Tools Approaches

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Various writers on public policy have used—and still use—a “tools” or “instruments” approach to make sense of the complexity of contemporary policy-making. There is something attractive about breaking down the complex, abstract concept of “public policy” into a more prosaic metaphor, as a combination of tools. It holds the promise of making the study of public policy simpler and easier to understand. Perhaps another reason for its attraction is that it suggests a solubility to policy problems, just as most problems around the house can, actually, be fixed with a reasonably simple tool box that may be purchased in a DIY store, or most dental problems be fixed by a dentist wielding a limited range of custom-built instruments.

This chapter focuses on the various tools or instruments approaches to policy-making developed over recent decades. First it lays out the advantages of the approach and outlines the main variants. Second, it discusses the merits and drawbacks of the approach in general, and each perspective specifically. Third, the chapter discusses the challenges to the use of the approach, in terms of how each of the variants copes with change in the policy-making environment by focusing on one particularly fast-moving
and important change—the availability and use of digital tools and data for policy-making, and the widespread use of such tools by society at large. Fourth, it shows how this particular challenge might be overcome, particularly by the tools approaches developed by the authors of this chapter and other chapters in this book.

**WHERE DOES IT COME FROM AND WHY IS IT DIFFERENT?**

What distinguishes the tools approach from other ways of looking at or analyzing public policy? As noted above, a key attraction of the tools approach is that it can simplify this complex concept, making more tangible the abstract idea of policy. For example, breaking public policy down into distinct elements, may aid the comparison of policy-making across sectors, across locations, and over time, or assist the process of policy evaluation. It also implies agency or control, in contrast to (for example) institutional approaches, with their implicit path dependency. It encapsulates the idea that there are choices to be made, and that the selection of instruments can make policy-making better, or more efficient, or socially optimal in some way:

> public policy is fundamentally conceived as pragmatic—that is, as a political and technical approach to solving problems via instruments; that it views such instruments as ‘natural;’ they are viewed as being ‘at our disposal,’ and the only questions they raise relate to whether they are the best possible ones for meeting the objectives set; and that the central set of issues is around the effectiveness of instruments. (Lascoumes and Le Gales 2007)

If we can think of the different choices available to policy-makers for any particular policy, and look back in time to see the results where certain choices were made, then we can start to think of what might be the *best* option—and therefore find out what works and what does not in particular contexts. And in analytical terms, it gives us a way to distinguish between different types of policy, providing us with a taxonomy for public policy-making.

These advantages vary according to the type of instruments or tools approach used, however. Not all instruments-based approaches do cut through complexity, particularly when they provide long lists of possible tools with little clear analytical distinction between them. Some approaches focus on the practical choices available to policy-makers, and lack analytical
validity, while some focus purely on analyzing policies after the event and do not provide the idea of choice. So first we provide a brief summary of the main approaches that have been used.

**ALTERNATIVE TOOLS-BASED APPROACHES**

Approaches to the tools of government vary according to how much they delve into the "how" and "who" of policy-making. There is a continuum from, on the one hand, authors who discuss the internal organization or institutional complexity of government, or differences between policymakers themselves within the governmental context, to, at the other end of the spectrum, the approaches which treat government like a "black box," and consider the differences between tools only in so far as they touch upon the world outside, and how they change individual, collective, or organizational behavior in society at large.

At the "inside government" or "institution-led" end of this spectrum, there are approaches that focus on different specific forms of organization through which public policy is conducted; and indeed this is central to the traditional mission of public administration. One way of doing this is to consider variants based on whether the public sector, private firms, or third-sector organizations or some combination (such as public-private partnerships) are providing a service or utility, or regulating an industry. These are highly contested issues in many countries, so conceiving instruments in the sense of alternative organizational types is clearly important.

One example of this "institution-led" approach is provided by Lester Salamon’s (2002) *The Tools of Government* (a development of the earlier work, *Beyond Privatization*, Salamon and Lund, [1989]), which pays considerable attention to various forms of public-private partnerships. Salamon’s general argument is framed by the new types of institutional form available for public policy that were central to a "new governance" paradigm linked with the rise of "New Public Management" during the 1980s-2000s. These new institutional arrangements were enthusiastically embraced in the USA by Osborne and Gaebler in their 1992 book *Reinventing Government*, probably the first (of very few) books on public administration which became a bestseller and which formed a key plank of the Clinton-Gore Administration’s National Performance Review of the 1990s. Osborne and Gaebler draw on Salamon’s earlier work to provide their own list of "tools" or "Alternative Service Delivery Options" laid
out in an Appendix A at the end of the book (pp. 332-346), but in their case they are precisely that—a (long) list of 36 options, and there is little analytic derivation or explanation of how they were derived.

