Building realist programme theory for large complex and messy interventions

SHEARN, Katie <http://orcid.org/0000-0001-7209-8404>, ALLMARK, Peter <http://orcid.org/0000-0002-3314-8947>, PIERCY, Hilary <http://orcid.org/0000-0002-7663-8858> and HIRST, Julia <http://orcid.org/0000-0001-9230-1828>

Published version

SHEARN, Katie, ALLMARK, Peter, PIERCY, Hilary and HIRST, Julia (2017). Building realist programme theory for large complex and messy interventions. International Journal of Qualitative Methods, 16 (1), 1-11.

Building realist programme theory for large complex and messy interventions

Katie Shearn[1], Peter Allmark[2], Hilary Piercy[2] and Julia Hirst[3]

[1]Corresponding author: Katie Shearn, Health and Wellbeing Research Institute - Postgraduate Research Centre, Chestnut Court, Sheffield Hallam University, Collegiate Crescent, Sheffield, S10 2BP (k.shearn@shu.ac.uk)

[2] Centre for Health and Social Care Research, Sheffield Hallam University, Collegiate Crescent, Sheffield, S10 2BP

[3] Department for Psychology, Sociology and Politics, Sheffield Hallam University, Collegiate Crescent, Sheffield, S10 2BP

Abstract

Programme theory, that is, the specific idea about how a programme causes the intended or observed outcomes, should be the central aspect of any realist evaluation or synthesis. The methods used for explicating or building initial rough programme theories in realist research are varied and arguably often underreported. In addition, pre-existing psychological and sociological theories, at a higher level of abstraction, could be used to a greater extent to inform their development. This article illustrates a method for building initial rough programme theories for use in realist research evaluation and synthesis. This illustration involves showing how the initial rough programme theories were developed in a realist evaluation concerning sexual health services for young people. In this evaluation, a broad framework of abstract theories was constructed early in the process to support initial rough programme theory building and frame more specific programme theories as they were developed. These abstract theories were selected to support theorising at macro, meso and micro levels of social structure. The paper discusses the benefits of using this method to build initial theories for particular types of interventions which are large, complex and messy. It also addresses challenges relating to the selection of suitable theories.

Key words: realist, programme theory, sexual health, young people, middle range theory, adolescents, organisational change, conceptual framework

What is already known

- Methods for developing initial theories in realist research are varied and underreported
- Existing abstract theories are often used to substantiate rather than inform programme theory development

What this paper adds

- An account of programme theory development in a realist evaluation of positive comprehensive youth sexual health services
- A rationale for early development of a framework of abstract theories to improve coherence, quality and transparency in realist research
- A set of criteria for selecting abstract theory to support early programme theory building

Introduction

The practice of realist evaluation and realist synthesis in social and health sciences is increasing (Marchal, van Belle, van Olmen, Hoeree, & Kegels, 2012; Salter & Kothari, 2014; Tricco et al., 2016). This prompts the need for methodological clarity in the use of such approaches. Notable contributions to support researchers in developing realist inquiries include the RAMESES I (Wong, Greenhalgh, Westhorp, Buckingham, & Pawson, 2013) and II (Wong, 2016) projects that support realist synthesis and evaluation respectively. These provide guidance in the form of publication standards, principles of good practice and critiques of case studies, but, they do not provide step by step methodological templates or protocols. Indeed, it is suggested that the iterative and cyclical nature of realist research is not suited to such rigid formats (Greenhalgh, Wong, Westhorp, & Pawson, 2011; Jagosh, et al., 2014). However, we propose that more detailed methodological guidance would support consistent application of realist principles and contribute to transparency of the process.

This paper aims to contribute to the discussion on building programme theory in realist evaluation or synthesis. In the broadest definition, programme theory or theories are the ideas about how the programme causes the intended or observed outcomes (Davidoff, Dixon-Woods, Leviton, & Michie, 2015; Funnell &

Rogers, 2011). Programme theory or theories are central to realist evaluation or synthesis as they may form the means to providing plausible explanations of why certain interventions work or do not in certain circumstances (Pawson, 2006; Pawson & Tilley, 1997). This paper outlines several approaches used by practitioners to make explicit or develop such theories. It then makes a case for the early construction of a broad framework of more abstract theories, in the grand or middle range, to guide programme theory development. It is argued that the construction of a 'broad conceptual framework', at an early stage may be particularly useful for realist inquiries concerned with interventions which are large, multifaceted (Westhorp, 2012, 2013) and/or could be described as messy (Sankar, 2011). The type of broad conceptual framework (Imenda, 2014) proposed would be a set of concepts, drawn from established abstract theory, which collectively provide an explanatory framework and a structure within which to develop and situate the initial set of programme theories that arise from the data. This is illustrated using an example of initial theory building relating to the delivery of positive youth sexual health services in England.

The paper will first introduce the topic that was under investigation. It then presents some key tenets of realism, particularly the central role of programme theory. Next the approach to building programme theory used in this research study is described. The paper concludes with discussion of the potential

benefits this approach offers for evaluations of complex social interventions as well as further challenges that it may present.

Background

Developing theory for the delivery of positive youth sexual health services

English and international policy contains an ambition for a positive approach to youth sexual health services, one which prioritises and promotes young people's sexual wellbeing (Faculty of Sexual & Reproductive Healthcare (FSRH), 2015; Great Britain, Department of Health, 2013; World Health Organisation (WHO), 2010). However, the dominant model of delivery represents a risk based, rather than positive approach, focussed on treating or preventing sexual ill-health and teenage pregnancy (FSRH, 2015). This is despite support from a wide range of scholars (Patton et al., 2016; Wellings & Johnson, 2013) and advocates for young people (Brook, 2016; FPA, 2011) for a positive approach. The WHO (2010) recognises a need for theory and evidence to support the development of positive, comprehensive youth sexual health services (hereafter positive services). The aim of this research project was therefore to gather evidence and ideas about what works (has worked,

could work) to deliver positive services, for whom, under what circumstances, and why.

Realist methodology for investigating youth sexual health service design and delivery

Complex interventions are characterised by multiple parts which interact with each other and the political, historical, social and geographic contexts in which they are situated to produce outcomes (Clark, 2013b). Youth sexual health services can be described as complex interventions because: they cover a range of different issues, for example prevention and management of sexually transmitted infections, preventing unwanted conceptions and psychosexual concerns, are delivered in a range of settings by a variety of clinical and non-clinically trained staff for all young people with their different needs and experiences. Such complexity needs to be reflected in any research evaluating these interventions. Research studies of sexual health interventions must be designed to consider local contexts; experimental designs alone are not sufficient to understand why certain ideas work, or do not, in particular contexts (Michielsen et al., 2016; Santelli & Schalet, 2009). Several scholars have argued that research approaches, rooted in a realist philosophy of science, may

support the accrual of knowledge concerning how complex interventions, such as sexual health services, work (Clark, 2013a; Pawson & Tilley, 1997; Westhorp, 2012). Realist approaches are particularly focused on uncovering causal processes rather than simply outcomes and may be most effective when dealing with issues of complexity, that is, where many causal factors interact. This was the case for the project reported here concerning positive sexual health services, hence the choice of a realist approach.

