists focused "their technical abilities to computing with devotion rarely seen outside of monasteries, they were the vanguard of a daring symbiosis between man and machine" (Levy, 1984). Hackers' early practices were only meaningful inside their community at that time. [142] However, they ultimately pushed the

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teaching, arts, and government to illustrate the universality of open source (http://en.wikipedia.org/ wiki/Open_source, last accessed June 29, 2011).

[140] Levy (2001) formulates six principles of Hacker Ethics as follows: (1) Access to computers - and anything which might teach you something about the way the world works - should be unlimited and total. Always yield to the Hands-On imperative! (2) All information should be free (3) Mistrust authority - promote decentralization. (4) Hackers should be judged by their hacking, not bogus criteria such as degrees, age, race, or position. (5) You can create art and beauty on a computer. (6) Computers can change your life for the better.

[141] The term "participatory" refers to Hacker Ethics "*Hands-On Imperative*" and the value of *sharing* among hackers. The Hands-On Imperative emphasizes that a developer can improve a technology (computer or code) only by having a full access to and control over the device that one is aiming to improve. Hackers' informal rule of sharing the results of one's work ("All information should be free") ensured that the improvements were validated, recognized, and disseminated. The Hands-On Imperative implied strong anti-authoritarian attitudes ("Mistrust authority"). In particular, hackers revolted against MIT "bureaucrats" – those technicians with the formal authority to regulate access to computers. The value of *decentralization* united all hackers against "high priests" (non-hacker computer administrators). Finally, hacker culture was a strong *meritocracy* ("No bogus criteria"). Each hacker was a technological entrepreneur whose individual contributions were evaluated by the entire community. The community decided collectively whether any particular improvement was a "hack" – an extremely bright technical solution that no one had proposed yet.

[142] The early computer codes that hackers wrote offered no immediate benefits to anyone. For example, hackers

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frontier of innovation by defining the new role of computers.[143] Together with hackers'

philosophy of exploration that stressed measurable improvements, this belief ultimately

contributed to changing "society in a clever way," as the founder of the free software movement

Richard Stallman put it later (Revolution OS documentary).

The value of freedom in the FOSSM

The hacker values of personal autonomy (Hands-On Imperative), sharing, and anti-

authoritarianism were challenged in the mid-1980s. With the commercialization of the hacker

culture, hackers' "playful creativeness" surrendered to more pragmatic concerns. To save the

culture, Richard Stallman created the free software movement. His GNU project did not

technologically differ from other hackers' projects. However, Stallman placed core hacker beliefs

above technology. In particular, he stressed the value of freedom of digital information (code).

Free code was meant to supplement other fundamental human freedoms, such as free speech. For

Stallman, free software was about freedom as a social value rather than about price: "think free

speech, not free beer." According to his philosophy, the society needed freedom for several

reasons. First, it needed "free information truly available to its citizens" (Stallman, 2002; p.49).

The information included "programs that people can read, fix, adapt, and improve, not just

operate" (p.50). Second, users of programs needed autonomy. If the program was owned by

somebody else, the user would lose his autonomy and control. Third, society needed freedom to

"taught" the three million dollar TX-0 how to play a J.S.Bach melody or imitate a (cheap) electromechanical calculator.

[143] Hackers were pragmatic and engaged in those projects where one could be a pioneer. It did not matter for them if the task was trivial. Hackers believed that once a problem was fixed it was fixed forever with the hacker's name written into the history. In the words of Peter Samson, an MIT hacker: "We did it twenty-five to thirty percent for the sake of doing it because it was something we could do and do well, and sixty percent for the sake of having something which was in its metaphorical way alive, our offspring, which would do things on its own when we were finished. That's the great thing about programming, the magical appeal it has . . . Once you fix a behavioral problem [a computer or program] has, it's fixed forever, and it is exactly an image of what you meant" (cited in Levy, 2001; p.)

encourage the voluntary cooperation of its citizens. In contrast, software ownership polluted "our society's civic spirit" (Ibid).

Ultimately, Stallman's appeal to the traditional societal values, such as freedom, as well as new hacker values was successful in maintaining the Hacker Ethics. He was able to build a movement by skillfully navigating the social ethical landscape and reminding hackers of their dual identity as members of the society and members of the hacker community. He also identified the societal practices not acceptable for hackers. Proprietary practices and those hackers' business companies that were involved in them became the movement's "Other." Essentially, proprietary practices became the free software movement's antagonist, the "nonfree."

The value of openness in the OSM

The new Linux project imported the FSM values and principles without changes in the early 1990s. With the growing commercial popularity of Linux, the project faced an identity crisis, however. An obvious technological advancement over GNU, Linux drew from the same philosophical and legal basis that Richard Stallman and his foundation established. This became an obstacle for Linux over time.[144] The newly developed Debian social contract and Debian licensing rules[145] filled the gap. The importance of new licensing scheme went clearly beyond

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[144] As Linux project had matured and attracted the attention of businesses, a number of companies emerged such as RedHat, SuSE, Caldera, and Slackware that helped integrate, configure, and install Linux on users' computers. Linux was designed "by hackers for hackers" and required serious efforts to put together the kernel, utilities, and drivers on a particular hardware. Very often Linux had to be integrated with users' commercial software.

[145] The Debian Social Contract and the Debian Free Software Guidelines represented a step away from GLP. Initially the Debian project involved the creation of a Debian version of GNU/Linux operating system by Ian Murdock in 1993. The project was based on free-software principles and was sponsored by the FSF in 1994-1995. Peter Perens, Debian's next leader, later wrote a new social contract with the free software community. The contract stressed that developers had a moral obligation to maintain the operating system free and open and "giving back to the free software community" (http://www.debian.org/social_contract). The contract further stated that it allowed creating distributions with both Debian and non-Debian software and did not object to non-free works.

legal issues. Similar to the GPL, license was a formal mechanism, a constitution, which glued

together the entire free software community. In the 1980s, the FSF's injection of the free

software narrative into the hacker community resuscitated the dying hacker spirit. In the 1990s,

the free software community had expanded and could celebrate a success, a fully functional and

competitive GNU/Linux operating system. New narrative and new identity were needed to

maintain the community. This narrative emerged by the name of open source. Openness

primarily referred to a particular methodology used by software developers[146] but was promoted

as a universal collaborative arrangement (Raymond, 1997).

The open source marketing strategy was met with the resistance of the proponents of free

software. Richard Stallman opposed the open source philosophy because it ignored the ethical

reasons underlying free software. He wrote:

> Nearly all open source software is free software. The two terms describe almost the same
> category of software, but they stand for views based on fundamentally different values.
> Open source is a development methodology; free software is a social movement. For the
> free software movement, free software is an ethical imperative, because only free
> software respects the users' freedom. By contrast, the philosophy of open source
> considers issues in terms of how to make software "better"—in a practical sense only. It
> says that nonfree software is an inferior solution to the practical problem at hand. For the
> free software movement, however, nonfree software is a social problem, and the solution
> is to stop using it and move to free software (Stallman, 2007).

However, Raymond disagreed that Stallman's moral crusade was the right strategy for the

movement:

> Big win, big score that gave us mainstream visibility and credibility from investors came
> not from bottom-up evangelism ... but because one strategist on the top saw the power in

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[146] In a nutshell, openness means that every software developer can start a project and any developer can contribute by writing pieces of code or testing the code (finding "bugs"). The products of hackers' work are also open or non-proprietary (not owned by anyone). When the code remains open, every developer can access and improve it. In contrast, the proprietary code allows access to a much smaller group of developers (e.g., those employed by a company) and ends up being inferior compared to similar non-proprietary code, according to open source advocates.

that method...and imposed that vision on everybody underneath him (Raymond, Revolution OS movie).

The value of open collaboration in the open data movement

FOSSM values were incorporated by the wider society under the umbrella of open collaboration, during the 2000s. Three different perspectives on open collaboration currently exist. First, the software developers identifying with Hacker Ethics understand it along the lines of Raymond' bazaar model. Second, business companies promote open collaboration as a business strategy aimed at capitalizing on user data. Third, open data movement advocates frame open collaboration as an application of open source principles to areas beyond software.

Historically, open collaboration has roots in free and open source software projects of the FOSSM. However, most open source products are used by non-developers now. These individuals are attracted to open source software because it is free and not because they want or can improve it. Business executives reinterpreted openness as the ease with which users can use Internet services, such as web-search services offered by Google. In the words of Jonathan Schwartz, a former president and CEO of Sun Microsystems "What matters more in this world is the price of the software. Free software is what has massive power. Google is powerful not because it's running on any one technology, but because its service is free."[147]

At the same time, the open data movement has revived the Hacker Ethics. Open data projects such as Wikipedia have applied the open source principle of collaboration to non-software areas potentially attractive to very large numbers of individuals. Open data advocates have relied on open collaboration principles and experience to reexamine such traditional values as private

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[147] Interview with Schwartz, oreillynet.com last accessed June 29, 2011.

ownership.[148] Also, a new generation of "civic hackers" has promoted the rhetoric of open

collaboration in relation to government transparency and open government policies.

6.1.3. Organizational praxis of the FOSSM

The FOSSM has been structured around loose communities of software developers and open

data individuals. Consistent with the Hacker Ethics' decentralization principle, the FOSSM

avoided having strong organizations. Hobby clubs were the dominant organizational form during

the movement emergence phase in the 1970s. With the spread of the Internet in the 1980s, most

hackers' initiatives were organized around web-based projects. Many recent open data

organizations imitate these decentralized organizational arrangements in order to facilitate mass

collaboration and sharing among open data individuals.

Hobby clubs

The early hacker culture was formed around several hobby clubs in the 1950-70s. The Tech

Model Railroad Club (TMRC), the first hacker club, had few formal rules.[149] The Homebrew

Computer Club (HCC) was another influential hacker club formed in San Francisco, California

in 1975. Similarly to TMRC, the Homebrew Computer Club stressed informal cooperation and

sharing: "[i]n true hacker spirit the club had no membership requirement, asked no minimum

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[148] Unlike the traditional Lockean view on liberty as property, self-interest and liberty have been increasingly defined around sharing rather than owning. Web 2.0 is a place where individuals share links, files, pictures, as well as personal data and personal opinions. Clay Shirky, a leading intellectual of new Internet technologies, believes that "Internet runs on love." He understands sharing as a fundamental act underlying all Internet collaboration: "share, then gather." In contrast, the traditional hierarchical organizational model starts with establishing a structure that ensures informational exchanges: "gather, then share" (Shirky, 2008; p.49).

[149] It was primarily a physical place, a clubroom hosting a huge train layout. No membership rules existed as anyone interested in trains was welcome to join the club. A club member awarded a key to those new members who had contributed forty hours of work on the layout. Besides physical access to the clubroom, new members had to learn the club's jargon and the informal club's culture in order to fully participate in the work on the layout (Levy, 2001, p.23).

dues, … and had no elections of officers" (Levy, 2001; p.203). Despite its loose organization, the cooperation of club members was remarkably successful, according to Levy.[150]

Internet-based forms of movement organizing

The ARPAnet and USEnet, two major national communication networks, had greatly facilitated the communication between hackers in the 1980s. Web-based hacker initiatives became the new organizational magnets that mobilized software developers. At the movement-building phase in the early 1980s, Richard Stallman's free software movement needed no other organizational structure other than a web-site. The Free Software Foundation, the free software movement's only organization, had a legal standing as a non-profit organization. However, its main activities and educational campaigns were organized through its web-site fsf.org.

Similarly, the Linux project was Internet-based. According to Eric Raymond, Linux was not just a source code but primarily "the social machine that developed around the source code."[151] Raymond was the first among hackers to articulate the organizational arrangements underlying most hacker projects. He named them "bazaar" (Raymond, 1996). Bazaar is characterized by the absence of a formal organization (formal rules, procedures, and incentives), weak and task-specific hierarchy, strong meritocracy, high openness to new members and ideas, and high transparency of products and processes (Weber, 2004; Lessig, 1999).

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[150] The club's technological brotherhood effectively pursued the idea of mass computing along the lines of the Hacker Ethics. Club hackers improved the first mass micro-computer *Altair* by adding video display, memory board, and developing new versions of BASIC language. The Apple "homebrewed" computer introduced at the Club by Steven Wozniak and Steven Jobs in 1976 became the club's best success (Levy, 2001).
[151] Raymond interviewed in the *The Linux Source Code* movie.

Open collaboration as a universal organizational form

During the last decade, the FOSSM shaped much of the business discourse on open innovation (von Hippel, 1986; 1988) and open collaboration. Some organization science scholars even proposed bazaar to be the fourth universal type of governance (Demil and Lecocq, 2006) in addition to the market, hierarchy, and network. Despite the open collaboration rhetoric, the organizational arrangements of many web-based companies represent a merger of open-source principles and traditional hierarchical organization. Also, many social media web-sites only resemble hackers' on-line projects but follow a more traditional proprietary approach.[152] On the other hands, many contemporary hacker communities still follow both the Hacker Ethics and have highly decentralized structures.[153]

Table 4 summarizes the cognitive praxis of the FOSSM. Hacker Ethics has glued the movement since hacker subculture emerged in the late 1950s. Specific hacker values were highlighted by movement leaders to promote specific movement strategies, at each movement phase. Thus the values of freedom and openness referred to the same hacker principle of sharing software. However, the different understanding of these values by Stallman and Raymond caused the fragmentation of the movement in the 1990s. Most importantly, as FOSSM knowledge had successfully won the marketplace it became more professional and commercial. As a result, the movement space created by hacker hobby clubs during the 1970s shrank as they were replaced by more professional and formal organizations during the last decade.

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[152] For example, Facebook does not allow access to its source code and users have little opportunity to influence Facebook improvements or policies.

[153] For example, the SourceForge.net, the largest repository of open-source software in the world, provides access to more than 260,000 of its open-source projects. Also, the MySociety.org, a civic hackers' web-site, allows access to all its data and source code.

TABLE 4. Cognitive praxis of the free and open source software movement

	Movement Emergence	Movement-building	Movement Specialization	Movement Institutionalization
Chronology	1950s - 1983	1983 - 1991	1990s	2000s
Practices	Hacking, personal computing	GNU project	Linux project	Open data projects
Values	Hacker Ethics	Freedom	Openness	Collaboration
Sources of meaning	Peer-oriented	Peer-oriented/ market-oriented	Market-oriented/ peer-oriented	Market-oriented/ user-oriented
Org. form	Hobby club	Web-site (Free Software Foundation)	Web-site (Open Source Initiative), formal organization	Web-site/ social media, formal organization

6.1.4. State-movement interactions in the free and open source software movement

Overall, the FOSS movement has had few direct interactions with public organizations. With a few exceptions, the movement never challenged the state and movement goals did not directly involve state polices. The most important interactions took place during the 2000s after movement practices had been incorporated by the society at large. The open-data movement led by web-based business companies and the new generation of hackers, civic hackers, provided an important impetus for framing and implementing the open government agenda in the U.S. The open data movement set a goal of making government data more public and accessible. The movement strategy included educating the public by demonstrating the effectiveness of mass collaboration advanced by the availability of public data and aimed at solving community problems.

State-movement interactions during the 1950-90s

With some exceptions, the movement seldom interacted with the state during the 1950-1990s. The early hacker culture at MIT praised its isolation from the outside world and individual

hackers were disinterested in politics[154] (Levy, 2001). The MIT received funding from the U.S. Department of Defense and its Advanced Research Project Agency.[155] Despite this fact, hackers did not identify with DARPA.[156] Some of them were employed by government organizations during the 1970s.[157] Besides these short employments, hackers had few interactions with the state. Collectively, hackers seldom opposed the state.[158]

The free software movement illustrates the ambivalence of the FOSSM in relation to the state. Unlike other social movements, such as civil rights or workers' movement, the FOSSM did not target the government. The fact that all government-produced code was released as free software in the public domain excluded the federal government from the list of enemies of the free software movement.[159] Stallman's FSM mobilized its supporters by enticing them with free software. The "download and use" strategy also implied a "network effect" – the value of the

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[154] The New Hacker's Dictionary defines hackers' political attitudes as follows: "Vaguely liberal-moderate, except for the strong libertarian contingent which rejects conventional left-right politics entirely. The only safe generalization is that hackers tend to be rather anti-authoritarian; thus, both conventional conservatism and `hard' leftism are rare. Hackers are far more likely than most non-hackers to either (a) be aggressively apolitical or (b) entertain peculiar or idiosyncratic political ideas and actually try to live by them day-to-day." (Raymond, 1996)

[155] MIT had received a large long-term grant from DoD (three million dollar a year) to work on multiple access computing and machine aided cognition. One third of this money could be used for the purposes of the Artificial Intelligence lab (a ten time increase in its budget). Marvin Minsky, the AI lab's director hired hackers for computer related research projects to implement some very abstract theories of artificial intelligence because "there was the question of how do you make the programs that do these things and do you get them to work" (cited in Levy, 2001; p.68).

[156] Student protests in the late 1960s pushed MIT hackers to articulate their relationships with the Department of Defense (DoD), however. For hackers it came as a shock to learn that their activist peers held AI lab in low esteem. Hackers responded that the DoD did not ask for any specific military application and hackers were "only advancing true science" (Levy, 2001; p.131).

[157] In his description of the Homebrew Computer Club at Berkley, California, Levy (2001) notes that at least two hackers, Tom Pittman and Lee Felsenstein, were employed by NASA early in their careers. Both of them left their jobs to pursue their interest in personal computing and never returned to any government organizations.

[158] Even in those rare cases when hackers opposed the government, they did not involve in direct protests. For example, they envisioned their Community Memory terminal in Berkley as "a testament to the way computer technology could be used as guerrilla warfare for people against bureaucracies." (Levy, 2001; 156). In hackers' view, if people started using computer, they would not be fooled into believing that government could control them by using computers.

[159] In other words, the software released by government was even less restrictive than the code released under Stallman's GNU GLP license. See Stallman's comments on the use of GPL license by the government: http://www.gnu.org/licenses/gpl-faq.html.

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product increased as more people started using it. The OSM used a similar strategy and did not interact with or campaigned against government organizations in the 1990s. The open source leaders urged their supporters to focus on technological rather than political issues.[160] In particular, Raymond's strategy involved working closely with those companies susceptible to open source principles, such as Netscape, and actively protesting against the companies hostile to these principles (Raymond, 2000). Similarly to the free software movement, the open source movement most frequently campaigned against the Microsoft Corporation, the chief antagonist in the FOSSM.

Notwithstanding the FOSSM's general apolitical stance, the interests of hackers and the government heavily clashed in the area of computer security (cryptography). Some hackers became interested in cryptography in the 1980s and established several communities centered on the issue of computer privacy.[161] Hackers understood privacy differently than the U.S. government: while hackers wanted to write encryption software that would make it impossible for others, including government officials, to read their emails, organizations like FBI claimed their right to access any email or computer data. On a technical side, many hackers were willing to use the encryption software written by a small group of government experts (Weiner, 2000). However, they believed that such closed software would not be good enough, according to the Raymond's bazaar principle: "secrecy is an enemy to quality" (Raymond, 2003).[162]

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[160] The open source movement's main strategist Eric Raymond, a libertarian and anarchist, believed that the government had to be kept out: "For freedom to flourish, the Internet must be kept free of government control" (personal web-site catb.org, last accessed June 29, 2011).

[161] At least three such communities formed in the mid-1980s (Lunceford, 2009; Thomas, 2002). Two communities, Phrack and *2600*, formed around two computer journals and primarily focused on practical cryptography issues. The Cult of the Dead Cow, another community, represented the hacker underground and was involved in political actions such writing and spreading the "Hactivismo" manifesto (Thomas, 2002).

[162] The book *Crypto* by Steven Levy describes how cryptography hackers and business companies defeated the attempts of National Security Agency to impose uniform national encryption codes and the Clipper encryption chip

The battle between the cryptography hacker community and government organizations in the

1990s resulted in hackers' general negative image. The media constructed the notion of hacking

around the cases of illegal activities in which only a small fraction of hackers were involved. In

fact, the hacker community at large condemned such illegal practices as incompatible with

hacker practices and the true hacker spirit (Lunceford, 2009).[163] Also, hackers appealed to one

case when two U.S. senators praised the work of the hacker group L0ft for its contributions in

identifying the nation's security vulnerabilities.[164] Overall, the cryptography hacker community

represented only a small fraction of the FOSSM and had little effect on the evolution of FOSSM

knowledge and its strategies.

Open government and the FOSSM in the 2000s

Open government has been a particular manifestation of FOSSM's institutionalization. Similarly

to the institutionalization of other social movements, such as the environmental movement, the

emergence of new institutional actors has been the corollary of the integration of FOSSM

practices by the wider society. These actors often employ a rhetoric associated with core

movement values but use it to pursue their narrow interests. Three groups of stakeholders to open

government can be distinguished that have relied on the FOSSM ideology and practices: open

source software organizations, open data web-based businesses, and civic hackers. They do not

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(Levy, 2002).

[163] Cryptography hackers argued that the knowledge about computer security that they possessed did not make them criminals: "knowing how to do something is not the same as causing harm" (Cross, 2006). Also, they made their case by arguing that innovations in the field of computer security would be impossible if government restricted the right of hackers to pursue their interests: "All of us would certainly lose a great deal if we deliberately limited science to only a few select laboratories and research institutions" (Ibid).

[164] Senator Fred Thompson invited several L0ft members to testify at the Full Committee hearing on the Government Computer Security in 1998. L0ft members stated that the nation's infrastructure was riddled with vulnerabilities and a group of hackers could easily take down critical government facilities (hsgac.senate.gov). Senator Lieberman recognized the "hacker think tank's" contribution: "It is probably not what you came to hear, but actually, I think you are performing an act of very good citizenship and I appreciate it" (cited in Gottlieb, 1999; nytimes.com, last accessed June 29, 2011).

represent a great variety of the FOSSM but has been selected here because each of these groups

has shaped the open government agenda and the rhetoric of collaboration, in particular.

As discussed earlier, the FOSSM seldom interacted with the state or used the traditional

movement tactics of "contentious politics" (McAdam, Tarrow, and Tilly, 2001; Tarrow, 1998).

With few exceptions such as political "hactivism" (Thomas, 2002), the movement has been

politically "invisible." Neither has open source organizations promoted open source software in

government using traditional lobbying methods.[165] Instead, their main strategy involved the

education of the public and government officials. [166] For example, the Open Source for America

(OSA), the leading open source coalition formed in 2009, defines its mission as raising the

"awareness in the U.S. Federal Government about the benefits of open source software" (OSA

web-site).[167]

Internet-based business companies, such as Google Inc., are another powerful stakeholder to

open government. Even though they do not necessarily identify with the FOSSM, they use many

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[165] Michael Tiemann, the President of the Open Source Initiative, comments on Argentina's first in the world public policy on open source software: "unlike many policies that are drafted by powerful lobbyists, I can assure you that this policy, written in June 2004, was never lobbied by anybody at the OSI. The government came to this conclusion the old-fashioned way through observation and real-world experience. The growth of open source policies among local, state, national, and transnational bodies like the European Union, and the fact that the OSI has virtually no lobbying capacity whatsoever, should be considered a major victory of public interest over private interference" (Tiemann's blog, opensource.org/node/417).

[166] The Open Source Initiative, the main organizational force behind the open source movement, focused on educating government officials about the values of open source by providing benchmarking cases. Also, a major Linux distributor Red Hat has actively marketed Linux in government organizations by creating a Public Sector Specialty (redhat.com/solutions/government)

[167] The coalition initially included about seventy companies, academic institutions, and individual technologists. The coalition is not a legal entity and does not participate in collective lobbying activities (even though each individual member might be involved in lobbying its specific interests). It describes its main activities as follows: "[W]e're focusing on developing an effective messaging strategy aimed at federal government leaders. We anticipate organizing events which bring open source advocates in contact with federal government decision makers, cultivating relationships with policy experts and organizations to develop thought leadership around open source software, and developing tools which enable grassroots communities to engage with political leaders about the open source message" (opensourceforamerica.com).

FOSSM principles and practices. Tim O'Reilly, a technology entrepreneur and a key open source

movement ally in the late 1990s, had indirectly promoted the business agenda of these

companies by advocating for the open data revolution as a frontier of technological progress in

the 2000s. User-generated data constitutes a critical asset for many web-based companies. Public

data generated by government organizations includes GPS, transportation, crime data, public

library materials, and laws. O'Reilly's idea of "government as platform" envisions government

that opens up its internal informational infrastructure in order to facilitate collaboration between

citizens and the government and the "crowdsourcing" of government work to the market

(O'Reilly, 2010).

