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Co-Production and Co-Creation in Public Services: Resolving Confusion and Contradictions

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ABSTRACT

Publications continue to affirm that there are no agreed definitions or conceptual frameworks for coproduction and co-creation in relation to public services. Consequently, across and within academic and grey literature lie many examples of confusion and contradictions. These hinder insightful discussion and explanatory research. This paper argues that underlying this muddle is a failure to be clear about the nature and structure of public services. The commonly used "service to customers" model from commerce is a misleading oversimplification. To re-frame the discussions on co-creation and co-production, a model is developed of a generic multi-actor, multi-instrument system that helps to identify the real issues associated with governmental and non-governmental actors combining to achieve a social outcome. The system can be assessed in terms of relationships (e.g. degrees of openness and collaboration) and the role of technology (e-government). The essential role of the government is determined to be policy and system design.

KEYWORDS

Co-Creation, Co-Production, E-Government, Governance, Government, Instruments, Policy, Public Services, System

INTRODUCTION

In 19th century London, fire engines needed 22 people to manually pump the water for the hoses. Rather than take a bus-load of pumpers with them, the firemen used to recruit them from the crowd of onlookers at the scene, literally crowdsourcing. Pumpers were paid one shilling for the first hour and sixpence (half a shilling) for subsequent hours. Was this co-production, or co-creation, or contracting-out, or outsourcing, or citizen participation, or volunteering? Was this a public service, an open government service, or public sector innovation? Was the fire engine owned and run by the city government or a private company under a private finance initiative? Did any of this matter?

Jo and Nabatchi (2016) sum up the published work on co-production in public services from the study group of the International Institute of Administrative Sciences on the subject, concluding that there is a need for a clear definition, and frameworks and typologies, to make sense of the concept of co-production in public services as a foundation for explanatory research. They argue that much work has focused on individual cases, like the one above, that do not provide a universally consistent definition and model.

Voorberg et al. (2015) carried out an extensive literature review on "public co-creation and co-production with citizens". In half of the cases reviewed, citizens took the role of *co-implementer*, in contrast to being a co-designer or initiator of a venture. However, they found that co-creation and

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co-production frequently were given similar definitions, and challenged the lack of conceptual clarity arising from this. Similar points continue to be made (Meijer, 2016; Osborne, Radnor, & Strokosch, 2016).

Consequently, this paper aims to resolve the uncertainty around co-production and co-creation in relation to public services. To do so it will combine concepts from the political sciences concerning public policy design and implementation, and from system and network modelling. The core argument is that a failure to clearly articulate the nature of "public services" underlies the many confusions and contradictions in the discussion of co-production and co-creation that appear not only in academic work but in "grey" publications by governments, think tanks and international bodies. Where specific confusions and contradictions are discussed, citations will not generally be given: the issues are pervasive, and singling out individual authors would be unfair. This paper will use hyphenated versions of the words co-production etc., though they appear commonly unhyphenated in literature.

The Problem

Elinor Ostrom initially defined co-production simply as the process by which inputs used to produce a good or service are contributed by individuals who are not 'in' the same organization (Ostrom, 1996, cited in Bovaird, 2007; Boyle & Harris, 2009; Brandsen & Honingh, 2016). Later, when she and others applied it to "co-production in public services" they created a great variety of definitions and terms (Brandsen & Honingh, 2016) and indeed her original formulation has been challenged as appearing to embrace too much (Joshi & Moore, 2004). Bovaird & Loeffler (2012) provide a brief history, and illustrate how many more terms beginning "co-" have entered the discussion (notably co-creation and co-design among many), with interchangeable usage or various attempts at differentiations (Voorberg et al., 2015).

Early in this history, the key actor in co-production was identified as the individual citizen, variously a "user", "customer", "client" or "consumer" of a public service. Studies thus became focussed on the role of this individual citizen in contrast to other people in non-state organisations such as charities (Voorberg et al., 2015). In contrast, the actors within the public service became characterised as "professionals", very often in the context of health or care related examples, but by implication extending to officials within a "traditional, bureaucratic" public service — precise definitions are rare in the literature. Boyle & Harris (2009) refer to real co-production as the intersection of planning and delivery by professionals and others (users/communities), but say that there is no agreed definition.

Similarly:

Co-production means delivering public services in an equal and reciprocal relationship between professionals, people using services, their families and their neighbours. Where activities are co-produced in this way, both services and neighbourhoods become far more effective agents of change. (New Economics Foundation - nef, 2012, p. 9)

Within the literature, some authors position co-production in public services as part of a new regime for public policy implementation, sometimes hypothesised to be a New Public Governance (Osborne, 2006, 2010), that follows Old Public Administration (OPA, essentially Weberian bureaucracy) and the New Public Management movement (NPM, Hood, 1991; Hood & Dixon, 2015) that embraced the application of private sector models — markets, management and measurement (Ferlie, Ashburner, Fitzgerald, & Pettigrew, 1996) — to the public sector. In contradiction, others assert that it has always existed, regardless of these, particularly as nations develop (Joshi & Moore, 2004). Developments from marketing theory, such as service systems theory and Service-Dominant Logic, are mapped by some authors on to public services (Akesson & Edvardsson, 2008; Maglio, et al., 2009; Osborne, et al., 2014; Vargo, et al., 2008) to attempt to model co-creation of value — but views differ on whether or not this leads to a different paradigm to NPM.

