

**EVIDENCE FOR AGILE POLICY MAKERS:
The Contribution of Transformative Realism**

Graham Room, University of Bath

ABSTRACT

Advocates of evidence-based policy-making (EBPM) are typically concerned with the impact of particular interventions. This implicit ontology of the policy world, as disaggregated into a variety of independent interventions, has been challenged by Pawson (2006) in terms of the contingencies that activate, inhibit or reshape the impact of any intervention. This critique does not however go far enough. The identity, potentialities and impact of an intervention are contingent on the synergies that it develops with other interventions. This ontology of evolutionary or transformative realism provides the vantage point for re-considering the theory and practice of EBPM and systematic review.

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1. INTRODUCTION

How can public policy-makers make good decisions? What counts as a good decision? And having made and implemented it, how can policy-makers check in retrospect just how good it proved to be?

The most common answer nowadays is that policy decisions, to be good, should be evidence-based. This renders them good in two senses. First, it is only such policies that are likely to be effective. Second, with evidence to back them up, they can expect to command public support.¹

Evidence-based policy-making (EBPM) became fashionable as part of the ‘modernising’ agenda with which Labour came into office in 1997. It was portrayed as the contemporary expression of the long-standing ambition, to bring scientific rationality to public affairs. For Labour, EBPM meant challenging established customs and vested interests with the demand for evidence of ‘what works’: it also meant abandoning ideology.

The Cochrane Collaboration exemplifies this ambition as far as medical interventions are concerned. The Campbell Collaboration is its imitator, in regards to education, social welfare and criminal justice.² The Campbell Collaboration is named after Donald Campbell, the US scholar who played a significant role in the development of the Great Society programmes of the 1960s. That was a self-confident era, with the ‘coming of age’ of sociology in particular, promising rational analysis and evidence for public programmes. Subsequent decades may have tarnished the promise and shaken the self-confidence. Nevertheless, it was appropriate and telling that when evidence-based policy making (EBPM) moved centre-stage at the turn of the 21st century, this international collaboration, for the review of evidence in social policy, should be named after one of the most prominent of those earlier heroes.

¹ The alternative to evidence-based policy making – and the implied target of its critical thrust – is not always clear. It certainly however encompasses policies and practices that reflect political loyalties, professional self-aggrandisement or the pressure of lobbyists.

² <http://www.cochrane.org/> and <http://www.campbellcollaboration.org/>

Campbell was an advocate of the careful empirical evaluation of policy interventions. He also endorsed efforts, in some of the Great Society programmes, to extend the logic of laboratory experimentation into the field, using a variety of quasi-experimental designs (Cook and Campbell, 1979). In some degree therefore he was a forerunner of the recent fashion for randomised controlled trials RCTs in social experiments and the careful evaluation of their impact. Nevertheless, even in those early days, the pioneers recognised that this logic of experimentation was problematic, in ways that this paper will re-visit and develop (see for example Marris and Rein, 1967, 1974).

Campbell was also however concerned with experimentation in a rather different sense: one that resonates with the work of Popper and Hayek (Campbell, 1969). In a world of uncertainty, experiment meant the proliferation of conjectures and their selective refutation, as the population in question tried things out and discovered what worked and what did not. This is an evolutionary approach, in the sense that it is the local testing of these myriad conjectures, with most being rejected, that leads to the eventual triumph of a select few across the population as a whole. Nevertheless, Campbell was not naïve about the triumph of reason. He recognised that vested interests and the exercise of power – albeit poorly conceptualised in much evolutionary theory - also shaped the development of public policy and of the understanding which informs it.

It is with the implications of such an evolutionary framework for the theory and practice of EBPM that this paper is concerned. It is however with EBPM as the assessment of impact that we must begin.

2. EBPM AS THE DISAGGREGATION OF IMPACT

The advocates of EBPM have been concerned first and foremost with evidence of the outcome or *impact* of a particular intervention. Evidence is collected, evaluated and aggregated – ‘systematically reviewed’ - across as wide a range of contexts as possible. This is meant to produce a rigorous assessment of ‘what works’, but also a clear understanding of how it can best be delivered and the ways that delivery can be adjusted to a variety of conditions. Those practices with the most substantial and well-attested impact can then be diffused and incorporated into standard operating procedures.

This discourse of EBPM is variously elaborated and criticised in the policy literature. Much of the discussion revolves around alternatives to the ‘gold standard’ of RCT, successively abandoning one or more of its defining elements and making do with quasi-experimental and descriptive studies (Pawson, 2006: Box 3.2). Campbell himself was central to the development of such ‘softer’ methodologies and the assessment of their utility. Even then, some minimum threshold of rigour is retained: only the evidence which meets this is taken into account, so as to be able to establish ‘what works’ with a sufficiently high degree of certainty.

