29 Theoretical foundations and design principles to improve policy and program implementation*
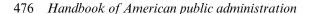*Jodi R. Sandfort*

INTRODUCTION

Governance and the management of public institutions in the US are at a crossroads. Years of under-investment in public institutions, low salaries, and high turnover in private non-profit organizations, as well as high levels of citizen distrust in formal institutions, create formidable challenges. The proliferation of government forms of investment (Salamon 2002) and concerns that the technical complexity of these mechanisms overshadows public managers' abilities to manage and has created a crisis of capability (Kettl 2000; Hill and Lynn 2005). While many tides of public management reform have attempted to exert order (Light 2000), these tides rarely wash up onto a clean beach. Instead, new programmatic ideas are introduced into complex organizations whose operations are shaped by disparate practices. While there is an array of "technical assistance" and "capacity building" agencies within government and the nonprofit sector, they often draw haphazardly from popular business management concepts that are often more accessible than public administration scholarship.

Amid the clamor to promote management tools and build greater organizational capacity, the direct effect of policy programs on management strategy and practices is often obscured. Yet, attending to the interplay of program and management is not a new idea. A generation ago, organizational theorists stressed the interplay between "technology" (the way work is accomplished and "structure" (how people and resources are organized) (Sproull and Goodman 1990; Scott 2003). Research stressed that the programmatic activity is a central defining characteristic of how organizational work is accomplished, largely because resource use is not fixed but significantly shaped by managers' and leaders' actions (Orlikowski 1992; Feldman 2004; Howard-Grenville 2007; Feldman and Quick 2009; Sandfort 2010). Yet, in public administration and management scholarship, the interplay between program technology and managerial practice in shaping outcomes is rarely stressed. One notable exception is policy and program implementation research (Spillane et al. 2002; Hill 2005; Garrow and Grusky 2012; Sandfort and Moulton 2015; Moulton and Sandfort 2017).

Policy and program implementation highlights that policy problems get resolved—for better or worse—within the operations of public and nonprofit organization. Managers confront management challenges when they are given a policy mandate or program parameters within a particular context. Yet, social science conventions cause scholars to place in the foreground administrative questions that are more easily answered with available data and place in the background investigations of how programmatic issues shape managerial actions. This trend is pulling public administration away from its pragmatic origins.

In this chapter, I describe an alternative approach. Grounded in the intellectual tradition of policy and program implementation analysis, it builds upon a theoretical framework for analysis that sees implementation as occurring in complex, multi-level systems (Moulton and Sandfort 2017). While the strategic action field framework focuses on describing change and the factors that cause it, it also holds the potential for a more pragmatic application. This chapter considers how it might be used to articulate general principles that shape interventions to improve public value outcomes (Simon 1996; Barzelay and Thompson 2010; Barzelay 2012; Fishman et al. 2013; Ansell and Torfing 2014). In the tradition of design science, these principles provide specific guidance for analysts and technical assistance providers interested in using a theoretically informed approach to make change rather than just describe it. To illustrate how such principles operate in practice, I discuss three intervention projects focused on improving human service program and policy implementation (for a framework involving the use of performance measurement, see Chapter 28 in this volume). The chapter concludes with ideas for how this approach might shape next-generation scholars committed to helping managers resolve the practical problems they encounter when implementing public policy and programs.

THE INTELLECTUAL FOUNDATIONS OF POLICY AND PROGRAM IMPLEMENTATION ANALYSIS

Policymakers, practitioners, and scholars have wrestled with the complexities of policy and program implementation for more than a half century. Some start from the premise of "what went wrong?" Why did the policy fail to achieve the results that were intended? Others, more optimistically, seek to understand conditions where things "go right"—to explore, more specifically, which factors help lead to policy or program success? Some try to explore how we observe conflicting results from implementing the very same policy or program across states or localities, even when authorized by the very same legislation and funding mechanism. Researchers have conducted case studies, analyzed survey data, and developed theoretical frameworks in an attempt to make sense of these questions and quandaries. Yet, in spite of this intention, too few lessons are available to guide more astute interventions to improve implementation effectiveness.

Reviews of previous literature often start with Jeffrey Pressman and Aaron Wildavsky's (1973) book, *Implementation: How Great Expectations in Washington are Dashed in Oakland or Why It's Amazing that Federal Programs Work at All*. However, scholarship that informs this literature began years before. While often intellectually discarded by the early policy implementation scholars, early public administration studies about politics, intergovernmental relations, and institutions that acknowledged the complexities of carrying out policies in the real world (see, for example, Simon 1948; Selznick 1949; Lindblom 1959) are relevant to the unresolved conceptual and theoretical quandaries in policy implementation research. However, the Great Society growth of government interventions in the US during the 1960s and 1970s spawned increasing attention to the study of policy explicitly. As policy analyses were launched to assess government interventions, scholars realized that solutions needed to be implemented and, thus, investigated the process.

Table 29.1   Three perspectives on implementation

Perspective	Unit of analysis	Dominant disciplines	Focus of implementation
Political processes and authority	Public policies or policy problem areas	Political science	*Power dynamics*: top-down authority; bottom-up influences
Governance and management	Organizations or networks	Public administration; organizational science	*Coordination*: multi-level; multi-actor; governance tools
Policy and program evaluations	Interventions	Economics and behavioral sciences	*Change processes*: impact analysis; innovation diffusion; behavioral change

Source: Sandfort and Moulton (2015).

This shift both altered the unit of analysis and signified an important normative change. Conventional public administration was criticized for focusing on bureau politics and process, without offering much relevance to public service delivery being carried out by different instruments and through an array of institutions (Lowi 1972). In addition, political scientists' linear models that merely depicted implementation as a distinct phase in the policy process—following agenda setting and policy formulation but before evaluation—was challenged (Sabatier and Jenkins-Smith 1993). As these traditional public administration and political science approaches were questioned, new schools of public policy and public affairs launched in many major universities with new attention to policy analysis, implementation, and governance (Lynn 1996). In other fields, the development of program evaluation research and behavioral science spawned the development of an accompanying "implementation science."

This has led to three different perspectives in the study of policy and program implementation. Table 29.1 summarizes the streams of inquiry; while not completely mutually exclusive categories, this typology helps orient us to how implementation studies have evolved and point toward the need for an integrative approach.

Some scholars seek to understand the political processes and authority of implementing a formal policy. This tradition makes up the lion's share of prior "policy implementation" scholarship and draws heavily from political science. For example, "top-down" scholars often suggest the most appropriate lever for improving policy outcomes is the design of the policy itself. Through case studies or empirical models seeking to identify all of the variables influencing implementation (Bardach 1977; Mazmanian and Sabatier 1989; Palumbo and Calista 1990), these studies focus on identifying mechanistic factors that can be manipulated by policymakers to ostensibly improve outcomes. A group of "bottom-up" scholars critiqued this approach and focused instead on assessing or mapping local contexts to appreciate incentive structures and behaviors on the ground (Berman 1978; Elmore 1980; Lipsky 1980; Hjern and Porter 1981). Although operating from a different vantage point, they too focused primarily on questions of the relationship between policy authority and other sources of power in mandating change. By the late

1980s, political scientists had identified many variables and contextual factors that might affect implementation outcomes but there was no comprehensive theoretical approach or framework by which to make sense of them (Goggin, 1986; O'Toole 1986; Goggin et al. 1990; Sabatier and Jenkins-Smith 1993). Others, such as Richard Matland (1995), proposed a typology that used the characteristics of the policy debates and nature of change to develop contingent criteria for assessing implementation effectiveness. Most of these efforts, though, were policy-centric, focusing attention on identifying what might predict implementation success or failure.