Two principles of realism

A goal of realist research is to explain causal processes. Causation, according to realist philosophy can be attributed to underlying mechanisms which, triggered under particular contextual conditions, lead to the outcomes we are interested in (Bhaskar, 2008). Mechanisms are often hidden, for example, at the level of human reasoning or social interactions and therefore cannot be directly observed (Sayer, 2000). It follows that we need to use other methods to uncover these mechanisms, the contexts in which they are triggered, and the outcomes that ensue; Pawson summarises this as the Context Mechanism Outcome (CMO) framework (Pawson, 2013). Given that the mechanisms are not directly observable the search for them is led by the theories about them; in

other words, we look for the operation of CMOs in places that the theories about them guide us to look. For example, sexual health services may be placed in a discrete location because it is assumed that possible embarrassment and shame, associated with sexual health issues, might prevent people attending, if the services were highly visible. We cannot see the user's feelings of shame, affecting their decision making, nor the cultural conditions contributing to these feelings, but our theories about them would direct us to consider these mechanisms in our data collection.

A second principle is that realist research embraces the idea that complexity is inherent in social systems (Westhorp, 2012). Social interventions are always played out in 'open' settings where various contextual features at different social strata, such as individual demographics, interpersonal relationships, and political and economic structures, interact affecting the outcome (Clark, 2013a). This is not necessarily a linear relationship, whereby A leads to B, but more like a web of causal processes which, in combination, generate the outcomes (Sayer, 2000). Realist scholars call this web of causal processes leading to an outcome generative causation (Bhaskar, 2008). One of the aims of realist research is to make explicit the ways in which the various contexts interact and affect the outcomes of an intervention via the triggering or inhibiting of key mechanisms (Pawson & Tilley, 1997). Both qualitative and quantitative

methods are legitimate tools for extracting, developing or testing theories that articulate these ideas (Pawson & Tilley, 1997).

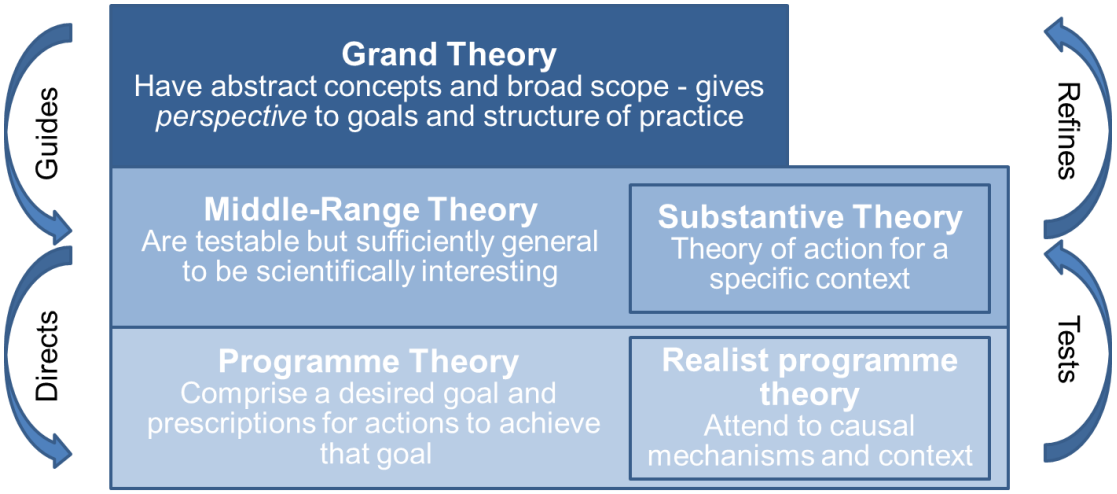
Realist research should therefore, and as stated above, be theory-led and use tools which support the analysis of the complexity inherent in the system.

Programme theories are the central aspect of realist research

Pawson and Tilley (1997), in setting out a realist approach to evaluation, argue that the 'evaluand' (that is, the thing evaluated) in such studies should not be the programme, intervention or policy itself, such as would be the case in other evaluative methods, for instance, a randomised controlled trial, but the causal programme theory underpinning it. Broadly speaking this programme theory relates to why and how the programme brought about the changes observed. There are some differences in the way in which 'programme theory' has been conceptualised. This is in part due to the fact that such theories can either represent a highly specific causal explanation or a more abstract explanation. Pawson, (2010, 2013) for example, uses programme theory somewhat interchangeably with middle range theory, which is at a higher level of abstraction and can be generalised across different contexts. Other scholars make a distinction between programme theory and middle-range or grand

theories, by which they mean abstract theories which are not attached to a specific context (Davidoff et al., 2015).

For the purpose of this paper, we will refer to programme theories in the narrower sense concerning how a specific intervention is theorised to lead to a goal (Davidoff et al., 2015; Funnell & Rogers, 2011). However these programme theories are not free floating; there are relationships between them and the more abstract theories in the middle range or grand theories (Walker & Avant, 2005), see Figure 1 which gives a visual representation of these relationships. For example, the more abstract theories can be harnessed to guide the development of programme theories by highlighting key concepts and relations that might be influential (Westhorp, 2012). In turn, testing programme theories, in different contexts, has the potential to refine more abstract theories. Thus effective programme theories may well be rooted in one or more abstract theories (Westhorp, 2012).



Adapted from Walker and Avant, (2005)

Figure 1: Relationships between grand, middle-range and programme theory

Accordingly, certain aspects of programme theories, which are rooted in more abstract theories, will not be unique to individual settings or interventions but may be commonly applied across a wide range of policy areas (Pawson & Tilley, 1997). Examples are given such as 'naming and shaming' theories which operate across criminal justice, healthcare and education settings amongst others. The task of the research practitioner is to identify whether, when, how and why the abstract theory applies in a particular context. This leads to the central question in their seminal work: 'what works, for whom, in what circumstances and why?' (Pawson & Tilley, 1997). The outputs from such a

study would ideally be well-articulated programme theory, to support the development of the intervention in context (Davidoff et al., 2015) as well as new or refined abstract theory, most likely in the middle range, which can be generalised to other settings.

Adapting programme theory building for large, complex and messy interventions.

