CO-CREATION AND CO-PRODUCTION IN THE UNITED KINGDOM: A RAPID EVIDENCE ASSESSMENT

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1. INTRODUCTION

1.1 Aims of the Rapid Evidence Assessment

This Rapid Evidence Assessment sought to arrive at an updated synthesis of the co-creation and co-production evidence base in the United Kingdom. Taking as our starting point the work of Voorberg et al. (2014), we set out to identify empirical evaluations of policies, programs, interventions and services which were wholly based on, or incorporated principles of co-creation and co-production. We were particularly keen to review a range of non peer-reviewed material, which might reflect the burgeoning practitioner literature which represents the spread of co-creation and co-production across a range of sectors in United Kingdom. Before commencing our review we had assumed that much of the evaluative literature would be based on qualitative and case studies methodologies, this assumption being based on our understanding of the field and the conclusions of Voorberg et al. (2014). Therefore we were particularly keen to understand the methodologies employed in the UK context, and the claims being made of co-creation and co-production.

1.2 This paper

We begin by defining co-creation and co-production, describing the various types of co-creation and co-production, along with their aims and principles. We then discuss them within the United Kingdom policy context, and locate them within various academic literatures. Following this we discuss the evaluation of co-creation and co-production, before outlining our approach to the Rapid Evidence Assessment.

Our description of the Rapid Evidence Assessment describes the methodology we adopted, our results, and recommendations for further conceptual and methodological developments.
2. BACKGROUND AND CONTEXT

2.1 Defining co-creation and co-production

Bovaird (2007, p. 847) defines co-production as “regular, long-term relationships between professionalized service providers (in any sector) and service users or other members of the community, where all parties make substantial resource contributions”. With a focus on the English and Welsh social care sector, SCIE (2015: 1) define co-production “a new way of describing working in partnership by sharing power with people using services, carers, families and citizens.” Key features of co-production, according to SCIE (2015) include:

- Defining people who use services as assets with skills and building on peoples’ existing capabilities
- Breaking down barriers between people who use services and professionals
- Reciprocity and mutuality
- Working with peer and personal support networks alongside professional networks
- Helping organisations become agents for change rather than just being service providers.

Co-production and co-creation can be distinguished from ‘participation’, which, means being consulted (SCIE 2015) and could also refer to passive involvement (Voorberg et al. 2014).

Co-production and co-creation are related (Voorberg et al. 2014 citing Vargo and Lusch 2004) but can be distinguished thus:

- In co-production people use services take over some of the work done by practitioners (SCIE 2015)
- In co-creation, people who use services work with professionals to design, create and deliver services (SCIE 2015). Osborne and Strokosch (2013) argue that co-production does not necessarily require user involvement in the service planning process, but where this occurs it is often termed ‘co-creation’. Similarly, Voorberg et al. (2014) argue that ‘co-creation’ refers to the active involvement of end-users in various stages of the production process.

Voorberg et al. (2014) suggest that the main difference between the definitions of co-creation and co-production is that the co-creation literature puts more emphasis on co-creation as value (citing Vargo and Lusch 2004 and Gebauer et al. 2010 in support).

CO-CREATION AND PERSONALISATION

In the UK, co-creation and co-production are closely related to the concept of personalisation. Personalisation can mean many things (Needham 2011). Most simply, personalisation means that public services respond to the needs of clients, rather than offering a standardised service. This was argued as responding to the end of the age of deference, increasing customisation available in consumer goods and the idea that by designing services for the average, they end up fitting no-one (Prime Minister’s Strategy Unit 2007, Rose 2016). Change in this direction has been most obvious in adult social care.

“Of all the changes that have taken place in adult social care (and increasingly other sectors too), it is personalization that stands out as one of the key themes of the past
decade, and quite possibly as one of the key agendas of the next ten years”. (Needham and Glasby 2014a: 3)

The narrative of personalisation has since travelled across a range of policy areas including welfare-to-work programmes (see below). Across these areas, personalisation encompasses a range of new ways of designing services, which can provide both what Leadbeater (2004) describes as ‘shallow’ and ‘deep’ approaches. It can include ‘providing people with a more customer-friendly interface’, ‘giving users more say in navigating their way through services’, ‘giving users more direct say over how money is spent’, users being ‘co-producers of a service’, and self-organisation (Leadbeater 2004: 21-24). Co-creation is clearly embedded within some of these approaches.

2.2 Types of co-creation and co-production

Voorberg et al. (2014) identify three types of co-creation in their review:

- citizens as co-implmenter of public policy: where citizens participate in delivering a service.
- citizens as co-designer: often, the initiative lies within the public organization, but citizens decide how the service delivery is to be designed.
- citizens as co-initiator where the public body follows.

Fifty percent of studies identified by Voorberg et al. (2014) in a systematic review of co-creation and co-production concerned the citizen as co-implmenter.

SCIE (2015) suggest four categories of co-production:

- co-design, including planning of services
- co-decision making in the allocation of resources
- co-delivery of services, including the role of volunteers in providing the service
- co-evaluation of the service

SCIE (2015) also suggest different levels of co-production:

- descriptive – where co-production already takes place in the delivery of services as people who use services and carers work together to achieve individual outcomes, but activities cannot challenge the way services are delivered, and co-production is not really recognised
- intermediate – where there is more recognition and mutual respect, for example where people who use services are involved in the recruitment and training of professionals
- transformative – where new relationships between staff and people who use services are created where people who use services are recognised as experts in their own right. There is respect for the assets that everyone brings to the process and an emphasis on all the outcomes that people value, rather than just those – such as clinical outcomes – that the organisation values.
Osborne and Strokosch (2013) differentiate three modes of co-production, at the operational, strategic and service levels, which they describe as ‘consumer’, ‘participative’ and ‘enhanced’ modes of co-production.

- **Consumer co-production** draws on the services management literature and is the result of the inseparability of production and consumption during the service encounter. It focuses upon the engagement of the consumers at the operational stage of the service production process in order to balance their expectations and experience of the service. The aim is user empowerment.

- **Participative co-production** draws on the public administration literature and is the result of the intention to improve the quality of existing public services through participative mechanisms at the strategic planning and design stage of the service production process. These mechanisms include user consultation and participative planning instruments. Such co-production does not necessarily challenge the nature of operational service delivery, but rather affects the design and planning of existing services at the strategic level. The aim is user participation. Osborne and Strokosch suggest that Arnstein’s (1969) ‘ladder of participation’ could be used to explore the actuality of the participation.