Others see implementation as coordination and seek to understand the *governance system* within which public action takes place, drawing heavily from organizational theory and public management. It is, in a sense, a reaction to a policy-centric orientation. Public management scholars focus on the structures and coordinating mechanisms of governance and networks (Lynn et al. 2001; Agranoff and McGuire 2003; Frederickson 2005). Many notable implementation scholars, including Michael Hill and Peter Hupe (2014) and Ken Meier et al. (2004), place the study of implementation squarely within such a governance framework. To conceptualize this "new" governance, scholars have situated the diverse public and private actors involved in implementation in hierarchical, multi-level frameworks. This provides a way to think about how policy decisions made in federal government resonate down to lower levels of state agencies, service providers, and eventually target groups. Inter-organizational network research that focuses on cooperative relationships are also important (Provan and Milward 2001; Knoke and Yang 2008; Provan and Kenis 2008). Others consider the roles government tools play in coordinating action for implementation (Ingram and Schneider 1990; Salamon 2002).

Finally, a third group of researchers focus on the policy or program intervention and seek to identify the factors associated with effective outcomes, drawing significantly from program evaluation, policy analysis, and behavioral science literature. All deploy sophisticated social science methodology to isolate causal relationships and predict effects of programs and policies. In many of these models, implementation factors are included as variables to be taken into account in policy design or controlled for after the fact to achieve desired outcomes (Weimer and Vining 2005). Psychology and behavioral economics also are increasingly used to make sense of "unexpected" results that may not comport with what policymakers intended (Amir et al. 2005). By exploring the behavior of target group members, analysts try to design more effective interventions that account for individuals' biases, improve take-up, and maximize behavioral change at less cost. While this work yields valuable insight about improving interventions, it offers little direction for how to appreciate contexts that determine whether or not such an intervention is brought to scale.

In intervention-based fields, such as community psychology and education, a more honed approach to "implementation science" has developed in the last fifteen years (Fixsen et al. 2005; Aarons et al. 2011; Meyers et al. 2012; Nilsen et al. 2013). It posits that creating evidence-based interventions will only impact results if there is accompanying attention to implementation structures. An often cited meta-analysis of implementation science (Durlak and DuPre 2008, p. 340) reviewed over 500 quantitative studies and "offered strong support for the premise that effective implementation is associated with better outcomes," with effect sizes that are two to three times higher when programs are carefully implemented. Yet, like the initial attempts of top-down policy implementation

scholars, what has resulted are complex predictive models with limited application.[1] It is possible to describe what implementation activities are occurring but not explain why it is happening.

While each of these three perspectives is reflected in vast and sometimes quite sophisticated empirical literature, all fail to adequately address the complex interactions between core program interventions and the administrative system focused on implementation. Stephanie Moulton and I offer such an approach with our Strategic Action Field Framework for implementation research (Moulton and Sandfort 2017) and the accompanying practitioner guidebook (Sandfort and Moulton 2015). This framework highlights the importance of being clear about the policy or program that is at the core of implementation analysis. However, it also enables researchers to attend to how political process and other forms of authority operating in complex systems to shape how it is interpreted and operationalized through implementation activities and actions. To understand how this approach provides a foundation for interventions into implementation systems, we must first explore the science of complexity developed in natural sciences and increasingly applied in other fields closer to public administration, such as economics and public policy.

UNDERSTANDING COMPLEX SYSTEMS

Complexity science is the study of interactions among the parts of highly interconnected elements to understand how uncontrollable dynamics can be influenced within systems. Insights are developed through the identification of patterns that show system evolutions. Some public administration scholars pursue this approach, often using agent-based modeling and simulation techniques (Axelrod 1997; Desai 2012; Eckerd 2013; Campbell et al. 2015), to study organizational change and policy formation. Unlike conventional public administration scholarship that models phenomenon with linear, ordered techniques, this approach is distinct. It draws attention to a fundamental distinction between ordered and disordered systems; while in ordered systems—both simple and complicated—there is a linear relationship between cause and effect, such a relationship does not exist within disordered systems (Snowden and Boone 2007; Westley et al. 2007; Hargreaves 2010; Patton 2010; Eoyang and Holladay 2013).

Some disordered systems are characterized by chaos. Extreme volatility or turbulence makes it difficult for people to understand patterns of interaction or ways of resolving problems. Actors focus upon survival and may try to isolate themselves from the unpredictable forces. Yet, an interesting finding in complexity science is that many disordered systems are not chaotic but self-organizing (Mitchell 2011). In what are called "complex adaptive systems," webs of relationships and resources interact in unpredictable ways to create outcomes. Small interactions among different parts of the system, within and across levels, might result in change. While change is impossible to predict, it can be documented and influenced through the intentional use of catalytic probes to create a pattern of activity that can be either stabilized and amplified if generating positive results or dampened if there are no positive consequences (Dooley 1997; Snowden and Boone 2007).

David Colander and Roland Kupers (2014) consider the implication of complexity

framework for public policy analysis. As economists, their pragmatic review of conventional policy analysis reveals how computation capacity (and what computers were able to do at the time) significantly influenced the development of the reductionist approach within neoclassical economic theory and modeling. They argue that a complexity approach recognizes what is practically obvious but often ignored by policy scientists: "there is no ultimate compass for policy other than a highly educated common sense. Scientific models provide, at best, half-truths" (Colander and Kupers 2014, p. 8). Rather than attempting to control the economy, they stress that policies both influence the evolution of institutions and shape the co-evolution of government and market systems. In this frame, policymakers certainly can still rely upon formal models but recognize that they merely provide guidelines.

In a complexity frame, policy and programmatic goals also are not predetermined. They evolve endogenously from within the system as various actors grapple with a policy problem and attempt to find or implement solutions (Colander and Kupers 2014). The distinction between policy-making and implementation becomes blurry, because, as various actors work to understand and operationalize a policy or program idea, they build more appreciation of the viability of particular solutions in their context. Analytical attention turns to documenting and modeling bottom-up conditions in order to record what is influencing other parts of the larger system. Catalytic probes are introduced to see how a part of the system might respond and whether or not there are larger unintended consequences. Attention is also paid to resilience—what system capacity exists to absorb and adjust to change by learning from events as they are unfolding.

If policy is seen as an intervention in a complex evolving system, our understanding of the role of policy analysis, evaluation, or interventions to improve the outcomes of policy implementation alters significantly. Currently, conventional policy analysis has focused upon navigating between the polarities of free market or government control. Program evaluation privileges designs with internal validity that assesses causal impacts. Also, the three conventional perspectives of implementation overlook the fundamental characteristics of complex systems. While implementation scholars openly acknowledge the complexity of the implementation process and some attribute the stalling of intellectual development to the inability to develop comprehensive predictive models or theories (O'Toole 2004), they stop short of conceptualizing implementation as occurring in complex systems. While research documents that implementation structures and processes seem to emerge rather than adhere to plans (Hjern and Porter 1981; Pressman and Wildavsky 1984; Bardach 1977), this insight is not more completely developed.

However, advances in theoretical understanding and modeling now allow us to provide more clear analysis of complexity and offer more precise strategies for intervention. A new, integrative approach that draws upon a complexity policy frame is necessary. In such an approach, it becomes essential to understand systems' parts, interconnectedness between them, and boundaries relevant to the core policy or program being implemented within the whole system.

ANALYZING COMPLEX IMPLEMENTATION SYSTEMS

Implementation is the mobilization of resources around a core policy or program invention designed to make a change in the current conditions that move toward some desired result. A complexity frame assumes that these systems operate in ways that are impossible to predict or control from either the top or the bottom. To increase effective implementation, analysts need to better understand the operations of these systems and develop interventions that both probe the existing dynamics and manage what emerges.

The strategic action field (SAF) framework builds upon the traditions of implementation scholarship but moved beyond them by considering the key analytical levers for understanding implementation as occurring in complex systems (Sandfort and Moulton 2015; Moulton and Sandfort 2017; Roll et al. 2017). Through this analysis, it is possible to more consistently carry out design-based implementation research for use in public affairs (Fishman et al. 2013).