Finally, the civic-minded young programmers who often self-identify as "civic hackers"[168] have

been instrumental in urging government to open its data. These programmers have a technical

capacity to digitize, aggregate, and visualize government data. Civic hackers create online tools

which helps citizens to use government data in a more user-friendly way. For example, most city

governments collect data about traffic conditions and roads. Civic hackers can use these data to

create a cell phone application that would suggest a bicyclist a safe and a convenient route to a

specified destination. Other applications use federal datasets to inform citizens about how budget

moneys are being spent.[169] Many civic technologists use their experience in creating civic

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[168] Luigi Montanez from Sunlight Labs, a non-profit organization promoting government transparency, is a civic hacker. He defines civic hacking as follows: "A civic hacker is an open source software developer who uses his or her skills to make their community and country a better place. Examples of civic hacking include building web apps to help people recover from a natural disaster, creating visualizations of the influence of money in politics, and cleaning up unstructured data on state legislation in order to make it more developer-friendly for others. A civic hacker will just do something, not asking for permission, ignoring government bureaucracy, in order to build tools and technologies with a civic-minded bent. Often, open government data is all one needs to create a compelling, novel app" (thebitsource.com).
[169] The recently launched recovery.gov web-site thus provides open data on the implementation of American Recovery and Reinvestment Act of 2009. Technologists can use this data to create detailed interactive maps showing where the Recovery Act money is going at the local level.

applications as an opportunity for professional development and to build prestige among peers. Some of them start their own small businesses afterwards (personal interviews).

Besides these three groups, many law professionals have been active in promoting open source principles in government.[170] Essentially, they have pushed for the creation of a government regime with few legal and administrative barriers to accessing government data. Beth Noveck, the first U.S. Deputy Chief Technology Officer for open government, exemplifies these efforts. A law professor at the New York Law School (NYLS), she relied on her prior successful experience with open source collaboration in the U.S. Patent Office.[171] While in the White House, she had repeatedly referred to open data philosophy in explaining transparency, participation, and collaboration – the three principles of open government listed by President Obama's Memorandum.[172] She acknowledges that open-source movement has influenced the open government as follows: "a lot of this collaborative activity started off in the open source community and has found its way into other social practices. Similarly for open government data - it started with the geeks, from them to the artists, from them to the public …. and the

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[170] Lawrence Lessig, a law professor at Harvard University and the founder of the Creative Commons non-profit organization, was among the first to express the idea that legal code regulates social behavior in the same way as computer code regulates the "behavior" of the computer: "code is law" (Lessig, 2006). Carl Malamud, a public domain activist, has long advocated for a better public access to public information, and the law of the land, in particular (Malamud, 2010). He proposed the new definition of the term "public" in relation to public information: "Today, public means online" (Malamud, 2010; p.46). In his speech at Gov 2.0 Summit in February, 2010, he famously compared the government to a computer operating system that should be run as open source with an unrestricted citizen access to all the nation's laws (Ibid). Also, Carl Malamud initiated a two-day meeting with major open data movement activists in Sebastopol, CA in December 7-8, 2007. The Sebastopol meeting defined eight principles of open government data.
[171] Noveck initiated the innovative Peer-to-Peer Patent project to do public patent examination by volunteer experts outside the U.S. Patent Office in 2006 (Noveck, 2009). The project received support from the U.S. Patent Office, large corporations (such as IBM and Microsoft), and the New York Law School (NYLS). It became one of the first government agency's experiments with crowdsourcing.
[172] As part of her implementation strategy, Noveck initiated the Open Government Dialogue, a brainstorming on-line civic engagement session, which the National Academy of Public Administration hosted in May, 2009. Based on the results of the brainstorming, the June 02 summary report by Noveck specified transparency, participation, and collaboration – three themes stressed by President Obama's memorandum. In particular, eight principles of open government data initially proposed by the 2007 Sebastopol meeting were adopted as new government transparency principles (See opengov.ideascale.com).

policymakers will be last" (Millar, 2011). Noveck made the above statement after she stepped down from her position as the U.S. Deputy CTO where she had worked for two years. This statement is an evidence of the penetration of FOSSM philosophy into government.

The above overview of the three stakeholder groups in open government provides the anecdotal evidence that FOSSM values and practices have influenced the open government ideology both from the top and from the bottom. "Change agents" such as Beth Noveck have directly shaped the Obama Administration's open government policies from the top by adding the principle of collaboration as a guiding principle of open government. Civic technologists substantiated collaboration in a bottom-up way by showing how collaborative technologies can benefit the public interest in practice.

Policy learning and FOSSM knowledge

The advocacy coalition framework (Sabatier and Jenkins-Smith, 1993; 1998) helps understand how FOSSM values have been exported by open government advocates. The ACF is a good conceptual lens because each coalition is distinguished by a set of common policy beliefs (Zafonte and Sabatier, 1998) and policy change occurs as a result of changes in coalitions' belief systems. Open government policies will be understood as a subset of information policies.

The Obama Administration's open government policies cross multiple subsystems of the U.S. information policy. I will focus on the Information Resources Management (IRM) subsystem to build on the earlier empirical study by Toavs (2004). Toavs chronicles the history of IRM subsystem from its formation in 1981-1996 to its maturation in 1997-2002. He identifies the

following advocacy coalitions: Information Producers, Traditionalists, Public Interest, and Information Technologists. Using this list of coalitions, the *policy core* beliefs of the last three coalitions support open government ideals even though their *deep core* beliefs (Sabatier and Jenkins-Smith, 1999) differ. Information Producers have no reasons to support open government.[173] According to the ACF theory, the examination of the belief systems of these coalitions is necessary to understand the policy change towards open government and collaboration principle in particular. Next, I will highlight the most important policy core beliefs of the three coalitions in relation to open government.[174]

According to Toavs (2004), Traditionalists has been one of the oldest coalitions. It includes groups of public librarians such as the American Library Association (ALA) with a policy core belief that citizens should have a more open and equitable access to public information.[175] More recent groups of advocates of open digital access to public archives can also be added to this coalition. Carl Malamud has been one notable public domain advocate.[176] He initiated a two-day meeting with major open data movement activists in Sebastopol, CA in December 7-8, 2007. The Sebastopol meeting defined eight principles of open government data, which were consequently adopted by the White House as a result of the Open Government Dialogue organized by Noveck in May, 2009 (Open Government Dialogue web-site opengov.ideascale.com).

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[173] Toavs defines "Information Producers" as those businesses that resell government and business information (Toavs, 2004). Open government policies thus might be detrimental for their commercial interests.

[174] I assume that no new coalitions have emerged during the last decade, which is consistent with the finding of Toavs (2004) that the IRM policy subsystem had become mature by the early 2000s.

[175] ALA sets access to information as its advocacy priority: "Core values of the library community such as equal access to information, intellectual freedom, and the objective stewardship and provision of information must be preserved and strengthened in the evolving digital world" (ALA web-site)

[176] Carl Malamud, a public domain activist, has long advocated for a better public access to public information, and the law of the land, in particular (Malamud, 2010). Malamud created the first Internet radio station and posted on-line the U.S. Securities and Exchange Commission EDGAR database. He proposed the new definition of the term "public" in relation to public information: "Today, public means online" (Malamud, 2010; p.46). In his speech at Gov 2.0 Summit in February, 2010, he famously compared the government to a computer operating system that should be run as open-source with an unrestricted citizen access to all the nation's laws (Ibid).

The Public Interest coalition focuses on the issues of privacy and information access. Toavs (2004) identifies three large Public Interest groups: the American Civil Liberties Union (ACLU), OMB Watch, and Computer Professionals for Social Responsibility (CPSR). Each of these groups has a disposition towards libertarian values and advocates for those technological solutions that ensure a good balance of privacy and access to government information. Sunlight Foundation has been an important new actor in this coalition and a force behind open government since 2006. According to its mission, "The Sunlight Foundation uses cutting-edge technology and ideas to make government transparent and accountable" (Sunlight Foundation web-site). One of its divisions, Sunlight Labs, employs software developers working on "digitization of government data and making tools and websites to make it easily accessible" (Sunlight Lab web-site). Some of these developers identify as "civic" or "government hackers" (Ibid).

Information Technologists is the most recent coalition formed by the late 1990s, according to Toavs (2004). It includes the nation's major Information and Communication Technology (ICT) business associations. Toavs argues that because this coalition had a greater technological expertise compared to other coalitions, it had become closely involved in all e-government policies since the 1990s.[177] During the last decade, many Internet-based companies have joined this coalition. For example, Google Inc. has been a key business actor in realizing the vision of "government as platform" that O'Reilly articulated (O'Reilly, 2010) and major ICT companies have supported. Technological innovation in government constitutes the policy core belief of this

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[177] In particular, Information Technologists influenced specific IT policies developed as part of "reinventing government," the Clinton Administration's reform in mid-1990s. They also participated actively in developing the "Citizen-Centered E-Government," a component of the Bush Administration's President's Management Agenda aimed to introduce customer-oriented on-line government services in the government in the early 2000s (Toavs, 2004).

coalition. Open government policies stimulate the adoption of new open data technologies by the government. Information Technologists ensure the adoption of these technologies by the government to make government on-line services comparable to those services provided by private companies.

Government Chief Information Officers (CIOs) constitute an important group in Toav's analysis of IRM subsystem advocacy coalitions. CIOs contributed to the establishment of IRM as a legitimate policy subsystem on the par with such traditional public management specializations as financial or human resource management (Toavs, 2004). Information policy implementation has been their main responsibility and they had to work closely with those coalitions who could provide such technological tools. For this reason, CIOs have maintained close connections with Information Technologists. In the context of open government policies, both U.S. Chief Information Officer Vivek Kundra and the U.S. Chief Technology Officer Aneesh Chopra have repeatedly stressed the adoption of new technologies, such as social media, as their main priority, which is also reflected in the OMB Open Government Directive of December 8, 2009.

The involvement of Information Technologists in open government has extended beyond its capacity as technology providers. A number the Information Technologists coalition individuals have been directly involved in shaping open government policies as members of the White House open government policy team.[178] Importantly, government CIOs and CTOs share the successful experience in the implementation of open government policies at various forums, such as Gov 2.0 summits organized by O'Reilly, a key voice of Information Technologists. Many

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[178] For example, Andrew McLaughlin, a U.S. Deputy CTO responsible for technology policy, served as the Director of Global Public Policy for Google prior to his joining the White House. A former Google project manager Katie Stanton worked as the director of citizen participation, a position created by President Obama in 2009 (Helft, 2009).

benchmarking open government practices are bottom- up and developed by communities of technologists. For example, prior to his appointment as the U.S. CIO, Vivek Kundra worked with iStrategyLabs, a civic technologist group who developed a pioneering Apps for Democracy project in Washington D.C., which has set an important benchmarking standard in open government at all levels.

Therefore, the ACF describes a fine policy learning mechanics behind open government policies that goes beyond technology issues. Consistent with the ADF theory, external factors, such as new technologies, affect policy change. However, these external factors influence policy change through the processes internal to a policy subsystem. In the case of open government policies, the policy core beliefs of three major coalitions, Traditionalists, Public Interest, and Information Technologists (Toavs, 2004) aligned for a short time. Open government policies and the use of new technologies address these policy core beliefs and provide new opportunities to pursue the values important for each of these coalitions.

In relation to the collaboration principle that has been integral to the current open government policies (Transparency and Open Government, 2009), the above ACF analysis suggests that collaboration approach most closely aligns with the agenda of Information Technologists coalition and government CIOs responsible for the implementation of open government policies. Government CIOs represent an important link between different advocacy coalitions in the IRM subsystem. They ensure policy learning in the subsystem (Sabatier and Jenkins-Smith, 1999), which means learning about those policy implementation tools that work, giving feedback to

other coalitions, and also mediating between coalitions' different belief systems and interpreting those belief systems for the purposes of policy implementation.

Organizational learning and FOSSM knowledge

There has been a growing literature on the use by government of interactive ICT technologies, such as social media tools (Mergel, 2010; Lee and Kwak, 2011; Gant and Turner-Lee, 2011). This literature refers to bottom-up collaborations of technologists, such as FixMyStreet, but does not explicitly address the links between organizational learning at public organizations and open source social practices. Because collaboration principle has been the main identifier of open government (Noveck, 2011) the actual collaboration practices provide an important source of policy and organizational learning for government CIOs and CTOs. The New York City case described below indicates that bottom up civic technologists' initiatives serve as an important source of organizational and policy learning for open government policy elites.

6.2. The case of organizational and policy learning in New York City

The FOSSM in New York City is represented by a number of communities that identify with the Hacker Ethics. This section discusses focuses two distinctive communities, the *2600* hacker community and the open source community of civic technologists. I will examine knowledge interactions between civic technologists and NYC government using the example of the NYC's 311 service.

6.2.1. The FOSSM community in NYC

The FOSSM in New York City includes a number of loosely organized communities broadly

identifying with core FOSSM values. New York City's human capital, its IT industry,[179] strong

media presence, and the long history of political activism have all created a unique environment

for the evolution of the FOSSM. Two FOSSM communities, the 2600 hacker community and the

open source community of civic technologists, reflect these city contexts by blending

technologies and the political grass-root activism.

The 2600 hacker community

The *2600* hacker community has been the largest FOSSM cultural space in New York City

(Thomas, 2002). The history of the *2600* community can be traced back to the Yippie youth

movement in the late 1960s.[180] A New York hacker Eric Corley (aka Emmanuel Goldstein)

started editing the *2600: The Hackers Quarterly*[181] magazine in 1984 (Goldstein, 2008; Thomas,

2002). The magazine continued the tradition of phreaking and tapped into the growing hacker

culture.[182] A large *2600* hacker community formed around the *2600* magazine in the 1990s

(Thomas, 2002). It has been very loosely organized and has not established any formal

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[179] The Silicon Alley, an area where most city's web-based IT businesses are located, cannot claim as many technological breakthroughs as its more successful West Coast counterpart. Similarly, the city has not been a major technological driver of the FOSSM as most hacker initiatives happened elsewhere, in places like MIT and Berkley. However, over 200,000 people that the Silicon Alley employs constitute a pool of technical expertise and resources from which the FOSS movement has benefited.

[180] On the wave of the student activism in the 1960s, a group of young hippies with a "revolutionary" agenda established an organization called Youth International Party in 1967. The group became known as "Yippies" (Sterling, 1992). Gitlin (1993) describes them as highly theatrical and anarchist youth movement. In the early 1970s, Yippies started using technologies for their political pranks, such as constructing pirate radios or altering gas and electric meters. The Youth International Party Line leaflet published articles on subversive techniques of "phreaking," the combination of the words "hacking," "freaking," and "phone." Phreaking techniques had been previously developed by hackers to exploit telecommunication systems (Sterling, 1992). They helped Yippies to express their political protest in technologically sophisticated ways such as dialing secret U.S. military phone numbers.

[181] "2600" refers to the 2600 Hertz tone that gave hackers access to the phone operator mode and made it possible to manipulate telecommunication networks (e.g., dialing long-distance numbers).

[182] Hacker culture had been cemented by the 1984 Hacker Conference organized by leading counterculture entrepreneurs Steward Brand and Kevin Kelly (Turner, 2006). It formed around the *2600: The Hackers Quarterly* magazine and *2600* monthly hacker meetings, as well as the biannual *Hackers On Planet Earth* (HOPE) conference.

organization.[183] Besides knowledge exchange, *2600* meetings have important ethical and public

relations purposes.[184]

The relationships between the *2600* community and the mainstream society are determined by

the Hacker Ethics. Similar to Richard Stallman's free software movement, the *2600* community

stresses the freedom of hackers to access and share information (Goldstein, 2008; Thomas,

2002).[185] Overall, the *2600* community maintains strong libertarian principles. Most hackers are

highly anti-authoritative, openly apolitical, and do not involve in traditional politics (Sorensen,

2003). On the other hand, *2600* hackers have been the most active nation's group that has

articulated the political implications of new communication technologies.[186] By highlighting

non-technical aspects of new technologies *2600* hackers have redefined liberty in the digital age

as the freedom to have control over the cyberspace and one's personal information (Coleman,

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[183] The community holds monthly meetings in public spaces and uses other communication means (email, chat, Bulletin Board System (BBS)) between these meetings. *2600* monthly meetings serve as a forum for the exchange of ideas related to technologies. They usually happen at the Citigroup Center and are attended by 50-100 individuals (nyc2600.net).

[184] First, these meetings serve to socialize young people into the hacker culture (personal interviews). Informal "initiation" occurs when a person brings a device he creates to be examined by his older peers. If veteran hackers agree that the device can be considered a "hack," the young person is admitted to the hacker community (Sorensen, 2003). Also, *2600* community hackers teach young people who come to the meetings that illegal practices, such as breaking into someone's computer to steal personal information, are incompatible with the Hacker Ethics. Second, *2600* meetings promote Hacker Ethics. To break the popular stereotypies of hackers as criminals and to demonstrate to the mainstream society that hackers have no secrets to hide, the meetings are kept open for the public. One of the hackers explains: "Why are we doing this in public? ...The very existence of the meeting is saying … that we are not doing anything wrong." Many journalists attend these meetings. When media come to see hackers, they encounter "a bunch of reasonable people … who share some nerdy common interest [and] ... usually they walk away disappointed because that does not make for good evening news." By opening their meetings to the public, hackers were able to change the popular image of hackers as criminals – to "get the truth out there" (Rob T Firefly, 2010).

[185] The *2600* magazine primarily concerns with technological issues but also publishes ethically-motivated materials in its editorials and letters (Ibid). They address such issues as hacker ethics, mainstream society's attitudes towards hackers, and hackers' rights. For example the following letter educates young people about hacker practices: "Perhaps you should keep your brain open to an intelligent thought or two. One of them might be the realization that the kind of stunts you're involved in are just plain and simple fraud and have nothing at all to do with hacking. We're not interested in your little crime ring" (2600: The Hacker Quarterly, 1998, cited in Sorensen, 2003).

[186] Goldstein (2008) summarizes the hacker philosophy expressed in the 2600 magazine as follows. "What we believed in, what we stood for, what we fought against – it transcends the political scene, global events, the technology of the day. We talked about freedom: freedom to explore, to be an individual, to spread information through whatever means were available. And all of that carries on to the present day and will continue into the indefinite future. It's part of who we are, not as hackers but as humans" (p.207).

2003). A fraction of the 2600 community includes a group of "hactivists" from the *Cult of The Dead Cow* (cDc), a radical libertarian underground wing of the hacker culture that uses technologies for the purposes of political protest (Samuel, 2004).

Overall, the *2600* community praises its isolation from the "mainstream" (Kroll, 2006). It stresses its ideological opposition to government and neither sets a goal of changing the government or collaborates formally with government officials on any specific civic projects.[187] Formal interactions between *2600* hackers and government have been limited to law enforcement issues. At the same time, informal interactions between the 2600 community and government employees happen frequently. Goldstein (2008) notes that the *2600* magazine benefited from the insider information provided anonymously by employees of business corporations and government organizations.[188] On the other hand, government organizations have also benefited from hackers' technical expertise and knowledge.[189] Also, several HOPE[190] presentations have

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[187] For example, the recent hackers' disaster relief and technology project stresses the role of technologies in improving communication "from people to people," mutual aid and self-organization. It explicitly contrast its bottom-up approach to the top-down "management" approach favored by government, corporations, and large non-profits. In the words of one hacker, this latter approach has been characterized by the "paranoid desire to control conformation" (presentation by Smokie at the 8th HOPE conference, 2010).

[188] In the words of Goldstein, "some of our most enthusiastic responses come from people within these very same institutions [corporations and government]… Deep down they were cheering us because everyone wanted to see the individual stand up to the monolithic entities and win. But on the surface everyone had to follow the rules and pay the rent. This is why from the beginning we found ourselves being fed all sorts of leaked information from behind the corporate (and government) walls. Being thought of as worthy of receiving top secret information has always been a real badge of honor for us" (Goldstein, 2008; p.157).

[189] For example, one of the *2600* contributors who worked as a security specialist for "a division of the United States Federal government" acknowledges the impact of his knowledge interactions with hackers on performing his job as follows. "Now, I interact with as many if not more hackers during the day as I do security professionals and, as a result, my knowledge of the holes that exist in computer systems has increased immensely, I even learned enough to hack into one of our computer systems, expose our security holes, and get them fixed. As a security specialist, that is priceless to me. I was only able to do that because of the training I received from these so called malicious hackers. Hackers helping me to improve the security of government computer systems, hmmmmmm, seem suspect to you? Not to me." (Fed, Summer 1992, see Goldstein, 2008, p.386).

[190] *The Hackers On Planet Earth* (HOPE) is the international conference in NYC sponsored by *2600: The Hackers Quarterly* magazine and attended by 700-1000 individuals. See Goldstein (2008, p.273) on the history of the conference.

addressed specific government-related issues.[191] For example, 2600 hackers helped improve a new NYC's transportation data system.[192]

The open source and civic technology community

Besides the 2600 hacker community, the FOSS movement includes a large community with an interest in civic applications of open source ideas. Since the open source revolution started in the early 2000s, the NYC's IT industry has endorsed open source practices as part of its business strategies. The NYC Tech Meetup, an informal gathering of over 16,000 city's technologists,[193] "a community-led organization, and … not for profit" (NYTM web-site) reflects the industry's interest in the business potential of open source model. A fraction of this community concentrates on "civic technologies," or technologies which help align interests of individuals, communities, and the government. The community of civic technologists has built around two large non-profit organizations (Open Plans and Eyebeam), several ad hoc groups and conferences (such as Open NY Forum), a number of projects initiated by journalists (DIYCity and Hack/Hacker), and entrepreneurial civic-minded individual developers.

Open Plans is a nation's leading "non-profit technology organization focused on civic engagement and open government" (Open Plans web-site). It was founded and has been funded

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[191] The first conference opened with the presentation of the former Central Intelligence Agency officer Robert Steele who advocated for the "open source intelligence" approach (1st HOPE conference, 1994). Mike Dvorak and Paul Suda discussed the potential of GIS and Google Maps and gave an example of bike trip mapping in New York City (6th HOPE conference, 2006). CyperHost discussed security vulnerabilities in USPS infrastructure (7th HOPE conference 2008, (http://www.youtube.com/watch?v=e1tWMutEOZU). John Strauchs addressed the problems of convergence of physical security and computer technology with information technology communities at the Department of Homeland Security (7th HOPE conference 2008) (2600.com, last accessed January 11).

[192] Red Balaclava summarized the assessment of NYC's new Metrocard system, from hackers' perspective at the second HOPE conference in 1997. This was brought to the attention of the *2600* community by an anonymous hacker and an employee from the NYC Metropolitan Transit Authority during the first HOPE conference in 1994.

[193] See meetup.com/ny-tech web-site, last accessed January 30, 2011.

by Mark Gordon,[194] an open source business entrepreneur.[195] Open Plans' projects include geospatial web-based open source platform OpenGeo, a number of community-oriented journalism and education initiatives, and Open 311 collaborative initiative. The program manager Philip Ashlock defines the purpose of Open 311 as the facilitation of "collaboration between cities and other government bodies on the development of open standards and best practices around open government initiatives" (Open Plans web-site). In particular he develops and promotes 311 open standards in New York City as well as nationally.

Eyebeam is another large non-profit organization that has promoted innovative open source practices by supporting art and technology projects in New York City since 1997.[196] Besides Open Plans and Eyebeam, the New York City's open source community includes a number of informal civic groups. For example, Open New York Forum meetup group was formed by Matt Cooperrider in 2009 to strengthen the "ecology" of open government enthusiasts and to implement open government ideas at the local level "in a grass root open government way" (Cooperrider, 2009).

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[194] Mark Gorton founded Open Plans in 1999 "after realizing the incredible potential of the open source movement to create tools that catalyze civic engagement" and social change (Open Plans web-site). He defines the opportunities for social change as follows: "Open Plans spots the seams in the world where opportunities for transformative change exist: the way open source can spread the knowledge and tools of good government; the promise that planning for people first, rather than cars first, can transform neighborhoods and cities; the potential of the Web to create a more open, engaged society" (Ibid).