A common omission is a clear definition of "public service", alongside attempts to reconcile taxes and regulations as being the same things as "services" like a health service. Debates take place on whether to use any or all of user, citizen, customer, consumer or client for a person experiencing a service (or regulation, tax, etc.). Indeed, the language of commerce dominates the literature in the field, unsurprisingly as the origins of co-production lie in the business world and NPM has made the terminology commonplace in the public sector. The most common words, alongside "customer", are "deliver", "provide", and "produce".

This has created an implicit core model of a service-providing organisation interacting with a customer, on to which the many attempts to diagnose and explain co-production and co-creation have been overlaid. This is of course entirely reasonable in a commercial context, but as discussed has presented numerous challenges when attempted in a public sector context. Not least of these challenges is that, in public administration, the purpose of an activity may not relate directly to a human person: it may concern the environment, infrastructure, even animals, unlike in a commercial context and service science where it primarily is about the customer. Contortions thus appear where cases such as recycling household waste are sought to be illustrations of co-production in an environmental setting — despite this being a reasonable aim in itself as the principle of co-production seems applicable here.

Numerous papers switch insouciantly in mid-argument from talking about an individual's experience "at the point of delivery of a service" to a broad outcome from multiple influences and actors interacting, such as environmental impact. Statements then arise that would appear absurd to a layman, such as that locking your house when you go out is an act of co-producing a public service (as opposed to just looking after your possessions or complying with your insurance policy). Authors consequently call on the notion of "the public" as a whole being the beneficiary, or customer, of a "service", bringing further levels of terminological confusion as discussed below. Avoidable linguistic muddle is also found in the literature, such as interchanging legitimate, accountable, responsible, and obligated — such words are unfortunately sometimes used in surveys as well, where respondents may not fully grasp the essential distinctions.

This introduces the thesis of this paper, that the failure to reach clarity on the nature of coproduction in the public realm results from a pervasive confusion between a public sector function and a social or civic outcome. The first is a specific activity exercised by a governmental organisation, such as a state-run hospital or a council's rubbish collection department, arising from a political choice to do that as a state-funded activity. The second is the result of the work of a system of actors that has evolved or been constructed to deal with a social issue. That system may include organisations run by local, regional or national governments as well as non-governmental actors such as charities, individual citizens and commercial or social enterprises. The system will also be subject to other governmental and non-governmental influences, such as regulations, taxes, information campaigns, marketing, insurance schemes, social pressures, and many others. Such systems have always existed — rediscovering and relabelling them to support arguments for a "new" model of governance is largely a response to inaccurate models and assumptions developed in literature over recent decades.

Healthcare is an example. The desired social outcome is a healthy population (though that in itself needs refinement to more specific goals). The achievement of that will in many places and eras involve an interconnected system of government-funded bodies alongside both regulated and non-regulated non-governmental actors —individuals and institutions — plus norms of expected behaviour (e.g. from sick people and their families). In other words, it can be the outcome arising from a network of state funds, facilities & employees; private providers and insurers; not-for-profit actors like charities and volunteers; and family, friends and patients. The system is likely to be underpinned by an assortment of funding, payments and regulations, and overlaid by a variety of governance and accountability structures.

In an attempt to resolve the inconsistencies and contradictions caused by this confusion between social outcome and governmental action, there are many references in literature to "traditional state roles", or sometimes, implying false equivalence, "traditional government responsibilities". A

government's responsibility is to ensure a social outcome (determined according to its current political mandate) is achieved, by policy design and implementation, which may or may not involve a role for a distinct state-funded body. There is no evidence that there is any such "tradition" in the way that that is realised when looking across time, policy domains and geography. It seems to be code for a time when the state did absolutely everything, which is almost never the case (except possibly in some domains in 20th century communist regimes). However, it leads to statements such as "parents can co-produce the education of their children" (in a posited post-traditional new governance model of society), or "without the involvement of the patient, a doctor cannot provide the service". Further, the intense debate about whether co-production adds to or substitutes for "public services" stems from this confusion.

In conclusion, the underlying assumptions behind the majority of discussions of co-production and co-creation in the context of public services have been based on the simple customer-service provider relationship taken from the commercial realm. The construct has essentially been of something being done for someone by an organisation that is part of the government. The reality is vastly different and more complicated, and this construct is flawed in every aspect.