First, there are various levels in the system that serve distinct purposes during the implementation of a core program technology or public service intervention. At the macro-level, there are the policy fields, networks of institutions activated to engage in implementation activities in a particular place and time (Stone and Sandfort 2009). At this level, understandings of the program technology are developed, viable alternatives are determined, and resources are assembled to support the actual implementation activities within organizations. This is a complex process that often can involve competing coalitions and advocacy positions (Weible et al. 2009). Conceptually, the mezzo-level of the implementation system is comprised of organizations where the policy or program is integrated with existing operations, accountabilities, and practices; most often in ways that are consistent with existing procedures and practices (Hasenfeld 1983; Sandfort 2010; Garrow and Grusky 2012). In the SAF framework, organizations playing two particular roles are highlighted: authorizing organizations often interpret and mediate the authority of laws and public accountability, while service organizations deliver public services.[2] At the micro-level, the framework draws attention to the frontlines of implementation systems where interactions between the system and target groups occur. At this level, the policy or program is enacted so that it is understood or experienced in some ways by the individuals, families, communities, or markets it is intended to influence (Lipsky 1980).

Second, understanding the complex dynamics at each of these levels requires closely analyzing human dynamics, particularly how formal and informal authority is used to shape implementation processes. Building upon prior scholarship, the framework highlight four types of authority brought into use when people try to reconcile the ambiguity that often surrounds implementation choices. Most often, public administrators and policy scholars focus upon the exertion of political authority, demonstrated through public laws, formal rules, and regulation. However, with the rise of new public management, there is also recognition of how economic authority and ideas about competition, return on investment, and performance affect how program implementation choices are shaped. Informal sources of authority also are significant. Professional norms and standards of behavior developed by associations and affiliations often align with deep ethical principles. Additionally, the beliefs and values that individuals develop from experience and interactions with their peers can significantly shape what gets done.

Finally, the framework draws upon social theory to highlight that human agency is significant in interpreting, deploying, and responding to these sources of authority (Bourdieu 1977; Giddens 1984; Latour 2005; Fligstein and McAdams 2011). Individuals play potentially important roles in driving change or assuring stability. Through demonstrating "social skill," they can draw upon knowledge about that context to engage others in either collaboration or competition that shapes collective action (Fligstein 2001, 2008).[3] While individuals' actions are not deterministic in a complex system, they are not without consequence (Parks 2005).

During the implementation of a particular policy or program, there are multiple and often overlapping SAFs involved. In each, people try to understand the intervention, develop a process of change to link inputs and outputs, use materials, apply technical skills, and develop structures to try to coordinate the work performed. In carrying out these tasks, they rely upon different sources of authority, attempting to engage each other by using concepts and communication strategies that others within that context understand to be legitimate. Within a particular social setting, people vest different sources of authority with more or less legitimacy. This notion helps explain why field studies so often document significant variation in implementation conditions and outcomes among organizations implementing the same policy or program (Sandfort 2003; Selden et al. 2006; Garrow and Grusky 2012).

While there is more detail available about the SAF framework for implementation analysis (see Moulton and Sandfort 2017), it is important to note here that it provides an analytical approach for understanding the operation of various sites and drivers within complex implementation systems. Its purpose is not to predict implementation success or failure, but to increase attention to the various parts of the system and the interrelationships between these parts. By seeking to describe a generalizable dynamic that shapes what implementation is in practice, it also points to potential interventions that improve system capability to carry out change. In its ideal, the complex systems engaged in implementation should be oriented toward creating public value outcomes—both improvements in the system and in conditions for the group targeted by the policy—on purpose (Bryson et al. 2015; Sandfort and Moulton 2015).

While improving public value outcomes through policy and program implementation are desirable, the existing system dynamics rarely assure this type of change. However, articulating the SAF framework allows analysts to more easily understand the complex systems dynamics and develop interventions that improve implementation effectiveness. The rest of this chapter explores that potential.

INTERVENING IN COMPLEX IMPLEMENTATION SYSTEMS

Considerable public administration scholarship looks at interventions that change and stabilize networks, organizations, and people. At the most macro-level, Lester Salamon (2002) documents the numerous tools governments use to implement public programs. However, rules remain a significant tool used to structure implementation activities. It is so common that a whole subfield within public administration research focuses on red tape and its consequences (Bozeman 1993; DeHart-Davis and Pandey 2009; Tummers 2012). While new public management posited performance management as an alternative

against rules, its additive and symbolic adoption have not challenged the primacy of rules as a means of implementing programs and policies within our field (Moynihan 2005, 2008; Radin 2006).

Yet, there are many limitations of top-down and rules-based approaches and, in response, scholars offered backwards mapping, a technique that starts at the frontlines of an implementation system, where citizens and the system interact (Cohen and Hill 1998; Elmore 1980, 1985). By analyzing conditions where the policy idea tries to affect change in the target population, backwards mapping presumes that a careful delineation of changes to supervision, performance incentives, or funding will improve implementation. While this approach is logical, it has not motivated significant realignment of administrative resources to support implementation.

Alternatively, program evaluation stressed that implementation analysis should focus upon monitoring whether or not plans are adhered to with fidelity (Werner 2004), Implementation science focused narrowly upon how to replicate what field experiments show "works" in a particular setting. While investments are made in training programs, information technology systems, management structures, implementation somehow defies control. There is no magic bullet when it comes to intervening to control implementation in practice.

These intervention approaches all assume an ordered system, with linear relationships between significant variables. They often overlook a key insight of policy feedback research that policy implementation is not merely a technical task. How policies and programs are implemented influence citizens' understanding of government, their roles in relation to it, and how interest groups and other professional institutions define public problems (Mettler and Sorelle 2012; Soss and Moynihan 2014). They also overlook years of research that attempted to predict implementation success with little success.

Intervention Principles

An alternative approach builds more explicitly upon an awareness of system complexity and the SAF framework. It moves from a science pursuing prediction toward a science focused on design that is in its infancy within public administration (Barzelay and Thompson 2010; Barzelay 2012; Ansell and Torfing 2014). Within education, a similar approach to design-based implementation research has gained traction (Penuel et al. 2011; Fishman et al. 2013), as researchers, teachers, and principals work together to collaboratively design solutions to persistent practice problems, create capacity to sustain change within the system, and develop theory and knowledge through systematic inquiry. While it has historical roots (Simon 1996), design science in management focuses on trying to intervene in current conditions to change them into more preferred conditions. Analysis focused on using knowledge to create what should be, engaging others, and studying these events and the outcomes (Romme 2003).

One of the scholarly challenges of design approaches is that while it might be interesting to understand a particular case of experiences, such analysis does not necessarily create more generalizable insights or knowledge relevant in another set of cases. However, general principles can provide useful filters that transcend a particular context. When applied intentionally, design principles help narrow the range of possible actions. They can allow people to receive guidance from analysis of the past without narrowly

prescribing future actions. Such people—be they managers responding to program mandates, leaders developing new innovations, or engaged scholars providing technical assistance—need assistance in developing strategies to probe a complex system, notice the response, and adjust the means for achieving desired ends. For people operating within the same complex system, principles can help articulate why a set of actions is appropriate, enable ongoing communication, and facilitate the continued engagement of others in the face of ambiguity. Articulating and drawing upon principles is also consistent with the SAF framework that highlights human ingenuity and agency in shaping what unfolds. Principles can articulate ways of responding to formal structures and authority, influencing informal understanding or cultural assumptions, or both (Giddens 1984; Whittington 1992). New advances in program evaluation theory also suggest that principles can be used as assessment criteria to help managers and others evaluate what progress is being made over time (Patton 2016a, 2018). Articulating design principles becomes an essential tool for interventions to improve policy and program implementation when it is carried out in multi-level, complex systems.

To illustrate the role of such principles in shaping interventions into complex implementation systems, I draw upon work my colleagues and I are carrying out at the Future Services Institute at the Humphrey School of Public Affairs. Focused upon advancing human service delivery into the twenty-first century, the Future Services Institute works with public and nonprofit organizations and networks across a number of policy fields. The human services fields are ones fundamentally shaped by intergovernmental relations and privatization of public services. In this chapter, I draw upon three particular projects to help illustrate how these design principles work in practice.