[195] Gorton runs several successful businesses including Lime Wire LLC, a producer of the world's most popular file-sharing software. According to Gorton, he has "imbued in Open Plans the same entrepreneurial spirit and results-oriented methods as [his] other companies" (Open Plans web-site). His commercial companies embrace open-source principles (Kassenaar, 2007).

[196] The organization's web-site defines its mission as follows: "Eyebeam is an art and technology center that provides a fertile context and state-of-the-art tools for digital research and experimentation. It is a lively incubator of creativity and thought, where artists and technologists actively engage with culture, addressing the issues and concerns of our time. Eyebeam challenges convention, celebrates the hack, educates the next generation, encourages collaboration, freely offers its contributions to the community, and invites the public to share in a spirit of openness: open source, open content and open distribution" (Eyebeam web-site). Since Eyebeam was founded in 1997, it has supported "more than 130 fellowships and residencies for artists and creative technologists" (Ibid). The organization also contributes to building the city's vibrant open-source community by organizing various events and talks on civic technologies. The Open Culture research group, one of the organization's initiatives, explores the history of free and open source software as well as non-software open-source model collaborations. The group offers a series of educational "skillshares" on the use of open licenses in arts projects (Ibid).

The group focuses on the intersection of open government and civic technology and promotes "local open government initiatives through workshops, education, and collaboration" (Open New York Forum web-site).[197] Also, the open source community in NYC includes many journalists who have merged journalism, media, and technologies, in projects such as DIYCity[198] and Hacks/Hackers.[199]

Finally, many entrepreneurial civic technologists who also work for the government have been key actors in NYC's open source community. For example, Noel Hidalgo, a software developer and an advocate of open-source, works as the Director of Technology Innovation for the New York State Senate[200] and also mobilizes NYC's technological community to promote open government practices. Hidalgo is a co-organizer of the Open NY Forum and thus bridges together the world of government and the world of civic technologists. In particular, he organized one event on open government in collaboration with Eyebeam and Open Plans. Participants at

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[197] Matt Cooperrider started the group in 2009 by registering the online Open Government NYC meetup group. When about 30 people came for the first meeting, Cooperrider considered his initiative to be the first success and attributed it to the "rich community that had already existed [in the city]" (Cooperrider, December 2009, presentation "OpenNY Past and Future"). In particular, Cooperrider lists a number of open government advocates and organizations in the New York City area who are active on the national/federal level. For example, the founders of Personal Democracy Forum (PdF), the world's largest media forum on politics and technology, Andrew Rasiej and Micah Sifry live in New York City (Cooperrider, December 2009, presentation "OpenNY Past and Future, " last accessed January 25, 2011).

[198] DIYCity.org (Do-It-Yourself City) web-site, launched by its founder John Geraci in 2008, is an example of the application of open-source technologies by a professional journalist. DIYCity represents a web-site and a "global online discussion … about transforming local communities with the help of free and open web technologies" (Geraci's personal web-site johngeraci.com). In the words of Geraci, DIYCity is a web-site that invites people "to reimagine our cities" so that cities become more effective, efficient, and sustainable (Interview to Smart City Radio, January 1, 2009).

[199] Hacks/Hackers is a forum that brings together journalists (hacks) and technologists (hackers). It was organized by a group of journalists from major media companies, such as The Associated Press and New York Times, and media professors in June, 2010. Hacks/Hackers is a community of people "who seek to inspire each other, share information (and code) and collaborate to invent the future of media and journalism."

[200] See the NYS Senate's web-site for a list of open source projects (nysenate.gov/open, last accessed January 21, 2011).

this event shared their experience in implementing Gov 2.0 ideas inside and outside government. Also, Hidalgo promotes open government ideas at the larger NYC's open-source community.[201]

Overall, the open source community of technologists has been sufficiently institutionalized compared to the *2600* hacker community. Both communities embrace the Hacker Ethics as their ideological foundation. At the same time, *2600* hackers identify with the moral message of the free software movement while civic technologists align with the late open source movement. These differences reflect their views on collaboration with government, which is the focus in this section. Both communities stress decentralization as an internal organizational principle consistent with the hacker tradition. Thus the *2600* hacker community has built around the *2600* magazine, monthly meetings, and biannual HOPE conference.[202] Similarly, open source civic technologists use hacker rhetoric to organize their events. For example, their conferences and brainstorming sessions are called "unconferences" and "hackathons" and explicitly embrace hackers' philosophy of decentralization. At the same time, civic technologists are more organized than *2600* hackers. Their community has been backed by two large formal non-profit organizations, Open Plans and Eyebeam (see the discussion above), which embrace the informal

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[201] Hidalgo views the New York City Tech meetup group (12,000 members) as a platform for innovation. He decided to run for the meetup's Board with the "association, participation, innovation" agenda (see vote.noneck.org, last accessed January 21, 2011).

[202] The *2600* magazine has been the main organizational force behind the otherwise chaotic NYC's hacker community. Emmanuel Goldstein, the founder and the editor of the *2600* magazine, notes on the importance of the magazine for the organization of the hacker community: "What people saw in *2600* was something previously unheard of in this community: consistency. Every month and at the same time we released a new issue" (Goldstein, 2008; p.xiv). In addition, the 2600 magazine stimulated the organization of *2600* but avoided traditional top-down management approaches. Monthly meetings have been another organizational form. The nyc2600.net web-site defines the organization of *2600* meetings as follows: *2600* [magazine] established the *2600* meetings as a forum for anyone of any persuasion or level of expertise to meet, share information, and commiserate amongst themselves. Apart from establishing the date and time of the meetings, and recognizing and advertising meetings that establish themselves all over the world, *2600* maintains no "control" over the meetings. The events are purely products of the communities they serve, with each location's meetings evolving naturally as their attendees take things in their own directions, and nobody is "in charge" (NYC2600 web-site, last accessed January 21, 2011).

community of civic technologists as an important element of their missions and strategies. The alignment of civic technologists' interests with these organizations' goals helps secure the technologists' professional careers and provide professional legitimacy to their projects. In contrast, the majority of *2600* hackers keep their interest in hacking separate from their professional lives.

Most importantly, two communities differ in their views about collaboration with government. *2600* hackers distrust government and do not view it as a legitimate partner (Kroll, 2006; interviews No 6,7,8). In contrast, civic technologists have been actively engaged with the NYC government. The web-site of Open Plans defines collaboration with business organizations and public organizations as its key organizational strategy: "We partner with forward-thinking organizations and public agencies on software development and technology strategy" (Open Plans web-site).[203]

6.2.2. FOSSM knowledge and NYC government: the case of 311

New York City government has been a leader in implementing open government principles. The NYC experience has been cited by federal government officials responsible for open government policies[204] as a benchmark in open government practices. Mayor Bloomberg has earned a

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[203] Government data constitutes the central issue of collaboration for civic technologists. O'Reilly's idea of "government as a platform" defines civic technologists' approach to collaboration. They understand the role of government as limited to maintaining the informational infrastructure and providing access to government data to encourage innovation: "When government agencies free their data, they open up a world of innovation" (openplans.org). The role of civic technologists consists in developing software applications that would help citizens use government data in their everyday activities, such as public transportation and recreation. Open Plans identifies several areas of collaboration with government agencies: developing open source software to save taxpayers' money, promoting best open data practices to "make smart decisions and improve neighborhoods," reforming transportation polices to create greener economy, developing curriculum and providing training in areas that "make cities more livable and data more available" (Ibid).
[204] According to the NYC press release of June 29, 2009, the Federal Chief Technology Officer Aneesh Chopra

reputation of the nation's most innovative mayor for his efforts to technologically upgrade the NYC government by engaging the city's community of technologists. The collaboration between the NYC government and technologists has primarily centered on public data held by the City's government organizations. Public datasets such as those generated by the NYC 311 non-emergency call system have stirred an intensive mobilization of technologists that the city has used to achieve its goals.

The NYC has recently introduced a new 311 Online in addition to its old phone-based 311 call system. Essentially, 311 represents both a customer-oriented system aimed to give citizens an easy access to government information and services, and a management system used to improve the quality of service through "measurement and analysis of service delivery" (NYC government web-site). The city launched 311 Online web-site in 2009 as an additional portal that citizens could access from their personal computers and mobile devices to ask questions or to report problems. 311 Online relies on the existing social network technologies, such as Twitter, to reach out to citizens. To improve the quality of 311 Online, Mayor Bloomberg decided to release a number of 311 datasets to the wider community of technologists in 2009 (NYC government Press Release, June 29, 2009). The NYC government used the engagement strategy of public contest that Washington D.C. has experimented with in the past (NYC Big Apps web-site).The NYC government presented its annual competition NYC Big Apps aimed to "use private sector technological innovation to bolster [city] efforts [to increase the transparency of City government]" (Mayor Bloomberg cited in NYC government Press Release, June 29, 2009). On

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praised NYC government of its efforts: "We applaud New York City's leadership on delivering a more open and innovative government. … These [NYC initiatives] align well to President Obama's Open Government Initiative and reflect best practices worthy of replication to achieve excellence in public sector performance" (NYC government Press Release, June 29, 2009).

the same day, Mayor Bloomberg announced his decision to release some city data at the Personal Democracy Forum, the major annual open government conference, in June 2009.

The NYC Economic Development Corporation organized the contest. It called for the "innovative and useful" software applications that would increase government transparency by delivering information about city services to citizens' mobile devices. According to the BigApps web-site, a successful application would use government data released by NYC government (82 datasets from 32 city agencies) in June 2009. A winner was promised a $20,000 cash prize, marketing opportunities, and a lunch with Mayor Bloomberg, according to the contest call. During the contest, 112 Android and iPhone applications were submitted for review. The winner application WayFinderNYC offered smartphone users a convenient tool to find the closest subway entrance. Many other applications became available for citizens for free as a result of this contest, which ultimately helped improve the quality of 311 Online.

The 2009 NYC Big Apps contest can be seen as the evidence of learning by the NYC government how to implement open government principles by mobilizing open source technologists. The City has recently released more public data and organized the second BigApps contest to build on the success of the first contest. Deputy mayor Goldsmith summarized the learning as follows: "NYC BigApps is redefining the relationship between City agencies and enterprising citizens, all while delivering value to the public … Last year, NYC BigApps contestants came up with innovative applications that would have never been created in the normal course of business" (NYC press release, 2011).

At the same time, the government learning resulting from the BigApps contest has not been

comprehensive enough, from the perspective of civic technologists. In their view, the

government was able to tap into the expertise of open source technologists but neglected the

value of collaboration, the key piece of open source movement's knowledge. Mayor Bloomberg

considers collaboration with technologists as a way to improve the delivery of information to

citizens by leveraging the entrepreneurial forces of the market.[205] In contrast, civic technologists

believe that this Mayor Bloomberg's vision is not sufficient to realize the ideals of open

government.[206] Their view of collaboration with citizens is exemplified by Open 311 project, an

Open Plans' "collaborative effort to create an open standard for 311 services" in June 2009

(Open Plans web-site). Open 311 advocates for API (Application Programming Interface) real-

time access to NYC's 311 internal data systems, which would create a completely new software

ecosystem of 311 and would result in a much closer collaboration between citizens and the

government.[207]

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[205] His philosophy is articulated in the *Connected City* vision (NYC Government Press Release, October 1, 2009). Fundamentally, it treats citizens as customers – not as partners to collaboration. (See Vigoda (2002) for a theoretical discussion about the difference between government responsiveness to citizens-as-customers and government collaboration with citizens-as-partners).

[206] According to Micah Sifry, a founder of Personal Democracy Forum and a leader of the open data movement, Bloomberg's team are "…still treating NYC.gov like a digital storefront: citizens can look in the window, or even knock on the door and get some information from the nice attendant at the desk. But we can't see what that person sees on her computer screen when she digs into 311 databases, or connect to other people like us with similar interests, the way we all do when we use social networking sites like Facebook or MySpace" (techpresident.com blog, last accessed February, 16).

[207] The Open 311 web-site defines its purpose as follows: Unlike the synchronous one-to-one communication of a 311 call center, Open311 technologies use the internet to enable these interactions to be asynchronous and many-to-many. This means that several different people can openly exchange information centered around a single public issue. This open model allows people to provide more actionable information for those who need it most and it encourages the public to be engaged with civic issues because they know their voices are being heard (Open 311 web-site). The Open 311's idea of community collaboration facilitated by civic technologies draws from the earlier initiatives of FixMyStreet in the UK, SeeClickFix in the U.S., as well as Open API experience in Washington D.C. followed by San Francisco, California. Based on these experiences, open government data and open API can increase the potential of good ideas, empower citizens, and allow cities to do more with less (Ibid).

The question of how much open data should be open has caused the tensions between the Mayor Bloomberg Administration and the open source community. The NYC's civic technologists have advocated for an unlimited access to city data: ideally, citizens should have the same real-time access to internal government data systems as government employees. In contrast, the NYC has given a very limited data access for citizens. To realize their radical open government agenda, civic technologists formed a coalition in 2009. Gale Brewer, a NYC Councilmember and Chair of the Councils' Technology in Government Committee, has been their most important ally (Lee, 2009). Together with civic technologists, she prepared the Open Data Standards (Int. 991-2009) legislation. The bill required the creation of a centralized repository of all publicly available data (excluding the data that should not be public according to the law) that "would enable web developers and entrepreneurs to interact with City government in new and unforeseen ways" (NYC Council Press Release, June 25, 2009). However, the Mayor's Office came up with a less radical approach to opening government data that ultimately prevailed.[208] The city released some datasets but largely refused to give up the control over data by appealing to its business-like customer service philosophy.

Informal knowledge interactions between the FOSSM and the NYC government

As the 311 collaboration case shows, formal knowledge interactions between civic technologists and the NYC government have been limited to technologies. Government officials learned about new technologies and leaned how to mobilize those individuals having a capability to develop such technologies. However, few policy makers or administrators learned the underlying value of these collaborative technologies and how open source values inform their collaboration. In other

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[208] When mayor Bloomberg announced his plan to open 82 city government datasets at the Personal Democracy Forum, this came as a surprise for Councilmember Brewer. In her interview to New York Observer, Brewer commented that the Mayor's plan overshadowed her own proposal and she had no knowledge about it (Pompeo, 2009).

words, the two sides were collaborating while having different philosophies and different goals of collaboration.

Unlike formal interactions, informal knowledge exchanges have been a better way to channel FOSSM knowledge and values into the NYC government. This occurs as government employees participate in open source "community of practice" (Wenger, 1998). In particular, because open source practices have been sufficiently institutionalized, many ICT government technologists participate in this community for professional reasons. For example, NYC government technologists have participated in open source hackathons and unconferences.[209] Many technologists inside government initiate their own open data projects, such as a semi-informal 311 blog at 311 Online.[210] Finally, many government employees, such as the Director of Technology Innovation for the New York State Senate Noel Hidalgo and the NYC Chief Digital Officer Rachel Stern responsible for government-wide open government innovation, entered the government as advocates of open source and have continued to maintain strong connections with the open source community.

6.3. The effect of FOSSM knowledge on public policy and administration in New York City

In the words of the founder of the free software movement Richard Stallman's, the FOOSM has "changed the society in a smart way" (Stallman in Revolution OS movie, 2000). Two U.S.

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[209] For example, Andrew Nicklin, Director of Enterprise Architecture at NYC DoITT, participated in Open311 DevCamp on October 24th, 2009 and answered questions about DoITT policies and practices (see wiki.open.311.org web-site, last accessed February 17, 2011).

[210] The employee who goes by the name Dan introduces the blog as follows. "My name is Dan, and I'm one of a team of several people who maintain 311′s close relationships with hundreds of NYC agencies and offices so that we can provide you with the government information and services you're after. Blogging isn't part of my job description, and I'm not a public relations expert. But I *am* passionate about helping bring down some of the walls surrounding government to make it more accessible, transparent, collaborative… and maybe even more personable at the same time. (311nyc.wordpress.com web-site, last accessed February 17, 2011).

Deputy Chief Technology Officers responsible for open government confirm this Stallman's

conclusion about the role of FOSSM knowledge in relation to open government. The first

Deputy CTO Beth Noveck has explained the rationale for collaboration with citizens by referring

to Wikipedia project (Noveck, 2009) and also explicitly confirmed the influence of the open

source movement on open government (Noveck, 2011; interview No 11). The metaphor of "civic

software" used by Noveck draws on the principles of collaboration in on-line networks first

defined by the open source ideologue Eric Raymond in relation to the collaboration of Linux

software developers. Similarly, the newly appointed Deputy CTO Chris Vein defines

collaboration with experts inside and outside government citizens as a crucial element of his

"renewing government" agenda. He recognizes the role of expertise, energy, and civic motivation

of civic technologists and commits to giving them credit and building on their contributions at

the federal, state, and local levels. Finally, Vein envisions the renewed government as a "social

network" rather than a bureaucracy (Vein, 2011).

Despite the ideological links between the rhetoric of open government and FOSSM philosophy,

open source principle of collaboration has not made its way to public organizations, based on the

NYC 311 case. Both Noveck (2011) and Vein (2011) agree that a complete culture change inside

the government is needed to implement open government ideals. However, this change has been

very slow in NYC. There is evidence that NYC government officials embrace a more

collaborative approach. For example, Charles Monheim**,** Chief Operating Officer of the

Metropolitan Transportation Authority (MTA), defines collaboration with city technologists as

the agency's important long-term strategy to improve the agency performance. He refers to the

open source contributions of technologists as "intellectual grants" by citizens that exemplify a

"21 century model of democratic philanthropy." MTA will seek to build trust with the technology

community, according to Monheim (Monheim, 2011). Also, the leaders of NYC Department of

Information Technology & Telecommunication (DoITT) responsible for 311 Online technologies

has become more open to the collaboration with open source technologists, as the recent

statements by Commissioner Post indicate.[211] On the other hand, the DoITT's top-down

customer service philosophy represents an obstacle to better collaboration. According to civic

technologists, "bureaucratic bottlenecks" generally reduce the potential of collaborative

technologies used by government (personal interviews). Bureaucratic culture also remains a

serious challenge in those cases when civic technologists enter government organizations as new

employees. For example, the discussion related to the newly created position of NYC Chief

Digital Officer reflects the skepticism of technologists about the ability of government

organizations to adopt collaborative technologies (Goodman, 2010; O'Donnel, 2010).[212]

In the view of civic technologists, the progress in their relationships with the NYC government

has been significant but the scope of collaboration still remains moderate. In the opinion of Mark

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[211] Commissioner Post acknowledges the importance of new tools and the collaboration with citizens and technologists in her interview to Tom D'Auria from IMI Tech Talk radio: "These are technical tolls of the future. We are … embracing them as an agency as a city. I think the challenge from the government perspective is coordinating efforts to encourage the use of these tools but in responsible ways… They can be very much a very strong and active link between citizens and government. Just as people use these tools to engage in socialization among themselves … we would like to encourage that amongst who want to interact with NYC." (Post, October 2010). http://imitechtalk.wordpress.com/shows/inside-nyc-it-with-commissioner-carole-post-october-3-2010/

[212] Charlie O'Donnell identifies bureaucratic culture as a major obstacle to collaborative technologies writing on his blog. According to him, civic technologists inside government need autonomy to make technologies work. "Hopefully, after they find that person [Chief Technology Officer], they won't muzzle them. If we don't hear form the CDO on a regular basis through social media channels in an authentic, engaging way, you might as well toss their salary into the Hudson because they'll never have the freedom to work. So before '…multimedia content from NYC Media and other outlets will be integrated into the City's website, mobile devices, video-on-demand and in public spaces…' [excerpt from the job description – V.P.] how about recognizing the following: This is not a media broadcast position or a project manager job—it's a community organizer… someone who can create community out of various government agencies to interact with the outside world in an efficient manner as well as to empower communities of constituents online. Hopefully, we'll see a lot less recreation of wheels, some autonomy around this position, and a renewed engagement in the community for city officials" (O'Donnel, 2010).

Gordon, the founder of Open Plans non-profit organization, the impact of the open-source movement on government will greatly increase in the future (interview No 13). In fact, Open Plans has been very proactive in promoting open collaboration by government. For example, Open Plans activists have developed recommendations for government officials on how to effectively collaborate with civic technologists (Grossman, 2010).[213] This has been consistent with the strategy of national open source coalitions focused on educating public policy officials and administrators on the values of open source as well as their practices. For example, Open Government Initiative offers a public policy template for local government leaders "to institutionalize open government principles within local government" (Open Government Initiative web-site).

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[213] In particular, the Open Plans builds on the case of successful collaboration with NYC MTA. The relationships between technologists and MTA were initially highly adversarial and litigious when software developers started using MTA data in 2008. After *Open Plans* began a dialogue with MTA by convening a working group in the attempt to build "a community of interest," MTA created a "developer outreach program" that was shaped by developers (Grossman, 2008). As a result of this collaboration, MTA agreed to release its data and developers built new mobile applications for MTA users, which increased the value of MTA services. In retrospective, Monheim admits that MTA did not have capacity and resources to use all its data (personal interview). This capacity was provided by civic technologists. Open Plans describes this case as MTA's organizational "transformation" driven by civic technologists (Open Plans web-site; interview No 5).

CHAPTER SEVEN. THE CASE OF THE NATURAL CHILBIRTH MOVEMENT

This chapter links knowledge in the natural childbirth movement and maternity hospitals in Ukraine. Section 7.1 overviews the movement's history in Russia and Ukraine, addresses main changes in its cognitive praxis, and describes the state-movement interactions. Section 7.2 examines the NCBM community in Dnepropetrovsk, Ukraine. Section 7.3 examines the effect of NCBM knowledge on state maternity hospitals and presents the case of the Stork perinatal education center.

7.1. Overview of the cognitive praxis of the natural childbirth movement

7.1.1. The history of the NCBM

Movement emergence, the 1970s-1983

The natural childbirth movement in former Soviet countries can be traced back to the late 1970s when several family clubs formed in Moscow. According to Sheila Cole, the American journalist who studied family clubs, these clubs parallel the human potential movement in the United States (Cole, 1986). Family clubs included those parents looking for alternative child development and pedagogical methods and, particularly, were influenced by the experience of the Nikitins family. Most family club members were engineers and had no background in psychology or social or health sciences. The Nikitins advocated that, given the right conditions, every child had a natural capacity to become genius. Their book Creative Ladder that reflected their philosophy of early child development and experience with their own children. Nikitins' approach resembled the Montessori discovery method that had been very common in the West but was very radical by the standards of the Soviet educational system. After one hundred thousand copies of the book were sold, the number of Nikitins' supporters increased

dramatically.[214]

In addition to new pedagogical methods, the NCBM was influenced by the experience of the Kosmos club. Kosmos club activists used a public convention hall in Korolyov city, the center of the Soviet space and rocket science near Moscow, to organize talks on spiritual development. Yan I. Koltunov, the club's charismatic leader and one of the country's leading experts in rocket science, was able to combine the language of physics and the language of self-development. Initially interested in man's survival in outer space and issues such as efficient breathing and nutrition, he turned to Indian yoga and soon gathered a very large audience, thousands of people.[215]

Zdorovaja Semya (Healthy Family) became one of the largest family clubs in Moscow. It merged Nikitin's pedagogical methods and Kosmos' spiritual practices. The club encouraged the experimentation with new ideas and organized discussions of innovative methods of self-development. Many Soviet innovators came to the club to promote and test their ideas. Igor Charkovski, a sports biomechanics researcher, a swimming instructor, and an innovator

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214 To discuss Nikitins' ideas and to share their own experiences in raising their children, parents met in small groups. Sometimes they met in their own apartments and then as the group grew bigger they moved to parks, gyms, and lecture halls. This growth was supported by good results that parents observed in their children as well as the new feeling of personal empowerment. Nikitin's method changed not just attitudes towards child development but also the lives of those who experimented with these new approaches: "They discovered a new sense of personal initiative and self-expression" remembers Rinata Ravich, a former director of the Moscow family club Zdorovaja Semja (interview No 15). The quest for hidden body and mind reserves took many forms. For example, in Zdorovaja Semja people practiced winter swimming (*zakalivanie*), jogging in Gorky Park, yoga exercises, meditation, etc. New ideas were exchanged openly and freely as few communication barriers existed between the clubs. The goal of personal intellectual, physical, and spiritual development united all the clubs. However, new agendas popped up frequently and spontaneously.