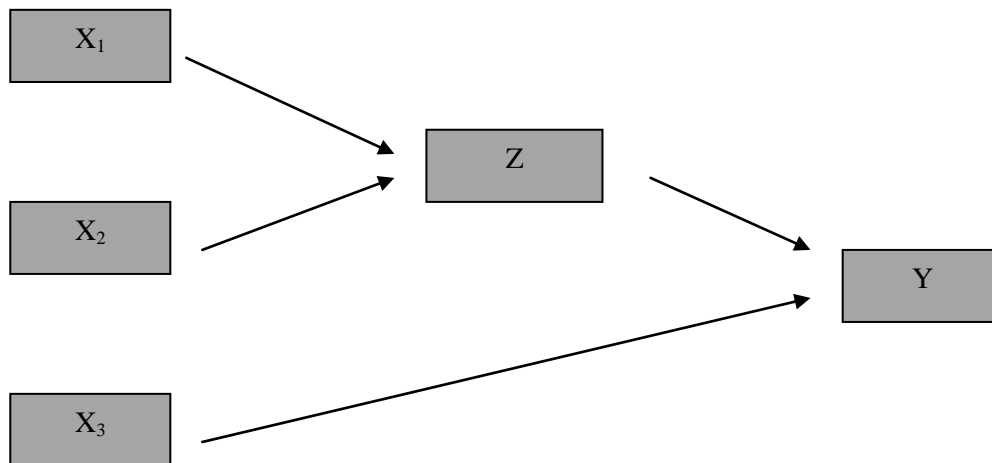
Those who develop guidelines for evidence-based policy and practice are often eclectic in their approaches. True, they draw on evidence from RCTs; nevertheless, their systematic reviews aggregate many other forms of evidence also. (This includes for example experience in other countries, albeit the range of countries reviewed tends to be heavily constrained - at least in the UK - by ties of language and history, with the US and the white Commonwealth predominating). There is also sensitivity to changes in context and environment. Examples of such eclecticism include Woolcock (2009), Gould (2011), Sutcliffe and Court (2006). Here are ‘reflective practitioners’ making sense of their world – and of their own role – through pragmatic and agile re-working of the analytical tools they have inherited (Schön, 1983). The question remains however: what overarching rationale can justify and guide EBPM, in terms which are ontologically and epistemologically convincing? The goal of this article is to make alternative rationales explicit and, by so doing, to provide a clearer point of reference for such practitioners.

The dominant rationale remains the assessment of impact, with RCT the gold standard. It is indeed to this rationale that policy makers and their public critics regularly appeal (see for example HM Treasury (2011) para 9.16; Johnson (2011)). Here EBPM involves the careful assessment of a single intervention. In practice of course any new policy is launched into a world already crowded with policy initiatives, ancient and modern, whose effects and impacts interact. Nevertheless, if we make some simplifying assumptions, appropriate statistical methods are available with which we can, in principle, partition and disaggregate these effects and isolate the contribution to those impacts of any particular intervention. Such methods can thus disentangle the combined effects of multiple interventions, against the background of a changing

environment; they can also discriminate inter-temporal and sequencing effects. That, at least, is what is commonly maintained (see for example Harkness et al (2009)).

We might then capture these key elements of EBPM through Figure 1. The independent variables X_1 , X_2 and X_3 correspond to the interventions that are simultaneously under way and that (in part through their effect on Z) affect the impact variable Y . Each of these can vary (albeit within some bounded range), in ways that our systematic review of the evidence will reveal. All other variables are assumed fixed and provide the larger context.³

Figure 1: Policy Intervention as Additive Impact



The real world is rarely so simple. Variables exert their effects within different timescales; there may be threshold and ratchet effects; impact may not increase in strict proportion to the independent variables. The functional form of the impact trajectory is therefore of the greatest importance (Cook and Campbell, 1979: pp 4-6). Econometric techniques exist for handling some of these complications, so that it is still possible to separate out the effects of these various interventions (Room and Brown, 2013). Nevertheless, to separate in this way is more than just a technical matter. It carries an implicit ontology of the social world, as one that can be disaggregated into a set of independent ‘variables’ that additively compose this world’s causal mechanisms. Epistemologically sophisticated methodologies are thus being used to trump ontological complexity. It is however in ontological terms that this whole approach remains open to challenge.