The first case focuses on altering relationships the core program technology at the policy field level. It focuses on workforce development, a field in which public and private agencies provide training and re-training to people who are under or unemployed. Strategies of public investment began in the late 1960s and have continued to the present and often respond to very specific economic incidents (such as plant closings) or needs of particular target groups (such as summer employment programs for youth). As a result, the field is rife with categorical programs with distinct eligibility criteria and yet a need to respond nimbly to market conditions. In 1998, the federal Workforce Investment Act strengthened state and local workforce boards that attempt to shape and integrate public funding and that direction was maintained in recent national law. However, the Future Services Institute was engaged because of a concern of field-wide stagnation. Nonprofit service providing agencies struggle with multiple accountabilities that create both significant managerial challenges and programmatic inefficiencies (see, for example, Chapter 22 in this volume). State administrators feel unable to address the increased evidence of significant racial disparities among those successful in these programs, and those able to retain employment and advance. Private foundations see all too clearly the negative consequences of funding silos and inconsistent performance measures throughout the field. Employers do not feel the public sector responds to their need for trained workers.

The second case involves the implementation of the national temporary cash assistance program by the state authorizing and local service organizations. While the passage of the Temporary Assistance for Needy Families (TANF) Act that ended national entitlement to cash assistance in 1996 is well documented, fewer analysts are aware that subsequent mandates created punitive implementation conditions for many poor families (Allard

2007; Sosset al. 2011; Schott et al. 2012). Minnesota has resisted the national direction and, instead, tried to create implementation conditions where families in short-term crisis and those needing more stabilization can understand program rules and receive support towards self-sufficiency. In providing technical assistance to implementers, the Future Services Institute discovered a willingness to develop a mobile app to provide program participants easy access to information about their case, the requirements of the system, and improve communication with frontline staff. Our efforts enabled the state agency to work with three county governments and their nonprofit contracts on a project that would reduce ambiguity and improve efficiency in program implementation.

The third illustrative case concentrates on our intervention within local service organizations that developed new, supportive housing for formerly homeless families and youth. Since the county government recognizes that vulnerable families are more likely to be successful if they receive childcare, employment support, mental health assessments, and other resources near their housing, they worked to identify stable funding streams to provide these services at a new housing development. The Future Services Institute was engaged to provide a developmental evaluation. This allowed our team to gather information from the families, frontline staff, and service managers and enabled the program partners to shape implementation to achieve desired outcomes.

Across these cases, our interventions focused on improving implementation by probing the complex systems to both change the system and improve conditions for the policy or program target group. In the first case, we needed to improve understanding of the core program, introduce research-informed practices, and engage staff and managers across the policy field in aligning their actions with program outcomes. We also targeted our activities on focusing service-providing organizations on the racial disparities that plague individuals seeking the services of the workforce development system. In the second case, we needed to harness the power of information technology to alter frontline worker practices and facilitate the sharing of vital information with and between low-income program participants. In the third case, we needed to support program managers in launching and refining the program during its first year to improve the likelihood of positive outcomes for residents in the short and long terms.

Across these cases, we drew explicitly upon intervention principles aligned with the SAF framework for implementation analysis. Table 29.2 provides some of the specific details; however, it is important to describe more generally how and why these principles effectively influenced the implementation systems.

Understand Context

Since authority and understanding within social systems shape implementation, a design-based implementation approach requires contextual analysis. All three projects began with the first principle—positioning the core program technology within its larger institutional environment—be it workforce training and employment counseling, welfare eligibility, or safe housing and supportive services. While the need to understand this context might seem apparent, the complexity of human service implementation is extensive, and intervening in such settings requires a considerable investment of analytical attention. In the workforce case, we discovered hundreds of organizations involved in the policy field, connected through a maze of funding, accountability, and service referral relationships.

Table 29.2   Illustrations of interventions into complex implementation systems

	Case 1: Workforce development for low-skilled workers	Case 2: Temporary assistance for needy families (TANF)	Case 3: Supportive housing for formerly homeless families
Site within the implementation system	Policy field	Authorizing and service organizations	Service organizations
Strategy for implementation improvement	Peer learning networks focused on operational improvement, data-informed decision making, and leadership to reduce racial disparities in access and outcomes	Web-app for program participants, frontline staff and supervisors to improve communication, social support, and adherence to policy requirements	Developmental evaluation to support program refinement and assessment of resident outcomes
Intervention principles Understand context *Describe core program within its larger institutional environment*	Policy field audit and analysis of institutions and formal laws/regulation. Analysis of new federal law (Workforce Innovation and Opportunity Act)	Organizational-program integration audit comparing accountabilities, alignment, and core practices concerning target group. Exploration of differences between state and county administration.	Assessment of development and collaboration history. Research harm reduction models from larger policy domain
Engage members of these institutions through purposive dialogue	Create a "core team" that reflect diverse institutional perspectives across the policy field to develop initiative purpose and strategies as well as react to tactical ideas. This group provides ongoing governance of intervention	Convene broadly constituted design teams to develop idea for app-web that included program participants	Create a "steering committee" responsible for program implementation in the first year to provide data and respond to findings during the first year
Use "probes" endogenous to the system *Construct shared awareness of target group experiences*	Engage service providers in developing a program process flow to document clients' experiences of services. Use story-telling to amplify courageous leadership to advance racial equity	User consultation in design. At initial problem definition, created personas of client experiences to shape understanding of presenting issues and how technology might enhance or impede resolution of issues	Through interviews and focus groups, capture clients' desired understanding of "home" and develop it as a cultural artifact for program operators
Document collective understanding through descriptive artifacts	Detail dialogue and decisions made in colorful newsletters for core team, funders, and service organizations. This enables refinement of purpose, design and enables accountability throughout system	Record development of initial idea, key design decisions, timelines, and iterations	Create colorful newsletters with images from housing setting that summarize themes from qualitative data and suggest areas in need of attention

Table 29.2   (continued)

	Case 1: Workforce development for low-skilled workers	Case 2: Temporary assistance for needy families (TANF)	Case 3: Supportive housing for formerly homeless families
Site within the implementation system	Policy field	Authorizing and service organizations	Service organizations
Use "probes" exogenous to the system *Identify implementation resources, such as research findings and technical tools*	Create two-page summaries of relevant national research about program models	Consult behavioral science research to inform app design	Utilize scientifically validated tools to develop outcome measures
Facilitate learning activities to motivate "take-up"	Provide time for small group discussion of resources to consider implications for program improvement	Provide training session and marketing materials about technical functionality to service organizations implementing app.	Focus of the entire developmental evaluation project
Enable managers to respond to emergence *Enable rapid cycle learning and adjustments*	Systematically gather information about each strategy, providing results regularly to the core team governing the project to enable adjustments.	Use virtual project-management tool to enable ongoing communication and idea refinement between local sites and authorizing organization	Develop ongoing progress reports summarizing data and facilitating meetings with steering committee to enable adaptive development of supportive housing project
Magnify positive developments with prototypes and pilots	Improve data dashboards connecting program activities to changes in participants' wages over time	Contract with technical experts to develop app prototype. Later scale effort through pilots in other counties that accommodate continued refinement	Feedback enables further development of support service pilot programs

Our policy field audit and visual map helped field actors understand the systemic nature of their individual experiences with a lack of coordination and inconsistency (Stone and Sandfort 2009; Sandfort and Moulton 2015). In the supportive housing project, our team spent time exploring the history of collaboration among the service organizations in the county, understanding their years of planning to launch the development of new housing, and studying the harm reduction model that informed how the partners came together. All of these factors significantly shaped how the service organizations worked together to envision a new service model for formerly homeless families and informed how we interacted with partners throughout the course of the project.