What are "Public Services"?

The term "public services" appears to lie at the heart of much confusion, stemming from this image of a part of a government being a service-providing entity. To make sense out of this however, the term "government" first needs unpacking. Focussing for the moment on western democracies, their governance is founded on the principles of the Rule of Law (Tamanaha, 2004) and (to a greater or lesser extent) the Separation of Powers (Benwell & Gay, 2011). This means that there are distinct components of "government" with separate roles and accountabilities.

The Rule of Law says that the law is supreme (Hood, 1991): everyone, including government ministers and public officials, is subject to the law as ultimately interpreted by judges in a Court. The law is made by a Legislature, or Parliament, representing the people. An independent police force and independent judiciary enforce the law. An Executive branch of government (generally comprising politicians and called "the Government") proposes laws to the legislature in order to implement its politically-determined policies. Depending on the constitution of the country concerned, a monarch or president may also have a role. For a more nuanced analysis than this summary of a complex topic see Benwell & Gay (2011), particularly in regard to the UK, Europe and the USA.

The means of implementing policies will be a combination of selected policy instruments (Howlett, 2004), crafted by the executive for presentation to the legislature for debate and inclusion in administrative law. To illustrate, instruments for giving money, through benefits, grants, subsidies or loans, utilise the state's ability to redistribute money within the economy. That money will be raised through another class of instruments that includes taxes, duties, fees, charges, and borrowing. A government can seek to influence the behaviour of individuals by non-coercive means such as running information campaigns (for example on health or the environment), or coercive means by criminalising certain activity (such as using drugs) or requiring specific permission to be obtained before doing something (through licencing and issuing permits). All such instruments require an organisation to administer (and/or enforce) them as determined in the legislation.

In other circumstances, a government can use its resources to create a human organisation to intervene in society, the economy or the environment (Hood & Margetts, 2007). A state organisation working directly with any of these, like a publicly-funded hospital, is an instrument for achieving policy goals (in this example, healthcare — but this is a political choice: a state could have an insurance-based private-provider system as an alternative instrument, such as Obamacare). Physical state-funded entities form another type of instrument, commonly transport infrastructure, public buildings, and protected lands — these also will have an organisation charged with management, maintenance, oversight or regulation of use of the asset.

Consequently, it is these various policy instruments, underpinned by legislation, that provide the interfaces through which governments interact with people, businesses and the environment to achieve

their policy goals. The majority of the public sector entities visible to citizens can be classified as either being instruments in themselves (either human organisations or physical objects), or organisations administering instruments (Waller & Weerakkody, 2016). These entities comprise the Administration and are generally non-political organisations charged with carrying out the law, under the direction of the responsible (political) minister or official in the Executive, who in turn is typically accountable to the Legislature. Any action by any of these that someone considers to be outside their legal remit can be referred to the Court for judgement. In cases where someone considers that the administrative processes have been done incorrectly (maladministration), they may in some cases be able to obtain redress by referring the matter to an Ombudsman, an official appointed to deal with such complaints.

It is also possible (and a feature of NPM) for the administration of instruments to be contracted out to private businesses, or commissioned from non-governmental organisations (NGOs) such as charities. However, through the contracts, the accountability chain remains. The overall picture will therefore be complicated and unique in any national context and policy domain.

In any democratic country, governments of this nature can occur at multiple tiers, with variations in form, but the fundamental principles remain sacrosanct — and indeed are part of the Treaties of the European Union. Outside western democracies, most or all of these components exist, but can be arranged in very different power and accountability relationships, for example where an individual (perhaps a monarch or a president) or political party takes the Executive function at the top of a power hierarchy, overseeing the Legislature, Judiciary and Administration. In such a case, neither the Rule of Law nor Separation of Powers are likely to apply.

We have now established that the interface to governments for citizens, businesses or even the environment is through organisations that administer legislatively-defined instruments. This sets the context for understanding "public services". Waller & Weerakkody (2016) explain that a full English dictionary gives multiple meanings of both the words "public" and "service".

"Public" as an adjective can most relevantly mean either "of, relating to, paid for by, or working for a government e.g. she was elected to a public office; public finances, public housing", or "able to be used by anyone — accessible to people in general rather than restricted or private e.g. a public telephone or toilet, they agreed on a coffee shop as a safe public place to meet". The latter does not imply the former, nor vice versa.

"Service" suffers from an even wider range of possible meanings (36 in the Oxford English Dictionary). It commonly is taken to mean an activity that provides benefit to someone. This is certainly its meaning in business and marketing, often as a counterpoint to "product" (Maglio et al., 2009). However, in the context of government, policy instruments and public administration, the term means a state-funded organisation. That is evident in organisations' names such as Prison Service, Probation Service, Coastguard Service, Disclosure and Barring Service, Civil Service, Fire Service, and so on.