3. THE ONTOLOGICAL CHALLENGE OF REALISM

The ontological challenge has been voiced with particular elegance and eloquence by Pawson (2006). His critique can be summarised in terms of several interrelated arguments.

- A medical intervention may be viewed as an active agent that ‘impacts’ upon a human subject. In contrast, a social policy intervention does not so much *impact upon* as *engage with* active stakeholders (pp 27-8, 45), offering them resources and seeking to secure their compliance. These stakeholders include the intended end-users or beneficiaries, but also the policy managers and professionals who deliver the intervention.

³ We might alternatively present the diagram somewhat more formally as the linear equation:

$$y = c_1x_1 + c_2x_2 + c_3x_3 + \dots + c_nx_n$$

This is a linear equation which combines variables through addition alone; there are no interactive terms on the right hand side of the equation.

- The ‘impacts’ of these interventions therefore depend in part on how these stakeholders respond and what projects of their own they pursue. Stakeholders pull the interventions in different directions, in pursuit of these projects, but also as a result of the practical learning and knowledge exchange that accompanies any intervention (pp 32-3, 46). Social policy interventions therefore change and diversify, even as their impacts are being assessed.
- Interventions vary also because typically they are embedded in multiple social systems (pp 30-31) and they unfold within institutionally complex environments (pp 28-9). This means that stakeholders have varying scope for blocking, re-directing or reinforcing the ‘impact’ of the intervention. Rarely therefore is the ‘same’ programme delivered across all contexts. The simplifying assumptions that were presupposed by Figure 1 are in general therefore inappropriate. Ontological complexity cannot be trumped by epistemological sophistication.
- In the closed and isolated systems depicted in Figure 1, all except the measured variables were fixed, and formed the ‘context’ of the intervention. In the real world, in contrast, interventions not only produce ‘impacts’, they also re-sculpt the conditions or context into which they were launched and upon whose continuation the expectation of impact was predicated. In other words, social interventions are typically ‘open’ not closed systems, transforming their world in ways that are time and path dependent (pp 18-19, 33-4).

The gold standard assumes that an intervention can be delivered to a standard population according to a standard design. In any systematic review, providing that a sufficiently large number of evaluation studies are included, rigorous measurement of the impact of the intervention in ‘typical’ situations is then possible. Any minor variations, in the way that the intervention was carried out, can be regarded as no more than random ‘noise’. The results of the studies under review can be readily mapped into a pooled data matrix which can then be analysed to reveal the impacts in question.

Nevertheless, each of the four bullets above implies that variations arising from local contingencies are normal, as well as being potentially highly fateful for outcomes, and they cannot therefore be satisfactorily handled by their exclusion from the analysis (pp53ff). To examine social policy interventions in terms of their additive impacts, as visualised in Figure 1, is at best a first approximation, and one which – depending on the intervention in question – may be artificial and misleading.⁴

On the basis of his critique of EBPM, Pawson offers a response in terms of ‘realism’, as developed by philosophers of science such as Harré (1972: Ch 4). Realism insists that it is not enough to establish by appropriate statistical techniques the correlations of independent and dependent variables with which Figure 1 was centrally concerned. Explanation – in both the natural and the social sciences - must also include an account of the processes – the ‘generative mechanisms’ - which produce the patterns we observe.⁵ Ontology matters: it cannot be entirely dodged by using epistemologically sophisticated methodologies.

⁴ This ontological critique of EBPM by Pawson has clear parallels with recent developments around a new paradigm of ‘complexity’, concerned with ‘open’ systems in the physical, biological and social world (Allen and Boulton, 2011; Room, 2011). Local variations and fluctuations matter: they may lead such systems into new ‘attractor basins’, so that they develop in quite different directions. What matters for how a social programme works is the particular blend of conditions under which it unfolds; to say how it works under ‘average’ or ‘typical’ conditions misses the point (Pawson, 2006: 59). For earlier attempts to draw on ‘complexity’ theory in relation to evidence and policy, see Sanderson (2006), Byrne (2011), Smith and Joyce (2012). It is not however sufficient to say that a particular intervention is ‘complex’ merely in having a number of interrelated components in a ‘complicated jumble’: what matters are the non-linear dynamics to which such connections can lead.