This second intervention principle is related to the first and focuses on the means for understanding context. While it is necessary to conduct research about the context from publicly available sources, it is also essential to engage institutional actors through

dialogue. Owing to the unpredictability of complex systems, it is necessary to purposively engage individuals working throughout the system to shape the initial understanding of the problem, intervention purpose, and determine desired results. In the Future Services Institute projects, we use engagement techniques from the Art of Hosting approach (Wheatley and Frieze 2001; Lundquist et al. 2013; Quick and Sandfort 2014). In the efforts to improve TANF implementation, it was clear that miscommunication between frontline workers and program participants created churning in the caseload and unnecessary impositions of sanction that reduced families' grants. To develop ideas for addressing this problem, the Future Services Institute convened various design laboratories to explore possibilities allowed by current federal and state regulations. When the idea of the mobile app came into focus, we then brought together state program managers, county supervisors, frontline staff, and program participants to further develop the concept and define essential functions. In the supportive housing case, we created a steering commit-tee of program managers from all service partners to articulate the theory of change underpinning the program and make ongoing adjustments in program practices. This group became both sources of data and recipients of our analysis from various parts of the implementation system.

Use Probes Endogenous to the System

In the theory of complex systems described earlier, considerable attention is spent on defining and understanding the boundaries of systems. This awareness is also relevant to designing interventions. Theory suggests a common strategy to influence systems dynamics is to introduce catalytic probes and document what results (Snowden and Boone 2007; Mitchell 2011). Probes are activities or artifacts that are introduced into the system to reveal more information relevant to improving effectiveness. One potentially potent source of information to fuel change dynamics are those things endogenous to the system.

In human services, one intervention principle involves using probes that construct a shared awareness of target group experiences that the policy or program is attempting to influence. In design thinking, this is often referred to as "user-centered design," in which the experiences, desires, or limitations of the end-users of a service or product are engaged in all stages. This invention principle is particularly important because many core programs require the target group members themselves to change or really engage in the transformation envisioned by the program or policy.[4] Yet, the formal authority mechanisms, such as rules, grant requirements, or performance measures, often pull attention from managers' experiences and knowledge of conditions for the target groups. The Future Services Institute has developed a number of tools to intervene with activities or resources that help remind program managers and staff about these conditions. In the workforce development case, we worked with each service organization involved in a peer-learning network to develop a program process flow, a visual representation of each operational step in core program implementation at the organizational level (Sandfort and Moulton 2015). From recruitment to training provision, employment placement to retention, staff from each organization considered the activities undertaken, as well as data from their organization to illuminate inefficiencies and systems' biases experienced by people of color. In the TANF case, we first created research-informed personas to

illuminate various aspects of client lives' to inform decision makers. We then consulted program participants directly in defining features in the initial app product.

Another principle for intervening in complex implementation systems is to document collective understanding through descriptive artifacts. In the Art of Hosting engagement practice, considerable attention is focused upon "harvesting" the results of dialogue and discussion so that system actors can understand ideas expressed by those approaching implementation from a distinct vantage point. Across each of these three illustrative cases, workforce development, TANF implementation or supportive housing, we provide colorful newsletters that summarize through photographs, visual models, and text the key discussions and decisions coming out of meetings with implementation actors. The format of these documents is important. Rather than merely notes that recount verbatim events, these artifacts seek to reflect the key insights to illuminate the instances alignment and sources of misunderstanding or discontent within the system. In that way, they operate as boundary objects that create and share understanding among people who are positioned differently within the system (Feldman and Quick 2009; Quick and Feldman 2014).

Ideas and materials from within the system can influence improvements in the implementation system, either in how it understands the target group or its own operation. Both of these principles help to make visible the tacit knowledge within a system so that it becomes explicit knowledge. In making this knowledge visible and showcasing gaps in understanding that exist, this approach can generate potentially significant probes that leaders can use to influence systems dynamics. However, another set of principles also encourages us to bring in additional resources into the social system (Giddens 1984).

Use Probes Exogenous to the System

Analysts often identify general tools that transcend a particular context (those which are exogenous to their particular system) and try to ascertain their salience to program implementers. Intermediary organizations, model program purveyors, and evaluation firms share training curricula, written reports, and web platforms about promising national practices. Such "implementation resources" help interpret formal policy and make the intent more accessible, recommend viable program elements, and provide an opportunity to learn new skills or terminology (Hill 2003).

In the framework advanced here, these resources can act as probes in a particular SAF. By identifying implementation resources exogenous to the system, analysts and technical assistance providers can introduce new resources into system dynamics. In the cases described here, Future Service Institute staff identified relevant resources and, in some cases, invested time in making them more accessible for implementers. In workforce development, for example, randomized control trial evaluations have examined the efficacy of conventional training and support models over the past 20 years. We reviewed these studies and developed summaries of key findings to make the translation from research to practice easier. In evaluating the outcomes of the supportive housing program, we identified scientifically validated tools to incorporate into surveys tapping elements of the programs' logic model not captured from other administrative data sources.

However, rarely is the mere existence of such technical resources sufficient. As Heather Hill's (2003) study on community policing documents, the existence of implementation

resources often provides an excuse to focus on the tasks at hand, bringing some program elements and decisions into focus. In each of the illustrative cases, the Future Services Institute staff facilitate learning activities to motivate take-up of these resources. These sessions allow members of the strategic action field to consider the potential relevance of the resources and assess both its utility and legitimacy for the problems at hand. When customized data dashboards were provided to the workforce development service organizations, some realized that the data source generating the picture were not complete. Because the tool brought valuable new information about program participants' wages after leaving the program, the incomplete picture motivated many agencies to improve their administrative data entry. After the TANF mobile app was developed, Future Service Institute staff developed training and marketing materials to help frontline staff use the technical tool more easily in their daily work with program participants. Staff were eager to incorporate it into their practice because it provided a means for addressing persistent service delivery challenges.

Enable Managers to Respond to Emergence

Our SAF framework is grounded in a different management philosophy than traditional public administration. Rather than stressing accountability to formal project plans, this approach encourages individuals to become stewards of improving implementation effectiveness in relation to improving public value. Desirable results are both the process and outcomes of how the system operates and conditions for group targeted by the program or policy.

In that vein, one design principle is enabling rapid-cycle learning. The idea of quick, reflective learning teams and organizations is gaining prominence. Policy and program leaders are interested in benefiting from systematically gathered evidence without waiting years for definitive judgments about causal impact. Although performance management has offered this promise, there are other techniques that support collective learning. Many evaluation designs can be crafted to provide more rapid-cycle learning; however, developmental evaluation is particularly well suited to complex implementation settings where innovation is often required (Hargreaves 2014; Patton 2010, 2016b). The Future Services Institute project for supportive housing was shaped initially as a developmental evaluation. However, the other two cases also benefited from rapid-cycle learning practices. In the peer learning workforce development networks, satisfaction, and other feedback were gathered systematically allowing both trainers and governing board to understand what tactics were successful and make adjustments in the short and medium-term. For the effort to improve TANF implementation, virtual project management tools allowed all those involved to provide feedback as the mobile app was developed and implemented in their organizations. These tactics easily enabled whole systems' learning.

This also enables people throughout the strategic action field to understand what is emerging throughout the implementation process. Analysts need to help those with authority to magnify positive developments with prototypes and pilots. When a probe generates positive change within the system, it is time to invest more attention and resources through prototypes. These quick, tangible tools provide a concrete idea of how things can work if they are more fully developed, to allow a system to see how the idea works in practice. If further proven to work, they can be developed into full pilot pro-

grams. In the workforce development project, once we had established some experiences in service providers using data about client outcomes, we brought in a data dashboard that allowed service-providing organizations to see specifically how their program participants' wages changed over time. We are planning to work with the state agency to provide this type of data tool to increasingly larger numbers of service organizations. In the mobile app project, we needed to contract with technical experts to build the prototype in three counties and test its viability. We now are engaged recruiting new pilot counties to benefit from this tool. By moving quickly but incrementally, innovations can be identified, tested, and refined to support more effective policy implementation.

