

Public Service Research Group

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ISSUES PAPERS SERIES

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THE PUBLIC SERVICE RESEARCH GROUP ISSUES PAPERS SERIES	2
EXECUTIVE SUMMARY	5
INTRODUCTION	6
<i>What is the purpose of this paper?</i>	7
MAPPING THE IMPLEMENTATION LITERATURE	9
<i>What is the current state of the literature?</i>	9
<i>What are the key findings?</i>	11
<i>What are the gaps in the literature?</i>	12
UNDERSTANDING WHAT DECISIONS ARE MADE AND WHY	13
<i>What decisions are made?</i>	13
<i>Why are these decisions made?</i>	16
FIGURING OUT WHAT IS MISSING	18
<i>What is missing?</i>	18
<i>Why is it missing?</i>	19
<i>How can it be addressed?</i>	20
DETERMINING WHAT WORKED AND WHY	22
<i>What worked?</i>	22
<i>Why did it work?</i>	24
<i>Are there any lessons learned?</i>	25
HOW DO WE MOVE FORWARD IN IMPLEMENTATION RESEARCH?	26
REFERENCES	28
APPENDIX	32
<i>Appendix A</i>	32
<i>Appendix B</i>	34



SUMMARY

In this Issues Paper we examine what light current literature can shed on the processes of policy implementation, what we know about this topic and where gaps remain. We found a burgeoning literature, but within this literature the concept of implementation is a rather contentious affair with contributions from a range of different academic disciplines and replete with many examples of what happens when implementation goes wrong.

The boundaries of this concept are unclear and while the literature offers a number of descriptive accounts of implementation, it does not necessarily tell us all that much about the actual concept and its practice.

INTRODUCTION

During 2017, implementation has come firmly back into the national policy spotlight. Concerns around the timescales and costs of the National Disability Insurance Scheme (Productivity Commission, 2017) and the National Broadband Network (Mason, 2017), amongst others, seemingly demonstrate how well-intentioned policy ambitions can be dashed in complex processes of implementation. A cursory glance

A IMPLEMENTATION AND WHY REVIEW

Studies of policy implementation first started to emerge in the 1970s with the publication of Pressman and Wildavsky's (1973) comprehensively titled *Implementation: how great expectations in Washington are dashed in Oakland or, why it's amazing that federal programs work at all, this being the saga of the Economic Development Administration as told by two sympathetic observers who seek to build morals on a foundation of ruined hopes*. It is hard to believe now, but policy implementation had been the “missing link” (Hargrove, 1975) in the study of policy processes until this time. The ‘discovery’ of implementation led to a vast amount of debate in the literature, although this discussion petered out somewhat in the mid-1980s, only to be ‘discovered again’ by the academic literature a decade later (see Althaus et al, 2012). Early in the study of policy implementation, essentially two sides dominated the debate. On one side were those who favoured ‘top-down’ accounts of policy and on the other, those who advocated ‘bottom-up.’ We reflect briefly on these here not only because they remain powerful ideas in the literature, but also because they clearly demonstrate the challenges with defining what implementation is, and where its limits lie.

Top-down models of implementation are most often associated with central planning functions where the government holds the political mandate to determine what is best for the population, designing policies and detailing how they should operate in practice. Top-down theorists view the functions of policy formation and implementation as profoundly separate activities. Much of this literature is concerned with understanding why gaps occur between policy development and implementation and what can be done to prevent these gaps from occurring (see for example: Sabatier and Mazmanian, 1979, Hogwood and Gunn, 1984). This literature is often made up of studies of how “perfect administration” might be achieved and the most effective ways in which complex administrative systems might be “controlled” (Hood, 1976). The implicit assumption here is that policy-makers should take responsibility for the formation of policy; local actors and services should then put these actions into place in the manner intended (Hill, 2009).

In contrast, bottom-up theorists argue that it is not just the case that policy can be fully formed and local agencies implement them. They consider that policy processes are inherently more dynamic and complex than the simplistic top-down model would suggest, in at least two senses. First, policy is rarely coherent, fully formed and clear; and second, policy-making might actually continue into the implementation phase. The latter point is important in the sense that it suggests that policy development and implementation are not completely separate functions; the work of Michael Lipsky (1980) is a well-known example of this perspective. He argued that professionals were not necessarily interested in ‘how to implement’ particular policies, but instead they wanted to figure out how they could best provide services within the range of constraints they faced. Illustrated through the notion of ‘street-level bureaucrats’, he drew attention to the

Box 1: Theories used in implementation research (derived from the coding of implementation literature for this review)