[215] Kosmos had a short life as Koltunov pushed his ideas about yoga philosophy too far and was severely criticized by the Soviet Communist Party. However, the club was able to ignite an interest in self-development. Even though some of Kolutnov's ideas were too radical for the Soviet regime, the state supported numerous centers of "youth creativity" that drew on the experience of Kosmos all over the country. Also, many Koltunov's followers actively promoted new ideas and practices in major Soviet cities by giving free lectures and talks in public halls (interviews No 17, 18).

introduced his waterbirth approach to the club in the late 1970s.

Based on his evolutionary belief that humans were "aquatic apes" destined to birth into the water, Charkovsky started experimenting with waterbirth (Sidenbladh, 1982). Many women in the club ignored Charkovsky's evolutionary ideas but quickly realized that his birthing method could become a practical alternative to Soviet maternity hospitals (Naumov, 2001).[216] They were unsatisfied with the quality of the Soviet maternity care that fell far below their ideals of good motherhood. Most importantly, they believed that they could not effectively develop the potential of their children if they entrusted the birth of their children to the official Soviet "System." The first waterbirth took place in Moscow private apartments in March, 1980 (Naumov, 2001; Martynova, 2008). Irina Martynova, a professional obstetrics nurse, attended the birth together with Charkovsky (Ibid). Several other successful home births followed in Moscow (Belooussova, 2002).

Movement-building, 1983-late 1980s

The experiments with waterbirth of the members of Zdorovaja Semja club triggered a social movement. The NCBM did not build a strong organizational basis and remained loosely structured as movement leaders did not believe that a "central" organization was needed (interview No 21). Primarily, movement activists focused on testing and refining new waterbirth practices. The Sargunas family became the first family in the Zdorovaja Semja club to try

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[216] Marina Semyonova, the director of Vozrozhdenie (Rebirth) perinatal education center in Moscow, remembers that moment: "I still disagree with Chrakovski on many points. But when he came to the club, his ideas fell on a fertile soil. I had one child born at the hospital by that time. And I knew I did not have to go there again to give birth to my next baby. Others in the club were thinking the same way..." (interview No 18).

waterbirth in 1983. As a result of experimentation with waterbirth by various family clubs,[217] the

NCBM accumulated knowledge about non-hospital birthing in the 1980s. The movement

articulated its philosophy of the "natural" childbirth approach. This philosophy stressed that

childbirth was a socio-psychological rather than a medical event and thus had challenged the

traditional medical model of childbirth predominant in the Soviet maternity system.

The NCBM borrowed many ideas from a similar women's movement in the West that had been

strong during the 1970-80s (Lichtman, 1998; Rothman, 1984; Davis-Floyd and Sargent, 1997).

In particular, the alternative birthing model in the NCBM became known as "spiritual

midwifery." The term was originally proposed by Ina May Gaskin, a spiritual midwife from the

hippie Farm Community in Tennessee, U.S. (Gaskin, 1978). After the book by Gaskin had been

translated into Russian language by NCBM enthusiasts, the Russian NCBM leaders started

identifying as "spiritual midwives." Very few Russian spiritual midwives had formal medical

training and learned about midwifery from the books by Western authors such as Dick-Read

(1944), Leboyer (1975), Gaskin (1978), and Odent (1984) as well as rediscovering the Russian

cultural tradition. The waterbirth "Russian method" distinguished the NCBM approach from

Western natural childbirth practices (Sidenblauch, 1982; Naumov, 2001).

Movement specialization, the1990s

In the 1990s, the NCBM further increased its knowledge and support basis and became more

specialized. During the emergence phase the practice of waterbirth was marginal to other family

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[217] After the club's charismatic leader Alexandra Gurvich left the Healthy Family club, it reemerged as the Ekologiya Semyi (The Ecology of Family) and then split into three other clubs (interview No 17). These clubs differed slightly in their childbirth practices. As a result of knowledge exchange between the clubs, a more self-aware and structured approach to the training of pregnant women gradually developed.

clubs activities. In contrast, waterbirth became the main identifier of the movement in the 1990s.

Movement leaders and activists directed most of their efforts towards better articulation and

justification of natural childbirth practices and values. Because the official maternity system and

doctors vehemently opposed the spiritual midwifery, natural childbirth advocates had to justify

their beliefs and practices in conventional medical and psychological terms. Notwithstanding the

lack of rigorous scientific studies on natural childbirth practices, the movement slowly matured

and accumulated an internal capacity for a dialog with the official maternity care system.

The book *Home Waterbirth* by Alexander Naumov, an NCBM's leader and its main chronologist,

is the evidence of the movement's capacity for a dialogue between the movement and the official

maternity system. The book represents a response to Yuri Bloshansky, the Chief City

Obstetrician of Moscow and one of the main critics of homebirth practices (Naumov, 2001). In

his book, Naumov addresses the Bloshanksy' argument that the homebirth method is criminal,

unnatural, and the movement women are uneducated, ignorant and barbarian.[218] Naumov

defends waterbirth by meticulously citing numerous documents and interviews with doctors and

those individuals familiar with natural childbirth practices.[219] Naumov (2001) also provides

many references to the international experience, such as the experience of Michel Odent with

soft birthing approaches in France and the U.K. Also, the World Health Organization (WHO)

started promoting more natural methods such as eliminating unnecessary medical procedures,

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[218] The statement about NCBM members being "uneducated" might not be true. There have been no studies examining the demographics of the NCBM. However, all individuals I interviewed had higher education degrees. The Soviet educational systems generally oversupplied college graduates. During the 1990s, most educated young women could not find well-paid jobs in their professions and preferred to stay at home rather than trying to fit into the new capitalist economy. This resulted in a high concentration of educated women in the NCBM in the 1990s.
[219] Naumov (2001) lists several professional obstetricians who practiced waterbirth in different Russian city hospitals in the 1990s, such as Natalya Tanaeva, the Chief Administrator of a maternity hospital in Yaroslavl' and the personnel of maternity hospital No 12 in Saint Petersburg. More often, maternity doctors adopted some of the NCBM knowledge and excluded the waterbirth.

breastfeeding, and maintaining the early contact with newborns (Chalmers et al, 2001) in many countries including Russia.

Many entrepreneurial maternity doctors were able to commoditize the NCBM knowledge. They used new market opportunities and offered new maternity services at public hospitals, such as partner birthing, family type-maternity wards, and perinatal training, on a commercial basis. Naumov (2001) even lists several professional obstetricians who practiced waterbirth in different Russian public maternity hospitals in the 1990s. Therefore, this evidence suggests that the NCBM gradually found its way into the official maternity care system. However, the commercialization and institutionalization of NCBM knowledge caused its fragmentation and specialization at the same time. Family clubs were still popular but a new organizational form – perinatal education centers – emerged in the 1990s. Unlike family clubs, perinatal education centers were more professional. They were run as non-profit or private organizations by professional women psychologists or obstetricians. Their leaders viewed birthing as a psychological process rather than a medical (as in traditional maternity) or a spiritual one (as in spiritual midwifery).

Movement institutionalization, the 2000s

During the last decade, NCBM practices have been transformed and institutionalized. First, a market of perinatal services emerged in Russia and Ukraine, two countries with the largest NCBM presence. My web-search identified about 50 perinatal centers in Moscow, 20 in Saint Petersburg and 15 centers in Kiev, Ukraine in 2008. According to an estimate by the Ukrainian magazine *Vlast Deneg* (The Power of Money) (Konotopsky, 2007), the market of perinatal

services has exceeded 3 mln U.S. dollar in Kiev alone and will be expanding in the future (based on a 40 percent increase in 2007).[220]

Second, perinatal education has been incorporated into health care laws and state health policies. The Executive Order No 620 of 2003 of the Ukrainian Ministry of Health created the legal foundation of the woman-centered maternity approach, for the first time in Ukraine. This 200-page order articulates the range of maternity-related women's choices at the hospital[221] and also guarantees specific rights to pregnant women. It also stresses the importance of cooperation with non-profit organizations, a new practice for Ukrainian maternity hospitals. The Order 620 made it easier to open perinatal education centers by licensed obstetricians.[222] To attract new clients, these centers also provide legal consultations to their clients informing them about their new maternity rights (interviews No 27, 22).

Third, NCBM psychologists have succeeded in promoting perinatal psychology as a new academic field, which became a subfield of the Russian Psychological Society in 2004. Moscow State University, the Russia's leading academic institution, started printing *Perinatal Psychology* journal. The Russian Association of Perinatal Psychology and Healthcare has trained 1000 perinatal specialists since 2000, according to the association's web-site.

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[220] Many perinatal centers are run by "entrepreneurial mothers" who "realized the value of that kind of service based on their own experience." The fashionable idea of "smart birth" that perinatal centers advertise attracts many expecting couples (Konotopsky, 2007). On the other hand, higher education institutes also offer courses for perinatal psychologists on the "commercial basis." This ensures a supply of trained and certified professionals for perinatal centers.

[221] Home-birth has not been institutionalized in former Soviet countries yet.

[222] No perinatal centers run by doctors had existed in Ukraine before 2003, based on the author's research.

7.1.2. NCBM values and practices

The NCBM has articulated a new worldview that stressed the spiritual and psychological elements of birthing and early child development – "natural childbirth." The meaning of "natural" has changed over the movement's history. It is true that official maternity practices and the system have been the symbol of "unnatural" and the movement's main antagonist. At the same time, the NCBM has been rather introverted and defined unnatural birthing in terms that did not relate to official maternity practices. In particular, spiritual midwives identified personal "fears" as the major factor preventing natural childbirth. The major changes of the NCBM cognitive praxis that involved the transformation of the initial holistic spiritual paradigm of human development into a more narrow psychological perspective on birthing also resulted in different approaches to dealing with personal fears. In particular, the spiritual approach stressed the esoteric knowledge needed in individual spiritual self-exploration. In contrast, the psychological approach was more specialized and focused on specific techniques that the woman could use to improve childbirth outcomes.

Spiritual approach

The NCBM cognitive praxis crystallized around Igor Charkovsky's idea of waterbirth (Sidenbladh, 1982). Charkovsky referred to arcane evolutionary concepts in paleoanthropology to explain his idea of waterbirth. He believed that humans were "designed" for aquatic living, from the evolutionary point of view. He also argued that waterbirth eased the shock of entering a new environment for a newborn child who had used to be in a different environment of amniotic fluid (the womb "water"). Charkovsky's ideas resonated with family clubs individuals because water also played an important spiritual role in family clubs. Club individuals believed that water

had healing properties and regularly used cold water therapy techniques such as winter swimming. These spiritual ideas thus shaped the early definition of natural childbirth as the practice of waterbirth. The waterbirth in the Black Sea in Crimea with dolphins around the birthing woman became the ideal of the natural childbirth. Going to the Black Sea and enduring its colder water was not very practical, however. Most women chose to stay at home and birth in a warm bathtub. At the same time these women believed that it was still possible to maintain the "energetic" contact with the sea and dolphins through meditation accompanied by the quiet New Age music.

As home childbirth practices spread, the meaning of the natural childbirth became less spiritual and more down to earth, in the 1990s. In her anthropological study of the NCBM, Belooussova (2002) compares the philosophy of the Russian childbirth movement to its Western counterparts. She confirms that "natural" still means waterbirth in the NCBM, in the 1990s. Her findings also suggest that the NCBM places a strong emphasis on the spiritual readiness of women for natural birthing. The participation in perinatal training at family clubs helped build such readiness. Family club leaders also redefined the notion of normalcy in relation to birthing. For example, Tatjana Sargunas, one of the leaders of the movement, defines normal women as those "who have been trained in special spiritual midwifery centers and taught to give birth in natural way and, preferably, in natural settings" (quoted in Belooussova, 2002). According to this definition, the woman is ready for the natural and normal birthing when she has been able to address her individual psychological and social circumstances with the help of a perinatal instructor. By placing more focus on individual factors and perinatal technologies, spiritual midwives thus

departed from their early practices. For example, Charkovsky stressed the need in having the

right spiritual environment for the natural childbirth, such as strong "energy spots" in Crimea.

Psychological approach

The woman's personal responsibility became a cornerstone of spiritual midwifery in the late

1980s. The idea that the woman was responsible for her choices – ranged from her decision to

birth at home rather that at the hospital to more trivial choices – gradually redefined the meaning

of natural childbirth. The experience of the NCBM suggested that women's individual

circumstances, such as their medical conditions and their readiness for home-birth, varied

greatly. Spiritual midwives also realized that the woman was the main agent of birthing so that

they should not and could not impose their own choices. This more balanced and pragmatic view

on natural childbirth even allowed for such women's choices as birthing at the hospital if the

woman felt safer being there. The NCBM community recognized such choices as inferior to

homebirth but legitimate. As a result, the meaning of natural in the NCBM blurred over time and

became more psychological than spiritual.[223]

The meaning of the "unnatural" childbirth similarly changed in the NCBM in the 1990s. Fear has

been the NCBM's working definition of the unnatural. At the same time the understanding about

the locus of fear had changed by the 1990s. While early NCBM approaches stressed spiritual loci

the later ones focused on the individual. Thus Charkovsky explained that the human race

abandoned the ocean because of its fear of sea monsters and he further argued that women had to

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[223] A NCBM woman activist once referred to any choices as natural, including those of non-NCBM women: "Others have fears, and problems, and for them "natural" is when others make decisions for them [i.e. traditional maternity system approach]. For me "natural" means that I am an active agent..." (interview).

deal with that fear (Sidenbladh, 1982). Had humans been able to overcome that primordial genetic fear of sea monsters that forced pre-humans out of the ocean long ago they would regain their best spiritual qualities, according to Charkovsky. Besides the influence of Charkovsky, the NCBM shared the New Age idea that personal fears represented powerful "energy blocks" that prevented the flow of space energy and hindered personal growth. Also, practicing homebirth in the Soviet Union meant a spiritual protest against the System, for many NCBM leaders. They believed that maternity hospitals produces fearful citizens and intentionally intimidated women (Belooussova, 2002).[224]

In contrast, the psychological approach simply states that individual fears prevent good birthing. This idea was expressed by the British obstetrician Grantly Dick-Read in the 1930s. Dick-Read argued that much pain during the birthing was induced by social attitudes and therefore changing these woman's attitudes would make childbirth less painful. His book *Birth Without Fear* became a major influence on the NCBM. Many NCBM practices aimed at overcoming this individual fear. The NCBM developed the approach that they called the "physiology of love" which the movement contrasted to the "physiology of fear." It was based on the idea that psychological states drive physiological processes. To a large extent physiology of love draws from the experience with the Soviet method of "psychoprophylaxis" that was invented in the 1940s and

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[224] The idea that one had to overcome the "inertia of fear" had a spiritual meaning for most Soviet dissidents in the 1970s (Turchin, 1981). Maternity hospitals were seen by many dissidents as a method of inculcating the Soviet totalitarian ideology. For example, Gorin (2005), an American born in the Soviet Union, describes the system as just another manifestation of "life under tyranny." Revolting against maternity hospitals meant a spiritual act of citizenship. For example, Arbatova (1999) compares Soviet maternity hospitals to the Soviet GULAG: I had such a terrible shock [during birthing at the hospital] that I wrote a story 'My name is woman.' Back in the Soviet Union, even the most prestigious maternity hospital was a GULAG for women. In the most critical moment of your life you felt like a tenth-class citizen. Humiliated, subdued, and begging."

was later popularized in the West under the name of Lamaze breathing method.[225] The work by the French obstetrician Michel Odent on the relationship between birth physiology, neocortical processes and hormonal balance (Odent, 1999) [226] have been the most recent influence on the NCBM practices.[227]

Therefore, the meaning of "natural" in the NCBM absorbed diverse spiritual, social, and psychological influences and changed over time. In particular, the early spiritual approach had been gradually replaced by more conventional psychological approaches that emphasized women's capacity for natural birthing. The psychological discourse was used by the NCBM to frame its opposition to the traditional technocratic culture of maternity hospitals by stressing the role of psychological factors during birthing.

7.1.3. The organizational praxis of the NCBM

Overall, the movement has been structured as a loose community of clubs and perinatal centers.

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[225] The Soviet method of psychoprophylaxis was developed in Kharkov, Ukraine, in the 1940s. It was based on Pavlov's theories of social conditioning, particularly, the role of language in triggering specific behavioral patterns, and practical knowledge on hypnosis and suggestion developed by Soviet psychotherapists. Like Dick-Read, Soviet psychotherapists believed that pain was socially conditioned and that it was possible to relief pain by creating appropriate psychological and emotional states in women. I.Z.Vel'vovski designed a six-session training aimed to prepare women for the painless birthing (Michaels, 2007).

[226] Based on his experience at the state hospital in Pithiviers, France, Odent (1999) proposes a theory that explained the importance of women's psychological states for good birthing physiology by proposing hormonal balance (hormones shared by the woman and the fetus) as a mediating factor between psychology and physiology. Odent views birthing as a set of complex emotional, neurophysiologic, and chemical connections between the mother and her child that extend beyond birth. Oxytocin, "the hormone of love," is essential for normal birthing processes and can only be produced by the woman's body when she feels comfortable and relaxed. Oxytocin and hypothalamus work together to ensure good natural birth being driven by the woman's natural resources with little or no medical interference.

[227] Specific perinatal education methods in the NCBM vary depending on the midwife's professional background, personal style, and group size. All midwives combine relaxation and meditation exercises with facilitated discussions of women's personal issues but may emphasize some components over others. Peer support is encouraged to help "talk out" any fears that women might have. Concrete women's experiences such as "seeing" the unborn child, establishing a "contact" with her/him lead to lively discussions. Women's "interesting" dreams and those stories when the (yet unborn) child is believed to affect the life of the couple are also shared. These shared experiences and stories create a positive emotional environment in the group to work with personal fears.

The NCBM has not succeeded in building any central organization such as a formal association that would represent the movement. The efforts to establish a movement association and develop a common strategy failed in the 1990s.[228] Two organizational patterns can be identified in the NCBM: informal family clubs and perinatal education centers.

Family clubs

From its very inception, the NCBM clustered around family clubs, informal gatherings of people sharing similar interests and hobbies. In particular, the Moscow family club Zdorovaja Semja became the first club to articulate "natural childbirth" ideas in the 1980s. However, several Moscow NCBM leaders note that Zdorovaja Semja club was merely one of the offshoots of a much larger Kosmos club, a loosely organized forum for expressing opinions on alternative lifestyles. Zdorovaja Semja club imitated Kosmos and borrowed its organizational structure.[229] The leaders Zdorovaja Semja believed that informal communication and non-hierarchical structure would best stimulate the individual creativity and initiative. The club did not have any membership rules and kept its doors open to all interested people. Various groups spontaneously emerged in the club around new ideas, practices or leaders. Other NCBM clubs were organizationally similar to Zdorovaja Semja, in the 1980s.

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[228] Alexander Naumov notes that, as a leader of the NCBM in Moscow, he invested significant efforts to create an association in 1988-1990. However, these efforts were not successful because, as of little agreement between the spiritual midwives (interview No 17). Other NCBM activists believe that there was no need in such an association. For example, Natalya Kulikova, one of the NCBM leaders who was actively involved in Moscow's clubs in the 1990s, believes that "nobody really needed that association.... because it would have divided people into those on the top and those below them..." (interview No 21).
[229] Historically, the informal gatherings of intellectuals, or circles (*kruzhki*), who came together to discuss political, social, and spiritual issues in small private groups were very common for the pre-Soviet and Soviet civil society. Many Soviet dissidents, musicians, artists, and scientists formed such informal groups.

Perinatal education centers

Perinatal education centers emerged as a new organizational form in the NCBM, during the 1990s. According to several NCBM pioneers (Naumov, 2007; Martynova, 2008), perinatal education centers were common in Saint-Petersburg where professional obstetricians and maternity nurses had a large influence on the NCBM, during the 1980s. In contrast, there were no professional medics among NCBM leaders in Moscow. This created a different organizational dynamics in Saint-Petersburg. Professional doctors and nurses either practiced independently as midwives or tended to create "centers" instead of clubs. The leaders of these centers tended to limit the participation of individuals without formal medical background. Initially, clubs and centers did not differ much. However, as the NCBM knowledge matured, the leaders of perinatal education centers stressed that centers were different. For example, Zhanna Tsaregradskaja, the leader of Rozhana perinatal education center in Moscow defines the difference between centers and clubs in the following way:

> Perinatal education center is the most modern and progressive form of work with future parents... Clubs differ from centers because they do not keep records, do not conduct evaluations, do not develop teaching materials, and do not do any research work. Clubs employ ... people without appropriate educational background who are not fit to this particular activity... It is some kind of informal work with pregnant women that does not imply any responsibility and... they can experiment with anything without any accountability (Tsaregradskaja, 2000).

Perinatal education centers are thus run as typical formal organizations. Centers operate on a commercial basis unlike the family clubs of the 1980s. Also, these centers' leaders play less attention to nurturing their communities of parents. During the 1980s, family clubs represented the informal communities where individuals shared their spiritual experiences, practices, and values. Family clubs were also managed on an ad hoc basis. Volunteering in organizing club

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activities was greatly encouraged, which also helped build informal NCBM communities. Most

importantly, family club leaders viewed clubs as common spiritual spaces necessary for the

personal growth of their children. They referred to such common space as "ecology of love"

(Naumov 2001). In contrast, perinatal education centers stress formal educational processes.

Table 5 summarizes the cognitive praxis of the NCBM. The most important transformation of the

movement's cognitive praxis involved the shift from the holistic spiritual paradigm of human

development to a narrowly specialized psychological perspective on birthing. The specialization

and institutionalization movement phases are characterized by the participation of the maternity

doctors who had adopted innovative NCBM practices.

Table 5. Cognitive praxis of the natural childbirth movement

	Movement Emergence	**Movement - building**	**Movement specialization**	**Movement Institutionalization**
Chronology	Late 1970s - 1983	1983 –1995	1995 – 2003	Since 2003
Practices	Early child development, yoga, meditation	Waterbirth	Waterbirth, perinatal education	Perinatal education, water-birth
Values/ motivation	Personal growth/ spiritual exploration	Spiritual development	Psychological development	Professional development, psychological development
Sources of meaning	Spiritual	Spiritual	Psychological / spiritual	Psychological
Organizational forms	Clubs	Family clubs	Perinatal education centers/ family clubs	Perinatal education centers

7.1.4. State-movement interactions in the NCBM

The interactions between the NCBM and the state occurred frequently because maternity

hospitals in Russia and Ukraine are still owned and operated by the state. These interactions have

been very adversarial. During the 1980s, the NCBM challenged maternity hospitals by creating

an alternative option of homebirth. The spiritual understanding of the waterbirth in the NCBM further intensified the conflict with the official maternity system. Maternity doctors most often viewed spiritual midwives as quacks and NCBM women as brainwashed. They did not recognize NCBM experience with new maternity approaches as legitimate. Despite the ideological conflict between the movement and maternity hospitals, many interactions between them frequently occurred in practice.

Administrative learning and NCBM knowledge

Most typical situations when NCBM women and spiritual midwives interacted with maternity doctors and nurses involved, first, the NCBM woman's hospital-birth and, second, the registration of home-born child. In each of these situation women had to justify their choices and thus helped spread NCBM ideas in a bottom-up way. Many women who attended perinatal education classes at NCBM clubs could not have home-birth due to medical reasons and had to go to maternity hospitals to avoid risk. In such a case, the NCBM woman tried to follow at least some natural childbirth recommendations. For example, the woman could ask a nurse not to separate the new-born child so that she could breastfeed him/her. The woman often bribed the nurse to break the rigid "medical protocols" that required such separation. A similar situation occurred when the birthing had started but could not be completed at home due to some unexpected reasons or because the spiritual midwife anticipated some risks. The woman had to be quickly transported to the maternity hospital. Typically, those hospitals were recommended by the midwife where the personnel would not discipline the woman. Over time, spiritual midwives established informal agreements with some maternity doctors and nurses, which also involved some "proselytizing." NCBM women shared information about those hospitals that had doctors

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and nurses sympathetic to NCBM ideas.