- **Enhanced co-production** results from combining the operational and strategic modes of co-production in order to challenge the existing paradigm of service delivery. The aim is user-led innovation of new forms of public service with the potential for transformational effects upon the public services delivery system as a whole. However, enhanced coproduction does not imply that it is not simply a case of empowering service users and expecting them to immediately begin transforming (public) services. Rather, enhanced co-production requires a genuine partnership between public service professionals and service users that is predicated upon the use of knowledge to transform service delivery.

For Osborne and Strokosch (2013) enhanced co-production offers a link between co-production and the much sought after goal of transformative innovation in public services through co-creation. In particular they suggest that enhanced co-production can explain how social innovation can happen within public services.

### 2.3 Principles of co-production

SCIE (2015) suggest some principles of co-production, possibly useful as an alternative to defining the concept. They argue that the following principles are critical values for putting co-production into action:

- **Equality**: No one group or person is more important than any other. Everyone is equal and everyone has assets to bring to the process (assets could be skills, abilities, time or other qualities). The assets of people who use services and of practitioners and managers need to be recognized. Equality requires a shift in power towards people who use services (and their carers). This takes time and implies a change in organizational culture.

- **Diversity**: It follows from the previous principle that diversity and inclusion are important values for co-production.

- **Accessibility**: The process of co-production needs to be accessible if everyone is to take part on an equal basis. Barriers to access can take many forms including physical, language and information. Issues of confidentiality and information sharing will need to be resolved for co-production to be successful.
- **Reciprocity:** “It has been defined as ensuring that people receive something back for putting something in, and building on people’s desire to feel needed and valued. The idea has been linked to ‘mutuality’ and all parties involved having responsibilities and expectations.” (SCIE 2015: 11)

### 2.4 Aims and objectives of co-creation and co-production

SCIE (2015) suggest that potential benefits from co-production can be divided into two types:

- **instrumental benefits** – the use of people’s experience and expertise, which can contribute to a more efficient use of resources; and
- **intrinsic benefits** – an increased sense of social responsibility and citizenship and benefits to the wider community (sometimes defined as social capital), particularly to improved health and wellbeing.

Over half (52%) of papers in the Voorberg et al.’s (2014) systematic review of co-creation and co-production do not mention a specific objective for co-creation:

> “There seems to be an implicit assumption that involvement of citizens is a virtue in itself, like democracy and transparency, thereby also stressing that co-creation as a process is a goal in itself.” (Voorberg et al. 2014: 9)

### 2.5 Implementing co-creation and co-production

**LEGAL FRAMEWORK**

Given the close links between co-creation, co-production and personalisation, much of the relevant legislation in the UK is linked to the personalisation agenda in social care.

Putting People First (Department of Health 2007) set out a comprehensive vision for ‘personalising’ social care, including a universal offer of advice and information to help people make informed choices and access universal services; the development of inclusive and supportive communities; investment in preventative services; and greater individual choice and control through the introduction of personal budgets. Difficulties in implementing individual budgets (direct payments), which integrated funding from a range of sources, led to them being re-badged as ‘personal budgets’ drawing only on social care funding (Needham and Glasby 2014a). A ‘transformation grant’ of £520 million was made available to local authorities to promote personalization. National Indicator 130 required local authorities to have 30% of eligible users on personal budgets by 2011, extended to 100% of eligible users by 2013. Whilst personalisation is often understood only in terms of personal budgets, this was not the intention, and implementation of personal budgets without other key changes has been shown to result in limited positive change (Fox 2012).

The version of personalisation set out in the Department of Health’s (2012) Care and Support White Paper had a stronger focus on relationships, communities and responsibility and it is this more rounded version of personalisation in which co-creation is more clearly visible.
The Care Act 2014 embedded personalisation into the legal framework for social care, and mandated adult’s involvement in planning their care. It required Local Authorities to give all eligible users a personal budget. The Care Act 2014 also provided a definition of co-production in its statutory guidance as:

“Local authorities should, where possible, actively promote participation in providing interventions that are co-produced with individuals, families, friends, carers and the community. “Co-production” is when an individual influences the support and services received, or when groups of people get together to influence the way that services are designed, commissioned and delivered.” (Department of Health 2014: 18)

The Social Care Institute for Excellence (SCIE 2015) argues that this definition is not as helpful as other ones because it only talks about people who use services influencing rather than working with professionals in equal partnership.

While to date, personalization and hence co-creation has been most strongly associated with the social care sector, its influence is spreading across a range of policy areas including welfare-to-work programmes and homelessness where, it is noticeable that a number of Payment by Results programmes and Social Impact Bonds have incorporated the concept of personalisation (see for instance, Department for Communities and Local Government 2014).

“One of the key features of personalisation is that it has spun out from adult social care into a range of other policy domains. The language of personalised services is now used in a range of sectors from employment to prisons to school building design and the education curriculum. The technologies of personal budgets are being utilised widely, including children’s social care, special educational needs provision, rough sleepers and NHS services.” (Needham and Glasby 2014b: 22)

**IMPLEMENTATION CHALLENGES**

Osborne and Strockosch (2013) identify four limitations to co-production. First, service users and service professionals bring important expertise to co-production and bringing these different forms of expertise together is challenging. Secondly, there are cases where the user of a public service is an unwilling or coerced user e.g. in the criminal justice system. Thirdly, co-production is particularly fraught where public services have multiple and perhaps conflictual users (e.g. the criminal justice system). Such contestation does not necessarily limit co-production but rather “it is a reason perhaps to acknowledge its greater complexity in public services than in the business sector.” (Osborne and Strockosch 2013: S42). Finally, substantive empowerment, participation and user-led innovation through co-production are all reliant on the presence of trust in the service relationship – because the process of co-production can be risky, uncertain, time-consuming and costly.

2.6 Theorising co-creation and co-production

**ORIGINS IN THE PUBLIC ADMINISTRATION AND PUBLIC SERVICES LITERATURE**
Osborne and Strokosch (2013) argue that, in the public administration literature, over successive decades, co-production has been recast in line with current academic ‘trends’. Thus, they suggest co-production first appears with an influential implementation literature on co-production that originated from the work of Ostrom (1972) in the USA, who argued that Public Service Organisations depended as much upon the community for policy implementation and service delivery as the community depended upon them. These ideas were developed in the public administration literature and within the New Public Management (NPM) emphasis was placed on the resource constraints of public services delivery and the need for a managerial approach to their delivery, recasting citizens as the ‘consumers’ rather than ‘clients’ of public services (Hood 1991). Osborne and Strokosch (2013: S33-S34) argue that: “In this context, co-production became associated primarily, and controversially, with the concept of ‘consumerism’ and with contrasting views upon its effectiveness”. Latterly, they suggest that the advent of ‘digital governance’ and ‘new public governance’ have led to further reformulation of co-production. The new public governance replaces Public Service Organisations with public delivery systems where the interaction of multiple actors is required to achieve societal goals and to delivery public services and in this context co-production is re-formulated as a core element of the production of holistic and ‘joined up’ public services (Osborne and Strokosch 2013). However, for Osborne and Strokosch (2013: S34) the public administration literature still delivers a limited version of co-production which “conceives of public services as ‘goods’ to be designed, planned and produced primarily by service professionals – but where service users can be invited into the process by these professionals even if the public goods are still consumed (relatively) passively by service users.” They contrast this discourse of co-production as an ‘add-on’ to service design and delivery with that in the services management literature.