Actor centred institutionalism	Forward and backward mapping	Network management
Advocacy coalition	Game theory	Policy frameworks
Ambiguity Conflict model*	Garbage can model	Policy streams
Bottom up*	Governance theory	Politics of structured choice
Boundary spanning	Hierarchical linear modelling	Principal-agent theory
Change and consensus model	Implementation science	Rational and bureaucratic models
Communications model	Institutional analysis and development	Regime framework
Complexity theory	Interpretive theory	Structuration theory
Contextual interaction theory	Issue-attention cycle	Third generation theory
Discourse analysis	Model of policy failure	Top down*
Diffusion of innovation		

* Most common theories identified in the literature reviewed

Given the extensive number of theories that populate this field, we have seen a number of calls to adopt a ‘synthesizing approach’ (e.g. Goggin et al., 1990). Such approaches, called ‘third generation’, attempted to deal with the challenge that policy implementation processes encompass a great range of different ‘layers’ of policy systems and technical and non-technical complex processes. On face value, synthesising theories that focus on different aspects of the complex processes of implementation seems like an effective idea. Yet, seamless integration of different theories continues to prove challenging because they start from different points and may not be epistemologically or ontologically commensurate.

In attempting to overcome these and other challenges, theories relating to multi-level governance (Peters and Pierre, 2001) or middle-range theories (e.g. Shea, 2011) have emerged. Both kinds of approaches recognise the influence that a range of different actors and agencies have on implementation processes and seek to develop a way to capture the messiness of implementation processes. However, although these theories are helpful to some extent in mapping these processes and recognising the influence of a range of different stakeholders on implementation processes, our review demonstrated that neither of these approaches has succeeded in providing a clear account beyond single cases.

One approach that does try to encompass the whole implementation system is complex systems theory. After all, if the introductory sections have demonstrated anything it is that policy implementation is typically a rather complex affair – although this observation does not mean that implementation always takes place in a ‘complex system’ per se (see Table 1). Systems theory aims to characterise systems according to its component parts, layers, feedback loops, linearity and size, which then allows classification as complicated, complex or chaotic systems (Hawe et al., 2009) (Table 1).

Table 1: Definitions of different types of systems and their descriptions (Hawe et al., 2009)

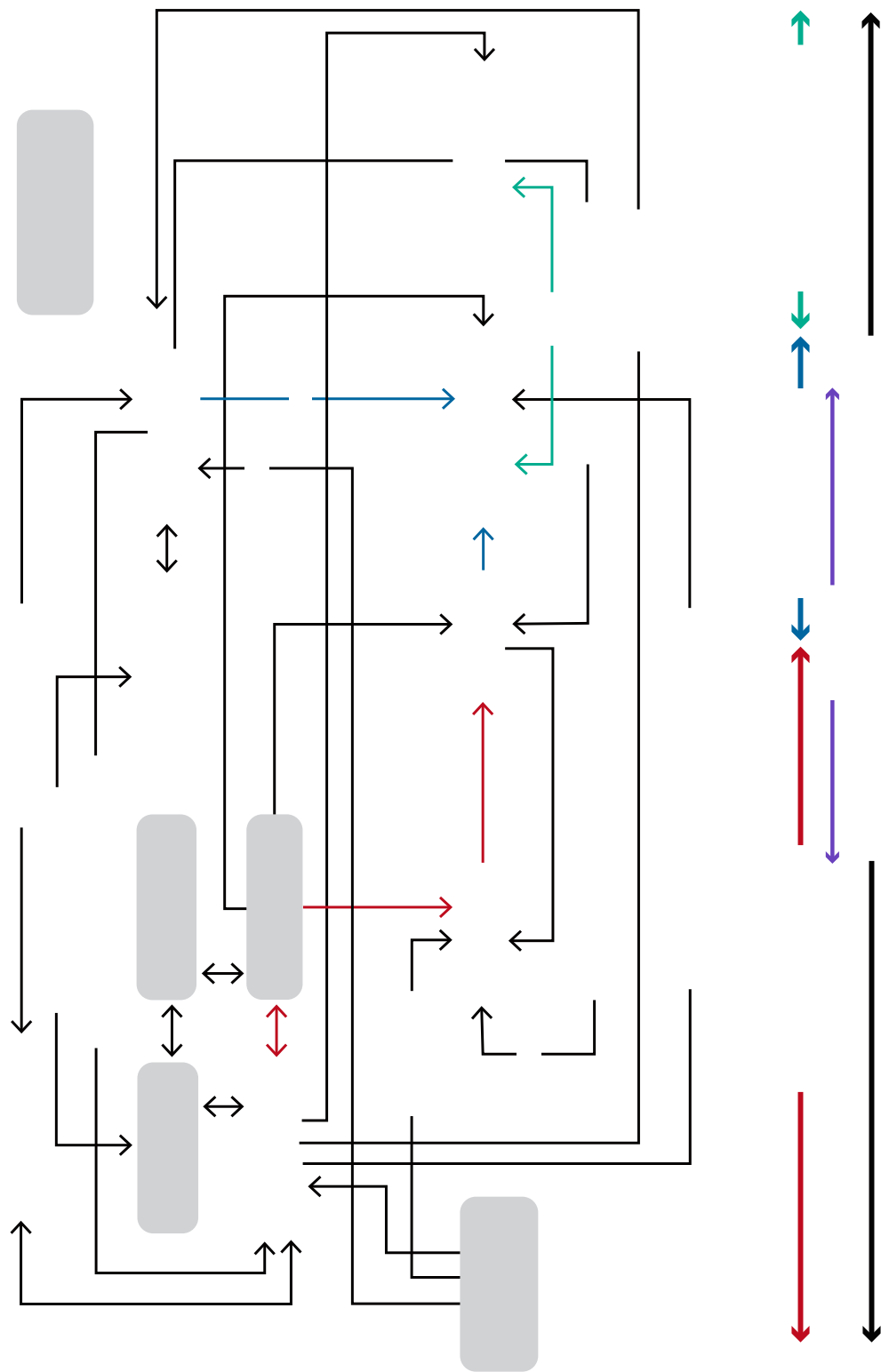
System type	
Complicated systems	Many interacting component parts, guided by simple rules; system may break down when a component part is removed
Complex systems	Very simple interactions among many interacting component parts; robust to the removal of a component part; increase in robustness over time due to capacity to self-organize
Chaotic systems	Few component parts, but they seem to produce random behaviors from the simple interaction of these parts