Consequently, "public service" can mean something like city transportation, even if provided by a private company, or an organisation that is an arm of government (a part of the Public Sector). McGregor (1982) asserts that a public service is an entity comprising people (but he is somewhat ambiguous on whether it is composed only of government employees):

...an institution- comprised of persons whose lives have been spent attempting to deliver on the promises of government. The institution of public service is that part of a community which concerns itself with the achievement of public objectives and the implementation of public policy. (McGregor, 1982, p. 304)

Waller and Weerakkody (2016) review how the interchangeable use of these distinct meanings has systematically undermined conceptual clarity in the field of e-government, and the same applies to co-production and co-creation. A significant aspect of this is the obscuration by terminology of the fact that public administrative organisations:

... exist necessarily and sufficiently either to be or to manage instruments arising from the policy design process. The scope for change — e.g. process or organisational transformation — within or between them is constrained by the political, design and legislative process that constituted them, which, depending on the legal and public sector norms in the relevant national context, may leave managers within them little discretion for structural change, process change or innovation. Indeed there is potentially a conflict between managerial empowerment and the principles of objectivity in administration and legality (e.g. through creating a possibility for bias or corruption). (Waller & Weerakkody, 2016, p. 10)

It is now apparent that such bodies are highly constrained in what they are legally able to do, and how they might do it. This, and the general confusion, may help to explain why the literature describes many barriers to co-production "of", "in" or "with" public services, such as various aspects of "resistance to change".

The pervasive phrase "co-production of/in public services" is therefore in need of clarification. That can be done by taking "public service" to mean, as above, a state-organisation created through legislation to achieve a policy goal. In that case, external actors cannot join with others to "produce" it or be "in" it. However, they may work with it, or together with government representatives to design it. Individuals may claim statutory entitlements from it, or be held subject to legal obligations by it.

Therefore, this paper advocates using the term "public service" only to mean a government-funded organisation, employing public servants, as opposed to a more diverse conglomerate, an activity or an outcome. There is then no longer a need to introduce "professionals", "traditional government services", "customers" and other artefacts in the literature in order to understand and describe what is going on.

A System Model

The analysis above indicates the need to focus on the concept of public policy and how that is designed and implemented, as the result of that is what people actually see and experience. "Public policies are the result of efforts made by governments to alter aspects of their own or social behavior in order to carry out some end or purpose and are comprised of (typically complex) arrangements of policy goals and means" (Howlett, 2014, p. 188). This paper now explores the nature of these arrangements in terms of institutions, people and policy instruments, by modelling them as systems, to find explanations of the phenomena termed "co-production" and "co-creation".

Adopting a system perspective is not new in the field. In her work on systems applied to social and environmental policy challenges, Meadows (2008, p.11) defines a system as "an interconnected set of elements that is coherently organised in a way that achieves something". Ostrom herself observed that combinations of public and private sector organisations were commonplace (Ostrom, 1975, cited in Ersoy, 2016). Ng, Maull, & Yip (2009) suggest outcome-based contracts between actors as drivers for systems thinking by switching the focus from inputs to outcomes. Bovaird (2007) and Geyer & Rihani (2010) introduce to the field of public policy the idea of complex adaptive systems. Phang & Kankanhalli (2011), Radnor et al. (2014) and Osborne et al. (2016) discuss the applicability of service systems theory and a Public Service Design Logic. Klijn & Koppenjan (2012) consider applying network theory to "governance networks" of interconnecting actors.

As a term then, "system" is quite generic, but means essentially a bounded set of interacting, interdependent parts (Abercrombie, Harries, & Wharton, 2015). As the citations above indicate, the parts might be different types of entities. Most people probably think immediately of mechanical or electrical systems made up of physical components, or computer systems comprising software programs. Systems can also be made up of people and institutions, as for example in public governance (a system that makes decisions about governing a community¹). Studying systems comprising people and institutions helps to understand their motivations and constraints, and relationships between the actors — which can be quite fluid and hard to define precisely. Thirdly, there are systems of policy-

related factors that influence each other such as vehicle emissions and air pollution levels, and these are the subject of "soft systems" studies and "systems thinking". Systems consisting of factors of this last type are issue-specific and ideal for working out what is happening in a particular problem area, or testing possible effects of interventions or changes such as new policies. The last two types of system model are complementary and both can be deployed when looking at a specific real-life situation.

In this paper, given its topic, the focus is on systems of people, institutions and policy instruments, and the relationships between them. Examples and illustrations of such systems appear in papers, notably a picture of the complicated system for dealing with childhood autism in Italy (Sicilia et al., 2016) where 12 public bodies interconnect across three tiers of government. A study conducted for the European Commission (Blakemore & Wilson, 2009) explicitly sought out and modelled a number of such systems in order to investigate the sustainability of their operating and financial models. Lubell (2015) posits some promising theoretical perspectives for analysing socio-ecological systems alongside examples of such complex institutional systems.