Another tools approach at this end of the spectrum may be described as the politics-of-instrument-choice approach, which focuses on the politics that lies behind the selection of whatever tools governments use. This approach can be traced back to the arguments of historians such as Ackerknecht (1948), who explored the different ways in which nineteenth-century European states approached control of contagious diseases, arguing that authoritarian states and liberal states would have different approaches, an argument further developed by Baldwin (1999) for more contemporary diseases such as AIDS. The politics-of-instrument-choice approach was developed within the field of political science by one of the authors of this book, Guy Peters, and his colleague Stephen Linder (1989, 1992, 1998). They distinguish four approaches to the understanding of public policy instruments, contrasting what they call “instrumentalists” (those who concentrate on and often seek to champion some particular tool, such as those economists who see price mechanisms as the answer to every policy problem); “proceduralists” (those who see tool selection as a product of political processes that are so complex and unique to every case that it is impossible to make any general assessment of “appropriateness”); “contingentists” (those who see the appropriateness of tool use as depending on types of task, for instance as between “compliance cultures” and cultures of resistance to government policy); and “constitutivists” (those who see the appropriateness of tool use as turning on subjective and contested meanings). They make the case for “constitutivism” replacing instrumental or contingency as the dominant approach, arguing that there is “a growing understanding that instrument selection is not a simple mechanical exercise of matching well-defined problems and equally well-defined solutions. Rather, it is fundamentally an intellectual process of constituting a reality and then attempting to work within it” (Linder and Peters 1998, p. 45). Again, as with the institutions-as-tools approaches, this view involves delving inside the policy-making process to distinguish between different types of policy-makers, rather than viewing government as some kind of opaque box.

It could be argued, however (as do Hood and Margerst 2007), that to compare the tools favored or perceived as superior by policy participants with others that could have been chosen or perceived by others with different ideological or cognitive baggage cannot be done without some
overall categorization of the tools available in principle, to play against those actors’ perceptions. In that sense, this approach does not really provide options to prospective policy-makers for selecting policy tools, unless it is to think themselves into one of the types presented; it assumes the existence of such a categorization as a point of departure—whether in the form of institutional types or broader methods of intervention—for exploring why political actors choose the policy instruments they do. That is because such an understanding necessitates a comparison between the tools that a given set of decision-makers chose to tackle the problems they faced with those that they could have chosen, but either did not see or did not use.

Meeting this kind of challenge to the politics-of-instruments approach, Pierre Lasculme and Patrick Le Gales (2007) in a special issue of *Governance* argue in favor of what they call a political sociology of public policy, arguing that “By emphasizing the political sociology of policy instruments, we want to stress power relations associated to instruments and issues of legitimacy, politicization, or depoliticization dynamics associated with different policy instruments.” They argue that it is essential to move beyond functionalist approaches, to see public policy from the angle of the instruments that structure policies: “public policy instruments are not tools with perfect axiological neutrality, equally available: on the contrary, they are bearers of values, fueled by one interpretation of the social and by precise notions of the mode of regulation envisaged.” In this way they provide “meta-tools” to understand the complexity of the policymaking environment.

At the other end of the continuum between the “inside government” and “black box” perspectives are generic “institution-free” approaches to cataloging the toolkit. As with the other approaches, this general approach can be traced back to an age before modern policy analysis. In the late eighteenth and early nineteenth centuries, for instance, the utilitarian philosopher Jeremy Bentham was much occupied with cataloging some of the different ways of controlling crime (e.g., by incarcerating prisoners or transporting them to Australia) and of providing public services. And economists have long been concerned with identifying different generic instruments for the conduct of economic policy, for instance, in distinguishing price mechanisms and rationing systems. Perhaps the most well-known, generic account of policy instruments is the distinction between “carrots, sticks, and screamers” as alternative methods of intervention and control, originating in a 1960s analysis of types of organizational
control by the famous sociologist Amitai Etzioni (1961), developed and introduced into the public policy literature by Evert Vedung (Bertelsmans-Videc et al. 1998).

While "carrots, sticks, and sermons" might be used in any organization, an institution-free tools approach developed specifically for government is that pioneered by Hood (1983) and later developed for the digital age by Hood and Margetts (2007). This approach argues that for any policy problem government has four basic tools at its disposal: nodality, the property of being at the center of social and information networks; authority, the legitimate legal or official power to command or prohibit; treasure, the possession of money or fungible chattels which may be exchanged; and organizational capacity, the possession of a stock of people, skills, land, buildings, and technology. The analysis is refined by breaking down each of the four NATO tools nodality, authority, treasure, organization into "effecting" and "detecting" tools—that is, tools for gathering information as well as for modifying or shaping behavior in other ways. In this approach, any policy solution will be composed of some combination of these tools, each of which has advantages and disadvantages in terms of being more-or-less expensive or renewable, for example. This approach has developed in other variants in the public policy literature. Elmore (1987) conceived government instruments as variants on a fourfold division of basic intervention strategies, comprising mandates, inducements, capacity-building and system-changing. Anne Schneider and Helen Ingram (1990) elaborated and modified this approach with a closely similar but fivefold categorization, comprising authority tools, incentive tools, capacity tools, symbolic or rhetorical tools, and learning tools.