Realist methodology has been applied in a wide range of research studies. Some of these concern interventions which are well-defined with distinct boundaries and outcomes against which the project could be evaluated, such as crime reduction programmes (Pawson & Tilley, 1997). However, other practitioners have attempted realist evaluations of interventions, including policy reform and system transformation, which are highly complex, large scale and/or messy (Greenhalgh et al., 2009). The intervention, which is the focus of this paper, falls into the latter category because it is looking at system transformation and organisational culture change within publicly funded health services, rather than the discrete addition of a new intervention. In addition, the 'programme' itself is not a well-defined intervention - more an idea or set of ideas which have been tried, but not in a systematic or uniform way.

Arguably, realist methods need to be adapted to address different research questions (Davis, 2005; Pedersen & Rieper, 2008). In particular, the method for explicating and developing programme theory in large, 'messy' interventions may pose, specific challenges because it is unlikely to be explicitly stated and may be highly convoluted and multi-stranded. This particular task is now considered in detail below.

Approaches for developing of initial rough programme theories *(IRPTs)*

Strategies for building IRPTs

Guidance on conducting realist work suggests that the starting point in realist evaluation and realist synthesis is to develop an initial rough theory or set of programme theories, henceforth referred to as IRPTs (Wong, 2015; Wong et al., 2016; Wong et al., 2013). These IRPTs become the object of the inquiry, and the structure and framework for examining and synthesising diverse evidence (Pawson, Greenhalgh, Harvey, & Walshe, 2005; Rycroft-Malone et al., 2012). As projects progress, the IRPTs are revisited frequently, revised and refined according to new information as it becomes available until ultimately they can be presented as a refined programme theory, albeit fallible and partial (Pawson, 2013).

The RAMESES guidance suggests that IRPTs may be elicited from a number of sources (Wong et al., 2016; Wong et al., 2013). An exploratory review of the literature suggests that, where initial theory building is reported, different approaches are indeed employed. Some use the programme theory which is explicit within the programme development documentation. For example, Tolson and colleagues, in their evaluation of delivering Managed Clinical Networks, cite programme theory used by the Scottish Executive Health Department (Tolson, McIntosh, Loftus, & Cormie, 2007). This may be possible when interventions are well-defined with clear boundaries, but less so with 'messy' interventions.

Where there is no explicit programme theory, written in policy or service documents, researchers are required to build it (Pawson, 2013). There are various processes for building IRPTs which can be used singly or in conjunction with one another (Lipsey & Pollard, 1989). Four of the possible strategies, used in realist programme theory building, are outlined below:

- Using concepts from abstract theories which were used to inform current or comparable interventions. A comparable intervention might be one that is aiming to achieve similar outcomes or one that utilises a similar change mechanism and therefore may be rooted in a common middle

range theory. For example, Marchal, Dedzo & Kegels (2010) and colleagues drew on four distinct theories of human resource management in their evaluation of hospital performance. In this case the abstract theory or theories were used as a framework for IRPT development.

- Using concepts from abstract theory which are selected purposively for the research synthesis or evaluation by the research team, but which have not been referenced in the programme literature. For example, Vareilles, Pommier, Marchal and Kane (2015) cite 'self-determination theory' which was used as a framework for IRPT development to understand the performance of community health volunteers.
- Extracting tacit theories about what is working and why from interventions on similar topics, reported in the literature (Lhussier, Carr, & Forster, 2016; Pearson et al., 2015). In both of these realist syntheses, the research teams extracted nuggets of data from the literature (in health improvement for traveller communities and collaborative care in offender health, respectively). These nuggets were then accumulated and configured to form a conceptual framework, from which the IRPTs were drawn, without reference to abstract theories.

- Extracting tacit theories (about what is working and why) directly from stakeholders via one-to-one interviews, brainstorming, documentation of the current intervention and/or developed by the research team who may be embedded in the intervention or use their own experiential or professional knowledge. In this case data derived tacit theories are accumulated and configured to form IRPTs. For example, Goicolea, Hurtig, San Sebastian, Vives-Cases & Marchal (2013; 2015) developed IRPTs about what worked for primary care teams to respond to intimate partner violence using programme documentation, one to one interviews and stakeholder workshops.

Building programme theory using the latter two strategies, that is, by using data drawn from stakeholders or literature alone, can give rise to problems which we look at below.

Issues associated with IRPT development from data alone

There are at least three potential issues with data driven approaches to building IRPTs. First, one may simply rediscover what is already well established in the theoretical literature and not add substantively to our understanding of the concept, for example, that trust between stakeholders leads to better outcomes.

Second, it is reported that data-driven approaches generate an overabundance of candidate theories, which can be overwhelming (Pawson, 2013). A third, related problem is the developing theory may be unstructured, that is, not clearly relatable to levels of social strata, (for example individual, interpersonal, institutional and infrastructural (Pawson, 2006)), and as a result lack coherence as they will not fully acknowledge the role of mechanisms at these different levels, nor explain the patterns that they form. Arguably, these problems are exacerbated in interventions that are large, complex, and less well-defined because there are considerably more aspects of the theory which could be explicated.

In the face of this abundance, RAMESES guidance stresses the importance of prioritising or focussing the research (Wong et al., 2013). Pawson, (2013) suggests a number of strategies, including the use of conceptual platforms, cycles of hypothesis selection and shedding, focussing on policy discord or developing lines of inquiry.

Additionally, in explicating the role of different mechanisms at different levels of social structure, Westhorp, (2012, 2013) uses the metaphor of climbing up and down ladders. The ladder rungs refer to different levels of social strata. These may have corresponding layers of theory: micro (relating to individual), meso

(relating to interpersonal) and macro (relating to institutional, infrastructural and cultural).

It has been argued that a sound understanding of a broader, more abstract conceptual framework, incorporating theories which relate to different layers of social structure may help to overcome each of the three highlighted issues (Westhorp, 2012). It may also direct and frame a more detailed analysis of causal explanation (Westhorp, 2012). The rationale for this is further developed below.

The case for a conceptual framework of abstract theories to inform IRPT development

It is the central thesis of this paper that an initial conceptual framework of abstract theory could be a valuable asset for formative assessments of large, complex and messy interventions. This framework, if informed by theory at different levels of social strata, may provide a number of benefits. First, it can highlight common features and relations which are likely to play a role in the programme theory, and, second, it can provide a structure within which to situate more detailed analysis. This marries with Salter & Kothari's (2014) suggestion that a conceptual framework may, in general, facilitate the

identification of important relationships between concepts. The method for developing one such framework and its contribution to IRPT building is outlined below.