Harrison, Pardo, and Cook (2012) arrived at similar place ("strategic ecosystems thinking") when discussing open government:

Ecosystems are naturally occurring phenomena and the metaphor may be applied to any existing socio-technical domain, they can also be seeded, modelled, developed, managed, that is, intentionally cultivated for the purpose of achieving a managerial and policy vision. (Harrison, Pardo, & Cook, 2012, p. 907)

Their ensuing analysis focuses on specific issues of open government, transparency, and open data (a policy instrument in the terms above), whereas this paper addresses the general phenomenon.

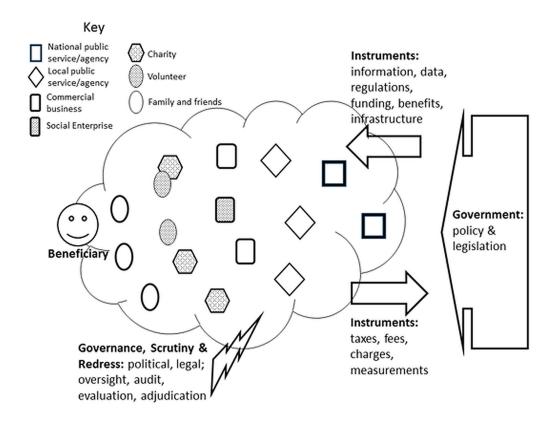
Randle and Anderson (2017) set this phenomenon in a local context, exploring how three groups — statutory bodies (equivalent to public services as defined in this paper), non-statutory bodies, and citizens and communities — differ across nine dimensions ("building blocks") yet have the potential to collaborate to improve social outcomes.

The UK's National Health Service (NHS) provides an example of how diverse actors combine with other policy instruments to create a healthcare system (or ecosystem, if one prefers). The NHS is the state body that administers, as set out in law, the universal entitlement of UK citizens and noncitizens to state-funded medical treatment. It owns and runs hospitals, but not doctors' surgeries. Many healthcare professionals (general practitioners, surgeons, dentists, etc.) are not employed by it, but work for it through nationally-set contracts. A local council may need to provide care for a patient leaving hospital. Charities provide support to patients and their families in many ways from transport to counselling. Private companies have roles from hospital cleaning and laundry to pharmacies issuing prescribed medicines and providing treatment advice. Charges apply sometimes, for dentistry or prescriptions for medicines, and for tourists' operations. Numerous other instruments are in the system: regulations apply ranging from the use and sale of medicines and drugs (including alcohol); taxes apply to unhealthy consumables like tobacco; there are regular health awareness campaigns; and medical research is funded. Less direct instruments contribute too, such as the requirement for vehicle passengers to wear seatbelts, and local councils fencing off dangerous drops or waterways.

A general picture of such a system might look like Figure 1. Not all actors or instruments will be present in every system, and numbers will vary. The forms that relationships between the actors, and their governance and accountability, might take are discussed in the following section and Table 1, but not shown here for clarity. As a note in passing for those interested, reflecting the point above, one of the input instruments might be open data.

A system of this form concerns the day-to-day operation of the result of policy design and implementation. Two features are worth noting. First, relevant policy decisions may be taken and legislated upon at different levels of government, for example city, state/regional, federal/national and supra-national, and the resulting instruments may therefore have a nested structure with some

Figure 1. A multi-actor multi-instrument system to achieve a social outcome



being dependent on others determined at a level above. Second, and related, the structures for making decisions about the system, the governance, are themselves systems that may involve some of those actors involved in these operational systems. This illustrates how most "service" based discussions of co-production are huge oversimplifications of reality.

The question also arises as to whether the beneficiary (the "user") is in the system. Many (see Millard, 2015, for a discussion) refer to drawing on the assets and capacity of the user as part of the means of achieving the outcome, especially in healthcare (referring to an actual or potential patient). In such a case one would say yes, the user is part of the system and include them inside the system boundary. Then, however, the supporting network may differ for each individual user, and we might say that the general system is instantiated in each case, or personalised, in a way that the public services cannot be as they must apply the rules equally to all. This addresses, with new nuances, another proposition in literature regarding the "personalisation of public services".

However, the intended outcome of the system may not be directed towards an individual human being. It might be the reduction of air pollution, or the preservation of an endangered species. Nevertheless, a similar mixed system of actors, including individual citizens, volunteers etc. as appropriate, and other instruments combine to achieve the outcome. The model therefore is more generally applicable than just to "co-production with the citizen."

The questions that arise from taking the system model perspective relate to how non-governmental actors are engaged in:

- Developing policy goals i.e. determining the problem and intended social outcome
- Choosing the policy design, i.e. what the system will look like to achieve the outcome
 instruments and roles of potential actors
- Implementing the policy design to build the system including legislating, developing processes, creating organisations, arranging financing, establishing relationships
- Operating the policy system to achieve the outcome
- Evaluating how well the system is working in relation to the intended outcome.