What such a perspective suggests is that different properties are associated with these classifications, which have implications for how systems might be altered through interventions. Some systems will obey simple rules, while others will respond 'randomly' to an intervention. Where an intervention involves the removal of one part of a system, it might cause the entire system to fail, while another system could re-organise, increasing its resilience in the process. Emerging research on complex systems is starting to focus on these elements of policy implementation, but a significant amount of research is still required

T H A A

A MADE AND WHY

“Scholars reflecting on the empirical reality of decision making have an eye for the fact that ‘decisions’ can be seen throughout a policy process – even at the street level. The relationship between policy goals as expressed and policy as implemented is not an obvious one. This relationship cannot be taken for granted,



Social processes and actors

Figure 1 highlights that policy development and implementation is a social process. According to our review, social elements of policy processes include: language and discourse, political ideologies and orientations, coalitionwvs and policy networks. Social processes were also determined to include discretion, accountability, legitimacy and institutional arrangements that define the rules, influence equality outcomes, and provide for individual choice at different levels of implementation (see Table 4 for more details).

Table 4: Dimensions of social processes (developed from our coding of the implementation literature)

Dimension	Description
Language and discourse	Language can be 'deeply political' in how it is used to contest meaning and is critical in shaping definitions of problems and, thereby, the policy agenda (Bessant, 2008). Language can be used to persuade policy communities, electorates and the general public to see a problem in a certain way and encourage them to support particular policies in overcoming that problem. One of the ways in which language is important is in the development of discourse. Discourse is essentially a system of meaning, 'an ensemble of ideas, concepts and categorisations through which meaning is allocated to social and physical phenomenon, and which is produced and reproduces in an identifiable set of practices' (Hajer, 2006: pg. 45). Discourse is important in the context of implementation in terms of the ways in which different social groups, events and types of information can be represented.
Political ideologies and orientations	The left-right political continuum is one of the strongest determinants of how people consider policy decisions should be made. For example, a leftist view corresponds with a more generous view of the welfare state (Stensota, 2012). Political orientations can affect policy at different governance levels. To illustrate, street-level bureaucrats are known to act as 'citizen agents', identifying with local community needs and political orientations, more so than central policy-makers. This alliance can cause policy outcomes to diverge from their stated goals (Stensota, 2012, Lipsky, 1980, Maynard-Moody and Musheno, 2000).
Coalitions and policy networks	Value-oriented approaches, including the advocacy coalition framework, can be used to understand the development of policy issues (Smith, 2013). The advocacy coalition framework, for example, suggests that 'networks' of actors who share a belief system (e.g. researchers, interest groups, journalists, policy-makers) compete with one another to influence policy with respect to particular issues, and aim to dominate 'policy subsystems' (Sabatier and Jenkins-Smith, 1993). The policy network literature explains that groups exist along a spectrum, with policy communities at one end of a spectrum (i.e. consensual relationship between government and a small number of groups) and issue networks at the other end (i.e. broad diversity of links between government and many groups) (Cairney, 2012, Hecllo, 1978, Marsh and Rhodes, 1992).
Discretion	Discretion is the "latitude that frontline bureaucrats possess to interpret rules when implementing programs, making them de facto bureaucratic policymakers" (Stensota, 2012, p. 554). Discretion has several