Pawson’s position also has parallels with Abbott’s critique of ‘general linear reality’ (GLR), albeit Abbott’s focus is on causal explanation in sociology, rather than impact assessment in social policy (2001). He points out that it is common for the empirical variables of interest to sociologists to emerge, divide, amalgamate and disappear. Their interrelationships develop and change. Their effects are exerted across multiple and complex timescales. Ratchet effects are commonplace. Sequence matters. The GLR is however unable to cope adequately with any of this, just as EBPM as the assessment of impact fails us in policy evaluation (Room and Brown, 2013).

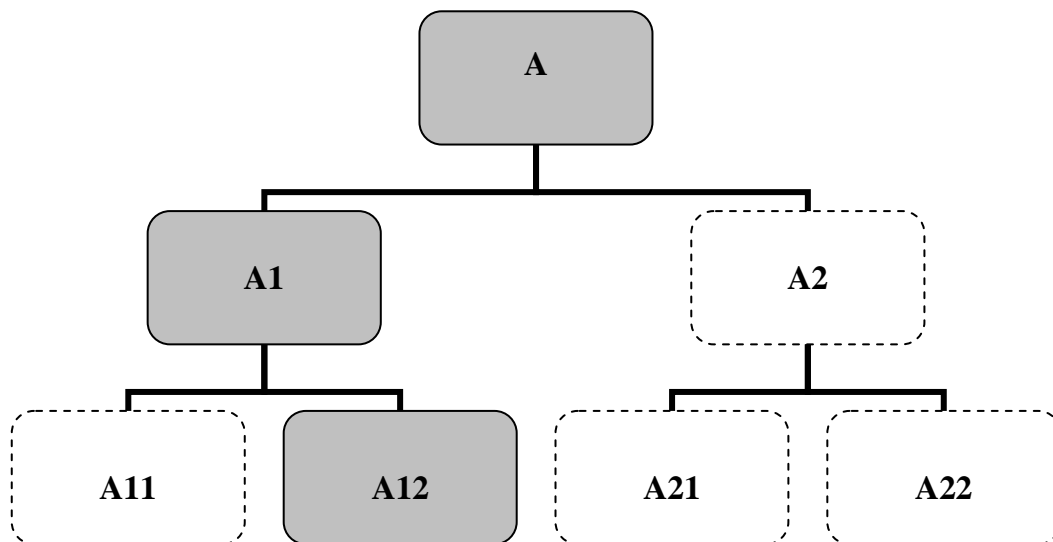
⁵ Pawson repeatedly speaks of this as the development of theory and models – our imagining of the generative processes which underlie the patterns we observe. These theories then guide further investigation, in the course of which they are

For Harré, these ‘generative mechanisms’ involve potentialities that are unlocked or closed down by different contextual conditions. Explosives such as gunpowder and dynamite provide the example commonly cited by Harré and his followers, including Pawson. The chemical composition of the explosive provides the capacity to explode: but whether it does so or not depends on such factors as the absence of damp, the presence of oxygen, the ambient temperature, etc. Causal analysis of generative mechanisms and policy impacts must be alert to such contingencies.

Pawson spells out some of methodological implications. Causal analysis is an ‘explanatory quest’, whose goal is to disentangle and peel away these contingencies. As this investigative journey unfolds, it guides the search for further evidence, rather than pre-judging this by reference to some standardised data matrix (pp 53-5). Only in this way can we hope for a cumulative and progressive body of theory and knowledge (Pawson, 2006: Chs 1-2). It is precisely in these terms that Pawson then lays out a new protocol for systematic reviews and illustrates its application in a series of case studies (Chs 4-7).

Figure 2 offers a visualisation of this process (albeit the diagram is ours, not Pawson’s). An intervention **A** can, depending on the conditions of its implementation, take form **A1** or **A2**; and depending on further contingencies, may then take the form **A11**, **A12**, **A21** or **A22**. The Figure tells us that **A12** was the form taken in a given instance; but asks us, in a realist spirit, to peel away and reveal the contingencies that came successively into play and the other possibilities that might have been realised.

Figure 2: Policy Intervention as Contingent Diversification



As Pawson concedes, statistically sophisticated exponents of EBPM reckon that they can take account of such complex contingencies, by including additional intermediate and moderating variables in the model (our Figure 1) and in their empirical analysis. As he argues however, many of the contingencies to which we have referred involve stakeholders re-weaving policy interventions into new configurations. Thus for example a lone mother may make her employment decisions, depending on a range of policies for taxation, income support and childcare provision, along with the state of the local labour market and her own informal networks of social support (pp 66-7). She weaves new connections among the various interventions that the public authorities have set in motion; she embeds them within her informal systems of social support; around them she then develops what Ridge and Millar (2008) describe as her ‘family-work project’. In short, albeit on a limited scale, the lone mother re-fashions the world in which she lives, by leveraging these various policy interventions to her own particular ends. This complex network of contingencies can hardly be incorporated

liable themselves to be modified (page 100). They also provide a mental model of the world, by which decision-makers can navigate the ‘tortuous pathways’ along which they travel (page 170).

into a model of the sort displayed in Figure 1; still less is it likely that a sufficient body of evaluative studies will be found that can be readily mapped into the corresponding data matrix (pp 64-9).