In the services management literature the production and consumption of services are inseparable because they are produced and consumed simultaneously. This is in contrast to the manufacturing literature upon which the public management literature tends to draw (Osborne and Strokosch 2013). Thus, co-production is an:

“essential and inalienable core component of service delivery: you cannot have (public) service delivery without co-production. It is the essential and intrinsic process of interaction between any service organization and the service user at the point of production of a service.” (Osborne and Strokosch 2013: S36).

**SOCIAL DIMENSION OF CO-PRODUCTION**

Co-production also has a social dimension. For Pearson and colleagues (ibid.):

“Over and above the focus on enhanced individual support, classic co-production relates to the generation of social capital – the reciprocal relationships that build trust, peer support and social activism with communities.

Voorberg et al. (2014) in their review of co-creation and co-production find that social capital is an important factor in delivering co-creation/co-production.
Osborne and Strokosch (2013) draw a clear distinction between user empowerment which is concerned with the ability of individual service users to control their experience of a public service and contribute to their own desired outcomes and user participation which is concerned with the role of the service user in participating in the public service planning process in order that the public service system can address their needs more effectively in the future. User participation is also seen as a route to other desirable social outcomes, such as social inclusion. Osborne and Strokosch also ask to what extent co-production is dependent upon citizenship; if co-production can act as a conduit to build social inclusiveness and citizenship; and if individual service user co-production is a prerequisite for co-production and partnership working, or not, by public service organizations.

**CO-PRODUCTION AND LEGITIMACY OF THE STATE**

Voorberg et al. (2014), based on an extensive review of the empirical literature argue that the added value of co-creation/co-production can be assessed from a political and cultural perspective in which innovation and co-creation/coproduction is defined as a process of sense-making in which citizen involvement is seen as having important political value. Citing DiMaggio and Powell (1991, 2000) they suggest that citizen participation can be regarded as an important mechanism to achieve normative integration and a way of sense-making ‘myth’ or ‘ceremony’ in order to achieve political legitimacy. This approach recognizes that the legitimacy of government is under pressure because public services do not fully address the needs of citizens and stresses the importance of citizen participation as a relevant process for closing a possible democratic deficit (Bekkers 2007) or performance gap (Salge and Vera 2012).

### 2.7 Our understanding of the current evidence

**OUTCOME EVALUATIONS**

Outcome evaluations are limited. Voorberg et al. (2014) in their systematic review of co-creation and co-production identify over a hundred empirical studies of co-creation and co-production between public organisations and citizens (or their representatives), but only 20 percent (24 papers) evaluate the outcome of co-creation and a proportion of these assess the outcome as being to enhance participation. Fourteen papers evaluate the outcome of co-production in terms of an increase (or decrease) in service effectiveness, but Voorberg et al. do not provide a synthesis or even a detailed description of these findings. Webber et al. (2014) undertook a Systematic Review of the effectiveness of personal budgets for people with mental health problems across diverse outcomes. They identified 15 studies, all conducted in the UK and US. Studies covered individual budgets, recovery budgets, personal budgets, direct payments, personal health budgets and ‘cash and counselling’. Two were randomized control trials and four used quasi-experimental methods. All of the studies were assessed to have a medium or high risk of bias for various reasons, most commonly relatively small sample sizes, recruitment bias and a lack of comparability of interventions across multiple sites. None of the qualitative studies reflected on the impact that the researcher’s position had on data collection or analysis. Overall, the studies report mostly positive outcomes in terms of choice and control, quality of life, service use and cost-effectiveness.
IMPLEMENTATION EVALUATIONS

In their review of the literature Voorberg et al. (2014) identify eight factors which affect whether the objectives of co-creation and co-production are achieved and they separate these according to whether they operate on the organizational or citizen side of co-creation. On the organizational side these are:

- Compatibility of public organizations with citizen participation (47 papers, 46% of papers)
- Open attitude towards citizen participation (23, 22%)
- Risk-averse administrative culture (19, 18%)
- Presence of clear incentives for co-creation (win/win situation) (14, 14%)

On the citizen side these are:

- Citizen characteristics (skills/intrinsic values.marital status/family composition/level of education) (10 papers, 33% of papers)
- Customer awareness/feeling of ownership/being part of something (9, 30%)
- Presence of social capital (9, 30%)
- Risk aversion by customers/patients/citizens (2, 7%)

Generally, these factors are not sector specific and not all of them are positive (i.e. encouraging of co-creation).

Voorberg et al. (2014) also identify actions that overcome barriers to co-creation. On the organizational side these are:

- Top-down policy that supports co-creation
- Appointing a policy entrepreneur to promote co-creation
- Enhanced professional autonomy

On the citizen side actions are designed to lower the threshold for citizens to participate and are:

- Financial support
- Supporting policy which supports a sense of ownership
- Offering plebiscitary choice instead of asking citizens about complicated policy issues

Most studies identified by Voorberg et al. (2014) were dedicated to the identification of influential factors or to find a typology of public co-creation/co-production. Only 24 out of over 100 papers were evaluations of the outcome of co-creation. Of these, 14 papers (59% of the 24) evaluate the outcome of co-production in terms of an increase (or decrease) in service effectiveness. Six studies use enhanced participation as an outcome, reinforcing the idea that co-production is often considered as a virtue in itself rather than as a means of achieving other outcomes (Voorberg et al. 2014). This contributes to an overall conclusion of the review that co-creation is a ‘cornerstone’ of social innovation and is best seen both as a means and an ends.

Voorberg et al. (2014) suggest that the influential factors facilitating or obstructing co-creation provide a framework for implementation evaluations of co-creation:
“If we look at the influential factors that have been identified we can say that we are now able to assess if and how the process of co-production/co-creation comes to being.” (Voorberg et al. 2014: 16)

However, Voorberg et al. conclude that they do not know if co-production/co-creation contributes to outcomes which really address the needs of citizens nor do they know, if there is a relationship between degrees of citizen involvement (co-implementing, co-design and initiator) and the outcomes of social innovations (Voorberg et al. 2014).