It is clear from the literature that social processes are considered to shape the nature of policy implementation, in terms of who is affected and how, and how success and failure are defined. We suggest, therefore, that paying attention to these factors has potential to bring increased clarity to implementation research.

An analysis of Table 4 also reveals that understanding implementation by examining how government agencies operate is no longer sufficient (if it ever was); it is necessary to understand the operations and dynamics of other actors and their relationships, which introduces a myriad of possibilities and challenges (May, 2003, O'Toole Jr, 2004). Within a particular policy context, actors are defined as 'entities such as individuals, groups and governments with the means to consider information and make decisions' (Cairney, 2012, p. 63). In understanding implementation, it can be critical to determine who the actors are and what their involvement is in policy processes (Robichau and Lynn Jr, 2009). Public, private and non-governmental actors, for example, can take on different roles within a system, "crossing established administrative levels, providing expertise, securing legitimacy4(er)-45| Pealcpurag legt 8DC BTcgwos10 56.8prov8 (eu)-2in (t8 (, fuh the (p

It becomes quickly apparent when reviewing the literature, that many elements of implementation are underestimated, implicit, or that their influence on the process or outcomes of implementation remains unclear. A number of problems arise here: what elements are important in terms of explaining implementation success or failure? How can we figure out which elements are most important to focus on? How do we find something that we do not know we need to be looking for?

From our analysis three main areas of implementation research emerge that we suggest deserve additional attention in terms of their capacity to both explain implementation success or failures to date, as well as provide research opportunities that will help frame and predict future implementation outcomes: context, behaviour and assumptions. Each area is already mentioned in the literature but often in terms of either being: (a) cited as important without strong analytical explanations as to why; or (b) described in unstructured ways that do not allow cross case comparison to build stronger implementation theory.

Context

Although context is acknowledged, and even studied, its real influence is often unrecognized or underappreciated. Johns (2006), for example, argues that context is most likely responsible for one of the biggest ongoing challenges in implementation research: variation in study-to-study research findings. Within public administration literature, context can be described as “situational opportunities and constraints that affect the occurrence and meaning of ... behavior as well as functional relationships between variables. Context can serve as a main effect or interact with personal variables ... to affect ... behavior” (Johns, 2006, p. 386).

Scale is just one aspect of context that, when examined even briefly, highlights how the complexity of context challenges implementation. Looking at context from a temporal perspective, we can see that context changes over time. For example, since the advent of online shopping, car sales people’s ability to influence customers in person has been severely constrained (Barley, 2015). Events, while usually considered to occur at a particular time, can in fact evolve temporally, as described by ‘event system theory’ (Morgeson et al., 2015). This theory explains how events can create new behaviours, features or events, extend over time and influence people and organizations.

Looking at spatial scales (e.g. local, national, global), some researchers examine how these scales are socially constructed and, thereby, imbued with power. In these circumstances, context becomes a fluid concept for, and a product of, power relationships in a society (McCann, 2003). Here, politicians frame reality in terms of scale, shaping constituents’ mental models of reality (i.e. their view of the world) and re-organizing scalar hierarchies with unpredictable consequences for associated politics. Essentially, this fluidity results in a “reshuffling of the locations of power among the institutions of the state, capital, and civil society” (McCann, 2003, p. 159). Context is thus implicated with power, which in turn is implicated with policy implementation.

In climate policy, analyses have been undertaken to look at how implementation can be successfully achieved when spatial and temporal scales are viewed as flexible features of context. Scale-related implementation options, such as joint implementation, supplementarity and inter-temporal trading can be used, at face value, to assist different jurisdictions in meeting their policy objectives (e.g. through the Kyoto Protocol). Perverse outcomes can arise, however, when the distribution of benefits reach their spatial limits, or inter-temporal trading is used to defer action. Examining the influence of spatial and temporal scales on policy implementation can therefore uncover unintended outcomes of well-meaning proposals (Stevens and Rose, 2002).