In the middle of the continuum between "institutions-as-tools" and generic approaches, there are tools-based perspectives on public policy which use a mixture of institutions and generic tools to make up their toolkit. Again, there are antecedents here; even in the early 1950s the famous American public policy scholars, Robert Dahl and Charles Lindblom (1953) attempted to catalog a range of socioeconomic instruments available to government as a mixture of institutions-as-tools and the generic institution-free approach. Perhaps the most extensive mixed approach comes from the Canadian public administration scholar Michael Howlett (1991, 2000, 2005, 2007, 2009a, b). Building on his earlier work in a chapter in his edited book (Dobrzynski, Howlett and Laycock 2007) he provides a "taxonomy of taxonomy" of policy instruments, within the basic NATO categories of Hood’s Tools of Government (which he terms "sub-
stantive instruments") and a raft of procedural instruments such as education, training, institutions, formal evaluations, and institutional reform. For each of these categories, he produces a spectrum of policy instruments across a continuum of the level of state provision, ranging from voluntary to compulsory. He goes on to identify a range of factors or variables that influence instrument choices in specific directions, using here the organization-specific categories of market; direct provision; regulation; and voluntary, community instruments. These various categorizations and subdivisions mean that he amassed quite a heavy toolbox; in Howlett (2006), for example, he builds on his previous work to delineate a spectrum of both "substantive" and "procedural" instruments, breaking them down into ten and twelve sub-categories, respectively.

Most recently, Peter John in Making Policy Work (2011) typifies this mixed approach, with his "six broad levers, which express themselves as resources that governments have available to manipulate, in varying degrees, so as to influence public policy outcomes." Of these, two are "institution-free" tools—public spending and taxation, and law and regulation—while three tools are based on the internal workings of government—inscriptions and institutional reform, bureaucracy, and public management. Another two are defined by the author as "non-standard"—information, persuasion, and deliberation; and networks and governance. Of these "non-standard" tools, the former might be seen as analogous to "Nodality" in Hood and Margetts' terms, and the latter "soft levers of networks" is more about the system of governance, but is separated out as being almost beyond the capacity of the state or other public actors. In this sense, the approach does not treat government as a "black box," because the author sees no clear boundary line between state and society; so he argues for the "softness and indirectness and blurred boundaries of contemporary governance"—but at the same time, he might be accused of rendering the concept of "tool" so soft as to be almost impossible to wield usefully.

The various approaches are summarized below in Table 8.1, which shows the extent to which each approach considers institutions or politics inside government as the key way to distinguish between tools, or rather relies on a taxonomy of generic policy tools and uses a black-box approach to government. The table also considers the extent to which the approach is parsimonious, with the minimum number of categories, or "thick," in terms of having a long list of categories which encompass every possibility and every alternative approach.
Table 8.1 Variants on the tools approach

<table>
<thead>
<tr>
<th>Institutions-as-tools, politics-of-instruments-choice (inside government)</th>
<th>Mixed approaches</th>
<th>Generic tools approaches (governments as black box)</th>
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<tbody>
<tr>
<td>Antecedents</td>
<td>Dahl, Lindblom</td>
<td>Bennis, Etzioni</td>
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<td>Peters and Lindzer</td>
<td>John</td>
<td>Vedung, Elmore</td>
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<td>Sahaman</td>
<td>Laclau and Mouffe</td>
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<td>Margulis</td>
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<td>Thick</td>
<td>Howlett</td>
<td>Schneider and Ingram</td>
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**Challenges to the Tools Approach**

A key challenge to any tools-based approach is answering the question, What can we use it for? How does it aid our understanding of policy-making, for example, to compare policies over time or explore differences between jurisdictions? And to what extent might it be used to improve policy-making, in terms of making it more efficient, effective, equitable, or ethical, or at least to evaluate policies that have already been carried out, in order to learn lessons and make better policy in the future? The various approaches outlined above pick up these gauntlets in different ways.