This prompts three important observations. First, the non-governmental actors involved may be a different set in each of these, and governmental institutions (the Executive, Legislature, Administration, Courts, and others like auditors) feature in different ways in each. Second, this is very similar to the classic "policy life cycle", much discussed in literature (Bobrow, 1970; Bridgman & Davis, 2003; Petersen, 2009). Howlett (2010) however provides a richer description than the life cycle model of the processes involved and their relationships, giving greater attention to the key role of policy instruments. Third, it is evident how the terms "co-production", "co-design", or "co-creation" have more or less randomly been applied to different aspects of the commonplace phenomenon now described, confounding rigorous analysis.

A similar set of these five questions arises concerning the role of ICT in each of the stages. That leads into the much-discussed fields of e-government, e-participation, the role of social media, the role of data, and so on, and much has been written about the role of technology and data in co-production including on the subject of "open government". In a system model, ICT may facilitate the working of the system or individual actors, and its potential to do so is a consideration in the system's design or evolution (Waller & Weerakkody, 2016). Further, the process of designing such a system may be facilitated by ICT, as many have written in papers on ICT-enabled co-design or co-creation, including engagement through e-participation.

Regarding the process of creating a system, it is possible to ask "what will make it work?" and "what can go wrong?" — Millard (2015) identifies numerous challenges and requirements. Putting together the three lines of enquiry now identified (policy formulation, design and implementation; the roles of non-governmental actors; the contribution of ICT and data) gives a holistic model with which to work. The majority of studies omits one or more of these three, most commonly the political, legislative and administrative dimension that underpins anything involving the public sector (Waller & Weerakkody, 2016). It can be noted in passing that literature in the overlapping field of public sector innovation suffers similar problems.

Drivers, Relationships, and Accountability

The next step is to look more closely at the actors and their attributes and relationships within the system. Blakemore & Wilson (2009) studied many cases where intermediaries provided essential direct links between disadvantaged people and public services and other support organisations, and concluded that in order for the system to be sustainable, stable relationships were necessary: "The intermediaries and their networks need to work within a coherent governance framework, with clear working arrangements, and where all the actors involved are working towards agreed objectives" (Blakemore & Wilson, 2009, p. 5). As Figure 1 implies, achieving this may not be straightforward and will require explicit attention in any system design, and an understanding of the potentially conflicting objectives and motivations of actors in the system (Randle & Anderson, 2017).

Table 1 attempts to summarise some of these key features. While not claiming to be complete, it shows how in reality a system can be complicated with challenges in reconciling objectives and accountabilities and formalising relationships. For example, the UK policy, called The Work Programme, to help unemployed people back into work through payment by results to private companies and NGOs experienced such challenges (National Audit Office, 2014). In discussing the legal position of volunteers in a public administrative function, Tuurnas, Stenvall, & Rannisto (2016) observe that accountability appears to be a complex issue.

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The entries in Table 1 represent common possibilities and may vary from country to country (particularly in relation to charities and the legal forms of some non-governmental bodies) so it should be taken as indicative rather than definitive. The political accountability of public bodies may be particularly complicated, with some functions coming under different levels of government in different places, and those may be under the control of opposing political parties. The UK illustrates a further level of complication, as at local level the geographical boundaries for organisations' governance structures do not coincide, for example those for health, social care, police and emergency services.

The system model and this table show how every actor can have different motivations, constraints and, in the case of individuals, personal and social value judgements on what is "right" and "fair" — consider policy towards land use (Foster & Iaione, 2016) or migrants for example. But dealing with conflicting interests within society is not new, and somewhat the point of democratic processes (Heaney, 2014; Mansbridge et al., 2010). Methods exist to explicitly take into account in policy choices the conflicting benefits and burdens among stakeholders (Waller & McKinnon, 2013).

This brings to light the potential risks inherent with such systems. The European Union's Framework Programme 7 (FP7) funded project *Learning from Innovation in Public Sector Environments (LIPSE)* sums up its mixed findings regarding accountability and equity in its Policy Brief 2:

We did not find many respondents who argued that governmental accountability improved. Moreover, some even noted that accountability decreased. ... Regarding equity, the results are also not as favourable as one might hope. Although we did find very positive examples of equity improving as a result of co-creation ... already well-off citizens often benefited from co-creation as well. ... It seems, therefore, that co-creation does not always result in more equity, and can even work in the opposite direction. (Tummers, Voorberg, & Bekkers, 2015, p. 7)