These few examples are used to highlight the potential that could be derived from a deeper understanding of the effect of specific contexts, both ‘accepted as existing’ and ‘socially constructed’ elements. Context is often conflated, however, with a description of a situation or a country, without real interrogation into what is specific about that particular context that will affect the implementation system. What emerges is that, in a literature focused strongly on exemplar cases with widespread recognition of the importance of context (Pollitt, 2013), few frameworks offer ways to systematically review context in a way that permits (a) a clear understanding of the effects of context; and (b) useful comparisons across multiple cases and contexts.

Behaviour

Successful policy implementation typically requires behaviour be modified, replaced or stopped in individuals and/or groups (deLeon and deLeon, 2002). Thus, studying implementation gives rise to a “most basic question about the relation between thought and action: how can ideas manifest themselves in a world of behavior?” (Pressman and Wildavsky, 1984, p. 163). Winter (2006) argues that policy makers should focus not only on ‘goal achievement’ (outcomes) but also on ‘implementation behaviour’ (i.e. outputs). He suggests that focusing on outcomes is problematic because it can be impossible to assess influences on behavior that are independent of policy implementation. If we assume that outputs represent the behaviours of implementers and outcomes represent the effects on target populations, it might be possible to identify “behavioral dimensions and classifications that are universally applicable in all policy areas”, overcoming the need to develop a generalised implementation theory (Winter, 2012, p. 247).

Despite the evidence of the potential effects of actor behaviour, policy-makers tend to be reluctant to map out exactly what or how behaviours need to change for a policy to be successful, thereby creating problems with respect to expectations and assessment (deLeon and deLeon, 2002). Problems are also created in terms of inappropriate instrument choice. When policy designers use backward mapping, for example, they often identify instruments that are more appropriate than those initially selected.

At least four main areas of theory development are available to examine the role of behaviour in implementation research. All of these theories stress the importance of behaviours in terms of their capacity to change the outcome of policy implementation:

- Third generation implementation research: attempts to explain “why behavior varies across time, across policies, and across units of government and by predicting the type of implementation behavior that is likely to occur in the future” (Goggin et al., 1990, p. 171)
- Backward mapping involves “stating precisely the behavior to be changed at the lowest level, describing a set of operations that can insure the change, and repeating the procedure upwards by

Assumptions

Underlying assumptions, implicit or explicit, represent one of the fundamental elements of public policy theory and research. According to (O'Toole, 2004, p. 320), the most basic assumption of policy implementation is: "that public managers confront 'a messy reality' of data, observations, opinions, facts and, not to be missed, human beings. A manager's intellectual task is to understand or explain messy reality toward the goal of gaining sufficient control over events to influence the future intentionally". Agreeing to what assumptions can or should be included in policy design and implementation is fundamental to understanding implementation success or failure. As Schneider and Sidney (2009, p. 114) explain: "By guiding the policy analyst away from taking stated policy goals at their face value and toward examining the meanings and assumptions within policy designs as well as designs' impact on social, political, and economic life, policy design theory pushes policy evaluation toward engaging in social critique that gets at core problems."

Mumtaz et al.'s (2015) research on Pakistan's Community Midwife (CMW) program clearly illustrates the effects of assumptions on policy implementation. The authors aimed to "understand why skilled birth attendance—an acknowledged strategy for reducing maternal deaths—has been effective in some settings but is failing in Pakistan" (Mumtaz et al., 2015, p. 249). They identified a number of assumption, such as:

Typically, people hear about one blunder, then another, then another, without realizing that there are far too many of them to be accounted for by random one-off sets of circumstances and that they may instead have common origins (King and Crewe, 2013, p. ix)

Providing analyses of previous practice to provide understandings and learning to build from is a common form of implementation research. However, a number of complexities and challenges confound our ability to determine what worked and why. Pressman and Wildavsky stated that “A verb like “implement” must have an object like policy” (Pressman and Wildavsky, 1973, p. xiii). But, they continue, “policies normally contain both goals and the means for achieving them. How, then, do we distinguish between a policy and its implementation?”. One of the complexities of the literature relates to whether evaluation is about policy outcomes, where implementation is seen as one of the variables itself, or whether implementation is a related, but separate element. What makes evaluation particularly challenging is that some researchers argue that evaluation cannot be reliably differentiated from implementation, or indeed other parts of the ‘policy cycle’ (Lindblom and Woodhouse, 1993). Others argue that things are measured but not always managed (Moynihan et al., 2011), and with so many different actors involved who have different objectives (Klijn and Koppenjan, 2000) it is typical that some aspects of the implementation process get overlooked. What is clear in the literature, is that evaluation tends to be an imprecise activity – rarely will one set of variables be decisive, making judgements of implementation success or failure challenging (Dickinson & O’Flynn, 2016). Although deLeon and deLeon (2002, p. 475) consider effective implementation evaluation to be “improbable at best, and illusionary at worst”, we sought themes in the literature that would indicate areas where research would provide clarity on how to evaluate implementation processes and outcomes.