Another situation involved the registration of the home-born child. Maternity-born children were registered automatically by hospital clerks. Registering home-born children was absurdly difficult in the Soviet Union, in the 1980s.[230] This was especially difficult because the registration took place at the hospital located in the area where the woman resided officially. The woman thus lacked any option of choosing a friendly doctor. Some women decided to explain to doctors why homebirth was more effective than hospital birth – especially if she could "present" a healthy child as the evidence of such effectiveness. Some issues discussed were very contentious,[231] other issues did not involve much disagreement, such as breastfeeding. Overall, doctors strongly resisted homebirth and used their administrative power to suppress the new "cult."[232]

Repeated bottom-up interactions between the NCBM and maternity hospitals did not cause organizational learning at the hospitals. However, they created a basis for individual learning by maternity doctors. Many informal networks emerged that connected NCBM midwives and

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[230] The midwife Martynova tells the following story about registering the second home-born child in Saint Petersburg in 1984. The birthing went well but Martynova had to put several stitches. Because it was illegal to have such a surgery outside the hospital and Martynova could have been persecuted, the couple decided to wait until the stitches got healed. They invited a doctor to see the child only several days after the child was born. The doctor was surprised and did not want to recognize a child as a child, because, as the doctor said, "a child cannot be born at home by definition." Finally, the mother was told to go to a forensic expert to verify that the "something" was a human child. When she came to a forensic department, she had to wait in a long line with the bruised victims of violence who came to document their injuries. Her child started crying. The overloaded forensic expert rushed out of his office and yelled at the people in the line: "What kind of people are you? Why don't you let the woman with a child to come first?" The mother asked him: "Didn't you say "child?" Could you please put it down?" (povotuha.ru)

[231] For example, most family club women refused to vaccinate their children (Ozhiganova, 2009), which created powerful backlashes from doctors because poor vaccination rates were considered a very negative indicator of administrative performance.

[232] Occasionally, doctors persuaded police to raid the meetings of family clubs in the 1980s, according to Naumov (interview No 17). Also, policemen could come to transport a home-birthing woman to a hospital by force after a neighbor's call about another "cult victim" (see povituha.ru, last accessed November 25, 2010).

maternity doctors. These networks were informal because homebirth practices have been illegal

both for midwives and doctors in Russia and Ukraine. In particular, it has been illegal for

unlicensed midwives to perform any medical procedures and it was illegal for licensed

obstetricians to assist a birthing woman in a non-hospital setting. As a result, both midwives and

doctors were interested in having their communication secretive and informal. They also tended

to shift risks towards the woman as solely responsible for her decisions about home-birthing. It

has never been illegal for a woman to have a home-birth in the Soviet Union as unplanned

homebirth cases happen infrequently. For this reason, women shared their transformative

homebirth experiences with their friends, which helped attracted new people to the NCBM. This

also made women's lay knowledge an important piece of NCBM knowledge.

During the last decade, many maternity doctors recognized the benefits of natural childbirth

approach. Irina Martynova, a professional obstetrics nurse and a pioneer of home-birth in Saint

Petersburg comments:

> Doctor's attitudes gradually started changing. Now, as I am looking from the 2008 to
> 1987, I see that we started shaking the [doctors'] stereotypes. Even maternity hospitals
> use some of our methods now – we offered a new algorithm of actions that is slowly
> gaining force (Martynova, 2008).

Perinatal education centers have been crucial in the institutionalization of NCBM practices. The

involvement of the World Health Organization and other international organizations promoting

new maternity approaches in Russia and Ukraine has been important too (Chalmers et al. 2001).

The Dnepropetrovsk case discussed below shows how the NCBM and WHO both affected

learning at Ukrainian maternity hospitals.

Policy learning and NCBM knowledge

The post-Soviet maternity care system has been insular to the influence of new democratic instructions. For this reason, the effect of the NCBM on maternity care policies has been very limited so far. Few documents are available to analyze specific policy mechanisms by which NCBM knowledge has affected policy-making in Russia and Ukraine. However, there is anecdotal evidence of the NCBM influence on the new maternity polices in Ukraine and the Executive Order No 620 of 2003 of the Ukrainian Ministry of Health, in particular. According to several Ukrainian NCBM leaders, the history of this order has been directly influenced by the private organization associated with the NCBM, the *Semja Ot A Do Ja* (Family from A to Z), a popular TV studio and a perinatal education center in Kharkov, Ukraine. The center has promoted new maternity approaches since 1999. The Woman's Choice, one of the center's projects, set the goal of developing "an alternative maternity system and improving the quality of the Ukrainian maternity care in general" (Semja Ot A Do Ja web-site). This ambitious project funded by the MATRA Program of the Ministry of Foreign Affairs of Netherlands, involved seminars, press-conferences, and training in Netherlands[233] for fourteen Ukrainian perinatal specialists, doctors, and midwives. During the final conference in 2004, several top-level Ukrainian officials expressed their commitment to promote new maternity approaches, according to two conference participants (interviews No 19, 22).

Finally, there has been a public discussion of new maternity policies related to the licensing of individual midwives.[234] The NCBM community has a strong interest in such policies because they would create a better legal environment for midwives. These discussions represent an

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[233] Netherlands was selected as a model of maternity care because of its highest in the world homebirth rate (about 40% of all the childbirths) and strong home-birth policies.
[234] See the 2009 Torocheshnikova radio program in Moscow.

opportunity for NCBM leaders to communicate their views to policy-makers as well as the wider public. Due to the growing perinatal education sector and the parallel reform of health care system, private maternity hospitals might be the next step to further institutionalize natural childbirth methods (Efimov, 2007).

7.2. The case of organizational learning at maternity hospitals in Dnepropetrovsk

7.2.1. The NCBM community in Dnepropetrovsk

NCBM practices were first introduced in Dnepropetrovsk[235] in the late 1980s. They have recently been integrated into some Dnepropetrovsk public maternity hospitals. A perinatal education center connected to the NCBM currently operates one maternity ward at a city maternity hospital. This partnership has been presented by NCBM leaders as the evidence of integration of NCBM practices into the public maternity system (interviews No 19, 22, 23, 36) The NCBM city network currently includes one family club, three perinatal education centers,[236] three independent maternity professionals, three midwives without formal medical training, and thousands of couples who participated in perinatal education classes and birthed at home.[237] In addition, psychologists with the background in perinatal education provide their services at parental education centers outside the health care system, newly opened perinatal education programs at maternity hospitals and clinics, and as independent psychologists.

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[235] Dnepropetrovsk is the fourth largest Ukrainian city (with 1 mln population) with strong industrial and educational industries.

[236] Two city centers position themselves as perinatal education centers. One center provides education on breastfeeding primarily. Another consulting center provides medical services, such as diagnostics, and offers few educational services. These two centers thus have been excluded from the analysis.

[237] Based on the estimates of the CPC leaders, over 3000 individuals have participated in CPC training (interview No 19, 20).

The majority of these centers and individuals have been involved in the activities of the Club of

Parental Culture (CPC), a family club focusing on early child development and natural childbirth

practices. The CPC emerged as a small group of parents interested in alternative child

development and birthing practices in the late 1980s. Natalya Kulikova, a neonatology nurse at a

Dnepropetrovsk hospital, learned about natural childbirth when she was traveling to Moscow to

visit her relatives. After her hospital colleagues refused to support her,[238] she decided to organize

an informal group to discuss these new ideas in Dnepropetrovsk. The group officially registered

their CPC as a "non-commercial association" in 1994.[239] The new CPC leaders Zeena and

Alexander Andreev, both engineers, envisioned the club as a spiritual community of like-minded

people and a forum for the exchange of knowledge. Zeena Andreev views the club as a "research

and development institute," a laboratory where people innovate with early child development,

nutrition, health care, and birthing, and then share, get feedback, and improve their methods:

> [our goal was] taking the best methods [of child development and healthy lifestyle] and
> trying those methods – to see what works and what does not – in the long perspective"
> (interview No 19).

Zeena's views on NCBM knowledge stress personal experience over formal knowledge. In

particular, she distinguishes knowledge from information. Information only triggers learning.

True knowledge emerges when information and learning become internalized by the individual

through practice, according to Zeena.[240] When club women start their experiences, such as how

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[238] She recalls this as follows: "I was fascinated [with new maternity practices]! But when I came back and told it to
my colleagues [in the Dnepropetrovsk maternity hospital] they were like deaf. They did not share my enthusiasm"
(interview No 21).
[239] As a registered association, the club could inexpensively rent a room for its classes at a municipal center.
[240] She explains this as follows: "Look... There is information and there is knowledge. Knowledge is information
went through experience. That has been worked through, lived through. ... I have knowledge because of my life and
my experience. ... I can pass knowledge to interested people only if I have experience. If I don't have it, merely
informational source would not work. ... People are coming because they need experience. They are coming [to me]
because they feel certain vibration – knowledge – then get information and ... realize it in practice. And only then
they acquire knowledge" (interview No 19).

to deal with fears, this individual knowledge becomes collective. Sharing experiences of home-

birth also empowers other women to plan their birthing and thus helps to build the community.[241]

The club grew and attracted several professional maternity doctors in the 1990s. Some of them

were looking for alternative health-care and birthing approaches and came to the club. Other

doctors learned about NCBM ideas from their patients who refused to follow traditional medical

procedures.[242] Some of these doctors decided to build their own centers. At present, three

perinatal education centers are active in Dnepropetrovsk.[243] Most women also completed formal

certificate programs in child development psychology at Dnepropetrovsk or Kharkov

universities.

The Executive Order No 620 created the foundation of the woman-centered approach in

maternity care and created a favorable legal and organizational environment for perinatal

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[241] Alexandra Pyrozhenko, a club activist, shares her thoughts about the importance of peer-support at the club: "I went through the training twice. The first time I was not even pregnant. I came there because I felt anxiety. It was not concrete. I just did not feel comfortable.... By visualizing positive experiences during class meditations my confidence grew. My anxiety disappeared even though I never talked about that during class.... Also, it helped that I saw positive examples. Some women from my group had home-birth before me. We all discussed that. Zeena told us all the details and explained what the couple did well. When I was thinking about others' home-birth experience I knew that I could do that even better. .... Zeena would always tell us about how others did it well. I think it was the main point of her method.... After the home-birth everybody in the group wanted to share their joy with the others who had not given birth yet. Videos of individual home-birth were often shared..." (interview No 26).

[242] Olga Mikryukova, a certified obstetrician and presently the director of perinatal education center Stork, shares her memories about her first encounter with natural childbirth ideas and values: [As an obstetrician] I was taught in the … manipulative way. I worked in the same way. The first time I realized it was when S. [a patient and a NCBM activist] came to her appointment. She [was pregnant and] had [some serious health issues]. I had to convince S. to go to the hospital. But S. came together with her husband. That was unheard of – that man came for her wife's gynecological exam! So I just swallowed that. And then he said: "Can you imagine how she should feel like when you are telling her all that [scary things]? Let's wait until she leaves [the room] and you will tell me everything." After that I began thinking and reading books. (interview No 22).

[243] The Stork center directed by Olga has been the largest. Another two centers are run as private organizations by professional obstetricians. Uljana Terekhova, the leader of the Little Mammoth center both continues practicing at a maternity hospital and also gives perinatal training at her center. Natalya Kulikova, the pioneer of NCBM in the city, leads small perinatal education groups at one the child development centers. Several other obstetricians work independently and individually. One early NCBM advocate with background in engineering received her second higher education degree in medical sciences only to teach perinatal education.

education centers in the city. The centers are now attracting more clients and have increased their outreach to maternity hospitals. For example, a perinatal psychologist from a center has a right to accompany a woman during her birthing. On the other hand, maternity hospitals also provide small perinatal classes taught by certified psychologists.

Comparing the Club of Parental Culture to the perinatal centers

Perinatal education centers linked NCBM knowledge to maternity hospitals. The comparison of the Club of Parental Culture to perinatal education centers helps understand this knowledge transfer. In essence, the CPC was too different from maternity hospitals in terms of its ideology and its organization to have a direct impact on the hospitals in the city. First, the CPC leader Zeena Andreeva views the club as a spiritual community. For Zeena, the club is very special. It is "a living thing," a "big family" (interview No 19). The NCBM leaders in Moscow called this spiritual model the "ecology of babyhood" (Trunov and Kitaev, 1993). Unborn babies represent sacred objects for the NCBM (Belooussova, 2002) and club communities were considered as spiritual spaces. Zeena and club activists thus spent lots of their efforts cultivating the community.[244]

Organizationally, the CPC represents a loose informal network. The club is registered as a non-commercial organization but its management is ad hoc and very chaotic. The club did not develop any formal policies or membership rules. Volunteers administer most of club's activities. For an outsider, it is difficult to understand how responsibilities and tasks are divided at the club,

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[244] In the 1990s, the club built its community through various social events, such as annual New Year Eve programs for children at city halls, and spring picnics in parks. Also, many club families spent their vacations at a summer camp in the Laspi Bay on the Black Sea. Like many other activities at the club, the summer camp emerged spontaneously every year. Families from other Ukrainian and Russian cities often came there too.

and how short-term objectives connect to long-term goals.[245]

According to Zeena, she delegated all the administration to her husband Alexander, an engineer by training and a foreman, from the very beginning because she did not know how to do management. However, Alexander similarly believed that the club had to be primarily spiritual and never designed any management system at the club.[246]

In contrast, perinatal education centers run as organizations. When the city's first center Stork opened in 2004, it positioned itself as a modern organization. Tatjana Kramarenko, a manager responsible for center's operations and personnel management, refers to the center as a non-profit organization. She stresses the importance of the mission and the need to rationally organize the center and its training sessions. Also, she believes that strong management helped the center win its USAID grant (interview No 24).[247] Other centers similarly stress strong management over strong communities.

Centers also differ in their approach to knowledge. Unlike the club that encouraged individual self-exploration and maintained a knowledge forum for the expression of diverse views, centers tend to focus on information dissemination rather than knowledge creation, using Zeena's

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[245] For example, a German non-profit management male consultant volunteered to help with club's basic management issues in 1999. To his surprise, he found that the club activists were not enthusiastic about his rational management approach. After the meeting with the consultant, one club woman activist remarked: "He has no idea how things get done at this club" (personal experience).

[246] In retrospective, he admits that he should have built a strong team of "five very active people" that would perform all major Club's functions: "There should always be a center. There should be goals set first and then everything should be done to accomplish those goals. And you have to repeat those goals to the people all the time... Our culture is not liberal. What matters now is power and money. But spirituality and business never merge... In the early 1990s, we had to rely on our best and most active people. Everybody was a leader when it all started..." (interview No 19).

[247] The grant covered the perinatal education training for more than a hundred women during the center's first six months and most of the office equipment.

distinction between knowledge and information explained earlier. The leaders of the centers use

a formal approach to training and focus on very practical issues such as explaining hospital

procedures during birthing.[248] Zeena Andreeva does not believe in the effectiveness of such an

informational approach. She considers the midwives' little involvement with woman's individual

problems as a sign of low-quality work.[249]

7.2.2. NCBM knowledge and the learning at maternity hospital No 2: the case of Stork

Several maternity doctors participated in the NCBM community as informal knowledge brokers

between the NCBM and the hospitals. However, these doctors had few opportunities to promote

these practices at the hospitals they worked for in the 1990s. The knowledge transfer intensified

when the perinatal education centers opened. The interactions between perinatal centers and

maternity hospitals became more formal and institutionalized. The history of the Stork perinatal

center illustrates these interactions in Dnepropetrovsk.

According to Zeena, she came up with the idea of the Stork and then built a team including

several doctors in 2001. Her goal was to

> work out and test a program [of perinatal education] that would be more adapted for the
> needs of the wider masses... It [the Club's program] had to be adapted because doctors
> told me: "You can say certain things only and you cannot say other things." (interview
> No 19)

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[248] For example, Uljana Terekhova, a director of the perinatal center Little Miracle, comments: "Women have to be alerted for what is going on during birth around them. Sometimes surgical instruments tinkle. Women should learn not to be scared of that.... Women don't know many things. They often shout and cry loudly during the labor ... and spend too much energy.... Unfortunately, pregnant women don't know what to do during birthing. This leads to additional medical interferences [during labor and delivery]..." (interview No 28).

[249] The midwife should work with "pregnant couples" so that she becomes ready to share the responsibility during birthing. The midwife cannot shift all the responsibility to the birthing woman or other specialists. On the other hand, a well prepared pregnant woman should also assume full responsibility. Ideal home-birthing occurs with little interference of the midwife who knows about the woman's individual problems and is ready to act when necessary (interview No 19).

To try the new program,[250] Zeena had to cooperate with doctors.[251] Alexander Kobasa, an obstetrician sympathetic to the NCBM, became her close ally. Alexander suggested testing the new program at the new Institute of Alternative Health Care, "the commercial wing of the medical establishment." Zeena believed that the center would become the intermediary link between the club and the official system. She wanted to sustain the club as a spiritual community and protect its principles by "finding compromises that would work well both for medics and for the club" (Ibid).

Zeena's plan did realize as she had planned. The team successfully ran the new program for about half a year at the Institute.[252] Together with her team, Zeena started looking for a maternity hospital that would share a maternity ward with the Stork. In particular, she negotiated with one underutilized village hospital near Dnepropetrovsk. Also, Zeena was happy to learn that one of the Club's activists persuaded her husband, a successful businessman, to buy an office for the new center in Dnepropetrovsk. The next step in Zeena's plan was to find an "effective director, ... somebody who would be able to talk to medics..." She chose Olga Mikryukova, a trained obstetrician and Zeena's companion. However, to Zeena's surprise, the team led by Olga decided to separate.[253] In the end, Olga and her team got the entire program, all the connections, and the

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[250] According to Zeena, the purpose of this social-medical program was "to create an officially registered commercial organization at the club that would – let me put it this way – to make money both for itself and for the club. Because I have been the club's director for so many years and never received any salary. [Also] we had to have money to attract sponsors... I wanted to create the Stork for that purpose. I did not see myself as the Stork's leader. I was planning to remain the director of the club. I wanted to help the Stork until it would stand firmly on its feet and then try other interesting programs..." (interview No 19).

[251] Zina was often criticized by doctors for lecturing on issues related to birthing because she did not have medical background and, therefore, did not have a right to speak in the public about those issues.

[252] The program did not bring any income as the Institute's charges were high and participant per session fees were deliberately set very low. Most importantly, the team felt empowered because they now saw that perinatal education was possible on a larger than the club's scale.

[253] Olga describes the reasons for her conflict with Zeena by referring to core NCBM principles: "I disagree with Zina because she replaced the fear of birthing by the fear of maternity hospitals. That fear remains there, in the woman. Zeena cannot deal with it in this way.... If there is no fear then it does not matter where to give birth – at

newly donated office.

When the Stork was ready to open in 2004, Olga invited Zeena to participate in the center as an instructor. However, Zeena rejected the offer: "they told me to leave the Club because – as they said – it had a bad reputation. For me, abandoning the Club was a betrayal..." (interview No 19). The center opened and received very favorable media coverage on the local TV. The USAID grant helped the center to build its capacity. At present, the center is a leading center that provides perinatal education workshops to expecting women, professional obstetricians, and perinatal education instructors from Ukraine and Russia. Also, it has opened its ward at one of Dnepropetrovsk's major maternity hospitals. Olga Mikryukova refers to the ward as an extraordinary achievement: "No hospital in the former Soviet Union countries has ever had it before... It has been like a relay race [for the center]. We are carrying the torch now..." (interview No 22).[254]

The cooperation between the Stork center and maternity hospital No 2 is a benchmarking case of the penetration of NCBM's ideas into maternity hospitals, according to most NCBM's Ukrainian leaders. The Stork succeeded in opening a one-person maternity ward on the premises of the hospital in 2005. It made an investment to create a "European family-type ward." The ward is used by those women who attend classes at the center and chose the center's ward to birth. A

home or in the hospital" (interview No 19). Olga's personal identity conflict was another reason for their conflict. One the one hand, she was a trained obstetrician and was offended by spiritual midwives' suspicious attitude towards doctors. Zeena explicitly stated that, in her eyes, the center had a lower status compared to the club. On the other hand, Olga was the insider to the NCBM and shared movement's core values. She used these NCBM principles to rationalize the reasons for her conflict with Zeena. In particular, she argued convincingly that because maternity hospitals had always been the NCBM's "enemy at the gate," they became just another source of fear for women.

[254] According to the center's web-site, the ward has been "the first joint project of a Ukrainian non-commercial organization and a state maternity hospital to create a family-type ward" (Stork web-site aist.dp.ua, last accessed November 30, 2010).

perinatal psychologist from the center helps the birthing woman during the normal delivery. However, the woman can be quickly transported to a different hospital unit in emergency situations. This reduces birthing risks and shifts legal responsibility from the Stork to the hospital because Stork specialists cannot provide medical assistance, according to the Ukrainian law.

The collaboration between Stork and the hospital started when Yelena Savelyeva, an administrator of a maternity unit at maternity hospital No 2, attended the training for obstetricians that Stork offered. New approaches to maternity care impressed her and she suggested a closer cooperation to Olga Mikryukova (interview No 22). Savelyeva approached Lyudmila Padalko, the head of the hospital, and received an approval of her initiative. According to Padalko, the hospital currently lacks capacity to offer such training and has greatly benefitted from Stork's "highly qualified professionals" who provide training to the hospital personnel[255] (interview No 34).

Besides training, the medical personnel at maternity hospital learned about new maternal methods by observing what Stork specialists did. Because birthing outcomes at the Stork's ward were better compared to the hospital, other doctors wanted to learn about what Stork did differently:

> They observed what we were doing and they liked it. And our statistics was amazing! We had three times lower C-section rates compared to the hospital – five versus fifteen percent... So they [medical personnel] began thinking about [our practices] and started learning from us. (interview No 22).

However, learning by maternity personnel was difficult and slow. Olga believes that the center would not have succeeded if they used administrative pressure. Instead, Stork people preferred

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[255] According to Tatyana Kramarenko, the Stork's manager, all the maternity hospital's obstetricians went through the training at the center (interview No 24).

informal communications with the hospital doctors and nurses:

> Nobody [in the hospital's administration] has ever planned anything.... It was all informal. We just approached doctors and nurses with love... as human beings who are also mothers and wives. And then people from other maternity hospitals in the city and Ukraine became interested. (Ibid)

Olga says that "...every small thing was like a fortress for us. For example, it took us lots of efforts until nurses started knocking at the door [of the ward].... They used to burst in whenever they wanted to..." Also, many nurses did not want additional work. For example, one of the nurses refused to use a new chair for the vertical birthing that Olga brought from Netherlands. This new chair was lower and less convenient for the medical personnel than the traditional Rakhmanov chair. A year later, Olga heard gossips that their chair was "traveling around the hospital" at night when no Stork people were there. Other doctors and nurses simply realized many benefits of that chair and started using it (Ibid).

7.3. The effect of NCBM knowledge on maternity hospitals in Dnepropetrovsk

There is ample evidence that maternity hospitals in Dnepropetrovsk have embraced softer maternity practices but the effect of the NCBM on these changes is difficult to identify. Overall, there has been a shift from the military model[256] of maternity care towards a more woman-centered psychological model,[257] according to senior city maternity administrators. Angela Kostyuchenko, who has been Dnepropetrovsk's Chief City Obstetrician for the last three years,

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[256] The Ukrainian healthcare system was based on the "Semashko model," designed for war settings, according to one European Commission report (2005).

[257] No customer satisfaction studies currently exist to confirm the change. However, based on my examination of the city' internet forum on maternity issues, most forum participants were satisfied with the quality of maternity care and very few were unsatisfied. In addition, I collected about ten informal interviews with women who had a recent birthing experience (2006-2008). Most of the women were either satisfied or very satisfied. Several women who had more than one child confirmed the changes at the hospitals as significant. One of the women also worked for a maternity hospital. The main reasons these women were satisfied included good personnel attitude, no need to give bribes, no unnecessary interventions, individual wards, and partner birthing.

believes that the city's maternity system has changed substantially during the last five years. She

notes that all the city's nine maternity houses have been officially accredited as "baby-friendly

hospitals." Maternity personnel encourage breastfeeding and do not separate newborns from

mothers. She notes other changes:

> We don't have any Rakhmanov chairs [gynecological chair] any more. We have partner
> birth now... individual family-type wards... Women can give birth in any position they
> want. A woman can tell us what she wants... (interview No 33).