Table 1. Characteristics of system actors

| Actor | Objectives & drivers | Governance and accountability | Nature of possible relationships |
|-----------------------|--|--|--|
| Public service/agency | Policy, legislative, financial (budgetary), administrative equity & efficiency | Political, judicial | Statutory, contractual |
| Charity | Philanthropic, financial (fund-raising) | Board of trustees, members, regulatory | Contractual, partnership, membership, client |
| Social Enterprise | Philanthropic, financial (revenue) | Owners, stakeholders, board of directors, regulatory | Contractual, partnership, customer |
| Commercial business | Financial (revenue), strategic, market | Owners, board of directors, regulatory | Contractual, partnership, customer |
| Volunteers | Philanthropic, social, personal | Informal, regulatory | Contractual (employment), informal |
| Family & friends | Personal, social | Social, legal*, regulatory | Personal, informal, statutory*, contractual, membership |
| Beneficiary ("User") | Personal | Personal, legal*, regulatory | Personal, informal, statutory*, contractual (customer/client), membership |

^{*} For example, a family member may have been granted the statutory right (power of attorney) to take decisions on behalf of the beneficiary, in a legal framework with which they must comply.

This is in counterpoint to apparent suggestions in literature that a "bottom-up" combination of individual interests is a good thing, as it counteracts "bureaucratic, top-down" decisions and design — despite this being essentially an argument for the dilution of political decision-making and equitable legislative administration by providing an opportunity for the strong, clever or corrupt to distort processes in their favour (Sørensen, 2013). Claims for the advantages of co-production through citizens contributing their "knowledge and assets" are counterbalanced by the poor and vulnerable being disadvantaged because they are unable to gain access to information and knowledge (Closs-Davies, Bartels, & Merkl-Davies, 2016).

The implication is that attention must be given in research and practice to how the system's creation and operational processes themselves are managed and governed, in particular their fit with Rule of Law and representative democracy (where these apply), and how outcomes are achieved that are compatible with equity and human rights (where these matter). This is a challenge of putting in place an effective governance system for the operational system. Such governance may itself be "collaborative" (Ansell & Gash, 2008; Foster & Iaione, 2016) or not, but that is a topic beyond the scope of this paper.

At a practical design level, the discipline of systems thinking (Meadows, 2008; Stroh, 2015), by examining the measurable factors within a system (e.g. vehicle emissions, pollution, ozone levels), explains the traps that systems can fall into (such as conflicting objectives, vicious circles, gaps in responsibility, burden shifting, or perverse incentives) and offers techniques to deal with them. Failure to recognise the traps can prove hugely costly in financial and human terms (Closs-Davies et al., 2016; Seddon & O'Donovan, 2013) as can the blind adoption of fashionable managerialist approaches (often inspired by NPM) that backfire when applied in a governmental context (Seddon, 2014).

Waller and Weerakkody (2016) propose that key design objectives, beside achieving the outcome intended and avoiding traps, should be the reduction of administrative burden (on both the public and public administration) caused by policy interventions, and the effective matching of demand on the system to its capacity, while making information and resources available to those who need them in appropriate ways.

Taken together, these issues might point to where there are specific key roles for one or more of the institutions of government.

The Role of Governmental Bodies

The key questions are how the system is designed, how it is designed to operate sustainably, and how it is governed and the components held accountable (including having a channel for redress for citizens with complaints). As discussed above, achieving this in terms of balancing objectives, financing, accountability, and administrative legislation, without falling into any of the traps awaiting such systems is far from easy. Where public policy, assets or money are involved, a government body must take responsibility for addressing these.

The essential role for a governmental body is for the Executive branch of the relevant government to decide on how to achieve the social outcome intended by its policy, determining the extent of public provision, public funding, and use of other instruments. This choice of means varies in time and place, reflecting cultural and social context, and political preferences. It may choose to build on an OPA or NPM paradigm, or neither or a mixture: that is a matter of political preference.

Regardless of its choices, it owns the responsibility to its citizens to create a system that works in spite of the challenges. Other governmental bodies have a role to play around this, in supporting, scrutinising, evaluating, adjudicating and auditing, in line with the relevant constitutional framework within which they interact. The overall process is complicated and non-linear, and usually addressing an issue where there is an existing intertwined set of policies and laws that have to be modified or replaced to form a new coherent whole.

This is the realm of policy design (Howlett, 2009). His nested model of policy goals and means, with overarching preferences, specific goals, and calibrations for each, provides a framework within

which the potential role of other actors and the contribution of technology and data can be investigated (Waller & Weerakkody, 2016). The latter authors propose that these possible roles and contributions in fact vary between the types of policy instrument and the stages of policy design, implementation, operation and evaluation.

Building on this proposition, a study contracted by the European Commission (Galasso et al., 2016) made progress on empirically constructing an analytical framework embracing policy design and implementation, the roles of non-governmental actors, and the contribution of ICT — the challenge identified above. In the study's terms, Open eGovernment Services (OGS) are a subset of co-production and co-creation cases in which ICT is a facilitator (eGovernment), government information or assets are purposefully made available (open), and non-governmental actors are invited to participate (collaborate). This gives rise to three criteria with to examine any particular OGS: the nature of the openness, the nature of collaboration, and the role of technology. The criteria can take a range of possible forms, shown in Table 2.