With regard to understanding public policy, and allowing us to make comparisons across policies, all approaches face the trade-off between simplicity and comprehensiveness. The different approaches provide different taxonomies of policy, which range from the most basic and simple—the “carrots, sticks, and sermons” approach—to the most complex mixed approaches, which endeavor to incorporate all possible dimensions of policy-making. The “carrots, sticks, and sermons” classification is the most parsimonious, achieving the greatest simplicity. But there are some instruments that are not easily classified under this parsimonious variety of headings. One such example is the case where environments are physically or digitally structured so as to shape behavior, for example, by making violation impossible, or very costly, such as fencing to shape crowd behavior, for instance, at sporting events or near pedestrian crossings on the roads. This set of activities—sometimes called “architecture,” as in the literature on digital codes (Lessig 1999) or “choice architecture” in the language of behavioral “nudge” experiments (Thaler and Sunstein 2008)—cannot really be forced into the “carrot, sticks, and sermons” trichotomy. But it has historically been one of the most important ways by which governments
have gathered information and shaped behavior, has been taken as a central aspect of government activity by philosophers from Bentham to Foucault, and is likely to remain so, particularly with digital technology.

Hood’s (1983) and the later Hood and Margetts’ (2007) Tools of Government approach is also parsimonious, and perhaps the most conceptually based, resting on theoretical and conceptual foundations rooted in the theory of cybernetics, the foundational science of control, and in the basic and distinctive properties of government rather than of organizations in general. It does not purport to be comprehensive in terms of incorporating all possible organizational instruments or forms, but it does make a claim to be exhaustive in terms of being able to discuss any public policy in terms of its tools make-up. In this way, the four NATO tools can be used for comparative analysis in at least two ways: to assess policy change over time, and to compare the way that the tools are used across different governments, levels of government, or government agencies (Hood and Margetts 2007, pp. 126–143). For example, countries vary enormously in the way they treat treasure, from a tax base of around 17% of the GDP in China or India, to 45% or so in Sweden, reflecting enormous differences in the extent to which government uses treasure for purposes such as welfare state payments to citizens and protection of the environment. Likewise, although in practice all government departments or agencies will all use a mixture of tools, they may be categorized in terms of the dominant tool they employ; a foreign office or department of state, for example, tends to be characterized by modernity as the dominant tool, because its operations depend on being at the center of informational networks, while they tend to lack large-scale organizational capacity, financial resources, or legal authority, except insofar as they link to other departments.

The institution-based approaches are less well placed to undertake this comparative analysis. They clearly perform a valuable function in terms of cataloging the different organizational forms available to government; and delving into the politics and cognitive processes that lie behind the choice of different policy tools provides important insight into the policy process. But these accounts tend to be based on heuristic lists of strategies for control or managerial intervention, the foundations of which are left largely implicit in most cases. For instance, Salamon’s (2002) Tools of Government takes a broad, eclectic view and argues that “tools” can be understood in many different dimensions (singling out for particular attention the aspects of “directness,” visibility, coerciveness, and automaticity); but what foundational set of categories underpins the four
dimensions of instrumentality or 14-point schema that Salamon picks out is far from clear. Osborne and Gaebler's 36-point schema is even more dislocated from any foundational conceptual framework. They state which instruments are suited to which sector in their 14-page appendix, but the match springs as if from nowhere. So these approaches can only really aid understanding when analysts have the book in front of them, rather than providing an analytic framework which is easily remembered and brought into play at any point.

Other mixed approaches such as the John and even more so the Howlett approach are comprehensive, and in this sense offer a “whole of public policy” approach to readers, but in so doing they lose out on simplicity and analytic derivation, and the idea of explicit policy choices in any particular public policy between the different tools. Howlett offers a range of categorizations so complex that it is very difficult to work out what a policy-maker might choose between. Everything is covered, but the bewildering array of instrument classifications does not entirely make up in terms of comprehensiveness what is lost in simplicity. In general, this is the challenge of the mixed approach.

So how do the various approaches tackle the task of policy evaluation: for example, by providing a way of evaluating whether the selected tool is more economic, efficient, effective or equitable or ethical than any of the available alternatives? Here the “institutions-as-tools” or “politics-of-instruments” approaches may seem at first glance to have the upper hand. They are geared at understanding the internal workings of the state—and what effect that has on the policy that emerges. Salamon’s approach, for example, is likely to lead to a focus on how different institutional forms perform in terms of efficiency and effectiveness, making it easier to evaluate the cost of policy or services (although proponents of this approach have tended to adopt a normative belief that private sector solutions, where possible, are more efficient, rather than actually embarking on the evaluation). Furthermore, this approach might be used to assess tools in terms of how citizens can be involved in policy-making, allowing the analyst to understand the extent to which they may be regarded as transparent or democratic. For example, if a policy is implemented by a private organization rather than a public one, governed by the terms and conditions of the contract, it is less likely that citizens will be able to provide input to policy-making or service delivery.