Table 6: Taxonomy of implementation outcomes (adapted from Proctor et al., 2011)

Implementation outcome		Available measures
Acceptability	The perception among implementation stakeholders that a given treatment, service, practice, or innovation is agreeable, palatable, or satisfactory	Survey; Qualitative or semi-structured; Interviews; Administrative data
Adoption	The intention, initial decision, or action to try or employ an innovation or evidence-based practice. Adoption also may be referred to as “uptake”	Administrative data; Observation; Qualitative or semi-structured; Interviews; Survey
Appropriateness	The perceived fit, relevance, or compatibility of the innovation or evidence based practice for a given practice setting, provider, or consumer; and/or perceived fit of the innovation to address a particular issue or problem. “Appropriateness” is conceptually similar to “acceptability”	Survey; Qualitative or semi-structured; Interviews; Focus groups
Feasibility	The extent to which a new treatment, or an innovation, can be successfully used or carried out within a given agency or setting	Survey; Administrative data
Fidelity	The degree to which an intervention was implemented as it was prescribed in the original protocol or as it was intended by the program developers	Observation; Checklists; Self-report
Implementation cost	The cost impact of an implementation effort	Administrative data
Penetration	The integration of a practice within a service setting and its subsystems	Case audit; Checklists
Sustainability	The extent to which a newly implemented treatment is maintained or institutionalized within a service setting’s ongoing, stable operations	Case audit; Semi-structured interviews; Questionnaires; Checklists

It seems sensible to consider a range of implementation outcomes in evaluations. Measuring these outcomes, however, requires careful analysis of the causal patterns associated with outcomes, how often these patterns occur, the unique influence of independent variables (Goggin, 1986) and an ability to compare different variables in useful ways.

Relationships between dependent and independent variables

In many instances, the object of study in implementation research will be the dependent variable, defined as an object whose change is caused by another, or a phenomenon that can be explained (Cairney, 2012). Changes in dependent variables are explained by independent variables, that is, the source of explanation or the object or process that causes a change in the dependent variable (Cairney, 2012). To illustrate with a simple example, the dependent variable, pollution levels, can be explained by the independent variable, pollution legislation.

Despite a seemingly clear dichotomy between dependent and independent variables, they can be used interchangeably to measure policy outputs or outcomes, as well as implementation processes and outcomes. Often, the dependent variable will be the implementation process, but it can also be behaviours or outputs and even outcomes (Winter, 2012). Independent variables can be both the policy, as well as the policy setting (Goggin, 1986). Hill and Hupe (2005) wrap a number of these variables into what they call, “implementation processes and outcomes”, which include the policy characteristic, policy formation, vertical public administration, responses of implementation agencies, horizontal inter-organisational relationships, responses from those affected by the policy, and environment or policy context.

Clearly, ambiguity exists over what to measure and it has severely hampered theory development in implementation research (May, 1999 in Winter, 2012, see also Howlett and Cashore, 2009). This ambiguity is due, in large part, to the ‘dependent variable problem’, defined as the “the indistinctness of the phenomenon that is being measured, and disagreement on its scope and boundaries” (Dupuis and Biesbroek, 2013, p. 1476). This problem limits meaningful comparisons, learning and policy transfer, due to a lack of clarity and consistency of what is being compared, measured and described as an explanatory variable (Dupuis and Biesbroek, 2013). Thus, the key to usefully evaluating implementation outcomes is to determine what constitutes the object of study.

Winter (2012) offers an alternative discussion of policy implementation and the complexities of defining and researching dependent and independent variables. From his discussion, and our coding of the current literature, we developed a figure that illustrates some of the fluidity of the concepts of dependent and independent variables (Figure 2).