Lyudmila Padalko, the head of maternity hospital No 2, believes that midwifery should be placed

"between health science and the mystery of nature" (interview No 34). She lists several major

changes in maternal practices that include abandoning unnecessary medical procedures,

maintaining cleanness rather than sterility, free labor positions, and partner birth. Padalko notes

that she has always had an intuition that softer methods were right but not consistent with the

medical protocols: "If I started practicing them back then [in the 1980s] I would have probably

been expelled from the [Communist] party" (Ibid).

Besides maternity administrators, university administrators and professors also recognize the

changes at the maternity system. Psychology training has recently been added to the formal

curriculum by medical schools in Ukraine. Many Dnepropetrovsk maternity hospitals similarly

include psychological training as part of professional development for their personnel. Professor

Nosenko, the Chair of Psychology Department at Dnepropetrovsk National University, notes that

she receives frequent requests from local health care public officials to organize psychological

workshops for doctors. In particular, many maternity hospitals express such a need because they

have introduced the "family-oriented" approach to birthing (interview No 30). According to

Professor Samoshkina, formal psychological training (such as certificates, diplomas, or degrees)

are now provided to the following categories of students: medical personnel at maternity

hospitals, those obstetricians teaching perinatal education classes at consultation clinics, lecturers

at medical schools, and psychologists at clubs. She believes that recent changes in maternity

hospitals stimulate the need in psychologists:

> Maternity hospitals have changed. Women can request anything they want now –
> individual ward, relatives to accompany them, dimmed light... They [medical personnel]
> just listen and write it down... [That is why] they need psychologists who would take care
> of those women's requests (interview no 31).

Similarly, many NCBM activists acknowledge that maternity hospitals have started using some

natural childbirth approaches. According to one former CPC activist, family clubs are less

popular now because "maternity hospitals have many things now that we were fighting for [in

the 1990s]." Uljana Terekhova, an obstetrician at a city maternity hospital, summarizes the

changes at her hospital by referring to the positive feedback of the state inspectors from Kiev.[258]

Larisa Ogyr, an ob-gyn at maternity hospital No 6, a former CPC activist and a part-time

employee at the Stork center, notes that the changes at maternity hospitals have been

significant.[259]

While the rhetoric on the changes at maternity hospitals borrows much NCBM terminology, such

as "natural methods," [260] few maternity officials and doctors recognize the influence of the

NCBM. Thus Chief City Obstetrician Kostyuchenko disapproves home-birthing: "We don't

support home-birthing and spiritual midwifery... because the risk is very high" (interview No

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[258] She says: "It was like "Wow!' for them! ... We have quiet music, the smell of juniper, and lots of other tricks in our wards..." (interview No 28).
[259] When she senses some skepticism in my question about changes, she explodes: "Even if you are deaf and blind you would know about them! Just go and turn on your TV..." (interview No 9).
[260] For example, Chief City Obstetrician states that "the nature is often more effective than medical interference" (interview No 33).

33). She believes that scientific knowledge has been the most important driver of the changes:

"We have had many scientific studies... conferences, and roundtables. Now we have evidence

that the natural way is the most effective..." (Ibid). Also, she acknowledges the influence of

international organizations, such as WHO and UNICEF, in promoting evidence-based maternity

care. In particular she refers to Dnepropetrovsk maternity hospital No 2 as the benchmarking

case of innovation.

The head of maternity hospital No 2 Lyudmila Padalko volunteered to participate in the

evidence-based maternity care program of the Maternal and Infant Health Project (MIHP), a

USAID-funded four-year program implemented by John Snow Inc. (JSI), [261] in 2006. The

maternity hospital's experience was very successful and she received a letter from the project's

leader Helene Lefevre-Cholay acknowledging hospital's accomplishments in implementing new

methods. At the same time, Stork opened it ward at about the same time and provided training

for all maternity doctors at the hospital. Hospital medical personnel also directly learned from

Stork specialists. Therefore, the influences of the MIHP or Stork overlapped. At the same time,

many NCBM doctors assess the NCBM influence as more significant. For example, Olga

Mikryukova is critical to the educational approach of MIHP, because "they just teach maternity

statistics." Larisa Ogyr believes that international organizations simply triggered the adoption of

natural childbirth practices, from the top: "There were two waves, us and WHO with USAID…

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[261] This $ 6 mln project had several goals including "the development of standards of care and clinical guidelines for maternal and infant health; … the introduction of standards/ protocols for complicated maternal and infant cases at pilot Ob/Gyn out-patient clinics and hospitals; the introduction of evidence-based best practices for delivery services…" Main program results include the decrease of the number of episiotomies by 75%; partner presence increase by 96%; normal deliveries increased to 74%; and C-sections decreased by 37%. (mihp.com.ua). According to Dr. Markin, the head of Obstetrics Department at Lviv Medical University, Helene Lefevre-Cholay, the project's Chief of Party, "made the Ukrainian medical elite change the mentality towards progressive birthing technologies, she persuaded us by her persistent actions and hard work that women children and their families are the central point in our work," (cited in Golubev, 2009, our Bodies, Ourselves blog, last accessed December 4, 2010.

It was a coincidence" (interview No 23).

Contrary to the views of the NCBM doctors, NCBM's non-medics are generally less enthusiastic about the changes at maternity hospitals and view the effect of the NCBM in less positive terms. According to Alexander Naumov, a NCBM leader in Moscow, the changes at maternity hospitals have been cosmetic. Based on his experience with Moscow and several Ukrainian hospitals, new practices have been poor imitations of natural childbirth methods that the movement had developed. Alexander disagrees that the NCBM has been a success either in Russia or in Ukraine because the number of homebirths has declined.[262] He feels disappointed because people are passive and clubs might soon disappear. Zeena Andreeva similarly believes that the mindsets of maternity doctors and nurses have not changed and the quality of their work with women remains low, in the NCBM standards. Speaking about the impact of the NCBM on maternity hospitals in Dnepropetrovsk, Zeena believes that because "the movement did not have money" the influence of the CPC on the maternity hospitals has been minimal. At the same time she views the ideological impact of both the Club and the movement as very significant (interview No 19). Alexander Kobasa, an NCBM obstetrician and an early Zeena's ally in Dnepropetrovsk, views the progress in perinatal psychology and Western studies as the most important historical driver of changes in Russia and Ukraine. At the same time he admits that "the social movement of spiritual midwives" had been crucial in disseminating new ideas in the former Soviet Union (interview No 36).

A deep-seated distrust towards the medical system might have been the reason why NCBM's

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[262] Based on his estimates, there were about 600 home-births in Moscow in 2007, which is less than 1% of all 2007 births (about 100 thousand). In contrast, in the 1990s, there were about 3% of home-births in Moscow, according to his data.

non-medics differ from medics in their assessments of recent changes. Thus Alexander Andreev, a NCBM pioneer in Dnepropetrovsk, perceives all doctors as representing the official medical system. He strongly believes that no medics should have been allowed to play a significant role in the NCBM. Also, he disagrees with Zeena's strategy of "cooperating" with Dnepropetrovsk doctors because it has not been favorable for the club. At the same time he admits that such a strategy has had an effect on the recent changes in city's maternity hospitals and helped improve the overall situation with maternity care. In contrast to her husband Alexander, Zeena trusts NCBM-associated medics: "As any human being they are capable of overcoming personal fears and misconceptions… I believe in them…" (interview No 19).

Finally, there has been a deep distrust between maternity hospitals and the NCBM, also reinforced by adversarial relationships between non-state and state organizations. In the past, the CPC and Zeena Andreeva personally were frequently targeted by Chief City Obstetrician office's media campaigns for their "illegal medical practices."[263] Also, many Ukrainian state organizations tend to exploit non-state organizations and perinatal education centers in particular.[264]

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[263] One particular case involved a media campaign against the club and Zeena organized by doctors in Dnepropetrovsk in 1999. The Chief Obstetrician accused Andreeva for suggesting a home-birth option for one woman having critical medical conditions. Andreeva claimed that she did not recommend the woman a home-birth option and that the woman did not follow her advice and decided on an unassisted home-birth. Because the details of the case were not clear the battle raged over the NCBM approach in general. She organized a meeting with the Chief City Obstetrician. During the meeting the Chief Obstetrician responded in a very authoritative and aggressive way: "We want to destroy you [the movement] and you propose that we talk!" (personal experience).

[264] Alexandra Pyrozhenko recalls her experience as the club's representative at the city's Youth Council in 1999: "Occasionally, I talked to public officials from the municipal government. Whenever I asked for help, they would respond in the same way: "We can advertise your organization. And what would you do for the city?" (interview No 12). This attitude has not changed ten years later. For example, Irina Demura, the director of Little Mammoth center, summarizes her attempts to cooperate with maternity hospitals as negative. The center offered its help in teaching workshops on perinatal education free of charge: "We would approach the head of the clinic and say 'We would be happy to share our knowledge with pregnant women.'" However, some hospitals even asked the center to pay for that (interview No 27). The director of another center avoids contacts with public officials at the city level: "We [her center] are not powerful enough. We have to hunker down and sit like mice." Instead, she prefers to work with

CHAPTER EIGHT. CASE COMPARISON AND KEY FINDINGS

This chapter is structured around the discussion of three key research findings about the relationship between movement knowledge and public administration. First, movement knowledge affects policy and expert knowledge. The degree of integration of movement knowledge by policy depends on the movement phase, the intensity of movement-state interactions, and movement strategies. Second, movement knowledge directly affects public organizations if movement communities interact with public organizations by challenging administrative practices. Third, movement communities promote movement knowledge by mediating between policy and administration. They can influence policy-makers by supporting their policies with successful examples of innovative administrative practices which had been previously initiated by movement communities. The findings substantiate the theoretical framework by connecting social movement, policy expert and administrative knowledge through the processes of social, policy, and organizational learning. Each finding is supported by the empirical analysis and the comparison of three cases (Chapters V-VII). In particular, the analysis builds on the answers to research questions 1-4. The chapter concludes with a discussion of potential limitations of this research.

8.1. Finding 1. Movement knowledge and public policy

Three interrelated factors have been found important in understanding how movement knowledge affects public policy: *movement phase, movement strategies in relation to movement*

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administrators of the hospital where she is employed as an obstetrician (interview No 14).

knowledge, and the intensity of movement-state interaction. Each of these factors will be discussed next.

8.1.1. Movement phase

Movement phase is important because it defines a threshold when movement knowledge becomes visible for policy-makers. Movement knowledge does not come to social movements in a readily available static form. Rather movement knowledge is a dynamic phenomenon that evolves together with the social movement. This study has applied the phase-based model of social movement dynamics (McAdam, 1982) to describe the evolution of movement knowledge in the SCM, the FOSSM, and the NCBM. According to the cognitive praxis approach (Eyerman and Jamison, 1991; Jamison, 2001), movement knowledge dynamics involves four distinctive phases: emergence, movement-building, specialization, and institutionalization. At the emergence phase, knowledge processes are very intensive but movement knowledge is difficult to identify as it is still the movement's "work-in-progress." For outsiders and for most movement actors movement knowledge represents a patchwork of new radical ideas and fragments of new worldviews. Obviously, for the policy-makers looking for the solutions to social problems, emergent movement knowledge is not useful or might not even be visible. In contrast, movement knowledge at the later movement phases is already consolidated, tested, and its potential for policy and social change has been established by movement leaders and activists. Its impact on public policy becomes significant. To utilize movement knowledge, policy-makers should ideally understand the evolution of this movement knowledge, including early movement phases.

For example the analysis of the evolution of movement knowledge in the SCM, the FOSSM, and the NCBM (Research question 1) shows that the ideological foundation of movement knowledge is laid down at its initial emergence phase. However, the knowledge processes are very complex and involve various intellectual streams. Each of the three movements had creatively built on pre-existing knowledge, including lay and expert knowledge. The early environmental movement built on the prior experience with conservation and preservation projects in the U.S. and also relied on three large intellectual traditions: systematic, democratic, and human ecology (Jamison, 2001) that had existed before the 1960s. The FOSSM hacker culture was initially limited to radio-electronics hobby clubs, such as the MIT's Tech Model Railroad Club in the late 1950s. The development of the hacker culture paralleled the creation of computer science. In a sense, hackers were the earliest applied computer scientists and their innovative subculture was a quasi-academic testing ground for other computer scientists. The NCBM borrowed from the Western intellectual tradition of natural childbirth and the experience of the Western NCBM. The importance of this early phase thus consists in its potential to generate new worldviews and values. The environmental worldview stressed partnership between humans and nature, the Hacker Ethics put forward a new model of creative relationships between humans and technology, the natural childbirth emphasized the active role of humans as creative agents in determining the relationships with their own bodies and minds. These new worldviews triggered new identity processes that became a source of movement mobilization (Melucci, 1980; 1989) and the foundation for all later phases. However, it is very easy for policy-makers to ignore these early movement cultural processes and is very difficult to discern the seeds of the useful social knowledge the movements are yet to create.

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8.1.2. Movement strategies in relation to knowledge

Movement knowledge does not enter the public policy arena automatically. Instead, it is always embedded in movement practices and thus follows what the movement does. In other words, it enters the public policy arena if the movement wants this. Therefore, policy-makers encounter movement knowledge as a movement practice if not strategy. The comparison of the SCM, the FOSSM, and the NCBM illustrates how movement knowledge shapes strategy as it matures from movement-building to institutionalization phase (Research question 1). In particular, movement knowledge is still inwardly-oriented at movement-building phase and starts reaching out to policy-makers at movement specialization phase.

Movement-building phase

New cognitive praxis crystallizes at the movement-building phase. Each of the three movements further substantiated their worldviews by developing new technological and organizational practices. The diversity of these practices varied in different movements. The environmental movement involved very diverse practices, such as social, political, and technological. All three movements created new technologies. Jamison (2001) selects the alternative technology movement as best exemplifying the creative potential of the environmental cognitive praxis. The alternative technology movement produced recycling, ecological design, and renewable energy practices. The FOSSM created the quasi-legal copyleft technology to sustain its GNU operating system project. The NCBM produced a unique non-hospital technology of waterbirth. The organizational praxis that embedded these new movement technologies was very similar in the three movements. The alternative technology movement was structured as alternative technology communities, the FOSSM, and the NCBM were organized around hobby clubs – hacker clubs in

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the U.S. and family clubs in Russia and Ukraine, respectively. These spaces were loosely organized with the intention of producing and testing new ideas by lay people primarily.

Movement specialization

The cognitive praxis reaches its maturity during the movement specialization phase. Compared to the emergence phase, new ideas emerged less frequently in the three movements as each movement had focused on refining the already tested practices. Once movement knowledge became rationalized, new movement leaders shifted their focus to knowledge dissemination outside the movement rather than knowledge production inside the movement. These attempts involved compromises in relation to the ideological framing of movement knowledge. In particular, many movement leaders gave up controversial movement messages in order to make easier the integration of movement knowledge by the market and the society. Thus the new leaders of the environmental movement and the NCBM gave up their spiritual worldviews and stressed the commercial potential of movement knowledge instead. Green businesses in the environmental movement, open source companies in the FOSSM, and perinatal education centers in the NCBM all relied on market forces to promote movement practices. The integration of movement knowledge entailed deep internal conflicts between movement leaders. The fragmentation and specialization of cognitive praxis resulted in movement decline. New professional organizations initially rooted in the movement practices gradually developed a greater autonomy in relation to these movements as they perceived a lesser need in maintaining a broad movement support base.

Movement institutionalization

The further institutionalization of movement knowledge signals the death of the movement.

Institutionalized movement knowledge became disconnected from the movement as new actors reframed new practices without referencing to the movement influence and framed these new practices in terms of the market dynamics and advances in particular sciences. For example, depending on different scholars' views, the sustainable community movement represents a late offshoot of the environmental movement's cognitive praxis (Jamison, 2001) or an advance in environmental policy practices (Mazmanian and Kraft, 1999) driven by the interests of green businesses. The FOSSM and the NCBM similarly had their own institutionalization agents who promoted new ideas by referring to new business practices, such as open innovation and collaboration promoted by large ICT companies in the FOSSM, and perinatal psychology innovations promoted by entrepreneurial maternity professionals in the NCBM. The institutionalization of movement cognitive praxis thus involved a dilemma: those professional organizations which were crucial for the integration of movement knowledge also killed that very hen which laid the golden egg. For the policy-makers who encounter movement knowledge at this late stage it appears as driven by interest groups, especially given the tendency of the latter to dissociate themselves from the social movements.

Therefore, there exists a paradox of movement knowledge in relation to policy learning: the emergency phase conceals movement knowledge from policy-makers and reveals its movement base while the institutionalization phase reveals movement knowledge but conceals its movement base. Three cases indicate that the transformation of movement knowledge into expert knowledge is a long historical process. Based on the three cases, the following chart is proposed that makes visible the dynamics of knowledge production in social movements (Figure 3).

Figure 3. The dynamics of knowledge production in new social movements
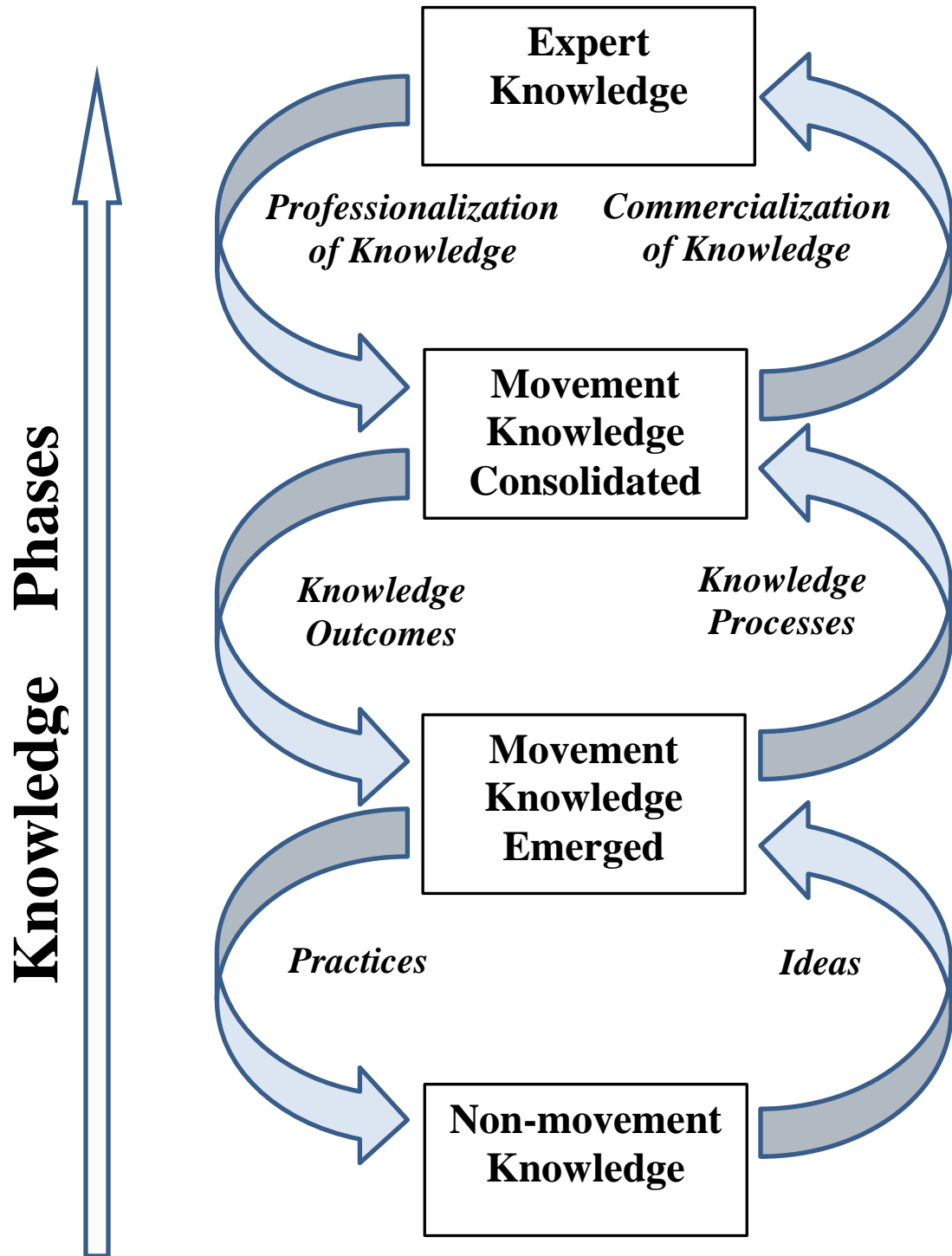
The chart summarizes the emergence and the transformation of movement knowledge into expert knowledge. The lower circle specifies the dynamics of knowledge production by highlighting how new ideas and practices creatively recombine old non-movement knowledge into new movement knowledge. The middle circle describes how specific knowledge outcomes resulting from the application of new practices generate learning (knowledge) processes, which in turn result in the consolidation and rationalization of movement knowledge. Finally, the upper circle illustrates the institutionalization of movement knowledge at the final movement phase. The practical purpose of this chart is to inform the ideal policy-maker about the evolution of movement knowledge to utilize the potential of movement knowledge for social problem-solving.

8.1.3. The intensity of movement-state interactions

The intensity and the character of state movement interactions varied in the three social movements. However, the following general pattern consisting of three trends can be identified in state-movement interactions in all three social movements (Table 6).

First, the scope and frequency of interactions between the state and social movements increase from movement emergence to movement institutionalization. Second, the interactions are concentrated in specific administrative areas at early movement phases and expand to policy areas during the movement institutionalization phase. Third, movement-state interactions tend to evolve from adversarial at the movement-building phase to collaborative at the institutionalization phase.

Table 6. Movement-state interactions in three social movements

Movement	Scope & frequency of interactions	Areas	Character of interactions
Movement	**emergence**		
EM/SCM	Low	Law	Neutral
FOSSM	Low	Administration (DARPA project)	Neutral
NCBM	Low	Administration	Neutral
Movement	**building**		
EM/SCM	High	Policy and law (environmental justice), administration (alternative technologies)	Neutral to adversarial
FOSSM	Low	Law	Neutral to adversarial
NCBM	High	Law, administration (homebirth)	Adversarial
Movement	**specialization**		
EM/SCM	High	Policy (green business, environmental justice)	Neutral to adversarial
FOSSM	Low	Law (cybersecurity)	Neutral to adversarial
NCBM	High	Administration (homebirth, new maternity practices), law	Adversarial to neutral
Movement	**institutionalization**		
EM/SCM	High	Policy (green business, environmental justice), administration (sustainable communities)	Collaborative
FOSSM	High	Policy (open government), administration (public data)	Collaborative
NCBM	High	Policy (woman-centered maternity care), administration	Neutral to collaborative

During the *movement emergence* phase, there is no movement yet and movement groups are in the process of generating a consistent worldview that would mobilize the movement and effectively challenge other worldviews. The state seldom interferes with the activities of movement groups as the latter do not represent a political threat. Thus the environmental worldview and the

hacker culture emerged in academia outside politics or policy arena in the U.S. The spiritual natural childbirth approach originated in several Moscow clubs that did not directly challenge the Soviet state or the Communist ideology. In fact, many early movement groups were even able to use state resources for their own purposes. For example, the funding from Defense Advanced Research Projects Agency (DARPA) sustained the hacker culture at MIT for more than a decade. The NCBM leaders used state-owned public halls, media, and other facilities for their experiments. These interactions primarily occurred at the lower administrative level.

The environmental movement and the NCBM have frequently interacted with the state from *movement-building* phase and onwards. With the exception of politically active environmental groups, such as the environmental justice movement, the two movements were primarily "do-it-yourself" movements. They stressed their isolation from the state and the wider society and did not attempt to influence the state to achieve their major goals. For example, the alternative technology movement clustered in counter-culture rural communities and the NCBM similarly forged autonomous quasi-private spaces of experimentation at their family clubs. The state resisted the movements' proclaimed independence passively or actively. In the NCBM case, the official state maternity care system fiercely opposed homebirth practices, which set a very adversarial tone in the relationships between the state and the NCBM. Most interactions in the alternative technology movement and the NCBM occurred at the administrative level. For example, some ecological design communities received federal funding for their futuristic projects. Individual NCBM members interacted with administrators of maternity hospitals on such issues as registration of home-born children. At the same time, the interactions between the environmental justice movement and the state occurred at the policy level too.