Building initial rough programme theories for the delivery of positive youth sexual health services

The following sections will describe three main phases of IRPT development: concept defining, proposition development, which includes the development of the conceptual framework introduced above, and theory development. Whilst these are described sequentially, in practice there was some degree of overlap across the phases. Overlapping methods and research phases are commonplace in realist projects, where aspects of the theory are iteratively enveloped with data, and where emerging findings may direct the researcher to return to previously examined literature (Wong, 2015). The phases are described in detail below, alongside illustrative examples of the IRPT in development.

Phase one: concept defining

Any programme theory is made up of concepts which define the fundamental characteristics of the programme in question (Walker & Avant, 2005). Realist methodology calls for explication of concepts and strives for clarity where they are contested. An essential first step of theory building is therefore to articulate the concepts and shared or contested understanding of the programme under review such as 'what the programme is?'; 'who is the supposed target?'; 'what is the supposed outcome?' (Pedersen & Rieper, 2008).

A process of concept mining (Rycroft-Malone et al., 2012) and refining was adopted in this project, not least because the concept of 'positive approaches to youth sexual health' has no set definition. This process had a number of stages as detailed below.

Concepts, constructs and definitions of positive approaches to youth sexual health services were identified through a systematic search of four electronic databases using the search terms “sexual health” in combination with “sex positive”, “young people”, “service”, and other synonyms (for details see Shearn, Piercy, Allmark, & Hirst, 2016). More specific inclusion and exclusion criteria were then applied to identify papers that related to universal youth sexual health provision, developed countries, written in English. Out of 1162 articles, three

services meeting the inclusion criteria were reported in the literature. Reference, citation and grey literature searches resulted in 25 sources concerning the development and evaluation of these services. Data referring to the overarching aim, outcomes of interest, characteristics, and principles were extracted. These were then synthesised, and principles and characteristics distinguishing positive approaches from other models of care were identified. In brief, these principles were: first, an acknowledgement that young people had a sexual identity and rights associated with this, second, a desire to support young people to achieve sexual wellbeing and recognition that this is influenced by individual, interpersonal and societal factors and third, a commitment to place young people's needs, as opposed to political, professional or societal needs, at the centre of decision making. We then investigated the extent to which these principles and characteristics were present in current policy, to refine our definition of positive youth sexual health services. This definition was then verified via a group of multi-agency practitioners and researchers in sexual health.

The output of this stage was a provisional definition of positive youth sexual health services which described its principles, characteristics and the organisational outcomes associated with such an approach and initial data regarding how such outcomes might accrue. The process of concept mining,

however, alerted us to the fact that many possible interpretations of positive services exist, for example, as a marker of quality overlaying a clinically orientated service, or as a reorientation of services to help young people achieve sexual wellbeing. These contested concepts were therefore incorporated into our initial theories as possible contexts leading to unintended outcomes.

Phase two: proposition development

i Using a framework of existing abstract theories

The next stage of realist theory development was to develop realist statements or propositions explaining how a positive approach might be brought about. This involved specifying the antecedent concepts leading to the concepts identified in phase one, for example to consider commissioners', managers' and practitioners' role, background, knowledge, values and skills and the structural and cultural factors conditioning them (Walker & Avant, 2005). As highlighted above, there is no set protocol for developing such propositions, and indeed a variety of approaches is recommended (Wong, Westhorp, Pawson, & Greenhalgh, 2013) and undertaken in practice.

As indicated above, initial pilot interrogations of the literature demonstrated that the 'intervention' was not well established or well-defined. This meant that there were no immediate contenders for programme theories of action or theories of change that could be extracted from the programme documentation or through searching academic databases. Additionally, a purely data driven approach based solely on practitioners' lay theories to develop an IRPT would run the risk of raising limitless theoretical nuggets without a clear picture of how to bring them together and prioritise between them. Instead we began by building a broad framework of social, organisational and individual change middle range theories that may reflect similar processes of service transformation to positive youth sexual health services.

In line with Westhorp (2012, 2013), the conceptual framework was intended to support the consideration of social structure and the multiple layers of overlapping context (as mentioned earlier: individual, interpersonal, institutional, infrastructural and cultural (Pawson, 2006)) by looking for micro, meso and macro level theories. Given the evolution of cultural attitudes towards sexual health and the influence these have on services design (Herzog, 2009), the conceptual framework was also designed to support theorising about changes over time.

ii Selecting existing theory on the basis of explanatory power

Initially, we asked ourselves the question 'what is this intervention an example of?' This gave the more abstract, general answer: 'the adoption of a new, potentially controversial, model of service delivery'. A purposive search for middle range theories to support an understanding of what might work to deliver this type of change was undertaken. An initial short list of fifteen theories was established by drawing on the work of scholars in the field of sexual health, other realist scholars looking at similar service transformation and our own expertise in psychological and sociological fields.

The short listed theories were then appraised according to four criteria:

- The level within the social system - that is the extent to which they offered guidance for explaining phenomena at or between micro, meso or macro levels
- Their potential fit with the aims of the current research project - that is the extent to which they offered guidance, in this case, for explaining the likely phenomena observed when looking at the transformation of youth sexual health services
- Their simplicity - how readily they inspired theory generation

- Their compatibility with realist notions of causation - that is the extent to which they offered guidance for articulating underlying causal processes building on Westhorp's (2012) notion of complexity consistency theory. For example, these theories would address some all of the following: the constituent elements of the system, interactions within and between levels of a system, and the properties that may result in one level of the system as a consequence of the interactions at other levels (Westhorp, 2012).

Three theories were selected from the shortlist which best fit the criteria. Each operated at a different level of social structure. These were the Morphogenetic Approach (Archer, 1995), Normalisation Process Theory, (May & Finch, 2009) and the Capability, Opportunity, Motivation model of behaviour change (COM-B) (Michie, van Stralen, & West, 2011).

At a macro level, Archer's (1995) morphogenetic approach provides a realist perspective of how structure, culture and agents interact. Her approach describes the ways in which agents are conditioned by structure and culture to behave or react in certain ways, and hence our choices are constrained. How agents choose to act then reproduces or transforms the social structures /

culture. This theory contributed to our thinking around the overall process of change, but also the role of agents within the system and the effect of time and sequencing of events.

At the meso level, Normalisation Process Theory describes how organisations change to adopt new practices. May & Finch (2009) propose that normalisation *'work',* by which they mean '*what people do'*, concerns four broad constructs: i) *coherence* - work that defines and organises objects of a material practice, ii) *cognitive participation* - work relating to actors within the system engaging with the change, iii) *collective action* - work relating to all parts of the system working towards the same goal and iv) *reflective monitoring* - work relating to assessing patterns of work and outcomes. This theory has clear applicability to the current project aims which is looking at the adoption of a new model of practice.