Nevertheless, this still leaves Pawson focussing primarily on the individual intervention – whether gunpowder or a new pharmaceutical product or a social policy programme - and unpicking the contingent factors that activate or inhibit its impact. This is not sufficient as a programmatic statement for EBPM that is matched to – and rooted in - the ontological critique and ‘realist’ perspective that Pawson has provided. This is perhaps why Pawson’s visual depiction of his programme (notably his Figure 2.7) has none of the simple elegance of Figures 1 and 2. This is now our quest. Nevertheless, much of what follows can be found in Pawson, at least in germ, and our argument is heavily in his debt.

4. THE CASE FOR TRANSFORMATIVE REALISM

Policy interventions are not isolated: they are launched into a crowded world. Nor are these forerunners merely the detritus of policy enthusiasms long forgotten; in many cases their champions are still at work, seeking to broaden their scope and colonise the landscape onto which any new policy is launched. Nor is it just a matter of what combinations of policies co-habit a given landscape. What can also matter is the order in which they are introduced. Sequence and timing are important: change them, and the ways in which they shape each other, affecting the impact of each, will also change. There is, in other words, contingency in all of this. Not only must the evidence for a given policy intervention consider how it will work in combination with other policies; it must also differentiate according to the order in which these policies are introduced, in the various contexts which characterise the policy maker’s domain, and having regard to the different time scales of their likely effects.⁶

Nor are interventions and their potentialities fixed, in the way that the chemical composition of gunpowder is fixed. On the contrary, the identity, the potentialities and the impact of any intervention are contingent on the various synergies that it develops – or fails to develop - with other interventions and on the ways that those who are affected by it lever it to their own particular ends. We are interested not in gunpowder *per se*, but in the weapons technologies of which it is no more than a component, and whose potentialities, far from fixed, will then be the stuff of desperate arms races. This is an *evolutionary* version of realism. The focus is still on ‘generative mechanisms’, but these are now located not so much within individual interventions, but rather in the transformative synergies that develop *among* these interventions and their stakeholders and by which they co-evolve.

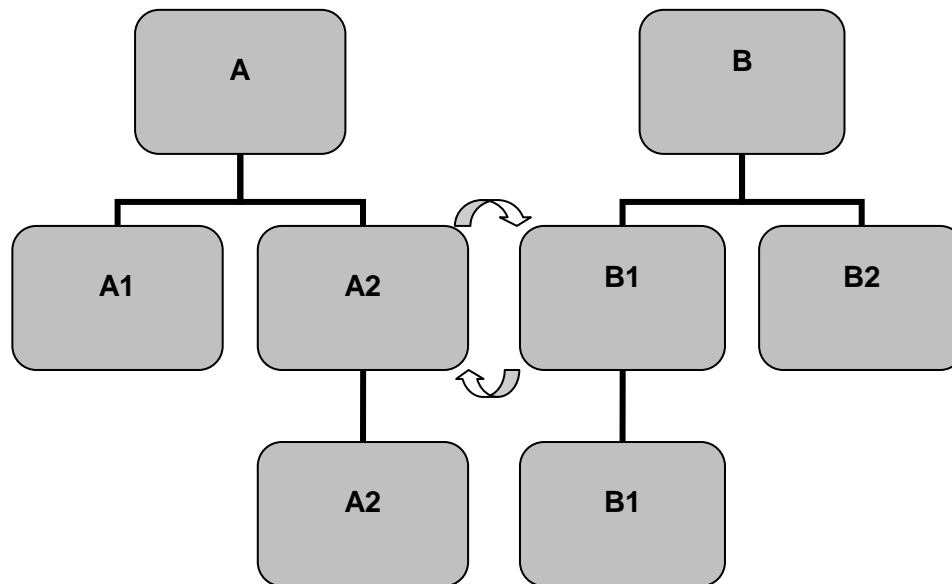
To use the term ‘evolutionary’ perhaps holds risks of misunderstanding. Evolution by natural selection is a blind process. In human societies in contrast, people in some degree make their own history. They probe and they experiment, not randomly but by systematic testing and learning (Bronowski, 1981: Chs 2-4). They seek strategically to re-shape the technologies and institutions of their world, in hope of discovering new dynamic synergies from which they can benefit. They strive to develop thereby their understanding and their capacities; their control over their lives; their positional advantage and leverage. This brings interests and power and politics centre-stage. We will therefore henceforth speak not of evolutionary but of *transformative realism*.