As the three movements rationalized their knowledge and adapted it for the needs of the wider society, the scope and the frequency of state-movement interactions increased during the *movement specialization* phase. The environmental and alternative technology movements created new market and academic niches to spread their knowledge. Green businesses and environmental consulting firms further promoted environmental values in more socially acceptable forms which avoided the early movement radicalism. Similarly, the NCBM leaders deemphasized the spiritual elements of natural childbirth and promoted new maternity practices under the agenda of perinatal psychology. As a result, the state viewed these innovations more favorably and movement-state relationships became less adversarial. For example, new environmental policies in the U.S. have been explicitly framed as market-based during this phase by environmental policy scholars (Mazmanian and Kraft, 1999).

State-movement interactions reached their maximum during the *movement institutionalization* phase in the SCM, the FOSSM, and the NCBM. Movement leaders and non-movement entrepreneurs detached movement practices from their movement context and promoted them as innovations. At the same time they frequently utilized movement ideology in their rhetoric. For example, the SCM promoted the international and business agenda of sustainability but employed the rhetoric of environmental community activism and the holistic environmental worldview. The advocates of open data movement promoted new Internet technologies by referring to the FOSSM ideology of openness and collaboration. Many NCBM leaders reframed new natural childbirth practices as Western innovative maternity care methods but interpreted "naturalness" of birthing consistent with the NCBM ideology of spiritual midwifery. These

innovations gradually became a priority for the state. New policies reflected this priority and stressed the collaboration with non-state groups as a policy implementation strategy. For example, new environmental, open government, and maternity care policies all stressed collaboration with non-state organizations in one way or another.

Therefore, as movement knowledge evolved the movement-state interactions intensified, reached policy arena, and became more collaborative in the three social movements. At the same time, the FOSSM stands out from this pattern in one respect. Unlike the environmental and the NCBM, it had very infrequent interactions with the state before its institutionalization phase. Notwithstanding its libertarian philosophy, the FOSSM seldom constructed the state as the movement's enemy. Richard Stallman believed that public organizations were not involved in proprietary practices and thus mobilized his movement by targeting private business practices. Similarly, the leaders of the open source movement opposed the Microsoft Corporation rather than the state. At the same time, the interactions between security and law enforcement federal agencies and hackers on cybersecurity issues, one narrow area of free software, shaped all movement-state interactions in the FOSSM as adversarial. The FOSSM ultimately won the policy arena with the introduction of open government policies by the Obama Administration. However, due to the lack of intensive interactions with the FOSSM in the past, most policy-makers and administrators are less aware of the presence of the movement rhetoric (such as hackers' ideology of collaboration) in open government policies, compared to the SCM and NCBM cases.

Therefore, Finding 1 confirms the importance of the dynamic view on movement knowledge in

understanding how it affects public policy. A lack of attention to the evolution of movement

knowledge renders it invisible for policy scholars. For example, the same case of sustainability

has been interpreted differently by cognitive praxis and environmental policy scholars. While the

former approaches sustainability as a movement practice and a strategy, the latter defines it in

reference to state policies primarily. It is thus too easy to lose sight of movement knowledge and

undervalue it. The analysis here has shown that the role of three movements in promoting their

knowledge cannot be ignored. The phase heuristics helps discern movement knowledge. The

model of movement knowledge evolution does not imply that any emergent movement

knowledge will ultimately be institutionalized, however. The research has not considered those

new social movements that had failed. Also, the cases illustrate that the movement leaders acted

incrementally and the movement cohesion was achieved by adhering to a broad common

worldview rather than a clearly defined set of long-term movement strategies. At the same time,

notwithstanding this incremental character of action, each movement phase triggered similar

movement tactics in relation to public policy.

Finding 1 supports the importance of movement knowledge as one example of social knowledge.

In reference to the theoretical framework, movement knowledge has affected and redefined

expert knowledge in three areas: sustainability, intellectual ownership, and birthing. The three

cases addressed movement knowledge as an active driver of transformation of movement

knowledge into expert and policy knowledge. However, the possibility of expert knowledge

being another active driver should be left open. Theoretically, expert knowledge can be a driver

of movement knowledge (see the knowledge triangle). In practice, a productive (from the

movement perspective) influence of expert knowledge is technically very unlikely as movement

knowledge production is not a simple linear process and is also subject to complexity, self-organization, and chaos. (It is much easier to imagine that expert knowledge can co-opt movement knowledge and thus prevent its development). At the same time, the role of expert knowledge should not be ignored. The three cases provide evidence that movement knowledge emerged from different streams of expert and lay knowledge. Also, many policy experts were aware of the early experiments and supported them.

8.2. Finding 2. The mechanics of movement knowledge transfer to policy groups and public organizations

Finding 2 emphasizes the role of movement communities in the transfer of movement knowledge to public administration. This transfer happens as movement communities interact with public administrators at the local level. Finding 1 suggests the importance of movement phase in constructing a big picture of the relationship between movement knowledge and public policy. Finding 2 specifies the question *how* movement knowledge reaches out to public administrators. Most significantly, it brings to light the direct influence of movement communities on public organizations. The analysis of the interactions between the SCM, the FOSSM, and the NCBM at the local (city) level (Level 2 of the analysis) indicates that some movement communities have directly interacted with public administrators and thus were able to exert their influence beyond policy channels.

Using the knowledge triangle, answering research questions 1 and 2 helped connect the

chronological dots between movement knowledge and expert/policy knowledge (Finding 1). At the same time, the focus on movement knowledge and its dynamics has so far left out the discussion of specific mechanisms by which movement knowledge transferred to policy and administrative arenas (Research question 3; analysis level 2). This section addresses the role of movement communities in the transfer of movement knowledge to public organizations. Using the knowledge triangle map, it looks for the links between the processes of social and organizational learning, and movement and administrative knowledge.

The local level cases of Sustainable Seattle, NYC 311, and Dnepropetrovsk's perinatal education center Stork provide evidence about the influence of movement community on administrative learning in three social movements. Local movement communities attract public administrators interested in new sources of knowledge alternative to their organizations and professions. These administrators participate in movement communities informally at early movement phase and formally at institutionalization phase. They become knowledge brokers that connect movement knowledge and public organizations, such as local government departments, ICT departments, and state maternity hospitals, even though their ability to span administrative boundaries is constrained by the degree to which the movement knowledge had been previously integrated by the society and the state.

The Sustainable Seattle case (Holden, 2004; 2006) examines the social and policy learning in Seattle in relation to sustainability indicators developed by S2. Holden finds that many Seattle's key change agents, such as the city planner Steve Nicholas, were simultaneously involved as early S2 members and government employees. Their insider knowledge about sustainability

indicators helped them promote the idea of indicators in Seattle government organizations. The proximity of Seattle government to the S2 community did not guarantee automatic administrative learning, however. In fact, there had been a "common wisdom" among S2 members that S2 was "a prophet in one's own land" because it built its international and national reputation earlier than it could earn the same reputation locally. Holden also finds that local government employees constituted the group that had been most resistant to the idea of indicators. At the same time she presents the evidence that, using both formal and informal channels of influence, S2 ultimately succeeded in disseminating its sustainability indicators approach in Seattle.

The NYC 311 case indicates the role of NYC's open source community in facilitating administrative learning by NYC government organizations. On the one hand, many open source advocates, such as NYS Senate IT director Noel Hidalgo or the NYC Chief Digital Officer Rachel Stern, had entered government service with the intention of promoting open source practices. On the other hand, many IT professionals already employed by NYC government participate in the open source community for professional development reasons. These individuals become knowledge brokers. They transfer movement knowledge into public organizations and also provide feedback to the community on how to deal with issues related to the operation of government agencies or specific policies in order to promote community goals.

The NCBM case presents very strong evidence about the involvement of maternity professionals in the Dnepropetrovsk's NCBM community and their role as knowledge brokers. Over the last two decades, eight maternity doctors and nurses have participated in the NCBM community as members of the Club of Parental Culture or later as leaders of new perinatal education centers.

The case describes how the Stork perinatal education center was able to open its maternity ward in one of the city's maternity hospitals. The Stork ward became a learning laboratory for maternity doctors and nurses who could learn firsthand about new maternity practices. The Stork built on this experience and further promoted softer maternity practices by educating maternity professionals from other maternity hospitals in Dnepropetrovsk and other cities.

Therefore, Finding 2 informs the question about the specific mechanism of movement knowledge transfer to public administrators. The cases of the SCM, the FOSSM, and the NCBM as well as their respective local level cases Sustainable Seattle, NYC 311, and Dnepropetrovsk's Stork perinatal education center highlight the important role of movement communities in the production and the dissemination of knowledge. Based on the three cases, local movement communities have been instrumental in communicating movement knowledge to public organizations. They played a significant role in facilitating administrative learning through their knowledge brokers, those public administrators involved in these communities. The knowledge brokers thus were a valuable asset for public organizations even though the senior administrators seldom recognized that.

8.3. Finding 3. Movement knowledge as an intermediary between expert and administrative knowledge, and between public policy and policy implementation

Finding 3 relates to the role of movement knowledge in linking policy making and policy implementation (see the knowledge triangle). This is the most significant research finding also directly applicable to the domain of public administration scholarship. Based on the three cases studies, movement communities skillfully navigate between policy and organizational level to

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promote movement knowledge. This finding builds on Findings 1 and 2. Finding 1 makes

movement knowledge visible in relation to public policy by using the movement phase heuristic.

Finding 2 addresses the role of movement communities in merging area-specific knowledge and

administrative practices. Finding 3 highlights the strategic use of movement knowledge by

movement communities as they test movement practices in public organizations at the local or-

ganizational level and simultaneously promote new policies to create a favorable legal and polit-

ical environment for their movement practices.

Policy learning connected to organizational learning

The three cases provide evidence of the influence of movement knowledge on policy learning.

There have been very few systematic studies in the Advocacy Coalition Framework literature

that would overlap with the three dissertation cases. However, non-ACF literature provides

evidence of the links between movement knowledge and policy learning. This evidence suggests

that policy elites have relied on movement experience to support their new policies. In his

analysis of community environmentalism, Jamison (2001) discusses how the synthesis of local

knowledge and experience or "social innovation of strong democracy" (p.152) informed the

environmental policies related to Local Agenda 21 in Europe and in the U.S. For example, the

parliament in Norway established a new agency, the Environmental Home Guard, to connect

central policy institutions to local environmental organizations and to increase citizen

participation in developing environmental policies. The case of Sustainable Seattle (Holden

2004; 2006) suggests that U.S. policy elites, such as the President's Council on Sustainable

Development (PCSD), incorporated the S2 experience as a model to guide sustainability

initiatives nationwide. Importantly, S2 leaders were very proactive in promoting the knowledge

about sustainability indicators and spent significant efforts to educate policy makers both nationally and internationally.

The FOSSM case presents significant evidence about the influence of open source ideology on key policy-makers responsible for open government policies in the Obama Administration. For example, the U.S. Deputy CTO Beth Noveck has repeatedly referred to open source collaboration as the model of open government. Most importantly, both U.S. CTO Aneesh Chopra and U.S. CIO Vivek Kundra used bottom-up initiatives of civic technologists as a proof of effectiveness of open government policies and collaboration with citizens in particular. Toavs (2004) uses the ACF in his study of the U.S. Information Resource Management (IRM) policy subsystem. He notes the role of CIOs as key knowledge brokers facilitating policy learning among key advocacy coalitions in the IRM subsystem. The NYC 311 case presented in this dissertation confirms his finding about this CIOs' role. Also, it provides further evidence that CIOs (and CTOs) cultivate their relationships with the communities of civic technologists to inform policy learning. The FOSSM case also suggests that open source associations and media groups, such O'Reilly Media, set the goal of educating policy-makers and administrators as their main strategy to promote open source and open data practices.

Due to the general scarcity of empirical data about policy-making process in maternity care in Russia and Ukraine and the lack of previous studies addressing this policy area, the NCBM case provides only anecdotal evidence that the NCBM knowledge informed policy learning of maternity care policy-makers. Based on the interviews with key NCBM leaders in Ukraine, the movement has succeeded in promoting new maternity practices at the policy level. In particular,

several interviewees refer to the efforts of one NCBM perinatal education center and a media company in Kharkov in educating senior officials from the Ukrainian Ministry of Health about innovative maternity practices. The leaders of the Kharkov center also helped frame and lobbied the Executive Order No 620 of 2003 of the Ukrainian Ministry of Health, according to these interviewees. However, I have not conducted interviews with Ukrainian policy-makers and thus this evidence remains unconfirmed. One city conference organized by NCBM supporters in Odessa in 2008 that I attended brought together city policy-makers in the area of maternity care and the proponents of alternative maternity practices from all over Ukraine. In fact, such a practice was typical for all the three movements: movement leaders identify those policy-makers sympathetic to their movement practices and then connect them to movement groups and those administrators having the experience and the commitment to such movement practices.

What drives movement communities to mediate policy-making and policy implementation through movement knowledge?

The cases suggest that some movement groups use this strategy to increase their power in promoting their agenda of knowledge institutionalization. There exist strongly opposing views on the desirability of collaborating with the government among different movement groups in each of the three movements. The respondents answers to research question 4 help illuminate why they disagree and why some groups have been actively engaged on the policy and administrative arena and other have not. As movement activists, all respondents were change agents. However some of them did not see any value in collaborating with policy-makers or public administrators and others did. To examine their opinions, I asked the following question: "Do you believe that the [movement name] has had an effect in promoting [movement practices]

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at public organizations?" Their answers surprised me. I expected to hear exaggerated success stories. Instead, many interviewees were puzzled by this question. Their responses differed among early and late movement leaders. Those movement leaders who became involved in the movements during their early phases were very skeptical about the effect of their movements on public organizations and the society at large. In contrast, those movement leaders who joined their movements during the institutionalization phase and thus spent significant efforts to promote movement knowledge beyond the movement tended to confirm the positive effect of the movements on public organizations.

In the FOSSM case, the *2600* hackers and open source technologists in NYC had very different opinions on the effect of the FOSSM on government practices. *2600* hackers identify with the moral message of the free software movement and have strong libertarian and anarchist views. They considered my idea that the movement could improve the "System" with great skepticism because the System was inherently bad and thus the movement should not help it look better. In contrast, open source technologists had more pragmatic attitudes and confirmed that public organizations slowly started embracing new collaborative technologies. At the same they noted the existence of many "bureaucratic bottlenecks."

The early NCBM leaders were very skeptical about the recent changes at Ukrainian maternity hospitals. They believed that those changes were "cosmetic" at best and maternity doctors did not change their mentality. The leaders of the Club of Parental Culture acknowledged the ideological effect of the NCBM on maternity hospitals but noted that the community had little power to promote deeper changes. In contrast, the maternity doctors involved in the NCBM

recognized the effect of the NCBM as significant and were proud that their efforts made their city a leader in innovative maternity practices.

The case of Sustainable Seattle was selected by Holden (2004) as an international and national benchmarking case in sustainable development. She examines the local impact of S2 on social and policy learning in Seattle. Holden finds that most S2 leaders were skeptical about the local effect of their sustainability indicators approach. She collects evidence that this opinion did not reflect the actual impact of S2, which was quite significant, according to her. Some of S2 members who worked for the government and helped promote sustainability indicators in their public organizations were more optimistic about the impact of S2.

This variation in the answers of movement activists reflects the fragmented nature of the three social movements as loose communities of communities each having a slightly different understanding of movement practices and goals. In particular, early movement leaders disapproved late movement practices and viewed movement institutionalization and commercialization as detrimental for the movements, first. For example, early NCBM leaders saw perinatal education as a truncated version of spiritual midwifery and also resented that NCBM doctors "took over." The FOSSM early leaders such as Stallman viewed open source practices as a betrayal of the principle of freedom. Jamison (2001) discusses how deep ecologists treated market-based sustainability initiatives as selling out to big business. Also, early movement leaders frequently saw the institutionalization of movement knowledge as their own leadership failure.

Second, the history of movement knowledge in the three cases is more complicated than the story about great movement leaders who commit to social change and heroically accomplish it. The experience of the three movements suggests that many early leaders had a very isolationist and elitist philosophy. For example, spiritual midwives and hackers did not believe that their knowledge was intended for everyone. In retrospective, Jamison (2001) identifies such attitudes in the environmental movement as "residual cognitive regime." The residuals, such as deep ecologists, are utopians who praise deep philosophical exploration rather than wide application of movement practices. In contrast, the "dominant cognitive regime" represented by movement pragmatists tends to cream skim the movement knowledge that is most marketable. Jamison proposes the ideal of hybrid cognitive regime that would synthesize the residual and dominant regimes. However, the opinions of movement leaders about the effect of movement knowledge on public organizations suggests that there is little evidence of the existence of such a regime. Movement knowledge represents a source of movement power. Ideally, movement leaders should maintain the coherence of movement knowledge and should avoid internal rivalries to capitalize on its power. However, this has not happened in the three cases.

Third, movement groups more actively promoting movement practices at the policy level were more likely to benefit from these policies than other movement groups. For example, open government data was a valuable prize for open source activists but not for *2600* hackers in NYC. Similarly, the Stork perinatal center was able to attract new clients by collaborating with city hospitals and by opening its maternity ward in one of the hospitals. The interdependencies between the movement and public organizations can be identified in all the three cases. However, late movement leaders were more likely to compromise movement values in order to access the

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resources of public organizations.

Therefore, Finding 3 points at the role of movement knowledge as an active intermediary between policy and administration. Movement knowledge is embedded in movement practices. In fact, it *is* a practice in many important respects as the authors of cognitive praxis argue. Late movement groups find it in their interest to promote movement knowledge beyond the movement. They skillfully connect the successful cases of administrative innovation involving movement practices to those policy-makers sympathetic to such movement practices. Finding 1 places the strategies of these late movement leaders into the context of movement evolution and suggests that this a common pattern in all three movements. Finally, all three cases point at the existence of a void at the senior administrative level in public organizations in relation to movement knowledge. Movement communities are more successful in converting lower- and infrequently middle level administrators and in influencing policy-makers than they are in affecting senior administrators. Organizational learning thus happens at the lower administrative level easier than it happens at the higher level. For example, in the FOSSM case NYC the senior leaders of organizations such as NYC DoITT embraced the movement rhetoric of open government collaboration much quicker than they actually adopted collaborative practices, from the point of view of open source activists.

8.4. Addressing the potential limitations of this study

This section addresses two interrelated biases in relation to the research findings: case selection and the theoretical choice of movement knowledge as a particular type of social knowledge. First, three selection case biases can be identified in this research: (1) three social movements

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might not be representative of the entire population of social movements; (2) all the selected movements have been successful and therefore those social movements that had failed to articulate or consolidate movement knowledge have been excluded; (3) two social movements selected are U.S. based movements and one is non-U.S. therefore, the national contexts could affect the findings. Second, the theoretical selection of social movements might not be representative of all the variety of social knowledge.

As explained in the methodology chapter it has been impossible to construct the entire universe of social knowledge and the case of movement knowledge was identified based on the review of several bodies of literature relevant to the central subject of this research, the relationship between social knowledge and public administration. Also, the literature on social movements identifies a number of movements such as peace, anti-nuclear, global justice, gay, and animal rights movements as new social movements, but their scope and the entire population remains unknown. Therefore, this research selected the SCM, the FOSSM, and the NCBM because they have generated very different kinds of knowledge (Table 7).

Table 7. The comparison of knowledge in three social movements

Movement	Fundamental opposition	Worldview	Institutionalization area	Collective action rationale	Challenge to bureaucratic accountability
EM/SCM	Technology/ nature	Environmentalism	Sustainable community	Synthesis of environmental, social & economic	Comprehensiveness
FOSSM	Culture/ technology	Hacker Ethics	Open data	Open collaboration	Low control
NCBM	Technology/ human body	Spiritual midwifery	Women-centered maternity care	Social ecology	Individualized care

Each movement addressed a distinct fundamental tension: between technology and nature, between culture and technology, and between technology and human body, respectively. Each movement creatively resolved a tension by producing a distinctive cognitive praxis – a worldview. Thus the environmental movement developed a new ecological paradigm of environmentalism that opposed the industrial economic paradigm and, most importantly, produced a "different way of life and knowledge-making" (Jamison, 2001; p. 72). The FOSSM produced Hacker Ethics, a worldview that resolved the challenge of human alienation from technology by creating a human-machine synergy in the exploration of the possibilities of computers as well as the depth of human ingenuity. The spiritual midwifery in the NCBM "returned" the body to women who now became the active and pragmatic agents of self-exploration who were also able to construct new ways of social life. This variety of movement knowledge lessens both the movement selection bias and the theoretical bias of selection of movement knowledge as a type of social knowledge even though it does not eliminate these biases completely.

There has been a variation in the movement institutionalization paths in the three movements. This has reduced the bias of movement selection too. The three movements had their distinctive evolution as early movement leaders had little control over how the new worldviews would be later realized by the wider society. Internal movement forces, external factors and national contexts created complex movement dynamics in each movement. Besides four identifiable movement phases and internal movement conflicts that marked key transformations of movement knowledge, few guides can be found to explain why a particular worldview had been institutionalized in one way but not the other. Thus open data became a synonym of the

institutionalized open source movement even though the open source movement leader Eric

Raymond believed that open data was a "loser." The spiritual midwifery worldview in the

NCBM had been ultimately stripped of its spiritual elements. The new woman-center model of

maternity care stressed the importance of perinatal training but refused to recognize homebirth as

a better option – the idea that early spiritual midwives would strongly oppose. Similarly, the idea

of sustainable community emerged as an impossible symbiosis of the environmental worldview

and the pragmatic insight of the environmental movement that the market mattered too.

Despite strong internal conflicts, the movements developed and articulated viable rationales of

collective action applicable outside their movements. The SCM combined environmental, social,

and economic dimensions of sustainability under the same collective action framework. This

framework borrowed its holism and integrity from the environmental worldview and the human

ecology's logic of place, in particular. The FOSSM proposed its own rationale of collective

action, the model FOSSM leaders called open collaboration or "bazaar." In this highly

decentralized and open model, collaboration occurred around those projects attracting enough

software developers' "eyeballs." The NCBM created the social model of "ecology of love." In

this model, birthing was only one episode of a much longer and complex spiritual community-

building. All these "technologies" of collective action effectively served bigger movement

purposes and were just one element of the cognitive praxis, its organizational dimension

(Eyerman and Jamison, 1991).

Another potential bias relates to all selected social movements being explicitly anti-bureaucratic

in their governance structure. Each movement produced the models of collective actions that not

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only escaped the ubiquitous "iron cage" of bureaucracy but also effectively challenged the Weberian rational model. For example, the comprehensiveness of the idea of sustainability in the SCM challenges the Weberian principle of specialization. In the case of Sustainable Seattle, the community was able to operationalize this comprehensive concept by proposing the sustainability indicator "salmon returns to the river." In the views of the citizens, this indicator reflected all three dimensions of sustainability – environmental, social, and economic. It would be difficult to expect that specialized bureaucracy could ever be able to achieve such as combination of comprehensiveness, concreteness, and democratic legitimacy. The open collaboration model articulated by the FOSSM stresses self-organization and decentralization. This model challenges the rational principle of control. According to the open source advocates, this model works just because it assumes low control rather than high control. The social ecology model in the NCBM stresses very personal relationships between the midwife, the woman, and the woman's family. It challenges the bureaucratic uniformity principle stressing impersonal relationships and little relevance of individual circumstances. The loose decentralized structure of social movements is typical to most new social movements. At the same time, it might bias the findings towards social knowledge in a particular non-bureaucratic and informal organizational setting.

Therefore, the variety of movement knowledge addressed in this research lessens the selection bias. One final concern is whether all these social movements have the same common base. I was once puzzled by the response of one of my interviewees, a man in his 60s who identified as a hacker, to my statement that I was studying the environmental movement, and the natural childbirth movement besides the hacker movement. He said: "Of course it all started back then."

I later discovered that the counter-culture Whole Earth Catalogue published articles on all three subjects – computer technologies, sustainability, and midwifery. My puzzle remains open. Were different new social movements as well as the interest to social knowledge triggered by the same fundamental social transformation that occurred some fifty years ago?