At the micro level, Michie et al. (2011) assessed a wide range of behaviour change theories and distilled them to three key factors they suggest are necessary for individual change: capability, opportunity and motivation (COM-B).

The three theories, (Archer's (1995) morphogenetic approach, May & Finch's (2009) Normalisation Process Theory and Michie et al.'s (2011) COM-B), were assimilated to form an overarching conceptual framework. This framework was used to guide and inspire our programme theory development and subsequent

data collection and to frame the analysis. Figure 2 below depicts the simplified framework in which theories are positioned in relation to macro, meso and micro layers of the social system.

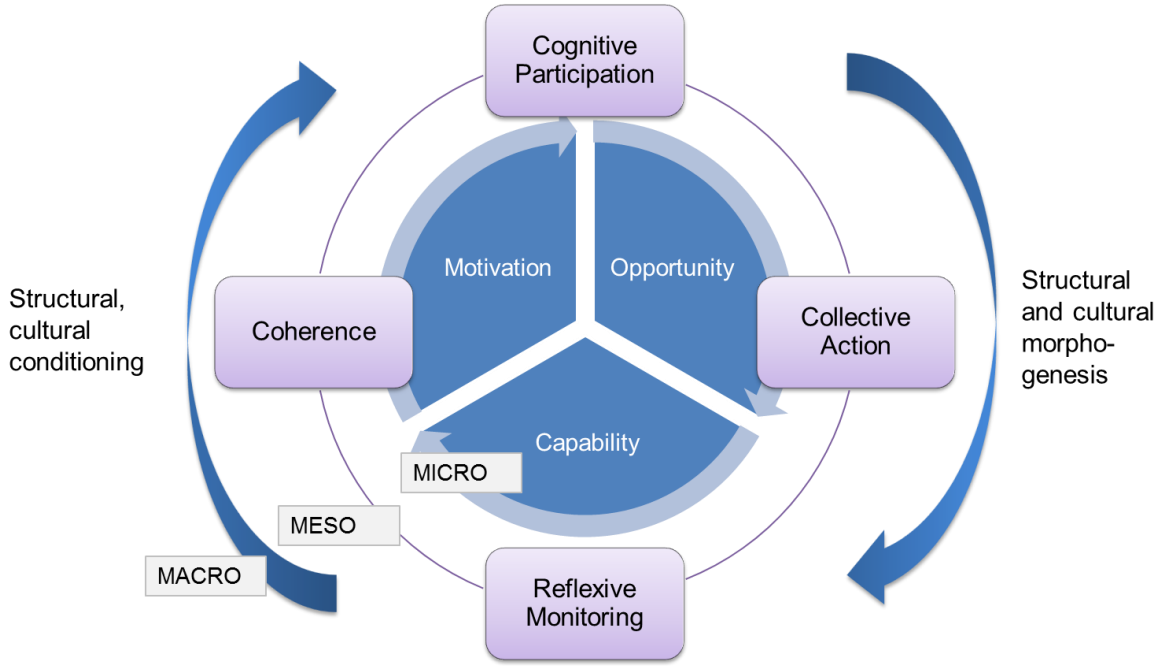


Figure 2 Conceptual framework of theories

iii Using the conceptual framework to build theory propositions

The next step was to use the conceptual framework to inspire the development of programme theory propositions, for example to connect concepts which might explain local buy-in to positive approaches. A series of explanations for the underlying causal processes leading towards local buy-in were postulated using the conceptual framework and information from the concept defining stage. Explanations were derived by iteratively hypothesising about how the step might be achieved based on a theoretical understanding of i) how it has been achieved in other circumstances (retroduction) and ii) developing hypotheses on the basis of data which are not explained by current theories (abduction) (Oh, 2014). This exercise gave rise to a number of theory propositions. One example is given below. Summarised, in prose, this is that *when commissioners, managers and practitioners, who intend to embed a positive approach in their work, share an understanding of positive principles and characteristics with other local decision makers and pursue the same goals, they will be motivated to work together as this will enhance their chances of success.*

Table 1 below illustrates which aspects of the proposition are supported by the conceptual framework and data (gleaned to that point).

Table 1 Proposition development and sources

Proposition	Data	MA	NPT	COM-B
When commissioners, managers and practitioners, who intend to embed a positive approach in their work	*	*	*	*
share an understanding of positive principles and characteristics with other local decision makers	*	*	*	
and pursue the same goals,	*	*	*	
they will be motivated to work together as this will enhance their chances of success		*	*	*

Other propositions supporting change relating to '*conviction', 'integration with other contextual features', 'consistent policy', 'evidence based practice', 'devolved decision making', 'young people's voice at the centre of decision making',* and those hindering change relating to *'tension between practice requirements'* and *'professional silos',* were also identified and explained using this approach.

Phase 3 Connecting propositions to form theories

The final stage of developing the IRPT was to draw the connections between the theory propositions. As Pawson (2006) notes, it is the combination of attributes, the fact that they happen together in a process over time, which provides the trigger for system transformation.

Figure 3 below illustrates the relationships between some of the theory propositions. Some were viewed as contextual features, representing social phenomena at macro, meso and micro levels. These propositions were thus arranged to illustrate how they might condition local, individual and group responses. Other propositions were viewed as possible outcomes or causal processes, that might be triggered as a result of such responses, within a long implementation chain which serves to transform services. Positioning these theories within a web of causation allowed for a rich picture to develop, but also highlighted gaps in the overall theory. Hypotheses were formed about the gaps using the abductive and retroductive inferences, in much the same way as the original propositions.

The theories are presented as relatively linear and sequential below, for the sake of clarity. It is, however, a representation of a more complicated picture where aspects of the theory compound or conflict with one another and where

feedback loops reinforce or reduce their influence. For example, young people's voices, demanding a positive approach, may be directly heard within the organisation through engagement strategies and indirectly heard through increasing practitioners' conviction in a positive approach.