ECONOMIC EVALUATION

SCIE (2015) note that evaluations of co-production have tended to focus on how people have participated and their experiences rather than on costs and benefits. SCIE (2015) suggests that there is “some evidence” (SCIE 2015: 16) that co-production can reduce costs, but that the evidence is inconclusive and it doesn’t cite any sources to support this assessment.

An evaluation by Nesta (2013) of its People Powered Health Programme, which included elements of co-production, found that where these approaches were used with people with long-term conditions they deliver savings of approximately seven percent through things like reduced and shorter hospital admissions and fewer visits to casualty. Nesta argued that the savings would grow to 20 percent as different parts of the programme support each other.

Knapp et al. (2010) analysed three coproduction/community capacity projects using a method called ‘decision modelling’. This compared what happened with the projects in place with what might have happened if they had not existed. The projects were a time bank, a befriending scheme and a community navigator scheme (volunteers who support people to obtain support services). Knapp et al. recognised that there were limitations in their analysis. However, they made conservative estimates that the projects produced net benefits for their communities in a short time.

2.8 OUR FOCUS FOR THE RAPID EVIDENCE ASSESMENT

The systematic review of co-creation and co-production undertaken by Voorberg and colleagues, and published in 2014, was a comprehensive summary of the worldwide literature. The findings of this review were particularly useful in mapping the literature and the dimensions of co-creation and co-production (e.g. in terms of the characteristics of the literature and types of co-creation and co-production). Our Rapid Evidence Assessment sought continue in this manner, and to produce an updated synthesis of the co-creation and co-production evidence base in the United Kingdom. We set out to identify evaluations of policies, programs, interventions and services which were wholly based on, or incorporated principles of, co-creation and co-production.

We were particularly keen to incorporate a range of non peer-reviewed material, which might reflect the burgeoning practitioner literature, and which represents the spread of co-creation and co-production across a range of sectors in the United Kingdom. Before commencing our review we had assumed that much of the evaluative literature would be based on qualitative and case studies methodologies, with this assumption being based on our understanding of the field and literature, and the conclusions of Voorberg et al. (2014). Therefore we were particularly keen to understand
the methodologies employed in the UK context, and the claims being made about the role of co-creation and co-production.

Therefore we undertook a Rapid Evidence Assessment to address the following questions:

1. How do academics and practitioners define co-creation and co-production as they relate to policy and programmes in the United Kingdom?
2. What are the objectives of co-creation and co-production in policy and programmes in the United Kingdom?
3. What methods are used to evaluate co-creation and co-production in policy and programmes in the United Kingdom?
4. What outcomes are associated with co-creation and co-production in policy and programmes in the United Kingdom?
3. METHODOLOGICAL OVERVIEW

We completed a Rapid Evidence Assessment in order to address our research questions. Rapid Evidence Assessments (REAs) are a form of systematic review, and are undertaken over a shorter period than a traditional systematic review (approximately 3 months, rather than 12 months). REAs and systematic reviews systematically search for, evaluate and synthesise evidence about a specific intervention, and they are used to help policy makers to understand the impact of an intervention. Where possible, an REA or systematic review will include a statistical meta-analysis of individual studies, in order to provide a clear indication of the likely impact (effect size) of the intervention.

Consistent with our understanding of the previous evidence synthesis in this area (Voorberg et al., 2014) we were aware that co-creation and co-production does not represent a specific and clearly defined intervention, but is rather a philosophy and approach which shapes interventions across a range of sectors. We were also aware that the extant evidence base was represented by predominantly qualitative approaches and case study methodologies. We therefore adapted our REA process to accommodate these considerations. As a consequence, were did not undertake a meta-analysis on this occasion.

We undertook an initial search to identify all the relevant studies published in English in or after the year 2000. Following this we classified the returned articles by evaluation type and design (‘classification of study designs’ below). Once we had reviewed the evidence returned by our searches, we considered appropriate methods of quality assessment and data analysis, before undertaking further analysis.

3.1 Methodology: step-by-step

1. SEARCH

A three-step search strategy was adopted to identify studies:

1. electronic databases were searched for published studies;
2. governmental and organisational websites were searched for grey literature;
3. and specified journals were hand searched.

We used the following Boolean search string, which was deliberately broad, so that we might identify all possible articles for inclusion. We searched for examples of evaluations of co-creation and co-production and subsequently used specific exclusion criteria to refine our pool of retained articles.

\[(\text{co-creation}^* \text{ OR co-production}^* \text{ OR cocreation}^* \text{ OR coproduction}^*) \text{ AND (evaluat}^*)\]

Where possible (in the majority of cases) we carried out full-text searches within databases, websites and journals, rather than simply using title and abstract searches. We chose this strategy as we were aware that approaches to to-creation and co-production were being incorporated into research across a range of areas, and that they may occur alongside other distinctive features of an
intervention. Therefore we did not expect these approaches to only occur in articles which had the words ‘co-creation’ and ‘co-production’ in the articles’ titles and abstracts.

**Table 1. Search strategy**

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2. TITLE/ABSTRACT AND FULL-TEXT SCREENING

Following our search we used exclusion criteria to inform two stages of screening, firstly on titles and abstracts, followed by a full-text screen. This process was undertaken by two researchers, and incorporated a quality assurance process.

Voorberg et al. (2014) identified three types of co-creation/co-production:

1. Citizen as co-implementer (citizens perform some implementation tasks);
2. Citizen as co-designer (citizens decide how the service delivery is designed);
3. Citizen as initiator (the government is an actor that follows).

We excluded instances of articles in which the only type of co-production was where the citizen was a co-implementer, as we were specifically interested in the active role of citizens in the design and innovation of policies and services.

In contrast with Voorberg et al. (2014) we decided to include non-peer reviewed articles, as we recognise that there is a wealth of co-creation and co-production being evaluated in non-academic contexts, and which may not be published in academic journals.
In summary, we excluded articles:

- Which were theoretical papers, commentaries, and policy analyses (non-empirical articles);
- Which were systematic reviews, and other forms of evidence summary (although we manually search these articles to check for the inclusion of source documents in our search);
- Which did not report an evaluation of an intervention, policy or programme;
- Which were not written in English;
- Which did not describe interventions and policies incorporating elements of (or wholly based on) co-creation and co-production taking place in the United Kingdom;
- In which the type of co-creation or co-production was ‘citizen as co-implementer’ only (Voorberg et al., 2014);
- Where the year of publication was before 2000.

3. CLASSIFICATION OF STUDY DESIGNS

Following the title/abstract and full-text screening we classified each article by its’ evaluation type and design. A typical REA methodology would lead to the meta-analysis of studies which are experimental, or which have a well matched comparison group. Such designs are fundamental to making assumptions about causal inference for the purpose of evidence synthesis. These studies correspond to levels 4 and 5 of the Maryland Scientific Methods Scale (MSMS; Sherman et al. 1997).