In contrast, at the other end of the spectrum, a generic tools approach will obviate the discussion for such questions, because there is no mechanism
for observing how different policies lead to more-or-less efficient administrative or institutional forms. However, it is possible to think about the question of what makes a good choice of tools and leads to an "intelligent" policy design (Hood and Margetts 2007, p. 144), for example, through the consideration of which mix of tools would work for which policy "job" and which tool works in which circumstances, and also the moral acceptability of choices in terms of satisfying ethical criteria, such as justice and fairness. With perhaps the strongest claim for an evaluative technique attributable to this tools approach, the tool mix may be considered under the heading of economy, although not in the sense of monetary expense. Hood and Margetts (2007) argue that the desired policy effect must be achieved as economically as possible from the perspective of both government and citizens, in terms of the "spending" of governmental resources, and the minimum burden, in terms of form-filling, obligations, and highly visible signs of governmental presence, on the general public. Saving in this latter sense would mean visiting on the public at large no more "trouble, vexation, and oppression" (Smith 1910, p. 369) than is absolutely necessary.

These two possible ways of being economical with the use of tools do not necessarily lead in the same direction, leading to a sophisticated analysis of how the use of tools might satisfy both of these aims. Not only do these two dimensions conflict, but the "economy" requirement may conflict with any moral dimension for policy-making: for example, custodial treatment for offenders might seem to be the most economic way of treating alcoholics, in terms of minimizing bureaucratic effort and impact on the population at large, but it would definitely raise some ethical hackles.

Such an analysis is not really possible with the instruments-as-tools approach. For instance, categorizing different organizational forms available to government only makes sense as an account of policy intervention if it can be supplemented by an analysis of the intervention instruments that those organizations can use or are likely to use. It is often said that organizations at the core of government tend to be used when it comes to the most authority-intensive instruments of policy, while the use of nodality and treasurers is often entrusted to a range of other organizational forms, such as special-purpose authorities or contract organizations. But there are some important exceptions to that rule; a Treasury department or Ministry of Finance at the center of government being the most obvious example. Most of the generic approaches—and some of the mixed ones—use "organization" in the generic sense—"organizational capacity" (Hood 1983) or "bureaucracy" (John 2011). The direct use of people and equipment for
physical processing of one kind or another does not obviously match with any single administrative form. It is used both by bodies at the “core” of government, such as armies and the police, and by bodies nominally independent from government, such as private firms operating under contract to government, or intelligence agencies. Indeed, the advantage of keeping generic accounts of government tools and categories of forms of government institution analytically separate is precisely that institutional type and method of intervention may not always be tightly connected.

COPING WITH A CHANGING (DIGITAL) WORLD

The real test of a tools-based approach to understanding public policy—or indeed any approach discussed in this book—is if they can cope with a changing world, for example by providing a way to understand how public policy changes over time in response to exogenous events. After all, public policy is the business of understanding, dealing with, and even changing the world outside government, so part of governing is to keep up with societal or environmental change.

One of the key changes to the context in which policy-making takes place in the last decades has been the widespread use of digital technology by both society and government, particularly since the use of the internet and social media became widespread. These are the first digital technologies that have become widely domesticated into everyday life, bringing societal innovation, and transforming the way that ordinary citizens work, shop, socialize, organize, entertain, inform and educate themselves, and communicate with each other. Such technologies and applications are also heavily implicated in the rise in societal mobilization, demonstration, and protest which caused some authoritarian regimes to collapse—for example, in the Arab Spring of 2011—and have challenged democratic states across the world, particularly since the financial crash of 2008 (Margetts et al. 2015). As a result, the ways in which government can—or cannot—influence the outside world through policy-making is in a period of flux. Governments have long used such technologies; they led the development of large-scale information systems for administrative operations from the 1960s onward, and since that time complex information systems have become integral to organizations of all kinds, including government, offering new possibilities for policy innovation, alternative organizational forms, and ways of interacting with citizens (Margetts 1999; Dunleavy et al. 2006). But with the advent of the internet, governments have tended to lag.
behind citizens in capitalizing upon these possibilities, so these are the first digital technologies which citizens have used earlier and to a greater extent than governments, and we are only at the beginning of being able to understand their effect on policy-making.

Theoretically, any of the "tools" approaches discussed above could help to explore what difference this widespread use of digital technology makes to the array of policy instruments, and hence to policy-making. They tend not to be used to do that, mainly because people who research public policy and administration—the "tools" scholars—and the "internet" scholars, looking at how digital technologies shape societal change—have tended to live in different worlds (Hood and Margetts 2007). But any approach aimed at making sense of contemporary policy-making and aiding policymakers in a rapidly changing world needs to take account of shifts brought about by technological change, both in terms of the challenges to governance posed by a digitally enabled society, and the new opportunities for government to use digital technologies, to increase efficiency for example, or to interact with citizens in innovative ways.