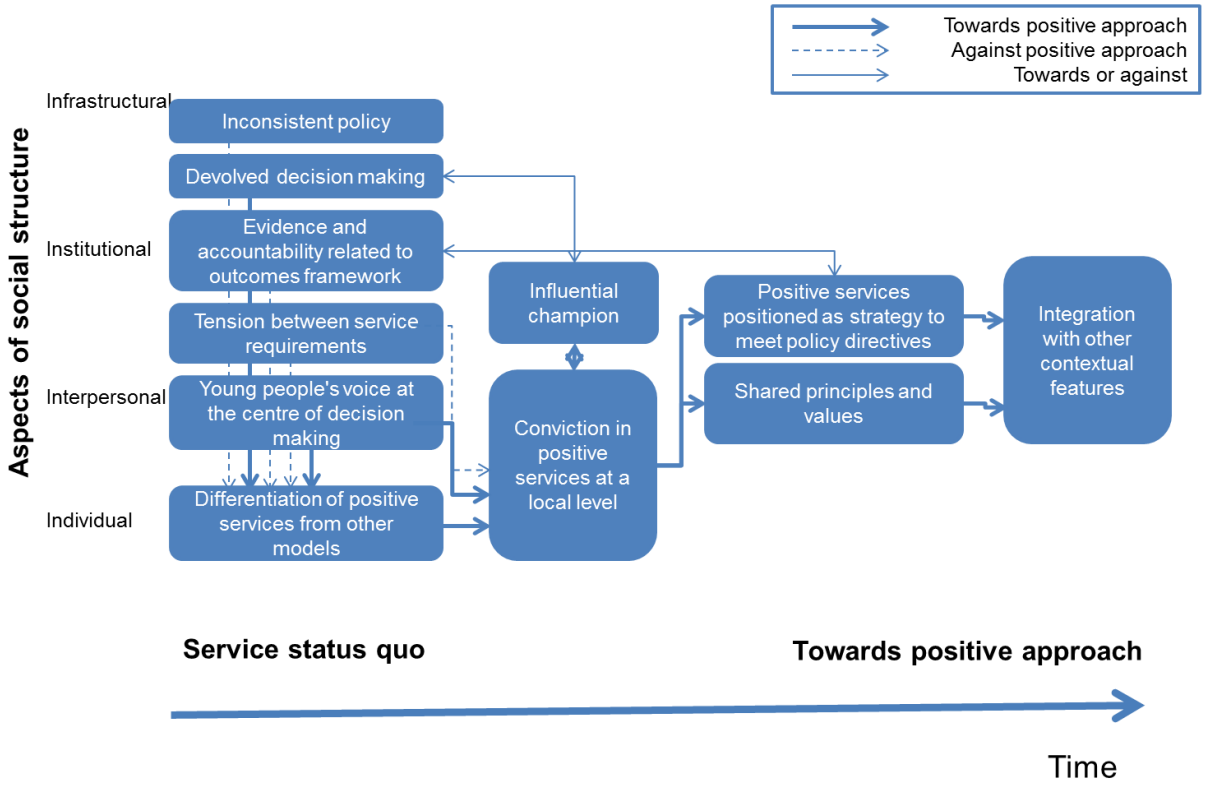


Figure 3 Connecting propositions to develop initial rough programme theories

The resulting initial rough programme theory (or collection of theories) can be summarised as follows. *In circumstances where there are multiple and competing influences on optimal service design, but some degree of autonomy in local settings, individuals with a clear understanding of positive services, (differentiated from other models of care), conviction in their efficacy for reducing youth sexual ill health and a sufficient degree of influence within the organisation may be able to instigate a positive approach by positioning it as the most effective means for reaching mandated service requirements. A model of positive services may be sustained if local agencies share principles and values and work towards common aims and if suitable evidence is collected to support it.*

Each of the propositions held within this could be further unlocked and interrogated, by asking 'when?' 'why?' 'how?' 'who?' and 'in what circumstances?'' These are the questions that can be posed directly in future data collection initiatives.

Summary

In the case of gathering evidence and ideas to build a programme theory for delivering positive services, we found that three phases of theory development

were required: concept, proposition and theory development (Walker & Avant, 2005). These phases were important as the programme under question was not a coherent intervention, and the purpose of the study was to develop ideas about what the intervention was and how it came to be operationalised. Concept development was supported by immersion in both youth sexual health service and realist literature. Proposition development was enabled through the development and application of a conceptual framework of middle range theories at different levels of social strata. Theory development, where links and relationships between the propositions were drawn, was undertaken through abductive and retroductive reasoning with references to the conceptual framework.

The development of the conceptual framework supported the building of the IRPT in several important ways. Firstly, it framed the overall process of organisational change, from one status to another via the theory of social morphogenesis. Secondly, it provided a scaffold for climbing up and down the levels of abstraction and zooming in and out of the layers of social structure (Westhorp, 2012, 2013). This supported an understanding of the emergent nature of organisational change. As part of a realist project, this then guided the search for underlying generative social causal mechanisms.

Discussion

Other accounts have referenced the use of a framework of substantive theories which informed the initial stages of theory development (Herepath, Kitchener, & Waring, 2015; Westhorp, 2013). What we have added here is a detailed account of how this framework can be used, in conjunction with initial data, to inspire the development of initial theory propositions.

In developing complexity-consistent theory, Westhorp (2012) advocates a similar approach of layered substantive theories in a 'theory ladder'. Her example demonstrates proposed direct linkages between the theories across the different layers. We found that the theories did not need to be directly aligned to inspire initial programme theory development. In fact, given that the task is to interrogate underlying causal processes, having theories which did not perfectly align, allowed us to consider alternative explanations which further empirical work would seek to test and adjudicate between (Pawson, 2013).

Purposively building an initial conceptual framework of abstract theories is not without its challenges. Firstly, there are a wide range of theories to choose from. A working knowledge of middle range and grand theories would be a valuable asset prior to beginning work on a realist project. Theories in this current project were identified from a range of sources, but there may have been others that

would have served the project better. Systematic approaches to searching for abstract theory have been suggested, for example the BeHeMOTH procedure (Booth & Carroll, 2015), although the extent to which this technique can be applied to realist projects concerning large, complex and messy interventions is as yet unclear. As such, the identification of relevant theories currently remains dependent on the researcher or research team's knowledge and deployment of a wide range of strategies.

Judging the utility of existing theory may also be problematic. At present we know of no criteria available for assessing whether an existing theory is suitable or not for developing a realist programme theory. Westhorp (2012) suggests characteristics which complexity-sensitive theories would feature. Furthermore, we were concerned with selecting theory which would be of practical use as a tool to inspire theory building. Hence we developed criteria as part of this project to justify the selection of the theories we used. These criteria were that the theories were: at an appropriate level of abstraction with regards to social structure; fitted with the topic; were simple, and could be easily utilised to inspire programme theory development; and were compatible with realist principles. If abstract theories are to be used more widely in developing initial programme theory then justifying the selection of one theory over another will become an important aspect of study development. Further work, perhaps

building on these initial criteria is needed to test them in other contexts, and to refine and develop them.

As the project continues, the broad conceptual framework may inform the sample design, data collection and analysis of data although its role in these tasks is beyond the scope of this paper. It is also possible that as the programme theories become more refined, the initial conceptual framework may recede into the background and additional middle range theory be utilised to explain the more granular level causal processes that emerge as central to the outcome patterns that occur. Nonetheless, in support of the general ambition that evaluators build on each other's work and accumulate a body of knowledge around programme implementation and programme theory, setting the detailed granular analysis within a general conceptual model of change should assist translation and aid transferability.