We were interested to make a distinction between studies that fell into this category, and other quantitative and qualitative studies, firstly to identify whether meta-analysis or other quantitative synthesis of our results would be possible, and also to understand the nature of the evidence base. Voorberg et al., (2014) had found that co-creation and co-production research is predominantly qualitative (often using case study methodologies), but we had the opportunity to investigate whether more recent research had used quantitative methodologies in greater numbers.

Table 2. Classification of study designs with examples

<table>
<thead>
<tr>
<th>Evaluation type</th>
<th>Outcome evaluation. Impact evaluations.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Other evaluation. Process evaluations, user acceptability.</td>
</tr>
<tr>
<td><strong>Design</strong></td>
<td>Quantitative, Maryland Scale (MSMS) levels 4-5, e.g.</td>
</tr>
<tr>
<td></td>
<td>• A well-match comparison group, or quasi-experimental design (MSMS level 4)</td>
</tr>
<tr>
<td></td>
<td>• A randomised controlled trial (MSMS level 5)</td>
</tr>
<tr>
<td></td>
<td>Quantitative, not Maryland Scale (MSMS) 4-5, e.g.</td>
</tr>
<tr>
<td></td>
<td>• A before and after study with no comparison group (MSMS level 1)</td>
</tr>
<tr>
<td></td>
<td>• A comparison with a predicted rate (MSMS level 2)</td>
</tr>
<tr>
<td></td>
<td>• An unmatched comparison group (MSMS level 3)</td>
</tr>
<tr>
<td></td>
<td>Qualitative and mixed methods</td>
</tr>
</tbody>
</table>
4. QUALITY ASSESSMENT

As we found that the overwhelming majority of articles employed qualitative and mixed methodologies, we used the four guiding principles specified by Spencer et al. (2003) to assess all of our articles for quality. These suggest that qualitative research should be:

- contributory in advancing wider knowledge or understanding;
- defensible in design by providing a research strategy which can address the evaluation questions posed;
- rigorous in conduct through the systematic and transparent collection, analysis and interpretation of qualitative data;
- credible in claim through offering well-founded and plausible arguments about the significance of the data generated.

Two of the authors therefore judged each article against each of the criteria, and judgements were cross-checked for quality assurance purposes.

5. DATA EXTRACTION

Following quality assessment, two of the authors then carried out extracted data from the articles based on our research questions.
4. RESULTS

4.1 Summary of retrieved articles

In this section we broadly describe the 33 articles identified by source search and exclusion processes, and in the following results sections we address each of our four research questions.

Figure 1. Search process

Of the 33 articles, 16 (48%) were published in academic journals and the remainder were from non peer-reviewed sources. These included governmental and other national organisations (e.g. Welsh Government Social Research; Joseph Rowntree Foundation), and localised public services and (e.g. Islington Borough Council). The systematic review undertaken by Voorberg et al. (2014) identified 4 articles based on co-creation or co-production in the United Kingdom, which was significantly fewer than the 16 academic journal articles which we found. This may perhaps be explained by a difference in search strategies; our strategy included a full-text search for potentially relevant articles in many of the databases, whereas Voorberg et al. (2014) restricted their search to records with the words co-creation or co-production in the title and/or abstract. This was a necessary step in their search strategy in order to reduce the number of returned results to a manageable level for screening, whereas incorporating the requirement for articles to also match on ‘evaluation’ potentially narrowed down the number in our search, and ultimately resulted in a greater number of UK articles found. In addition we also included non peer-reviewed material from a range of sources.
Analysing our articles by sector we found that 17 (52%) could broadly be classified as healthcare, with five of those being in mental healthcare and three in public health. 15 articles (45%) were in social care.

Our assessment of the quality of the articles perhaps reflected the relatively large proportion of non peer-reviewed articles which we reviewed. For example, 18 (55%) articles were classified as weak or average with regard to their contribution towards advancing wider knowledge or understanding. This was understandable when reading the articles themselves, and points perhaps towards their purpose, which was often to evaluate a specific programme or policy, without necessarily seeking to make links to broader conceptual, theoretical and academic understandings of the evidence base.

We also classified a large number of articles as weak or average with regards to their defensibility in design (i.e. the extent to which they provided a research strategy which addressed the evaluation questions posed). In two cases there was insufficient evidence on which to make a judgement with regard to this (this was also noted when trying to assess the rigour of the approaches taken). The remainder of the articles judged to be of weak or average design defensibility were judged as such because the accounts of their designs didn’t make clear exactly how the research design and methods used would address the questions and aims of the research (which in some cases were not clear). Again we viewed this to be an artefact of the types of articles which we found, in particular the non peer-reviewed material. In addition, qualitative designs and methods prevailed, from which it is difficult to rationalise some of the causal claims which we observed in a number of the articles, with regard to the degree to which they could address the evaluation questions, and provide certainty about outcomes.

Table 3. Quality assessment

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Weak</th>
<th>Average</th>
<th>Strong</th>
<th>Insufficient evidence</th>
<th>Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>contributory in advancing wider knowledge or understanding</td>
<td>6</td>
<td>12</td>
<td>14</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>defensible in design by providing a research strategy which can address the evaluation questions posed</td>
<td>3</td>
<td>10</td>
<td>17</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>rigorous in conduct through the systematic and transparent collection, analysis and interpretation of qualitative data</td>
<td>5</td>
<td>6</td>
<td>16</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>credible in claim through offering well-founded and plausible arguments about the significance of the data generated</td>
<td>2</td>
<td>9</td>
<td>21</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Finally, we analysed the nature of co-creation and co-production described by our articles, using the categories described by Voorberg et al. (2014). As we had excluded records which described citizens as co-implementators only, we did not find any articles with this type of co-creation or co-production described in isolation. Rather we found 22 (66%) of the articles which described co-design and co-implementation taking place within the same policy or programme context, and a further 8 (24%) articles in which co-design occurred in isolation. On occasion it was difficult to
delineate exactly where in a particular implementation of co-creation or co-production the boundary was between co-design and co-implementation, and this may be a facet of the nature of some of the material studied, where action research was used as a mechanism to design, test and innovate in an iterative manner.

Whereas Voorberg et al. (2014) found a small proportion of articles which described the citizen as an initiator of co-creation or co-production, we did not observe this in the articles which we reviewed.

One interesting finding was that citizens are often involved in the evaluation of the policy or programme, perhaps representing an additional type of co-creation or co-production, which positions the citizen as co-evaluator. Again it was sometimes difficult to delineate the purpose and scope of this activity, and what in fact constituted evaluation. A number of programmes and policies incorporated action research and participative approaches to research, some of which include formative evaluation activity as an aspect of the programme itself. In other instances (n=2; 6%) we observed summative evaluation being undertaken by citizens as a distinct element of co-creation and co-production.