SUPPORTING LEADERSHIP AND MANAGEMENT THAT IMPROVES IMPLEMENTATION

The principles of design-based implementation articulated in this chapter enable analysts to develop strategies for probing a complex system, notice the response, and adjust the means for achieving desired ends. They support the creation of action plans aligned with the SAF framework and complexity theory. They also are underpinned by the concept of social skill from the SAF framework. To be effective, analysts, technical assistance providers, and scholars must learn the terminology, accountability, beliefs, and values of people within a particular social setting. However, they must also encourage individuals within those settings to apply their own social skill to dampen activity that does not seem likely to generate positive public value and magnify activity that does. In the workforce development case, when service organizations began to focus upon their vulnerability because of incomplete data in the outcomes dashboards, we helped private funders clarify for the field that the tool was intended to support program improvement rather than penalize those with incomplete information. When the service organizations involved in the supportive housing program got embroiled in controversy about the facility opening, we helped a senior manager think through how to reframe the terms of the conflict and use the authority of shared professional norms to overcome the roadblocks. A design-based approach to implementation, grounded in practice principles, provides a pragmatic way to build resilience within the people and systems doing public human services work.

For scholars interested in this approach, it is useful to first ground yourself in the tradition of design-based research in management and implementation (Simon 1996; Romme 2003; Fishman et al. 2013), as it differs significantly from the epistemology and ontology that dominates much of public administration research. Scholars must think carefully about their key interests and commitment. Research that focuses on describing or explaining the drivers of change in implementation does not require a design-based approach. It is relevant when scholars want to focus more directly how change is accomplished and managed in implementation systems. Luckily, the strategic action field framework (Moulton and Sandfort 2017) can be used to advance either approach to implementation analysis.

However, what differentiates a design-based approach is its attempt to draw upon the theory to develop strategies for intervening—for leveraging authority sources within the particular strategic action field—to improve current condition. In particular, underlying

each invention is a proposition for how the attempted change will alter conditions for the target group or the system itself. In our workforce development project, we are attempting to strengthen the professional commitment to racial equity and data-informed decision-making among service providers. In the mobile app project, we are drawing upon information technology (IT) innovations to more efficiently assure formal rules are followed and improve communications between clients and caseworkers implementing a regulatory program. In the supportive housing case, we are working to assure program managers have up-to-date information about service delivery to enable service integration. Across all, we assume that public policy and programs are implemented by "a collection of individual agents who have the freedom to act in unpredictable ways, and whose actions are interconnected such that they produce system-wide patterns" (Eoyang and Holladay 2013, p. 23). Design-based implementation research encourages public administration scholars to look for these system-wide patterns as they work collaboratively with public managers. It enables us to focus on persistent practice problems and work iteratively as deeper levels of questions come into focus. Throughout the projects, we are seeking to both develop new knowledge and build capacity for sustaining the change within the system (Van de Ven 2007; Fishman et al. 2013).

In this chapter, we have covered a lot of ground. I began by recounting the intellectual foundations of policy and program implementation and considering how a complexity frame for public policy analysis alters this tradition. After highlighting the key elements of the strategic action field framework, I invited reconsideration of how public managers try to affect implementation, suggesting that new design principles crafted to reflect an awareness of complex system dynamics might yield more potent results. The view advanced is that scholars are poised to be more involved in trying to improve policy and program implementation in practice.

NOTES

1. For example, Greenhalgh et al. (2004) often cited model from health care has more than 50 variables important to predictive modeling of implementation success. See also Tabak et al. (2012).
2. It is quite possible, however, that organizations playing other roles might be quite important in shaping a particular implementation system; for example, organizations that create critical resources such as research, training, or supplemental funding might also be important to analyze to understand complex system dynamics.
3. This theoretical approach has a different ontological assumption than many conventional policy analysis frameworks. Rather than seeing individuals as focused upon maximizing economic gain or interest achievement, strategic action field theory sees individuals motivated by social acceptability (Fligstein and McAdam 2011; Moulton and Sandfort 2017).
4. Organizational theorists stress the human services are either people changing or people processing technologies, and inherently affected by moral judgments (Hasenfeld 1983; Sandfort 2010; Maynard-Moody and Musheno 2003). Both benefit from user-centered design.

REFERENCES

Aarons, Gregory A., Michael Hurlburt and Sarah McCue Horwitz (2011), 'Advancing a conceptual model of evidence-based practice implementation in public service sectors', *Administration and Policy in Mental Health and Mental Health Services Research*, **38** (1), 4–23.

Agranoff, Robert and Michael McGuire (2003), *Collaborative Public Management: New Strategies for Local Governments*, Washington, DC: Georgetown University Press.

Allard, Scott W. (2007), 'The changing face of welfare during the Bush administration', *Publius*, **37** (3), 304–32.

Amir, On, Dan Ariely, Alan Cooke, David Dunning, Nicholas Epley, Uri Gneezy et al. (2005), 'Psychology, behavioral economics, and public policy', *Marketing Letters*, **16** (3–4), 443–54.

Ansell, Christopher and Jacob Torfing (eds) (2014), *Public Innovation through Collaboration and Design*, New York: Routledge.

Axelrod, Robert (1997), *The Complexity of Cooperation: Agent-Based Models of Competition and Collaboration*, Princeton, NJ: Princeton University Press.

Bardach, Eugene (1977), *The Implementation Game*, Cambridge, MA: MIT Press.

Barzelay, Michael (2012), 'The study of public management: reference points for a design science approach', in Giovanni Tria and Giovanni Valotti (eds), *Reforming the Public Sector: How to Achieve Better Transparency, Service, and Leadership*, Washington, DC: Brookings Institution Press, pp. 219–39.

Barzelay, Michael and Fred Thompson (2010), 'Back to the future: making public administration a design science', *Public Administration Review*, **70** (suppl. 1), 295–97.

Berman, Paul (1978), *The Study of Micro and Macro Implementation of Social Policy*, Santa Monica, CA: Rand.

Bourdieu, Pierre (1977), *Outline of a Theory of Practice*, Cambridge: Cambridge University Press.

Bozeman, Barry (1993), 'A theory of government "red tape"', *Journal of Public Administration Research and Theory*, **3** (3), 273–304.

Bryson, John M., Barbara C. Crosby and Laura Bloomberg (eds) (2015), *Public Value and Public Administration*, Washington, DC: Georgetown University Press.

Campbell, H., Yushim Kim and Adam Eckerd (2015), *Rethinking Environmental Justice in Sustainable Cities: Insights from Agent-Based Modeling*, New York: Routledge.

Cohen, David and Heather C. Hill (1998), 'Instructional policy and classroom performance: the mathematics reform in California', CPRE Research Report, Consortium for Policy Research in Education, University of Pennsylvania, Philadelphia, PA.

Colander, David and Roland Kupers (2014), *Complexity and the Art of Public Policy: Solving Society's Problems from the Bottom Up*, Princeton, NJ: Princeton University Press.

DeHart-Davis, Leisha and Sanjay Pandey (2009), 'Red tape and public employees: does perceived rule dysfunction alienate managers?', *Journal of Public Administration Research and Theory*, **15** (1), 133–48.

Desai, Anand (ed.) (2012), *Simulation for Policy Inquiry*, London: Springer.

Dooley, Kevin (1997), 'A complex adaptive systems model of organizational change', *Nonlinear Dynamics, Psychology, and Life Sciences*, **1** (1), 69–97.

Durlak, Joseph A. and Emily P. DuPre (2008), 'Implementation matters: a review of research on the influence of implementation on program outcomes and the factors affecting implementation', *American Journal of Community Psychology*, **41** (3–4), 327–50.

Eckerd, Adam (2013), 'Policy alternatives in adaptive communities', *Review of Policy Research*, **30** (3), 281–301.

Elmore, Richard F. (1980), 'Backward mapping: implementation research and policy decisions', *Political Science Quarterly*, **94** (4), 601–16

Elmore, Richard F. (1985), 'Forward and backward mapping: reversible logic in the analysis of public policy', in Kenneth Hanf and Theo A.J. Koonen (eds), *Policy Implementation in Federal and Unitary Systems: Questions of Analysis and Design*, Boston, MA: Martin Nijhoff, pp. 33–70.