As we have seen, visual representations can provide powerful images that organise and direct our thinking. Figure 1 provided such an image for ‘policy intervention as additive impact’. Figure 2 captured some elements of Pawson’s ‘realism’ and its causal contingencies. We now seek now a counterpart for transformative realism, in its simplest or canonical form. (Pawson himself offers a plethora of diagrams that are rather more complicated, but therefore perhaps less illuminating.)

⁶ Thus for example western advice to Russia in the 1990s, to privatise enterprises even before well-functioning markets and financial institutions had been established, is now widely reckoned to have had damaging consequences for Russian economy and society. Or to take a very different example, popular perceptions of health hazards in light of previous health panics - and the way that policy makers have handled them – have consequences for subsequent policy interventions, and for the sequencing of communications about such risks (Breakwell, 2001; Barnett and Breakwell, 2003).

In Figure 3, **A** and **B** are two policy interventions among many. Each may have been well-specified by the instigators; nevertheless, each involves multiple layers of policy staff, bringing a diversity of interpretations and interests to bear. This process of diversification we represent by the variations **A1** and **A2**, **B1** and **B2**.

Figure 3: Policy Intervention as Transformative Synergy



No intervention is isolated: each interacts with others. What now matters is which of the four sets of interactions between **A1** and **A2** on the one hand, **B1** and **B2** on the other, produces the most powerful transformative synergies. In the diagram, we show the relationship of **A2** with **B1** as being this favoured pairing, this ‘elective affinity’. **A2** and **B1** will each now accelerate the flourishing of the other: they progressively dominate **A1** and **B2**, which are re-ordered, marginalised, frozen or extinguished altogether.

Thus by the time we arrive at the bottom row of the diagram, **A2** and **B1** dominate. This is a policy world substantially different from the one with which we began, centred on **A** and **B**. Nevertheless, domination by **A2** and **B1** will not last for ever; further rounds of interaction with the larger policy ‘eco-system’ will eventually destabilise them, as new rounds of variation and selection are set in motion. In these new rounds, **A1** and **B2** will however no longer be in play: there will be no chance for their potential synergies with the new partners to be tested. Sequence matters, because it dictates which elements are made available for interaction with others.

Figure 1 embodied the conventional linear view of EBPM. It had the independent variables X_1 , X_2 and X_3 determining or dominating dependent variable Y . Once we embrace Figure 3, the task is instead to identify the dynamic synergies by which **A** and **B** and their sub-variants interact with each other and thereby come to dominate the changing morphology of the system as a whole.⁷ Or, if we take **A** as the policy environment that exists initially, we seek to understand the consequences of a new policy intervention **B** ‘invading’ the system and re-sculpting that environment; or alternatively, revealing that this environment is sufficiently stable and resilient against such invasion as to remain in its original state.⁸

⁷ If the ontology presupposed by Figure 1 is of a social world that aggregates additively, that presupposed by Figure 3 is of one that combines multiplicatively. Just as compound interest trumps simple, and geometric growth overwhelms arithmetic, the processes captured by Figure 3 are liable to dominate any captured by Figure 1.

⁸ There is one further standpoint from which we may view the difference between Figures 2 and 3. Figure 2 is a dendrogram, a tree diagram, with successively sprouting branches and sub-branches. It is therefore reminiscent of Darwin’s ‘Tree of Life’ (Darwin, 1859). In his account of the diversification of species, Darwin was centrally

It is this ontology of *transformative realism*, presented in its most parsimonious or canonical form by Figure 3, that provides the vantage point from which, in the rest of this article, we re-consider the theory and practice of EBPM and systematic review, and develop appropriately transformed protocols.

5. PROTOCOLS FOR TRANSFORMATIVE REALISM

Pawson challenges the ontological basis of EBPM, as the disaggregation of impact, and he offers a ‘realist’ alternative. He then lays out corresponding new protocols for systematic review, which he illustrates in a series of case studies. We now do the same for ‘transformative realism’.

Notice however that our three Figures depict very different worlds: what is meant by systematic review varies correspondingly.