4.2 Research question 1: How do academics and practitioners define co-creation and co-production as they relate to policy and programmes in the United Kingdom?

Given the various conceptions of co-creation and co-production discussed in the background and context to this review, we were interested to understand how the articles defined co-creation and co-production explicitly. Eight (24%) of these were found in academic journals, and the lack of definition may reflect the fact that co-creation or co-production was often not the primary focus of the article, but that it was embedded within a particular type of sector-specific intervention. For example, Turner et al. (2015) describe an approach called Co-Creating Health in which expert patients are instrumental in developing a self-management program for patients living with one of four long-term conditions. Whilst co-creation (and indeed co-production) is at the heart of this initiative, it is not explicitly defined for the purpose of this article.

We analysed the 18 articles which offered a definition of co-creation or co-production using the principles suggested by SCIE (2015). We felt this was useful, as all of the articles which offered a definition of co-creation or co-production were also evaluations of a programme, intervention or policy, and SCIE (2015) argue that the principles are critical values for putting co-production into action. We found that definitions of co-creation or co-production found in:

- 11 articles (33%) referred to the principle of equality
- 2 articles (6%) referred to the principle of diversity
- 1 article (3%) referred to the principle of accessibility
- 9 articles (27%) referred to the principle of reciprocity

Only one article (NHS, 2016) defined co-production in a way which referred to all four principles, although it is arguable that the development of a ‘concordat’ represents more than a definition of co-creation or co-production, but is in fact a step to describing how co-creation or co-production will take place. We would suggest however that definitions and statements of intent are closely related,
and indeed valuable reference points for those involved in the co-creation or co-production of programmes, interventions or policies. For example, one of the articles found that different conceptions of co-production in two pilots shaped both the style and progress of the groups (Evans et al., 2011).

Whilst there was evidence of some consistency of definition of co-creation or co-production, suggesting broad elements of the definition which may apply across sectors and implementation contexts, there was also some evidence of definitions of co-creation or co-production which are sector specific. For example Newman-Taylor et al. (2016) cite a mental health specific literature review which defines co-production in mental health according to six principles. Whilst these are in no way contrary to broader conceptions (e.g. SCIE, 2015), this further specification may represent the embedding to co-creation and co-production within specific disciplines. If this were the case it may suggest that definitions of co-production become more specialised as various disciplines develop their own evidence base and practice based on co-creation and co-production principles.

4.3 Research question 2: What are the objectives of co-creation and co-production in policy and programmes in the United Kingdom?

Voorberg and colleagues’ (2014) found that the majority of their articles didn’t mention a specific objective for co-creation. In our REA we found that only a small number of articles (3; 9%) which did not clearly state an objective of co-creation and co-production in the policies and programmes which they described. However it was often difficult to ascertain whether the objective of the policy or programme (and expected outcomes) was proposed to be attained through the incorporation of elements of co-creation or co-production, or through some other aspect of the programme/policy design. In many cases co-creation or co-production was ‘bundled’ with other active ingredients of the intervention. This may indeed reflect Voorberg and colleagues’ suggestion of the ‘implicit assumption that the involvement of citizens is a virtue in itself’ (2014: 9), the result of which is that co-creation or co-production elements feature heavily within policies and programmes in specific sectors. This however doesn’t necessarily communicate an understanding of the objective of co-creation or co-production, and how it might play a part in achieving expected outcomes. Specifying theories of change for interventions or policies would go some way to addressing this, if sufficiently detailed. For example, Brown et al. (2017) offer a detailed theory of change which identify mechanisms of change which incorporate co-creation or co-production principles.

As there were a number of objectives specified for the programmes and policies described in the articles, we analysed them in order to understand the level at which (or ‘for whom’) the objectives were expected to benefit. We found 13 articles which described objectives for individuals. In the majority of instances this referred specifically to individuals who were involved in the co-production. For example, living more fulfilled lives; giving individuals choice and control over their care; supporting the recovery of individuals, and improving patient outcomes such as activation (a construct similar to self-efficacy) and clinical outcomes such as anxiety and depression. We classified six (18%) articles as describing objectives which sought to be of direct benefit to a community, for example by increasing community engagement, connections and capacity. Three (9%) articles outlined objectives which would directly benefit the public service provider (e.g. in terms of greater efficiencies; Munoz, 2013). A comparatively larger number of articles (16; 48%) described objectives
which were designed to bring improvements to at the policy or service level, for example pioneering a new approach to healthcare, influencing practice and strategy and improving service delivery to specific groups (Strokosh and Osborne, 2016).

The objectives which we identified therefore fit within SCIE’s (2015) typology of instrumental and intrinsic benefits.

4.4 Research question 3: What methods are used to evaluate co-creation and co-production in policy and programmes in the United Kingdom?

Based on our knowledge of the co-creation and co-production literature and the findings of Voorberg et al.’s (2014) review, we expected the majority of the articles to describe qualitative methods to be the prevalent approaches to data collection and analysis. Reviewing the classification of the articles did indeed support out expectations; qualitative and mixed methods designs were found to be the most common (29 articles; 88%) with purely quantitative studies being much fewer (four articles; 12%).

**Table 5. Classification of study design**

<table>
<thead>
<tr>
<th>Evaluation designs</th>
<th>N</th>
<th>Typical methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome evaluations, quantitative, Maryland Scale 4-5</td>
<td>1</td>
<td>Randomised Controlled Trial</td>
</tr>
<tr>
<td>Outcome evaluations, quantitative, not Maryland Scale 4-5</td>
<td>3</td>
<td>Pre and post measures (e.g. psychometric wellbeing scales)</td>
</tr>
<tr>
<td>Outcome evaluations, qualitative and mixed methods</td>
<td>14</td>
<td>A range of evaluation methods, prevailing of use of interviews, some analysis of pre-existing data (e.g. service uptake). One incorporated an RCT. One included a pre-specified Theory of Change.</td>
</tr>
<tr>
<td>Other evaluations, qualitative and mixed methods</td>
<td>15</td>
<td>Case studies, participative action research. Looking particularly at the process, and resultant findings. Action research featured strongly.</td>
</tr>
</tbody>
</table>

A number of the qualitative methods in particular were undertaken by citizens, and this is understandable as these may include methods which are based on action research. In particular, *participatory action research* featured in a number of articles (e.g. Leask et al., 2017). This therefore elaborates our finding with regard to ‘co-evaluation’.
Interestingly we observed that all of the purely quantitative evaluations amongst the articles had been published since 2014. It is unclear whether there is a single explanation for this pattern, and it does parallel Voorberg and colleagues’ (2014) observation with regard to a lack of quantitative studies prior to 2014. It is also interesting, given their call for more quantitative studies to be undertaken, although we do not suggest that our finding is a necessarily a direct response to Voorberg et al.’s suggestion for greater use of quantitative and experimental approaches. If the use of quantitative methods is a trend which is increasing for the evaluation of co-creation and co-production, then this might also reflect that these approaches are becoming more prevalent in other sectors and disciplines which may be more traditionally associated with quantitative methods. It is interesting to note that the four purely quantitative examples which we found were from the healthcare sector, and represented interventions which healthcare researchers would have routinely evaluated using quantitative methods, albeit with co-designed or co-produced elements.