For any of the institutions-as-tools approaches, the emphasis will be on the changing set of institutional and organizational arrangements available to government in the era of "digital era governance" (Dunleavy et al. 2006; Margetts and Dunleavy 2013). Digital technology has long paved the way for forms of privatization and outsourcing to global corporations that were not available in the pre-digital age (Margetts 1999; Dunleavy et al. 2006). Much has been written about the way such developments reshape organizations in a geographical sense, for instance, in having "back office" functions once co-located with strategy units or front-line delivery now conducted in different regions, countries, or even continents, and by workers in their own homes. And digital technology makes new forms of organization possible by dramatic reduction of transaction costs for certain kinds of activity, facilitating the rise of digital labor and micro-labor markets (Lehdonvirta and Castronova 2014) and the opening up of new markets for public services and utilities. For instance, electric power is a good that cannot readily be stored once it has been generated, meaning that a spot market was not really practicable (and indeed would have been unimaginable) in the early twentieth century when electric power generation developed, and in effect the only organizational alternatives were direct state organization or regulated private monopoly. But by the late twentieth century, a virtual spot market in electric power became possible through digital technology, creating the possibility of a different
(commercial market) kind of provider structure (see Foster 1992, p. 73) as did new possibilities for users of utilities such as gas and telephones to choose among alternative providers in a way that would have been either impossible or very costly in the pre-digital age (Hood and Margetts 2007). Since then, virtual organizations with no physical presence visible to customers have proliferated all over the world, and although they are mostly outside government, they do offer new types of contract arrangements and ways of interacting with citizens that would have been unimaginable 20 years earlier.

Digital technology also raises important questions for the politics-of-instruments approach to the tools of government, although Linders and Peters (1992) did not discuss it. We would expect that this approach would concentrate on the use of digital technology by government, rather than by citizens—as it is here that policy-makers are presented with choices. On the face of it, technology seems to be a dramatic case of what they call "instrumentalism." Digital technology tends to be treated by, or presented to, governments as a panacea for many of the problems associated with traditional bureaucratic functioning—such as high cost, inflexibility, overload, difficulties in tracking down elusive lawbreakers—and thus to figure largely in upbeat trade-off-free political visions of new ways to deliver public services and to "do more for less," at least since the 1993 US National Performance Review presented information-age technology as a pathway to several kinds of bureaucratic salvation and even more since the rise in internet use. But interests may be equally important in driving this policy "instrumentalism," and research has shown how the outsourcing of government's own information systems and digital technology has spawned large markets of global computer services providers to government, which in some countries (such as the UK) are highly concentrated and oligopolistic (Margetts 1999; Dunleavy et al. 2006). The obvious historical parallel is with the way that nineteenth-century Europe saw many kinds of arms manufacture move from a domain dominated by state arsenals to one dominated by private arms companies, albeit closely linked with governments. If the nineteenth and early twentieth centuries saw the rise of the military-industrial complex, the late twentieth century saw the rise of an information-industrial complex with large corporate interests treating digital-age technology as a universal solution looking for problems to solve—though of course the solution often turned into the problem, as the endless roll call of government IT fiascos and troubled contract relationships shows (Margetts 1999; Hood and Margetts 2007; Dunleavy
et al. 2006, 2008). In general, however, aside from this drive toward ‘one-size-fits-all’ policy change (as in the UK’s Digital by Default initiative of the 2010 Coalition Administration), the politics-of-instruments approach cannot do much to distinguish different effects of digital era change on policy because it is so often presented in a politics-free way, making it attractive to all the possible variants of policy-makers. Furthermore, any approach which conceptualizes tools as being internal to government will be challenged when it comes to changes taking place in society at large, such as the rise in mobilization and collective action fuelled by new opportunities for communication and co-ordination that digital technologies facilitate.

At the other end of the spectrum, generic ‘institution-free’ approaches to analysing the tools of government—the classification of generic forms of action for the purpose of exploring alternatives and combinations—are the most well suited to understanding digital era change in society, and the challenges it presents to government. For these approaches, the question posed by the digital age is how far and in what ways the new technology has changed each of the tools in the box. For this generic approach, at some level the basic resources available to government do not change with changes in technology, so the repertoire of tools is unchanged. Carrots, sermons, and sticks or nodality-authority-treasure-organization remain the fundamentals in a digital age as in any other. In that sense, digital technology does not bring fundamentally new instruments to government of the same order as nodality, authority, treasure, and organization, any more than the railway age of the nineteenth century brought fundamentally new principles to the law (see Holmes 1920, p. 196).