CHAPTER NINE. CONCLUSION

This dissertation on the relationship between social knowledge and public administration started with the proposition by Charles Lindblom that social inquiry, a "broad, diffuse, open-ended, mistake-making social or interactive process, both cognitive and political" (Lindblom, 1990; p.7) can be an alternative to expert knowledge way of solving social problems. The three cases of social movements presented here have showed how movement knowledge considered as a particular type of social knowledge contributed to solving such social problems as sustainability, ownership in IT development, and maternity care. Based on the research findings, this concluding chapter summarizes the theoretical contributions of this research by presenting a theoretical model of the relationship between movement knowledge and public administration and then offers several hypotheses for the future research. It ends with the discussion of the movement knowledge as a commons.

9.1. Emergent theoretical model

The knowledge triangle conceptual map (Figure 2, Chapter 3) synthesizes three literatures: knowledge production in new social movements (Eyerman and Jamison, 1991), policy learning in advocacy coalitions (Sabatier and Jenkins-Smith, 1993; 1999) and social learning in communities of practice (Lave and Wenger, 1991; Wenger, 1998) to address the relationship between social knowledge and public administration. It connects social movement, policy expert and administrative knowledge through the processes of social, policy, and organizational learning. The main research findings identify the following issues: (1) the role of movement phase, movement strategy, and the intensity of movement-state interactions in understanding the connection between movement knowledge and public policy; (2) the role of movement

communities in the transfer of movement knowledge to public organizations; and (3) the role of

movement knowledge as an intermediary between policy and administration. The theoretical

model (Figure 4) summarizes these findings and specifies the knowledge triangle (Figure 2).

Figure 4. The conceptual links between movement knowledge and policy and administrative
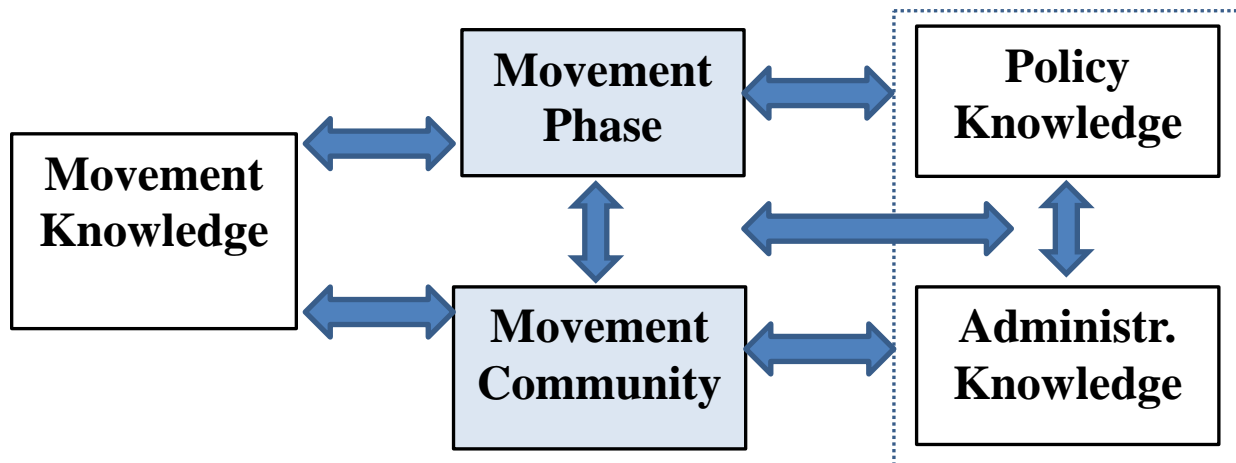
knowledge

First, movement knowledge is a dynamic process that involves changes in movement practices

(the arrow connecting "movement knowledge" and "movement phase"). Second, knowledge

production in social movements is consolidated by movement communities ("the arrow

connecting "movement knowledge" and "movement community"). Third, movement

communities evolve over time (the arrow connecting "movement phase" and "movement

community"). Fourth, the links between movement knowledge and policy and administrative

knowledge are determined by the movement phase (the arrow connecting "movement phase" and

"policy knowledge" and the arrow connecting "movement phase" and "administrative

knowledge"). Fifth, they are shaped by movement community (the arrow connecting "movement

community" and "policy knowledge" and the arrow connecting "movement community" and

"administrative knowledge"). Sixth, policy knowledge interacts with administrative knowledge

(the arrow connecting "policy knowledge" and "administrative knowledge"). Seventh,

movement knowledge affects how policy knowledge interacts with administrative knowledge.

Next, specific hypotheses will be offered to define the model links most important for the public

administration field, based on the reviewed literature (Chapter 3 and 4) and the research finding.

The issues internal to social movement such as the relationships between movement knowledge,

movement phase, and movement community will be excluded from consideration as located

outside the domain of public administration scholarship and will be addressed elsewhere.

9.2. Hypotheses

Three groups of hypotheses parallel the three research findings about the role of movement

knowledge in policy learning, organizational learning, and as a link between policy and

administration.

Policy learning

This research makes a contribution to advocacy coalition framework (ACF) literature (Sabatier

and Jenkins-Smith, 1993; 1999) by suggesting a new role of movement knowledge in affecting

policy learning of advocacy coalitions. The ACF provides theoretical links between policy

learning and policy change. The main tenet of the ACF is that policy change results from changes

in the behaviors and intensions of strategic policy makers who learn from their experience. It

builds on the insight that innovations initially occur at the periphery of the system and then

generate learning throughout the entire system (Schon, 1970). The ACF does not specifically link

movement knowledge and policy learning but notes the role of social movement as an external

factor affecting public opinions. Also, the ACF addresses the role of professional forums for

policy learning in the ACF (Sabatier and Jenkins-Smith, 1999). One of the research findings here

indicates that social movement both shape public opinions and create new professional forums.

The movement leaders in the three movements strategically educated policy elites about new

movement practices. For example, open source associations in the FOSSM explicitly define their

main strategy as educating public officials about the benefits of open source and open data. In

particular, they create and support professional forums, such as those organized by O'Reilly

Media, to bring policy-makers and movement groups together. Therefore, the following

hypothesis is offered:

Hypothesis 1. *The greater the access to movement knowledge of an advocacy coalition, the*
greater the impact on policy change of that coalition.

Organizational learning

The research findings suggest that public organizations can learn about new practices from

movement communities. The geographic proximity (connectivity) and the frequency of

interactions between the community of practice and the public organization(s) is a pre-condition

of such learning. According to Amin and Cohendet (2004), the quality of communications

between two heterogeneous communities depends on the activities of knowledge brokers. The

literature on communities of practice (Lave and Wenger, 1991) proposes that knowledge is

situated and individual learning involves participation in communities of practice. This is

especially true for social movement knowledge which is often tacit. Therefore, the knowledge

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broker should be committed to the values of the communities, share their collective identities (Wenger, 1998), and be a good communicator. Movement communities are interested in knowledge brokers and proactively cultivate their supporters and "zealous nuts" among public administrators – especially if they need access to the resources of public organizations. On the other hand, the knowledge brokers use their participation in movement communities for professional purposes.

The literature on communities of practice (Lave and Wenger, 1991; Wenger, 1998) and knowledge management offers few empirical studies linking external communities of practice and public organizations. Also, all studies of communities of practice in public administration literature deal exclusively with internal communities (Pardo et al., 2006; Bates and Robert, 2002; Mischen 2007). The three dissertation cases place public organizations at the intersection of movement knowledge and formal expert knowledge. All three social movements created movement communities that functioned as "laboratories" of knowledge production. At the local level, these communities interacted with public organizations and individual public administrators, which facilitated the transfer of movement knowledge to public organizations. Therefore, this research contributes to the knowledge management literature in public administration by pointing at the role of a particular type of knowledge broker who is engaged in the transfer of particular type of external knowledge (movement knowledge).

Hypothesis 2a. The greater the number of public administrator knowledge brokers, the greater the transfer of movement knowledge to public organizations.

From the point of view of public organizations employing knowledge brokers, these knowledge brokers are "organization deviants" (O'Leary, 1994). Their innovation can be described as innovation by dissent. First, they had to break many administrative rules to experiment with movement practices at their organizations. Second, many of them decided to exit the organization. At the movement institutionalization phase, many knowledge brokers could also use the option of "voice" using the terminology of Hirschman (1970). Their dissent strategies varied and depended on individual factors as well as on the movement dynamics. For example, the early knowledge brokers faced much more resistance from their organizations than the late knowledge brokers. Most importantly, individual dissent strategies were affected by collective choices of other knowledge brokers as well as the movement community at large.

This surprising finding contributes to the literature on the "ethics of dissent" in government (O'Leary, 2005). O'Leary finds dissent in government very common: "guerrillas in government are all around us" (Ibid). This research describes a particular type of guerrilla government, knowledge brokers associated with movement communities, who engage in innovation by dissent to promote movement practices. Most importantly, this individual dissent is collectively driven. In general, movement knowledge represents mass dissent on fundamental values and issues. Also, their ethics of dissent stems from collective movement values rather than from individual values of guerrillas.

Hypothesis 2b. *Low-level knowledge brokers will be more likely to use dissent to promote innovative movement practices in public organizations, than other options.*

Knowledge brokers helped promote movement practices by connecting movement communities and public organizations. However, they had an insignificant effect on the overall organizational learning at public organizations, according to the movement leaders. Because the majority of the knowledge brokers were low-level administrators, the organizations learning concentrated at the organizational bottom primarily. Given the resistance of the rest of the organization and their role as deviants, knowledge brokers alone could not produce the needed organizational change. The knowledge management literature offers many insights on successful practices in designing the organizational "architecture of knowledge" (Amin and Cohendet, 2004) involving heterogeneous communities. However, the three cases lack any evidence that senior public administrators were using, were aware of such knowledge governance practices, or were committed to initiating organizational change in order to achieve organizational learning. In the context of collaborative governance, Weber and Khademian (2008) argue for the role of knowledge enablers to facilitate knowledge exchanges in networks. According to this study, knowledge enablers at the senior management level are needed to sustain the innovation initiated by low-level administrators.

Hypothesis 2c. The stronger the knowledge governance skills of senior leaders in public organizations, the higher the sustainability of innovations initiated by low-level knowledge brokers.

Movement knowledge in the link between policy and administration
Connecting policy and organizational knowledge engages several bodies of public administration literatures. The policy implementation literature deals with the challenge of aligning policy to actual implementation (Pressman and Wildavsky, 1984). One reason why policy is divorced from

implementation is that street-level bureaucrats (Lipsky, 1980) often act as policy-makers. Maynard-Moody and Musheno (2003) find that street-level bureaucrats form their values in interactions with their clients rather than with their organizational superiors. The literature on knowledge management in the public sector similarly stresses front-line public administrators' local knowledge in policy implementation. Mischen (2002, 2007) finds that the local knowledge, beliefs, and sense-making activities of bureaucrats affect policy outcomes. She argues that the success or failure of policy implementation depends on the alignment between the agency mission and the employees' beliefs as well as on the existence of employees' tacit knowledge of policies. Hartley and Rashman (2007) and Rashman et al. (2009) put the effectiveness of knowledge management into the context of policy implementation. They note that knowledge creation in the public sector is "more likely to be a factor of policy implementation, rather than an explicit goal" (Rashman et al., 2009; p.487). Therefore, the alignment of policy and administration could be increased by aligning policy knowledge and administrative knowledge.

This research identifies one particular way of aligning policy and administrative knowledge. Movement knowledge simultaneously influences policy and administrative levels. If the movement is successful, it can shape new public policies that promote movement practices and knowledge. At the same time, movement communities promote these practices at the organizational level by engaging its knowledge brokers. Importantly, movement groups build on the successes at the organizational level to make their case at the policy level. Because movement values remain stable, movements are able to align policy knowledge and administrative knowledge in the long-term. This happens in a small number of organizations and the senior managers most frequently resist the change. However, movement knowledge

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represents a remarkable case of linking policy and administration by a third non-government party.

Hypothesis 3. *The greater the communication of movement groups at both the policy and administrative levels, the greater the success in shaping new public policies.*

9.3. Important themes not addressed by the model

This research generates two big themes in relation to the nature of movement knowledge: (1) movement knowledge as public knowledge, and (2) movement knowledge as a "commons," a resource shared by a group of people.

The three dissertation cases indicate that movement knowledge is *public* knowledge in many respects. The public and open character of movement knowledge helps mobilize movements consistent with the theory of new social movements (Melucci, 1980). Movement leaders in all three social movements have addressed their rationale for keeping their movement knowledge public. The FOSSM has developed the most articulate philosophy. The movement built on the opposition to the proprietary practices of the software industry and created the quasi-legal copyleft mechanism to promote non-proprietary practices. The SCM leaders spread the knowledge about sustainability because achieving sustainability required the collaboration of different sectors and the involvement of the entire local communities. The NCBM leaders similarly believed that the knowledge about new maternity methods had to be kept public. Also, movement knowledge is public because it implies certain civic motivation, the desire to contribute to the common good. This motivation has been expressed by many movement

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activists even during the late movement phases after movement knowledge had been commercialized.

The literature on civic innovations (Sirianni and Friedland, 2001) and public works (Boyte, 1980; Boyte and Kari; 1996; Boyte; 2008) addresses the role of citizens' knowledge in the revitalization of civic and democratic life in America. These authors also assume civic knowledge to be public as it can be used by civic groups for public purposes (Levine, 2006). On the other hand, many public administration scholars writing on citizen participation make a similar normative argument that a greater place should be allowed for citizens' knowledge in public administration (Denhardt and Denhardt, 2007; King et al., 1998, Box, 1998). Also, many scholars in the field argue more pragmatically that new collaborative governance arrangements might benefit from citizen participation in developing government performance indicators (Callahan and Holzer, 2000), and community governance overall (Epstein, 2006). The literature on civic capacity (Stone, 2001; Chaskin, 2001) and community learning (Morse, 2004; 2006) similarly emphasizes social learning as a factor in effective collaborative governance. Therefore the three dissertation cases, the literature on social movements, civic innovation and citizen participation all point at the publicness of citizens' knowledge.

Movement knowledge is a *valuable* public resource, as indicated by the three cases. First, each of the three social movements produced important knowledge, including new ideas, social practices, and worldviews. Second, government organizations have benefitted from this knowledge. Seattle government improved its progress in achieving sustainability goals by adopting the sustainability indicators approach developed by a group of civic environmentalists.

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The quality of NYC 311 service increased when NYC open source computer technologists creatively used the 311 public data and wrote new mobile phone applications for citizens. The maternity hospitals in Dnepropetrovsk, Ukraine, benefitted from new maternity practices promoted by the city's natural childbirth community. These findings support the claim of open government advocates that there exists knowledge in the society and that government can "benefit from having access to that dispersed knowledge" (Transparency and Open Government, 2009). Also, they support Lindblom's argument that social knowledge can help in solving social problems.

The advocates of social knowledge have not addressed the possibility that social knowledge might be an *exhaustible* public resource, however. This research provides evidence that movement knowledge diminishes as movement leaders turn it into a commodity. Jamison (2001) proposes the ideal hybrid regime that reconciles movement pragmatism and idealism. However, this ideal has been difficult to realize in reality. The literature on governance of communities of practice has been attentive to this issue and suggested different institutional approaches to systematically govern and nurture social knowledge (Amin and Roberts, 2008). Beyond the knowledge management literature and social movement literature, the issue of governance of common pool resources in polycentric systems has been addressed by Ostrom (1990). In particular, Hess and Ostrom (2006) focus on the problem of knowledge as a commons. It is worthwhile to apply these ideas to the study of movement knowledge as a commons. Movement knowledge is embedded in movement practices, including organizational practices (Eyerman and Jamison, 1991). The literature on the structure of new social movements (della Porta and Diani, 2006; della Porta and Andretta, 2002, Byrne, 1997) indicates that these movements resemble

polycentric governance systems. Therefore, the theories of commons can guide the question

about what movement structures and governance practices improve the sustainability of

movement knowledge.[265] This would ultimately contribute to solving the problem of impairment

of social intelligence (Lindblom, 1990) and could lead to a better civic and democratic life

(Boyte, 1980; Boyte and Kari; 1996; Boyte; 2008; Sirianni and Friedland, 2001).

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[265] Ostrom and Hess (2006) identify the following general threats to knowledge commons: "commodification or enclosure, pollution and degradation, and nonsustainability" (p.5).

Appendix A

List of Interviews Conducted for the Free and Open Source Software Movement Case

Interviews conducted during the Participation Camp unconference at New York University, New York City

No	Interviewee name	Affiliation	Position	Form	Date
1	Dmitry Kachaev	Office of the Chief Technology Officer, Government of the District of Columbia	Director of Research and Development, civic hacker	Face-to-face	06/15/2009
2	Lily Liu	Public Stuff	Founder & CEO	Face-to-face	06/15/2009
3	Thomas Lowenhaupt	Connecting.nyc Inc.	Founder	Face-to-face	06/15/2009
4	Anonymous	Freelance hacker		Face-to-face	06/15/2009

Interviews conducted at Open Plans non-profit organization, New York City.

No	Interviewee name	Affiliation	Position	Form	Date
5	Philip Ashlock	Open Plans	Program Manager of Open 311	Face-to-face	01/07/2011

Interviews conducted during the monthly meeting of 2600 hackers in the Citygroup Center lobby, New York City.

No	Interviewee name	Affiliation	Position	Form	Date
6	Robin	2600 hacker community	Organizer	Face-to-face	01/07/2011
7	Gizmo	2600 hacker community	Member	Face-to-face	01/07/2011
8	Anonymous	2600 hacker community	Member	Face-to-face	01/07/2011
9	Kassandra	2600 hacker community	Member	Face-to-face	01/07/2011

No	Interviewee name	Affiliation	Position	Form	Date
10	Anonymous	2600 hacker community	Member	Face-to-face	01/07/2011

Interviews conducted during the Transportation Camp uncoference at New York Law School (NYSL), New York City.

No	Interviewee name	Affiliation	Position	Form	Date
11	Beth Noveck	NYSL (current), White House (former)	Professor, U.S. Deputy Chief Technology Officer for open government (former)	Face-to-face	03/05/2011
12	Charles Monheim	NYC MTA	Chief Operating Officer	Face-to-face	03/05/2011
13	Mark Gorton	Open Plans	Founder	Face-to-face	03/05/2011
14	Anonymous	Freelance open source developer		Face-to-face	03/05/2011

Appendix B

List of Interviews Conducted for the Natural Childbirth Movement Case

Interviews conducted with NCBM leaders in Moscow, Russia

No	Interviewee name	Affiliation	Position	Form	Date
15	Rinata Ravich	Zdorovaja Semya club	Director (former)	Face-to-face	06/11/2008
16	Natalya Kotlar	Our Stork	Director	Telephone	06/11/2008
17	Alexander Naumov	Rebirth PC[266]	Consultant	Face-to-face	06/12/2008
18	Marina Semyonova	Ellie club	Director	Telephone	06/12/2008

Interviews conducted in Dnepropetrovsk, Ukraine

No	Interviewee name	Affiliation	Position	Form	Date
19	Zeena Andreeva	Club of Parental Culture	Director	Face-to-face/Audio record	02/16/2008
20	Alexander Andreev	Club of Parental Culture	Co-director	Face-to-face	01/25/2008
21	Natalya Kulikova	Alye Parusa club	Consultant	Face-to-face	04/11/2008
22	Olga Mikryukova	Stork PC	Director	Face-to-face	03/19/2008
23	Larisa Ogyr	Stork PC	Consultant	Telephone	03/13/2008
24	Tatyana Kramarenko	Stork PC	Manager	Face-to-face	02/12/2008
25	Ekaterina Denisova	Rozhdestvo PC	Director	Telephone	02/28/2008
26	Alexandra Pyrozhenko	Club of Parental Culture	Club representative at the City Council (former)	Face-to-face	06/25/2008
27	Irina Demura	Little Mammoth PC	Director	Face-to-face/Audio record	2/29/2008
28	Ulyana Terekhova	Little Miracle PC	Director	Face-to-face	03/21/2008
29	Natalya Gotvyanskaya	Alye Parusa	Consultant	Face-to-face	03/17/2008
30	Eleonora Nosenko	Dnepropetrovsk National	Professor, Chair of Pscyhology	Face-to-face	03/13/2008

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[266] PC is the abbreviation for 'Perinatal Center'

		University	Department		
31	Lyubov Samoshkina	Dnepropetrovsk National University	Associate Professor, Psychology Department	Face-to-face	03/13/2008
32	Vera Makarenko	Dnepropetrovsk National University	Assistant Professor, Sociology Department	Face-to-face/Audio record	03/18/2008
33	Anzhela Kostyuchenko	Municipal government	Chief City Obstetrician	Face-to-face	03/18/2008
34	Lyudmila Padalko	Maternity hospital No 2	Chief Administrator	Face-to-face/Audio record	03/19/2008

Interviews conducted during a conference on maternity care and perinatal education training at Kroshka-Ru perinatal center in Odessa, Ukraine

No	Interviewee name	Affiliation	Position	Form	Date
35	Svetlana Galich	Municipal Government	Chief City Obstetrician	Face-to-face/Audio record	06/24/2008
36	Alexander Kobasa	The Main Sports Club of the Ukrainian Armed Forces	Instructor on hydro-kinesthetic therapy	Face-to-face/Audio record	06/25/2008
37	Svetlana Shamilova	Sevastopol State University	Assistant Professor	Face-to-face/Audio record	06/25/2008

Interviews conducted with managers at USAID and John Snow, Inc in Kyiv, Ukraine

No	Interviewee name	Affiliation	Position	Form	Date
38	Alexander Golubev	John Snow Inc.	Program Manager	Telephone	03/21/2008
39	Alina Yurova	USAID	Program Manager	Telephone	03/21/2008

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Publications and Presentations

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Pyrozhenko, V. (submitted). Innovation by Dissent: Exit, Voice, and Loyalty of Knowledge Workers at Ukrainian State Maternity Hospitals. *Public Administration*.

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WORK IN PROGRESS

Pyrozhenko, V. Citizens' Knowledge, Citizens' Power, and Public Administration: What Can We Learn from New Social Movements? To be submitted to *Administration & Society* journal.

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Pyrozhenko, V. Collaboration with Citizens from Citizens' Point of View: Learning from the Free and Open Source Software Movement.

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Pyrozhenko, V. *Knowledge as a Driver of Social Change: Exploring Connections between the Free and Open Source Software Movement and Open Government*, Presented at NYSPSA annual conference, Niagara University, April 8, 2011.

Pyrozhenko, V. *Sustaining Collaboration between Civic Technologists and Public Organizations*. Presented at TransportationCamp unconference, New York Law School, March 5, 2011.

Pyrozhenko, V. *Globalization and Knowledge Production in New Social Movements: Friends or Foes?* Presented at the Graduate Student Symposium, Department of Sociology, Syracuse University, November 2010.

Pyrozhenko, V. *Bridging Civil Society and Public Organizations*. Presented at the EGPA seminar for doctoral students at Erasmus University, Rotterdam, Netherlands, September 2008.

Pyrozhenko, V. *Bridging Weak Organizational Forms of Civil Society and Public Organizations: How a Spirituality-driven Natural Childbirth Movement Improved Maternity Practices in Ukraine*. Presented at the 2008 Academy of Management annual conference doctoral seminar at Anaheim,CA, August, 2008.

Gant, J., P. Ingraham, S. Kim, and V. Pyrozhenko. *Organizational Conditions For Performance: Examining Local Governments*. Presented at the 8th Annual Public Management Research Conference, University of Southern California, Los Angeles, CA. October, 2005.

Administrative Experience

Executive Education Programs, Syracuse University
> *Graduate Assistant:*   2011 – 2012
> - Coordinate with the director of Civic Education and Leadership Program (CELF) for Middle East and North Africa faculty on professional development and training opportunities
> - Collaborate with faculty on organizing civic education seminars

Conflict Management Center, PARCC institute, Syracuse University, Syracuse, New York
> *Coordinator:*   2010 - present
> - Collaborated with faculty on interpersonal conflict resolution workshops
> - Coordinated with institute director on training and outreach opportunities
> - Maintained volunteer involvement

E-PARCC (on-line repository of teaching materials on collaboration in the public sector),
PARCC, Syracuse University
> *Consultant:*   2009, Summer
> - Developed future strategy scenarios
> - Identified potential donors

Skills and Qualifications

CERTIFICATES

Tufts University
2011 Summer Institute of Civic Studies at Tufts University   July, 2011

PARCC, Syracuse University
Certificate of Advanced Study in Conflict Resolution   September , 2011