Our finding with regard to the predominance of qualitative studies is therefore consistent with that of Voorberg et al. (2014), and we echo their observation that this implies that the context in which co-creation and co-production takes place is highlighted. We also agree with their conclusion that greater use of quantitative techniques would help to identify the contribution of influential factors, and randomised evaluations would give confidence about causal relationships. We observed a number of articles which made strong claims with regard to the outcomes of the policy, programme or service, and the centrality of co-creation or co-production in achieving those outcomes. Yet these claims were often based on qualitative methodologies, the description of which did not provide clarity with regard to the causal mechanisms and contribution of co-creation or co-production. We refer also to our earlier finding concerning the ‘bundling’ of co-creation with other elements of a programme; again this makes it difficult to precisely delineate causal mechanisms. In the majority of articles these processes were not specifically theorised, nor empirically tested using robust research designs.

4.5. Research question 4: What outcomes are associated with co-creation and co-production in policy and programmes in the United Kingdom?

Although we classified 15 (45%) of the articles as ‘other’ evaluations (thus principally representing evaluations of the implementation process), the majority of articles presented findings which related to outcomes. This is to be expected, particularly when using qualitative methodologies, which would potentially ‘surface’ discussion about outcomes even in the context of evaluating how well the programme was implemented.

Considering for a moment the four purely quantitative articles, a range of outcomes are reported which indicate probably positive effects of the co-produced programme. For example, Turner et al. (2015) found improvements on a number of patient outcomes following their participation in a co-created and co-delivered Self Management Programme. A cluster Randomised Controlled Trial (Phillips et al., 2014) of a community engagement approach to improving health behaviours and mental well-being found some evidence of impact on secondary outcomes (e.g. reducing unhealthy eating score). However despite these examples of quantitative studies employing research designs which would give the researcher and reader confidence in the cause of the observed effect, we are unsure of the contribution of co-creation and co-production to that outcome. Indeed in the latter
example, co-production is one of many elements of a theory of change, and may therefore likely play a minor role in the attainment of specific health-related outcomes.

Broadening our analysis to outcomes and findings associated specifically with co-creation and co-production (by a range of methodologies), we can understand outcomes at a number of levels:

- **Individual** – co-production was empowering to individuals, but increased feelings of pressure, strain and frustration among those who took part in the co-production process;
- **Community** – increased sense of community amongst citizens; offering a community to marginalised groups;
- **Public service provider** – co-production highlighted a means of managing tensions between the different competing priorities of the stakeholder groups (and organisations) represented; professionals differing in their acceptance of co-production; and
- **Policy or service** – runs best when owned and run by local communities; increased policy acceptance with citizens being ‘architects’ of policy; citizen engagement leading to greater service user retention; increased appetite amongst service users for co-creation or co-production approaches; co-production resulting in a more nuanced and effective evaluation; lack of time to implement and lack of awareness by service users impacting on user involvement in service co-production;

Voorberg et al. (2014) concluded that they were unable to conclude that co-production is beneficial. Based on our analysis we would go one step further, and suggest that there is (albeit limited) evidence that co-creation or co-production may in some instances have detrimental effects on individuals, groups organisations and systems. The examples cited above suggest some negative outcomes for individuals and in terms of efficiency for public bodies, policy and services. Whilst we are careful not to overstate any potential negative findings associated with co-creation or co-production, this suggestion is important as it stands in stark contrast with the understanding that co-production is in itself primarily a virtue (Voorberg et al., 2014).
5. DISCUSSION AND FUTURE DEVELOPMENTS

This Rapid Evidence Assessment sought to arrive at an updated synthesis on the co-creation and co-production evidence base in the United Kingdom. Taking as our starting point the work of Voorberg et al. (2014), we set out to identify evaluations of policies, programs, interventions and services which were wholly based on, or incorporated principles of co-creation and co-production. We were particularly keen to review a range of non peer-reviewed material, which might reflect the burgeoning practitioner literature which represents the spread of co-creation and co-production across a range of sectors in United Kingdom. Before commencing our review we had assumed that much of the evaluative literature would be based on qualitative and case studies methodologies, this assumption being based on our understanding of the field and the conclusions of Voorberg et al. (2014). Therefore we were particularly keen to understand the methodologies employed in the UK context, and the claims being made of co-creation and co-production.

Our review observed a number of principal findings:

1. There were a comparable number of peer-reviewed and non-peer reviewed articles. Non-peer reviewed articles were characterised by lower quality ratings when rated against criteria for their contribution to advancing wider knowledge or understanding, and the defensibility of their design in providing a research strategy which could address the evaluation questions posed. To some degree this might be expected, and may be an artefact of the absence of a peer review process which might ensure fuller descriptions and reporting standards.

2. We noted that a small number of instances of co-creation and co-production involved the citizen as co-evaluator. This might represent an additional category of co-creation and co-production, to those found by Voorberg et al. (2014, p.7).

3. In many cases articles did not offer a definition of co-creation and co-production, and there was evidence of the link between definitions and consequent implementation of co-creation and co-production. There was also some evidence of a lack of definition (and shared understanding) resulting in slow uptake and a lack of engagement in one or two projects.

4. We found objectives of policies, programs, interventions and services based on co-creation and co-production to be at the individual, community, public service provider, and policy or service levels. As co-creation and co-production were often a mechanism of delivery which was ‘bundled’ with other aspects of programme design, there was often difficulty discerning the anticipated contribution of co-creation and co-production. Very few studies specified this, for example in terms of a logic model or theory of change.

5. Qualitative and case study methods were used in the majority of the evaluations. Whilst there were clear examples of where this was undertaken to a high standard, we observed a number of strong claims about co-creation and co-production, in terms of its contribution to specific outcomes. From the perspective of causal inference, it is difficult to substantiate these claims on the basis of the methods used.

6. Many articles cited specific outcomes related to the policy, programme, intervention or service, these being the result of the overall intervention. Similar to the objectives of co-creation and co-production, it is difficult to delineate the contribution of co-creation and co-production on these outcomes, although many articles describe co-creation and co-
production related outcomes specifically. We observed that there were some examples of negative outcomes for individuals and services.