The study's significant advance comes in identifying from its empirical analysis of cases a pattern between the forms of these criteria and particular types of policy instrument. This supports the thesis that there is a linkage between the choice of policy instrument in policy design and the appropriate and feasible roles of non-governmental actors and technology. The second-order effect of this is on the forms of governance that are then appropriate for the operation of the instruments.

For example, in relation to instruments that exercise government authority (such as issuing licences) or distributing money (benefits, for instance), there would be potential for collaboration on design that might lead to technology components, but these would in such cases be very tightly controlled, with no open access. In the case of physical instruments like roads, waterways and buildings however, there would be the potential for collaboration in their operation and maintenance through perhaps volunteering or spotting problems (enabled by a pothole reporting mobile phone app for example).

In relation to public services, as defined in this paper, the study concludes that scope for collaboration in the operation of one itself is very limited, and is different to collaboration in a "mixed economy" — a system in this paper's terms. The implications for other instruments, such as open data in particular, and policy decision processes are also discussed.

Table 2. Possible forms of openness, collaboration and technology in relation to policy instruments. (adapted from Galasso et al., 2016, Table 24)

| Criterion | Possible forms | |
|---------------|--|--|
| Openness | no openness | |
| | open to the general public, non-governmental actors | |
| | shared only within the public sector or restricted group | |
| Collaboration | no collaboration | |
| | collaboration in design and/or implementation | |
| | collaboration arising in live operations | |
| | collaboration in feeding back on live operations | |
| | collaboration influencing decisions | |
| Technology | no technology | |
| | technology enables design | |
| | technology enables operations | |
| | the thing created is a technical component | |

The study concludes with caveats regarding varying national interpretations of the concepts of openness and collaboration, and attitudes to volunteering in particular. It notes that:

'Openness' and 'collaboration' are words and concepts that when used in relation to the actions of a government or the state will be interpreted by citizens, public servants and politicians against their own specific historical, cultural and political context, for example in some countries volunteering or participation may be seen as giving positive social status while in others it may be seen as doing the state's job for free and highly suspicious. (Galasso et al., 2016, p. 88)

CONCLUSION

The phenomena described in this paper — the systems and their design and construction as a result of a policy intervention by a government — exist everywhere, and always have done (Lubell, 2015). The debates in recent times around them, introducing numerous borrowed or invented terms, frequently arise from a lack of precision about the role of the various components of governments and the public sector that might be involved, and the nature of relationships between them and other parties.

The focus needs to be on the achievement of a social outcome through the combined efforts and resources of governmental and non-governmental actors, working in a connected system, in an environment influenced by a range of legislative instruments including funding, information provision, regulations, taxes, fees and charges, and so on.

In such systems, the detail of the nature of the actors and their relationships will differ according to the influence of OPA, NPM and even the form of governmental regime. So, they will differ across countries and eras, but no particular configuration constitutes a "new form of governance". The issue is of policy design and implementation. This is not straightforward, and the appropriate involvement of non-governmental actors, and technology, raises many constitutional, political, legal, and practical issues, some of which have been raised in this paper.

The big question, for research and practitioners, is how a government creates sustainable and equitable systems that produce better outcomes than alternative means, given that the system involves a mix of actors and the potential contribution of technology and data. This combines elements of policy goal setting, instrument choice, and system design – taking particular account of a financial model and the objectives, accountability and relationship structures of actors in the system. The questions are not so much about the practicalities of design and creation processes, on which much work has been done (Bason, 2010; McKinnon et al., 2010), but how they take account of the challenges and risks involved and incorporate governance into the design. This points towards the application of systems thinking and design, firmly anchored in the correct governmental context.

An aspect of that is how one moves from a project to design and build a system – popular among researchers in the field who focus on practical processes for co-design and co-creation – to a self-sustaining, governable operation (Waller et al., 2010). One might ask how many systems created by research and public sector innovation projects actually survive the closure of the project, and what were the factors that enabled them to survive. Similarly, research might be better directed at discovering and studying operational systems (like Blakemore & Wilson, 2009) to develop and validate theory, as opposed to creating new ones.

This paper supports a call for a 're-discovery' of policy design studies (Howlett, 2014) after a couple of decades of the distractions discussed. It also echoes the call to move from exploratory and descriptive research to explanatory research (Jo & Nabatchi, 2016): it is possible that with further work, the systems approach might provide the definitions, framework and typology sought by them.

Finally, this paper contends that it would be better now to drop the ill-defined terms co-production, co-creation and co-design in relation to the governmental realm and leave them in their commercial setting whence they came. Replacement terms for the "systems" will no doubt be invented in due course.

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ENDNOTE

See http://iog.ca/defining-governance/

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