However, digital technologies do make a difference in how policymakers can wield these tools. That is, such technologies may ‘sharpen’ the tools, making them easier to use or more effective when they are used, or blunt them, by making them more difficult to wield in a technologically savvy society. There are some generalized effects on all tools: Hood and Margetts (2007) observed a general ‘narrow-casting’ effect, whereby all four tools could be more easily targeted at groups of people, whereas blanket coverage or individualized interactions do not necessarily become easier. The UK Conservative Party’s use of targeted advertising on social media platforms during the 2015 election campaign, geared at people having certain types of conversations or buying certain products, is a good example of this—they were not actually a government at the time, but a similar strategy might be applied to making people aware of public health...
risks, or changes to benefits, or new tax laws. In the most advanced form, this narrow-casting narrows down to a personalization of treatment, as in moves toward personalized healthcare based on people’s genetic identifiers (Dudley et al. 2014), or other personal characteristics. Indeed, the availability of large-scale data and algorithmic development should, in theory, allow for a personalization of welfare—although in the UK, the move has been the other way, with the introduction of a benefits cap, a universal benefit, and a bedroom tax, in benefits changes underway from 2013.

The most interesting implications, however, may come from examinations of the individual tools. For organizational capacity, for example, it might be argued that there is in general a move away from the use of government’s stock of people, buildings, and equipment and toward a more informational (or nodal) approach, where web-based platforms can harness citizens in a form of isocratic administration (Margetts and Dunleavy 2013), where they manage their own affairs in the same way that internet banking has allowed people to take over some responsibilities (and some of the administrative effort) from their bank, reducing the need for organizational capacity. The advent of mobile healthcare, whereby patients monitor chronic conditions in their own homes and communicate back to health professionals may also reduce the need for organizational capacity (in terms of nurses measuring blood pressure, for example).

Conversely, the tool of authority can become more difficult to wield in a society where the internet, social media, and mobile communications are ubiquitous. Governments can struggle to keep up with a tech-savvy citizenry, particularly when citizenries rise up, riot, rebel, or revolt, as in mass protests against the financial crisis and austerity from 2008 and the revolutions of the Arab Spring from 2011, and indeed to some extent in many countries since then. And those authoritarian states that have not fallen into disarray must wield an increasingly sophisticated technological apparatus to censor, block, or otherwise restrict citizens’ use of the internet to maintain control (e.g., repressive regimes, as in China or Saudi Arabia, where the government’s own Internet Services Unit [ISU] directly operates the high-speed data links that connect the country to the international internet). The ISU administrative web site explains the implementation of the government’s content filtering regime, presents the reasoning behind it, and lets Saudi internet users request that a particular site or URL be blocked or unblocked. Citing the Qur’an as a basis, the government describes its task with filtering as “preserving” our Islamic values, filtering the Internet content to prevent the materials that contradict
with our beliefs or may influence our culture.” In China, research has shown that censoring efforts are focused on any conversation that might engender, reflect, or lead to collective action, rather than discussion of controversial issues per se (King et al. 2013; Wright 2014).

Most significantly, widespread use of the internet and social media can challenge government nodality. In the original articulation of Hood’s 1983 tools approach, nodality was defined as something that government possesses “by virtue of being government” (Hood 1983), but in the twenty-first century nodality—being embedded in social and information networks—is bestowed on any user of the internet as a “peer-to-peer” network, providing ordinary citizens with unprecedented capacity to receive, share, and disseminate information across their own large-scale networks. This universalization of nodality is one of the most exciting characteristics of the domestication of the internet into everyday life, but it poses a particular challenge to government. To lose nodality, is for government to cede power and even the very idea of what it means to be a state. Such a point was illustrated tragically by the events on the ill-fated United Airlines flight 93 during the events of the 9/11 al-Qaeda attacks, where citizens used a range of mobile communications to acquire nodality far more rapidly and efficiently than any state organization, organizing a resistance against the hijackers, although their attempt to save the lives of travelers on UA93 from New Jersey to San Francisco was ultimately unsuccessful (Dunleavy and Marsettta 2015). At every point, the organized passengers were far more nodal than state entities, receiving far better information from other citizens (relatives and friends) than from US federal authorities, who were always several steps behind in understanding what was going on, exhibited massive gaps in their information and decision capabilities, and had no means of communicating with anyone outside of the cockpit in the hijacked aircraft—for example, tragically, no staff or passengers or the relatives of passengers had any emergency number that could put them in direct touch with the federal aviation administration, national security administration, or law-and-order personnel.

The way that digital technologies, or rather society’s relationship with these technologies, impact on each of the tools varies greatly according to context, so investigating the relationship between digital technologies and the tools is also useful at a sectoral level. For example, as noted above organizational capacity may be reduced in healthcare, but may have to increase in other contexts, such as in the “army” of cybersecurity experts required to deal with modern day criminal activity and terrorist threats. Likewise,
nodality is easier to secure in some contexts—such as indeed, healthcare, where people are strongly incentivized to communicate directly and cooperate with healthcare organizations or a benefits agency. In others, such as taxation or security, where holding of nodality is vitally important, it can be more difficult. And both governments and citizens face threats to nodality from other quarters, for example, where so-called "phishing" sites trick citizens into paying for services that the government is offering for free, such as obtaining a health insurance card or an application for citizenship.