We believe that this and other similarly detailed accounts would help increase transparency of realist work. Additionally, given the newly emerging nature of realist methodology, it would appear that support, in the form of a framework, or scaffold to assist in the process of theory building, as opposed to a template or protocol, would be a useful tool for realist practitioners to access. This paper puts forward a rationale for using existing abstract theories, in combination, close to the outset of a project to frame and guide the development of initial

rough programme theory. We suggest that this is a useful strategy for supporting standalone projects, particularly of large, complex and less well-defined interventions. We believe it is also directly in keeping with Ray Pawson's (2013) manifesto aim to build a body of knowledge on realist principles and support future researchers' aims to synthesise the realist programme theories in the future.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Declaration of Conflicting Interests

The authors declare that there is no conflict of interest

References

Archer, M. (1995). *Realist social theory: the morphogenetic approach*. Cambridge, Cambridge University Press.

Bhaskar, R. (2008). *A Realist Theory of Science* (Rev. ed. .). London, Routledge.

Booth, A., & Carroll, C. (2015). Systematic searching for theory to inform systematic reviews: is it feasible? Is it desirable? *Health Information and Libraries Journal*, *32*, 220–235. http://doi.org/10.1111/hir.12108

Brook. (2016). *Be Sex : Positive Hello*. Retrieved February 26, 2017 from https://www.brook.org.uk/get-involved/sexpositive-challenging-negative-attitudes-about-sex

Clark, A. M. (2013a). Complex Critical Realism: Tenets and Application in Nursing Research. *Postdisciplinary Humanities & Social Sciences Quarterly*, *23*(2), 124–147. http://doi.org/10.2478/s13374-013-0115-7

Clark, A. M. (2013b). What are the components of complex interventions in healthcare? Theorizing approaches to parts, powers and the whole intervention. *Social Science and Medicine*, *93*, 185–193. http://doi.org/10.1016/j.socscimed.2012.03.035

Davidoff, F., Dixon-Woods, M., Leviton, L., & Michie, S. (2015). Demystifying theory and its use in improvement. *BMJ Quality & Safety*, (24), 228–238. http://doi.org/10.1136/bmjqs-2014-003627

Davis, P. (2005). The Limits of Realist Evaluation: Surfacing and Exploring Assumptions in Assessing the Best Value Performance Regime. *Evaluation*, *11*(3), 275–295. http://doi.org/10.1177/1356389005058476

Faculty of Sexual & Reproductive Healthcare. (2015). *Better care, a better future: a new vision for sexual and reproductive health care in the UK*. London, FSRH

FPA. (2011). *Young People*. Retrieved from http://www.fpa.org.uk/sites/default/files/young-people-policy-statement.pdf

Funnell, S. C., & Rogers, P. J. (2011). *Purposeful program theory: effective use of theories of change and logic models.* (Vol. 31). San Francisco, John Wiley & Sons, Ltd.

Goicolea, I., Hurtig, A.-K., San Sebastian, M., Marchal, B., & Vives-Cases, C. (2015). Using realist evaluation to assess primary healthcare teams' responses to intimate partner violence in Spain. *Gaceta Sanitaria / S.E.S.P.A.S*, *29*(6), 431–6. http://doi.org/10.1016/j.gaceta.2015.08.005

Goicolea, I., Vives-Cases, C., Sebastian, M. S., Marchal, B., Kegels, G., & Hurtig, A.-K. (2013). How do primary health care teams learn to integrate intimate partner violence (IPV) management? A realist evaluation protocol. *Implementation Science*, *8*(1), 36. http://doi.org/10.1186/1748-5908-8-36

Great Britain Department of Health. (2013). *A Framework for Sexual Health Improvement in England*. London. Great Britain Department of Health

Greenhalgh, T., Humphrey, C., Hughes, J., MacFarlane, F., Butler, C., & Pawson, R. (2009). How Do You Modernize a Health Service? A Realist Evaluation of Whole-Scale Transformation in London. *Milbank Quarterly*, *87*(2), 391–416. http://doi.org/10.1111/j.1468-0009.2009.00562.x

Greenhalgh, T., Wong, G., Westhorp, G., & Pawson, R. (2011). Protocol-realist and meta-narrative evidence synthesis: evolving standards (RAMESES). *BMC Medical Research Methodology*, *11*(1), 115. http://doi.org/10.1186/1471-2288-11-115

Herepath, A., Kitchener, M., & Waring, J. (2015). A realist analysis of hospital patient safety in Wales: applied learning for alternative contexts from a multisite case study. *Health Services and Delivery Research, 3*(40). http://doi.org/10.3310/hsdr03400

Herzog, D. (2009). Syncopated Sex: Transforming European Sexual Cultures. *The American Historical Review*, *114*(5), 1287–1308. http://doi.org/10.1086/ahr.114.5.1287

Imenda, S. (2014). Is there a conceptual difference between theoretical and conceptual frameworks ? *Journal of Social Sciences*, *38*(2), 185–195. http://doi.org/10.1111/j.1471-0528.2006.00853.x

Jagosh, J., Pluye, P., Wong, G., Cargo, M., Salsberg, J., Bush, P. L., … Macaulay, A. C. (2014). Critical reflections on realist review: insights from customizing the methodology to the needs of participatory research assessment. *Research Synthesis Methods*, *5*(2), 131–141. http://doi.org/10.1002/jrsm.1099

Lhussier, M., Carr, S. M., & Forster, N. (2016). A realist synthesis of the evidence on outreach programmes for health improvement of Traveller Communities. *Journal of Public Health (Oxford, England)*, *38*(2), e125-32. http://doi.org/10.1093/pubmed/fdv093

Lipsey, M. W., & Pollard, J. A. (1989). Driving toward theory in program evaluation: More models to choose from. *Evaluation and Program Planning*, *12*(4), 317–328. http://doi.org/10.1016/0149-7189(89)90048-7

Marchal, B., Dedzo, M., & Kegels, G. (2010). A realist evaluation of the management of a well-performing regional hospital in Ghana. *BMC Health Services Research*, *10*(1), 24. http://doi.org/10.1186/1472-6963-10-24

Marchal, B., van Belle, S., van Olmen, J., Hoeree, T., & Kegels, G. (2012). Is realist evaluation keeping its promise? A review of published empirical studies in the field of health systems research. *Evaluation*, *18*(2), 192–212. http://doi.org/10.1177/1356389012442444

May, C., & Finch, T. (2009). Implementing, Embedding, and Integrating Practices: An Outline of Normalization Process Theory. *Sociology*, *43*(3), 535–554. http://doi.org/10.1177/0038038509103208