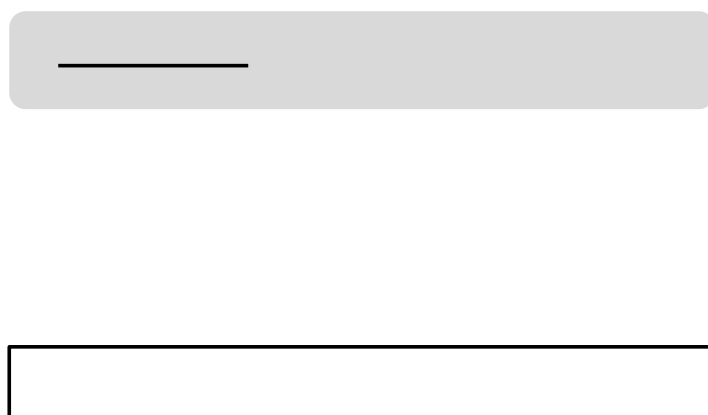


Figure 2: Relationships and complexities of studying the dependent and independent variables of policy implementation (developed from our coding of the implementation literature)

Beyond the challenges of defining dependent and independent variables, a number of additional problems confound evaluations.. First, “outcomes may be influenced by factors that have nothing to do with the policy intervention”; second, “judgement about outcome may be a judgement about the appropriateness of the policy not about its implementation”; and third, as discussed above, unambiguous and agreed outcome variables might not be able to be established (Winter, 2012, p. 274). As a consequence of these challenges, researchers might need to examine competing policy goals at the same time and possibly even decide ‘who’s side’ they are on.

Future research, we suggest, should focus on identifying implementation variables and explaining why and how they were evaluated. Post-hoc, researchers and practitioners can identify which variables were dependent and which were independent, by exploring the causal relationships between variables. This approach can provide insights into how the system is operating and enable comparisons within and between systems, processes and outcomes.

Assessing the ‘real’ effect of an intervention

Implementation could be assessed in terms of whether the outcome was that which was predicted; in other words what is the real effect? Fidelity “is a determination of how well [a] program is being implemented in comparison with [its] original program design” (Mihalic, 2004, p. 83). Carroll et al. (2007) argue that an evaluation of implementation fidelity is necessary to determine the true effect of an intervention. This argument is particularly relevant to evidence-based policies, which often assume that the intervention is being applied in accordance with published evidence. While argued to be under-researched (Blakely et al., 1987, Mihalic, 2004), measuring fidelity is an important aspect of policy evaluation, in particular because it provides opportunities to replicate policies successfully by understanding whether policies were implemented as intended (Carroll et al., 2007).

Three terms are commonly used within this literature. A pro-fidelity position assumes that when an outcome is different from the original intention of a policy, implementation has failed (Schofield, 2004). Within the pro-fidelity literature, when implementation moves away from stated policy goals, terms with negative connotations are used, such as ‘divergence’, ‘deviation’ and ‘non-compliance’ (Cartwright, 2016; Hupe, 2014). Adopting a pro-fidelity approach ensures that the challenges of applying data generated under experimental conditions in the ‘real world’ are not overlooked.

Pro-adaptation refers to modifications of policies that allow it to adapt to local or specific needs (Blakely et al., 1987). Pro-adaptation allows implementers to move beyond initial problem definitions or objectives and instead accommodate changing perceptions of problems and solutions (Klijn and Koppenjan, 2000). Proponents of pro-adaptation argue that policies tailored to local needs experience a higher likelihood of implementation success, in addition to longer commitments to policies through the creation of a sense of ownership (Blakely et al., 1987). One of the concerns around pro-adaptation is the extent to which changing or diluting a policy causes reduced effectiveness, with each modification potentially approaching a “point of drastic mutation”, rendering the policy ineffective (Blakely et al., 1987, Hall and Loucks, 1978, p. 18).

Policy durability is defined as the “sustainability of political commitments over time”, reflecting a political commitment to overcome a set of problems (May, 2015, p. 282). A policy can be both durable and adaptable, allowing evolution in response to learning, improved administration and new demands, while retaining the principal commitments and basic objectives (May, 2015, Patashnik, 2008). A lack of durability is characterised by altered objectives and political commitments.

Reflecting on our learning from the literature review we suggest that assessing fidelity in terms of pass/fail may lose sight of some important nuances and learning opportunities. A more valuable development might be to undertake evaluations and research that take a more pragmatic approach, reflecting other areas identified in this paper as needing greater development such as context, behaviours and assumptions. These considerations could offer more explanation as to how and where the policy adapted and whether the outcomes are perceived by policy-makers, or the public, as a good outcome.