According to Figure 1, the policy maker asks what will be the impact of a particular type of policy intervention, if applied to a given target population. The analyst undertakes a systematic review of the evidence of such impact and distils this into an evidence base for the policy maker’s actions. This is a world that assumes no ambiguity in the definition of the problem or the intervention. It is a timeless world, where knowledge of ‘what works’ – as set out in systematic review of the past – suffices for policy decisions today and tomorrow. Each intervention can be considered in isolation from others and introduced or withdrawn with few wider consequences. There is no significant lock-in and the sequencing of different interventions hardly matters. Here therefore is a simple and direct relationship between systematic review, the elaboration of possible futures and the practice of policy-making.

According to Figure 2, the policy maker asks how the impact of a particular policy intervention will vary, depending on the range of contingencies to which it will be exposed. These contingencies arise in particular from the active involvement of the various stakeholders. The policy analyst who undertakes a systematic review must peel away the effects of such contingencies, as revealed in previous implementations of the intervention in question. It is with this type of enquiry that Pawson’s own protocols for systematic review are concerned (Pawson, pp 100, 170, 180).

The policy maker then applies that wisdom, having regard to the contingencies which he or she faces. The sequence of these contingencies may well matter: the world of Figure 2 contrasts with the timelessness of Figure 1. Scenarios of the future will be correspondingly varied: but these are all scenarios discrete to the particular intervention in question. Other policy interventions are at most elements of contingency within the larger context.

Figure 3 is different again. Here the policy maker asks how a particular policy intervention is liable to interact with those that are already in place and with others that may subsequently be rolled out. In particular, what synergistic dynamics are liable to be set in motion and with what consequences for the wider policy landscape? The policy analyst who undertakes a systematic review must uncover such dynamics - and the contingencies under which they develop in substantially different directions.

Figures 2 and 3 both have the policy analyst unpicking the contingent dynamics that have unfolded in past cases, the better to illuminate what may happen in future. However, Figure 2 asks us to focus on each individual intervention – whether gunpowder or a new pharmaceutical product or a social policy programme - and unpick the contingent factors that activate or inhibit its impact. In contrast, Figure 3 focuses on the dynamic synergies which develop among policy interventions in complex sequences.

concerned with processes of adaptation to the successive contingencies of different habitats: Pawson’s realism likewise aims at exposing the successive contingencies which shape the intervention and its effects.

Nevertheless, Darwin also referred to the co-evolution of species, albeit not perhaps to the same extent as his successors, who have shown how powerfully the dynamic synergies and arms races of co-evolution shape the evolutionary story (Kauffman, 1993; Maynard Smith and Szathmary, 2000). Such co-evolution typically involves populations that are far removed from each other in the evolutionary tree: for example, flowers and insects over the last 140 million years. It is interactions of this sort – in this case between policy interventions - that Figure 3 captures, but which Figure 2 ignores.

Here it will be difficult to say with confidence what dynamic synergies will develop in any particular case. The local specificities of policy interventions will matter: simply appealing to ‘typical’ cases is insufficient.⁹ The dynamic synergies that develop are moreover mediated by a variety of social actors. These probe and test what synergistic dynamics a new policy intervention may offer – the opportunities but also the threats – and how these may be steered and re-shaped or, indeed, resisted. Scenarios of possible futures will therefore need to take account of the distribution of power and the political economy, within which such struggles are waged. What this also of course means is that any particular dynamic synergy is likely to be viewed positively or negatively by different stakeholders, depending on their interests, goals and values.

It is evident therefore that the relationship between systematic review and the elaboration of possible futures differs profoundly between our three Figures and the social ontologies they respectively embody. So does the relationship to policy-making. We now spell out the practical implications of embracing transformative realism.

5.1. Systematic Review

The purpose of any systematic review is to provide well-evidenced scientific knowledge: knowledge of how policy interventions are likely to unfold on different landscapes. Within an ontology of realist contingency, such knowledge must however be seen not as a set of ‘universal truths’, but instead as ‘time-bounded truths’ about the contingent dynamics of social change (Brown and Langer, 2011).

The policy analyst inspired by Figure 1 asks what will be the impact of a particular type of policy intervention, if applied to a given target population. The analyst inspired by Figure 2 asks what contingencies re-shape and even obstruct a particular intervention; and how these may be overcome by appropriate tailoring, so as to achieve a desired outcome. Here in contrast we are interested in the synergistic dynamics that such an intervention sets in motion. The policy analyst inspired by Figure 3 therefore asks:

- When a particular policy intervention is introduced, what *synergistic dynamics with other policy interventions* are liable to be set in motion on different policy landscapes?
- Under what conditions or contingencies do the dynamics develop in *substantially different directions*?
- How do these dynamics depend on the *order* in which these various interventions are introduced?
- What *critical transitions and regime shifts* are liable to occur on different policy landscapes?
- Under what conditions is a policy landscape likely to be *resilient*, in face of ‘invasion’ by new policy interventions?