Michie, S., van Stralen, M. M., & West, R. (2011). The behaviour change wheel: a new method for characterising and designing behaviour change interventions. *Implementation Science : IS*, *6*(1), 42. http://doi.org/10.1186/1748-5908-6-42

Michielsen, K., De Meyer, S., Ivanova, O., Anderson, R., Decat, P., Herbiet, C., … Chandra-Mouli, V. (2016). Reorienting adolescent sexual and reproductive health research: reflections from an international conference. *Reproductive Health*, *13*(1), 3. http://doi.org/10.1186/s12978-016-0117-0

Oh, J. (2014). Understanding Natural Science Based on Abductive Inference : Continental Drift. *Understanding Natural Science*, *19*, 153–174. http://doi.org/10.1007/s10699-013-9322-2

Patton, G. C., Sawyer, S. M., Santelli, J. S., Ross, D. A., Afifi, R., Allen, N. B., … Viner, R. M. (2016). Our future: a Lancet commission on adolescent health and wellbeing. *Lancet (London, England)*, *387*(10036), 2423–2478. http://doi.org/10.1016/S0140-6736(16)00579-1

Pawson, R. (2006). *Evidence-based policy: a realist perspective*. London, Sage.

Pawson, R. (2010). Middle range theory and program theory evaluation: from provenance to practice. In J. Vaessen, & F. L. Leeuw, (Eds.), *Mind the gap: perspectives on policy evaluation and the social sciences* (pp. 171–202). New Jersey, Transaction Publishers.

Pawson, R. (2013). *The science of evaluation: a realist manifesto*. London, Sage.

Pawson, R., Greenhalgh, T., Harvey, G., & Walshe, K. (2005). Realist review-a new method of systematic review designed for complex policy interventions. *Journal of Health Services Research & Policy*, *10 Suppl 1*(SUPPL. 1), 21–34. http://doi.org/10.1258/1355819054308530

Pawson, R., & Tilley, N. (1997). *Realistic evaluation*. London, Sage.

Pearson, M., Brand, S. L., Quinn, C., Shaw, J., Maguire, M., Michie, S., … Byng, R. (2015). Using realist review to inform intervention development: methodological illustration and conceptual platform for collaborative care in offender mental health. *Implementation Science*, *10*(1), 134. http://doi.org/10.1186/s13012-015-0321-2

Pedersen, L. H., & Rieper, O. (2008). Is Realist Evaluation a Realistic Approach for Complex Reforms? *Evaluation*, *14*(3), 271–293. http://doi.org/10.1177/1356389008090856

Rycroft-Malone, J., McCormack, B., Hutchinson, A. M., DeCorby, K., Bucknall, T. K., Kent, B., … Wilson, V. (2012). Realist synthesis: illustrating the method for implementation research. *Implementation Science*, *7*(1), 33. http://doi.org/10.1186/1748-5908-7-33

Salter, K. L., & Kothari, A. (2014). Using realist evaluation to open the black box of knowledge translation: a state-of-the-art review. *Implementation Science*, *9*(1), 115. http://doi.org/10.1186/s13012-014-0115-y

Sankar, M. (2011). Designing evaluation in messy interventions. In J. Higgins, R. Parsons, & L. Bonne (Eds.), *Processes of Inquiry*. (p. 163-178.

SensePublishers. http://doi.org/10.1007/978-94-6091-531-4_10

Santelli, J. S., & Schalet, A. T. (2009). *A New Vision for Adolescent Sexual and Reproductive Health*. Ithaca. ACT for Youth Center of Excellence

Sayer, A. (2000). *Realism and social science*. London, Sage.

Shearn, K., Piercy, H., Allmark, P., & Hirst, J. (2016). Provision of positive sexual health services for young people: a realist evaluation. *The Lancet*, *388*, S105. http://doi.org/10.1016/S0140-6736(16)32341-8

Tolson, D., McIntosh, J., Loftus, L., & Cormie, P. (2007). Developing a managed clinical network in palliative care: a realistic evaluation. *International Journal of Nursing Studies*, *44*(2), 183–95. http://doi.org/10.1016/j.ijnurstu.2005.11.027

Tricco, A. C., Soobiah, C., Antony, J., Cogo, E., Macdonald, H., Lillie, E., … Kastner, M. (2016). A scoping review identifies multiple emerging knowledge synthesis methods, but few studies operationalize the method. *Journal of Clinical Epidemiology*, *73*, 19–28. http://doi.org/10.1016/j.jclinepi.2015.08.030

Vareilles, G., Pommier, J., Kane, S., Pictet, G., & Marchal, B. (2015). Understanding the motivation and performance of community health

volunteers involved in the delivery of health programmes in Kampala, Uganda: a realist evaluation protocol. *BMJ Open*, *5*(1), e006752. http://doi.org/10.1136/bmjopen-2014-006752

Walker, L. O., & Avant, K. C. (2005). *Strategies for Theory Construction in Nursing* (4th ed.). Michigan: Pearson/Prentice Hall.

Wellings, K., & Johnson, A. M. (2013). Framing sexual health research: Adopting a broader perspective. *The Lancet*, *382*(9907), 1759–1762. http://doi.org/10.1016/S0140-6736(13)62378-8

Westhorp, G. (2012). Using complexity-consistent theory for evaluating complex systems. *Evaluation*. http://doi.org/10.1177/1356389012460963

Westhorp, G. (2013). Developing complexity-consistent theory in a realist investigation. *Evaluation*, *19*(4). http://doi.org/10.1177/1356389013505042

Westhorp, G., Stevens, K., & Rogers, P. J. (2016). Using realist action research for service redesign. *Evaluation*. http://doi.org/10.1177/1356389016656514

Wong, G. (2015). Special Invited Editorial: Getting Started With Realist Research. *International Journal of Qualitative Methods*, *14*(5), 1–2. http://doi.org/10.1177/1609406915621428

Wong, G., Greenhalgh, T., Westhorp, G., Buckingham, J., & Pawson, R. (2013).

RAMESES publication standards: realist syntheses. *BMC Medicine*, *11*(1), 21. http://doi.org/10.1186/1741-7015-11-21

Wong, G., Westhorp, G., Manzano, A., Greenhalgh, J., Jagosh, J., & Greenhalgh, T. (2016). RAMESES II reporting standards for realist evaluations. *BMC Medicine*, *14*(1), 96. http://doi.org/10.1186/s12916-016-0643-1

Wong, G., Westhorp, G., Pawson, R., & Greenhalgh, T. (2013). Realist Synthesis. RAMESES Training Materials. *The RAMESES Project*, retreived from http://www.ramesesproject.org

World Health Organisation. (2010). *Developing sexual health programmes: A framework for action*. Geneva. World Health Organisation