Given our findings we have a number of points for discussion, and suggestions with regard to how to develop theory and the evidence base for co-creation and co-production.

Firstly, we acknowledge the many overlapping concepts relating to co-creation and co-production. Our background and context to this paper described these at length, and we value the contributions (e.g. SCIE, 2015; Voorberg et al., 2014; Osborne and Strockosh, 2013) which clarify these definitions. Nevertheless, considerable conceptual overlap remains, and this may be amplified in implementations of co-creation and co-production where concepts are not clearly defined. In this review we found considerable evidence of lack of definition, or other concepts (e.g. Asset Based Community Development, participation) being cited in the same context as co-creation and co-production.

We argue that conceptual clarity is a pre-requisite for successfully operationalising co-creation and co-production, and that academics and practitioners should strive to clearly articulate shared definitions of co-creation and co-production as the basis for policies, programmes, interventions and services. Such specificity with regard to definitions would be instrumental in establishing the role of co-creation and co-production in a particular intervention, and would therefore be a requisite step towards theorising and evaluating the contribution of co-creation and co-production towards outcomes.

Secondly, we would welcome the development of a taxonomy of potential objectives and outcomes of co-creation and co-production, so that the various stakeholder groups involved in policies and services may better understand the expected contribution of co-creation and co-production with regard to outcomes. Such a taxonomy would provide a framework to aid understanding as to how co-creation and co-production works, for whom and at what level. Our review found objectives and outcomes for co-creation and co-production at different levels, and we argue that a better specified multi-level taxonomy would facilitate precision in the implementation and evaluation of co-creation and co-production. Similar taxonomies are used in other disciplines. For example, academic occupational psychologists have developed a taxonomy of organisational training outcomes (Birdi, 2010), which have been used widely by academics and practitioners. Figure 1 is a graphical representation of such a taxonomy, and it is easy to imagine how the various levels of training outcome (e.g. individual, team, organisational and societal) could be represented for interventions based on principles of co-creation and co-production.
For example, we found objectives and outcomes at individual, community, public service provider, and policy or service levels. These would fit well into a taxonomy. Furthermore, TOTADO specifies objective and outcome categories at each of the levels (e.g., cognitive, physical, affective, behavioural, and instrumental at the individual level). This granularity is helpful for stakeholders to develop a shared understanding of the anticipated objectives and outcomes of co-creation and co-production, and also for evaluators who seek to understand objectives and outcomes, through the classification, data collection, and measurement of these. Greater specificity also helps to operationalise different variables for the purpose of understanding causality, particularly for quantitative analysis, but also for qualitative methods which seek to evaluate causal processes within a structured framework.

Our recommendations thus far have focused on definitions of co-creation and co-production, and the specification of the various objectives and expected outcomes for interventions which are wholly based on, or include principles of co-creation and co-production. Our third suggestion is with regard to the expected benefits of co-creation and co-production, which Voorberg et al. (2014) do not reach a conclusion on. This is despite the ‘implicit assumption’ that co-creation and co-production is a ‘virtue in itself’ (ibid, p.9). Furthermore, despite a number of the articles in our review which cited co-creation and co-production as being instrumental in the success of the intervention, there was some evidence of negative and detrimental effects of co-creation and co-production, particularly for individuals or the intervention. Overall, our review did not find clear evidence which isolated the causal effects of co-creation and co-production, and we suggest that there is much more work to be done to understand these at different levels. In doing so, we are keen to identify and challenge any prevalent assumptions about the ‘virtuous’ nature of co-creation and co-production. Greater specification of the levels and categories of objectives and outcomes would help in this endeavour, and therefore the development of a taxonomy as previously suggested would be instrumental towards this end. This would help to identify for whom co-creation and co-production has a
beneficial or detrimental effect, under what circumstances, and at what level. Studies which address causal factors would be particularly helpful towards this end, and specifying psychological outcomes (e.g. in terms of cognition, affective and behavioural elements) would be critical in understanding some of the individual level factors which would be critical to the success of any co-creation and co-production related policy or programme, particularly if implemented at scale.

An enduring theme throughout our findings and recommendations so far has been that of causality, and here we concur with Vorberg et al. (2014) with regard to methodological recommendations. Whilst we acknowledge the highly contextual and distinct natures of implementations of co-creation and co-production, and the appropriateness and utility of case studies and qualitative methods for evaluating these, we found few examples of methodologies which would be sound rationales for causal inference, particularly with regard to the actions of co-creation and co-production. Greater use of quantitative methods is required in order to understand the extent of some of the relationships and causal processes which may feature in co-creation and co-production interventions. For example, we might wish to understand service users’ perceptions of the degree to which a programme or policy adheres to the principles of co-production (SCIE, 2015), and the effect this has on their motivation to contribute to the programme or policy.

Fortunately there is a considerable knowledge base and resources from quantitative social science to help researchers and practitioners to incorporate quantitative elements to methodological approaches. For example, the Maryland Scientific Methods Scale (Sherman et al., 1997) is a clear guide to understanding the degree to which particular quantitative research designs can convey certainty with regard to their findings. Randomised Controlled Trials, often cited as the ‘gold standard’ in questions of causal inference, have been implemented and well documented in a range of social policy contexts and there is considerable expertise available in the academic and practitioner community to effectively undertake such a research design. In addition there are existing measurement scales which would make a strong contribution towards the measurement of individual level outcomes in particular. Many of these are general psychological scales, some of which have already been piloted in co-production contexts (Fox et al. 2018). In addition, there is evidence of the development of scales which have specific applicability to co-production. For example, the World Bank (2004) has developed a measure of social capital, and there are examples of researchers beginning to develop instruments which are closely conceptually related to co-production (Bolton et al. 2016). One caveat to the use of such instruments is that a clear conceptual understanding of their nature and purpose is required in order for them to be valid measures of intended constructs. For example, there might be a danger of misapplying a measure of social capital to a co-production intervention, in the belief that the measure was closely measuring aspects of co-production. Again we refer to our initial recommendation with regard to conceptual clarity to avoid this.

In order to develop the methodological approaches to the evaluation of co-creation and co-production policies and programmes, we suggest the following elements should be incorporated to enhance the explanatory power of any evaluation:

1. Process evaluations should be undertaken to give insight into implementation fidelity;
2. Mid-level theory (e.g. a logic model or theory of change) should be specified;
3. Research contexts should be made explicit and explored (including supporting factors and moderators);
4. Causal explanations should be sought, including pathways and mechanisms of effect;
5. Issues of generalizability and external validity should be considered.

Across these areas both qualitative and quantitative methods have much to contribute.
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