Eoyang, Glenda and Royce J. Holladay (2013), *Adaptive Action: Leveraging Uncertainty in Our Organization*, Stanford, CA: Stanford University Press.

Feldman, Martha S. (2004), 'Resources in emerging structures and processes of change', *Organization Science*, **15** (3), 295–309.

Feldman, Martha S. and Kathryn S. Quick (2009), 'Generating resources and energizing frameworks through inclusive public management', *International Public Management Journal*, **12** (2), 137–71.

Fishman, Barry, William Penuel, Anna-Ruth Allen, Britte Haugan Cheng and Nora Sabelli (2013), 'Design-based implementation research: an emerging model for transforming the relationships of research and practice,' *National Society for the Study of Education*, **115** (2), 136–56.

Fixsen, Dean L., Sandra F. Naoom, Karen A. Blase, Robert M. Friedman, Barbara Burns and Frances Wallace (2005), 'Implementation research: a synthesis of the literature', Louis de la Parte Florida Mental Health Institute, University of South Florida, Tampa, FL.

Fligstein, Neil (2001), 'Social skill and the theory of fields', *Sociological Theory*, **19** (2), 105–25.

Fligstein, Neil (2008), 'Fields, power and social skill: a critical analysis of the new institutionalisms', *International Public Management Review*, **9** (1), 227–53.

Fligstein, Neil and Doug McAdams (2011), 'Toward a general theory of strategic action fields', *Sociological Theory*, **29** (1), 1–26.

Frederickson, H. George (2005), 'Whatever happened to public administration? Governance, governance everywhere', in Ewan Ferlie, Laurence E. Lynn, Christopher Pollitt (eds), *The Oxford Handbook of Public Management*, Oxford: Oxford University Press, pp. 282–304.

Garrow, Eve E. and Oscar Grusky (2012), 'Institutional logic and street-level discretion: the case of HIV test counseling', *Journal of Public Administration Research and Theory*, **23** (1), 103–31.

Giddens, Anthony (1984), *The Constitution of Society: Outline of a Theory of Structuration*, Berkeley, CA: University of California Press.

Goggin, Malcolm L. (1986), 'The "too few cases/too many variables" problem in implementation research,' *Political Research Quarterly*, **39** (2), 328–47.

Goggin, Malcolm L., Ann M. Bowman, James P. Lester and Laurence J. O'Toole (1990), 'Studying the dynamics of public policy implementation: a third-generation approach', in Dennis J. Palumbo and Donald J. Calista (eds), *Implementation and the Policy Process: Opening up the Black Box*, New York: Greenwood Press, pp. 181–97.

Greenhalgh, Trisha, Glenn Robert, Fraser Macfarlane, Paul Bate and Olivia Kyriakidou (2004), 'Diffusion of innovations in service organizations: systematic review and recommendations', *Milbank Quarterly*, **82** (4), 581–629.

Handler, Joel F. (1986), *The Conditions of Discretion: Autonomy, Community, Bureaucracy*, New York: Russell Sage Foundation.

Hargreaves, Margaret B. (2010), *Evaluating System Change: A Planning Guide*, Princeton, NJ: Mathematica Policy Research.

Hargreaves, Margaret B. (2014), *Rapid Evaluation Approaches for Complex Initiatives*, Washington, DC: US Department of Health and Human Services.

Hasenfeld, Yeheskel (1983), *Human Service Organizations*, Englewood Cliffs, NJ: Prentice Hall.

Hill, Carolyn J. (2005), 'Casework job design and client outcomes in welfare-to-work offices', *Journal of Public Administration Research and Theory*, **16** (2), 263–88.

Hill, Carolyn J. and Laurence Lynn (2005), 'Is hierarchical governance in decline? Evidence from empirical research', *Journal of Public Administration Research and Theory*, **15** (2), 173–95.

Hill, Heather C. (2003), 'Understanding implementation: street-level bureaucrats' resources for reform', *Journal of Public Administration Research and Theory*, **13** (3), 265–82.

Hill, Michael and Peter Hupe (2014), *Implementing Public Policy: An Introduction to the Study of Operational Governance*, New York: Sage.

Hjern, Benny and David O. Porter (1981), 'Implementation structures: a new unit of administrative analysis', *Organization Studies*, **2** (3), 211–27.

Howard-Grenville, Jennifer A. (2007), 'Developing issue-selling effectiveness over time: issue selling as resourcing', *Organization Science*, **18** (4), 560–77.

Ingram, Helen and Anne Schneider (1990), 'Improving implementation through framing smarter statutes,' *Journal of Public Policy*, **10** (1), 67–88.

Kettl, Donald F. (2000), 'The transformation of governance: globalization, devolution, and the role of government', *Public Administration Review*, **60** (6), 488–97.

Knoke, David and Song Yang (2008), *Social Network Analysis*, Thousand Oaks, CA: Sage.

Latour, Bruno (2005), *Reassembling the Social: An Introduction to Actor-Network Theory*, Oxford: Oxford University Press.

Light, Paul C. (2000), *Making Nonprofits Work: A Report on the tides of Nonprofit Management Reform*, Washington, DC: Brookings Institution.

Lindblom, Charles (1959), 'The science of muddling through', *Public Administration Review*, **19** (2), 79–88.

Lipsky, Michael (1980), *Street-Level Bureaucracy: Dilemmas of the Individual in Public Services*, New York: Russell Sage Foundation.

Lowi, Theodore J. (1972), 'Four systems of policy, politics, and choice', *Public Administration Review*, **32** (4), 298–310.

Lundquist, Leah, Jodi R. Sandfort, Christ Lopez, Marcela Sotela Odor, Karen Seashore, Jen Mein et al. (eds) (2013), *Cultivating Change in the Academy: Practicing the Art of Hosting Conversations That Matter within the University of Minnesota*, Minneapolis, MN: University of Minnesota Digital Conservancy.

Lynn, Laurence E. (1996), *Public Management as Art, Science and Profession*, Chatham, NJ: Chatham House.

Lynn, Laurence E., Carolyn J. Heinrich and Carolyn J. Hill (2001), *Improving Governance: A New Logic for Empirical Research*, Washington, DC: Georgetown University Press.

Matland, Richard E. (1995) 'Synthesizing the implementation literature: the ambiguity-conflict model of policy implementation', *Journal of Public Administration Research and Theory*, **5** (2), 145–74.

Maynard-Moody, Steven and Michael Musheno (2003), *Cops, Teachers, Counselors: Stories from the Front Lines of Public Services*, Ann Arbor, MI: University of Michigan Press.

Mazmanian, Daniel and Paul Sabatier (1989), *Implementation and Public Policy*, Lanham, MD: University Press of America.

Meier, Kenneth J. Laurence J. O'Toole and Sean Nicholson-Crotty (2004), 'Multilevel governance and organizational performance: investigating the political–bureaucratic labyrinth', *Journal of Policy Analysis and Management*, **23** (1), 31–47.

Mettler, Suzanne and Mallory Sorelle (2012), 'Policy feedback theory', in Paul A. Sabatier and Christopher M. Weible (eds), *Theories of the Policy Process*, Boulder, CO: Westview Press, pp. 151–81.

Meyers, Duncan C., Joseph A. Durlak and Abraham Wandersman (2012), 'The quality implementation framework: a synthesis of critical steps in the implementation process', *American Journal of Community Psychology*, **50** (3–4), 462–80.

Mitchell, Melanie (2011), *Complexity: A Guided Tour*, New York: Oxford University Press.

Moulton, Stephanie and Jodi R. Sandfort (2017), 'The strategic action field framework for policy implementation research', *Policy Studies Journal*, **45** (1), 144–69.

Moynihan, Donald P. (2005), 'Managing for results in an impossible job: solution or symbol?', *International Journal of Public Administration*, **28** (3), 213–31.