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Table A1: Results from the systematic literature review for each subject area

Group and subject area	Search terms	Total returns	146Total min123us duplicates	Filtered articles (exclusion criteria)	Relevant articles (abstract)
Implementers and public administrators	Implementer* OR public administrator* OR micro-behavi* OR public servant*	93	62	20	11
Politics	ab(Politics)	94	61	26	26
Assumptions	assume* OR assumption*	72	53	27	27
Multi-governance systems	"multi-level" OR "multi-agency" OR "multi-actor" OR "governance level"	38	27	15	15
Temporality	temporal*	11	11	7	7
Multidiscipline research	multidisciplin* OR multi-disciplin* OR "multiple disciplines" OR disciplinary OR "inter-disciplin*" OR interdisciplin* OR "cross-disciplin*" OR crossdisciplin* OR "trans-disciplin*" OR transdisciplin*	36	28	11	11
Empirical testing	ab(empirical* OR test*) AND ti(theor*)	41	33	10	10
Success and failure	ab(success* OR fail* OR fidelity)	198	137	30	16
Total		583	412	146	123

Coding exemplar

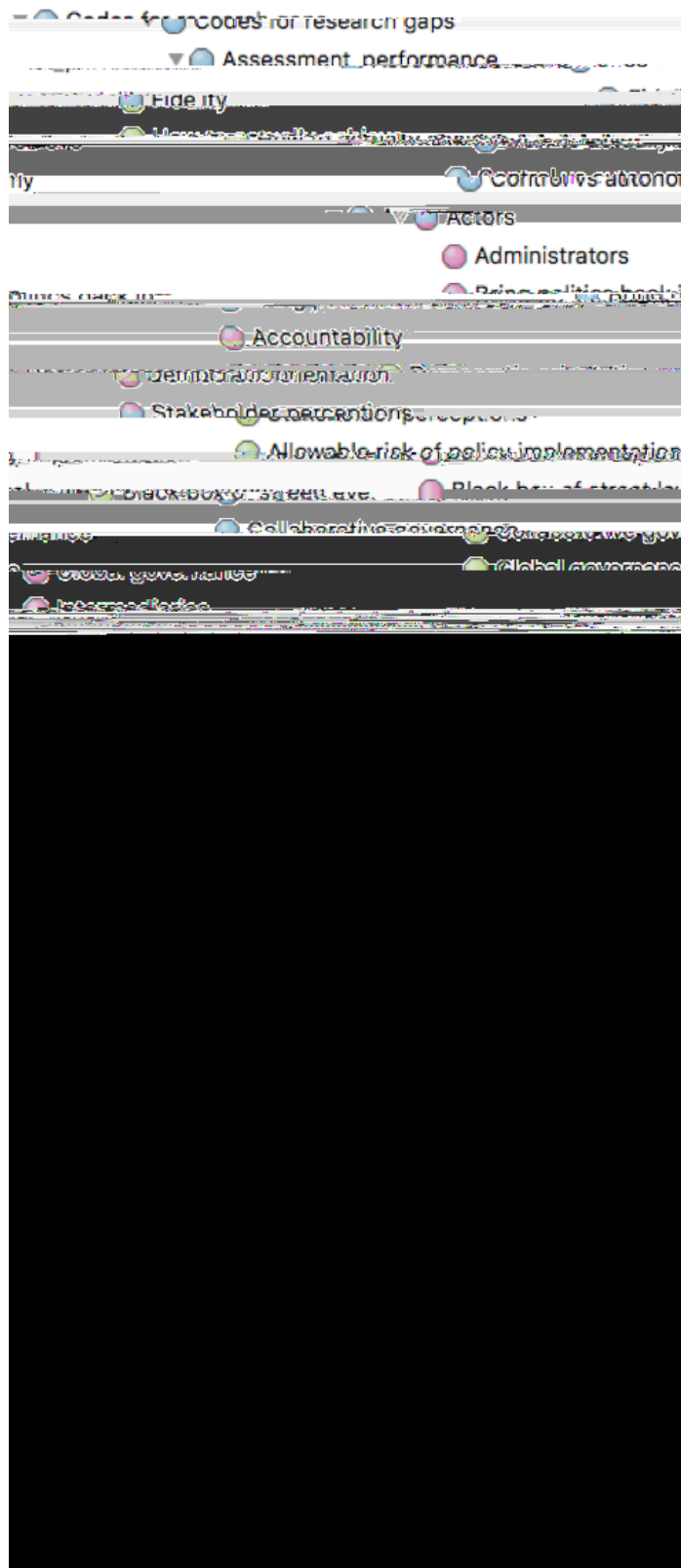


Figure A2: Screen shot of NVivo coding from analysis of gaps in research (scoping phase). Note that this example represents only one of the main themes identified in the scoping phase.

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