So how useful are "mixed"-tools approaches at incorporating the effects of digital change? In the most complex and differentiated (Salamon 2002; Howlett 2011) it is less viable to consider changing patterns within the schema in any meaningful way, although Howlett (2009b) does discuss "c-communications" in his discussion of government communication as a policy tool, loosely based on the nodality concept. But John's (2011) schema has been developed to tackle the question directly, arguing that "All tools are Informational now" (2013) and that the key to all interventions is the provision of information to change behavior. John (2013) argues that "there is a distinction between the provision of a tool of government, such as a new law or new tax, and how the citizen or organization receives information about it," and suggests that behavioral interventions based on experimental "nudge" approaches made popular by the book of the same name (Thaler and Sunstein 2008) and developed in particular by the Behavioural Insights Team in the UK government are the best way to introduce and develop policies, taking some of the load from "expenditure" of the other tools. In a way, this could be construed as a recognition of the importance of nodality (in Hood's terms) and an appreciation of choice architecture (missing from generic approaches, as noted above) as a tool, but in another sense it misses the concept of centrality and capability embodied in the term. After all, without nodality, and the capacity to disseminate information across populations, it is not possible to nudge. However, in the end, this mixed approach and the generic approach are not so very far apart. In the NATO schema, most policies are in practice a mix of the available tools, and the questions are of the emphasis placed on nodality within that mix, rather than completely replacing it with (say) authority, which is rarely viable. So the idea that all tools rely on government's ability to communicate them to citizens—and persuade them to comply—is commensurate with the argument that "all tools are informational now," while explicit recognition of nodality's importance might enhance the potential for "recalibrating the instruments of state" (John 2013).
CONCLUSION

The tools approach is an attractive way to understand policy-making, because it seems to offer the potential of breaking down the complex concept of policy into constituent components and thereby provide a taxonomy for public policies. The attraction of the approach has long appealed to writers on public policy, and has received particular attention in the last three decades, with a number of variants being developed on the basic tools concept. We have considered the various approaches here in two dimensions: First, we consider the extent to which they deluge inside government and consider institutions as tools, or treat government as a black box and consider the various resources that government can use to act upon society at large. The second dimension is the extent to which they provide a parsimonious selection of tools or types of tool, with the attraction of simplicity, or whether they provide a “thick” array of types and subtypes, with the advantage of comprehensiveness.

Along the first dimension, Linder and Peters (1989) and Salamon (2002) consider, respectively, the different political choices made in terms of policy instruments and the alternative administrative possibilities for government as tools; while at the other end, Elmore (1987), Hood (1983), and Hood and Margetts (2007) identify generic tools which may be implemented by any organizational form. A number of mixed approaches employ both generic tools and institutional forms (John 2011) or produce a “taxonomy of taxonomies” that endeavor to capture the advantages of either end of the spectrum (Howlett 2005). The parsimonious approach is embodied in the Elmore approach and to some extent captured by Hood’s Tools of Government, while by offering a much more extensive and subdivided taxonomy, the mixed approaches endeavor to make up for in terms of comprehensiveness what they lose in simplicity.

All tools-based approaches, along with other approaches that provide a taxonomy, face the challenge of what they may be used for. The approaches covered here are definitely well used. The generic tools approach conceived of by Hood (1983) and developed by Hood and Margetts (2007) has 1228 citations in total, while Howlett’s work on instruments probably reaches the same total when all the articles and books with the word instruments in the title are added together (Howlett 1991, 2000, 2004, 2005, 2009a, b). Salamon (2002) has over 1300 citations, while Peters and Lindner’s work on instruments probably reaches around 800 (it is early to compare fairly John’s [2011] more recent approach). So they are
definitely being used by scholars of public policy, but to what extent may they be used for the task of policy evaluation, or at least for comparison over time, across countries, levels of government, or at department or agency level, is less clear. In the end, to be able to really make these comparisons or evaluations with any kind of clarity it is essential to have a clear way to lay out the tools in the box, in categories (such as screwdrivers, hammers, pliers, and so on, where there is some rough difference between functionality and mechanism, albeit with some overlaps). It has been argued that by treating government as a “black box” and focusing on how it interacts with society, a generic tools approach can provide this simple and elegant way to think about public policy. It does so, however, through a radical simplification of core concepts of public policy, ignoring the internal organization of government and by implication the entire field of public administration. But it does lend itself to an understanding of what works where, to comparison across countries and over time; and in particular, to an understanding of how policy-making is changing in the rapidly changing technological—and social—context of the digital era.

REFERENCES