Moynihan, Donald P. (2008), *The Dynamics of Performance Management: Constructing Information and Reform*, Washington, DC: Georgetown University Press.

Nilsen, Per, Christian Ståhl, Kerstin Roback and Paul Cairney (2013), 'Never the twain shall meet? A comparison of implementation science and policy implementation research', *Implementation Science*, **8** (1), art. 63.

O'Toole, Laurence J. (1986), 'Policy recommendations for multi-actor implementation: an assessment of the field', *Journal of Public Policy*, **6** (2), 181–210.

O'Toole, Laurence J. (2004), 'The theory-practice issue in policy implementation research', *Public Administration*, **82** (2), 309–29.

Orlikowski, Wanda J. (1992), 'The duality of technology: rethinking the concept of technology in organizations', *Organization Science*, **3** (3), 398–427.

Palumbo, Dennis J. and Donald J. Calista (1990), *Implementation and the Policy Process: Opening up the Black Box*, New York: Greenwood Press.

Parks, Sharon Daloz (2005), *Leadership can be Taught: A Bold Approach for a Complex World*, Cambridge, MA: Harvard Business School Press.

Patton, Michael Quinn (2010), *Developmental Evaluation: Applying Complexity Concepts to Enhance Innovation and Use*, New York: Guilford Press.

Patton, Michael Quinn (2016a), 'The developmental evaluation mindset: eight guiding principles', in Michael Patton, Kate McKegg, and Nan Wehipeihana (eds), *Developmental Evaluation Exemplars: Principles in Practice*, New York: Guilford Press, pp. 289–312.

Patton, Michael Quinn (2016b), 'What is essential in developmental evaluation?', *American Journal of Evaluation*, **37** (2), 250–65.

Patton, Michael Quinn (2018), *Principles-Focused Evaluation: The Guide*, New York: Guilford Press.

Penuel, W.R., B.J. Fishman, B. Haugan Cheng and N. Sabelli (2011), 'Organizing research and development at the intersection of learning, implementation, and design', *Educational Researcher*, **40** (7), 331–7.

Pressman, Jeffrey L. and Aaron Wildavsky (1973), *Implementation: How Great Expectations in Washington Are Dashed in Oakland or Why It's Amazing That Federal Programs Work at All*, Berkeley, CA: University of California Press.

Pressman, Jeffrey L. and Aaron Wildavsky (1984), *Implementation: How Great Expectations in Washington Are Dashed in Oakland or Why It's Amazing That Federal Programs Work at All*, 3rd edn, Berkeley, CA: University of California Press.

Provan, Keith G. and Patrick Kenis (2008) 'Modes of network governance: structure, management, and effectiveness', *Journal of Public Administration Research and Theory*, **18** (2), 229–52

Provan, Keith G. and H. Brinton Milward (2001) 'Do networks really work? A framework for evaluating public-sector organizational networks', *Public Administration Review*, **61** (4), 414–23.

Quick, Kathryn and Martha Feldman (2014), 'Boundaries as junctures: collaborative boundary work for building efficient resilience', *Journal of Public Administration Research and Theory*, **24** (3), 673–95.

Quick, Kathryn and Jodi Sandfort (2014), 'Learning to facilitate deliberation: practicing the art of hosting', *Critical Policy Studies*, **8** (3), 300–322.

Radin, Beryl A. (2006), *Challenging the Performance Movement: Accountability, Complexity, and Democratic Values*, Washington, DC: Georgetown University Press.

Roll, Stephen, Stephanie Moulton and Jodi R. Sandfort (2017), 'A comparative analysis of two streams of implementation research', *Journal of Public and Nonprofit Affairs*, **3** (1), 3–22.

Romme, A. George (2003), 'Making a difference: organization as design', *Organization Science*, **14** (5), 558–73.

Sabatier, Paul A. and Hank C. Jenkins-Smith (eds) (1993), *Policy Change and Learning: An Advocacy Coalition Approach*, Boulder, CO: Westview Press.

Salamon, Lester (ed.) (2002), *The Tools of Government: A Guide to the New Governance*, Oxford: Oxford University Press.

Sandfort, Jodi R. (2003) 'Exploring the structuration of technology within human service organizations', *Administration and Society*, **34** (6), 605–31.

Sandfort, Jodi R. (2010), 'Human service organizational technology', in Yeheskel Hasenfeld (ed.), *Human Services as Complex Organizations*, Thousand Oaks, CA: Sage, pp. 269–90.

Sandfort, Jodi R. and Stephanie Moulton (2015), *Effective Implementation in Practice: Integrating Public Policy and Management*, San Francisco, CA: Jossey-Bass.

Schott, Liz, LaDonna Pavetti and Ife Finch (2012), *How States Have Spent Federal and State Funds Under the TANF Block Grant*, Washington, DC: Center on Budget and Policy Priorities.

Scott, W. Richard (2003), *Organizations: Rational, Natural, and Open Systems*, Upper Saddle River, NJ: Prentice Hall.

Selden, Sally Coleman, Jessica E. Sowa and Jodi Sandfort (2006), 'The impact of nonprofit collaboration in early child care and education on management and program outcomes', *Public Administration Review*, **66** (3), 412–25.

Selznick, Phillip (1949), *TVA and the Grass Roots: A Study of Politics and Organization*, Berkeley, CA: University of California Press.

Simon, Herbert A. (1948), *Administrative Behavior*, New York: Free Press.

Simon, Herbert A. (1996), *The Sciences of the Artificial*, Cambridge, MA: MIT Press.

Snowden, David J. and Mary E. Boone (2007), 'A leader's framework for decision making', *Harvard Business Review*, **85** (11), 1–8.

Soss, Joe and Donald P. Moynihan (2014), 'Policy feedback and the politics of administration', *Public Administration Review*, **74** (3), 320–32.

Soss, Joe, Richard Fording and Sanford F. Schram (2011), 'The organization of discipline: from performance management to perversity and punishment', *Journal of Public Administration Research and Theory*, **21** (suppl. 2), i203–i232.

Spillane, Jim, Brian Reiser and Todd Reimer (2002), 'Policy implementation and cognition: reframing and refocusing implementation research', *Review of Educational Research*, **72** (3), 387–431.

Sproull, Lee S. and Paul S. Goodman (1990), *Technology and Organizations*, San Francisco, CA: Jossey-Bass.

Stone, Melissa and Jodi R. Sandfort (2009), 'Building a policy fields framework to inform research in nonprofit organizations', *Nonprofit and Voluntary Sector Quarterly*, **38** (6), 1054–75.

Tabak, Rachel G., Elaine C. Khoong, David A. Chambers and Ross C. Brownson (2012), 'Bridging research and practice: models for dissemination and implementation research,' *American Journal of Preventive Medicine*, **43** (3), 337–50.

Tummers, Lars (2012), 'Policy alienation of public professionals: the construct and its measurement', *Public Administration Review*, **72** (4), 516–25.

Van de Ven, Andrew (2007), *Engaged Scholarship: A Guide for Organizational and Social Research*, Oxford: Oxford University Press.

Weible, Christopher M., Paul A. Sabatier and Kelly McQueen (2009), 'Themes and variations: taking stock of the advocacy coalition framework', *Policy Studies Journal*, **37** (1), 121–40.

Weimer, David L. and Aidan R. Vining (2005), *Policy Analysis: Concepts and Practice*, Upper Saddle River, NJ: Pearson Education.

Werner, Alan (2004), *A Guide to Implementation Research*, Washington, DC: Urban Institute Press.

Westley, Frances, Brenda Zimmerman and Michael Quinn Patton (2007), *Getting to Maybe: How the World Is Changed*, Toronto: Vintage Canada.

Wheatley, Margaret and Deborah Frieze (2001), *Walk Out, Walk On: A Learning Journey into Communities Daring to Live the Future Now*, New York: Berrett-Koehler.

Whittington, Richard (1992), 'Putting Giddens into action', *Journal of Management Studies*, **29** (6), 693–712.