The contingent dynamics of social change on different policy landscapes will depend upon how these landscapes were themselves formed, with recent and ancient policy sediments having been re-worked in response to successive transformative synergies. The systematic review will therefore consider the connections and potentialities with which their respective histories have endowed them (see for example the historically oriented type of systematic review illustrated by our case study, at the end of this article).

The policy analyst inspired by Figure 1 will typically use methods of statistical regression, and related approaches, to quantify the evidence of impact that the systematic review collates. The analytical task implied by Figure 3 is likewise susceptible to formal analysis. The starting point is to map the connections that selectively drive the synergistic dynamics displayed in Figure 3. The analytical techniques that are appropriate build on graph theory, analysing the adjacency matrix of the connections that a given system of connections entails (Room and Brown, 2013). Such methods can – in principle and within limits – identify the transformative synergies that a given ecosystem of connections entails, the scope for such synergies to trigger larger-scale transformation, the changing patterns of dominance that thereby develop and the areas of the policy ‘ecosystem’ that remain resilient to invasion.

⁹ When we use the term ‘local’, we do not mean this necessarily in the geographical or administrative sense, but simply to refer to the particularities and contingencies of a given case, which affect how policy synergies then unfold. This is something powerfully argued by Pawson (page 59, para3): ‘Programmes work in the here and now... it makes no sense to ... aggregate their findings to arrive at a meaningful net effect that applies to all ... localities’. On the contrary, such aggregation may serve only to cancel out these different effects, making it seem that the intervention is useless.

5.2. Local Preview

The relationship between systematic review and scenarios of possible futures differs profoundly between our three Figures and the social ontologies they respectively embody. Figure 1 assumes a timeless world: here therefore the protocols of review and preview are the same. Figure 2 encourages us to develop scenarios of the future that are discrete to a particular intervention and suppose a fairly stable policy environment. Indeed, much of the existing literature on scenario building involves this rather simple extrapolation from the past, examining how, as contingent conditions vary, the likely trajectory changes.¹⁰

For Figure 3 and transformative realism, such simple extrapolation is quite insufficient. Any policy intervention is involved in dynamic interactions with other interventions, of a variety of vintages. Here the range of alternative futures depends not only on the factors implicated in Figure 2, but crucially also on the scope that stakeholders find for re-weaving a policy intervention with other interventions and discovering dynamic synergies. Any preview of possible futures must therefore take into account the particularities of the policy landscape in question: and it is in this sense that we speak of *local* preview. The policy analyst might therefore map the particularities of:

- The policy landscape or ‘ecosystem’ and the successive policy interventions by which it has been shaped;
- The historical development of – and antecedents to – the current social and political settlement;
- The principal stakeholders who are actively probing the policy landscape;
- The social, economic and political connections among them;
- The capacities and resources they bring to the fray;
- The battle of ideas in which they are involved and the ‘mental models’ with which they variously operate.

It is not just a matter of these different actors each probing, to check what opportunities and threats a new policy intervention may present. This is a dynamic terrain: as they and other stakeholders probe, those dynamics may alter: they may indeed find themselves in a race against time, to extract positional advantage as the tectonic plates shift, or at least to maintain their existing position. The prize will go to those who capture dynamic synergies across different interventions and can run away with the game.

Finally, we notice that the ‘battle of ideas’ is not only about what is, but also about what ought to be. Unavoidably therefore, local preview must consider the political and value choices involved in alternative futures.

5.3. Guidance for Agile Policy Makers

As policy makers probe the present, they re-work their readings of the past – including their systematic reviews - and their mental models for previewing possible futures. These are conjectures which they continually test, adapt and refine.

In the world of Figure 3, the policy maker is however in conditions of limited visibility: the range of alternative futures cannot be comprehensively listed, still less can particular probabilities be assigned to each. Slight differences in starting point or in the pattern of interactions that subsequently develop can result in quite different dynamic synergies, of the sort that Figure 3 depicts. These uncertainties severely limit the scope of any *ex ante* guidance.

What policy makers also need therefore is an ‘on-board guidance system’, so that they can navigate with the necessary agility a world that is too complex fully to anticipate.

Stewart (1997: Ch 15) examines how such control systems can be designed for complex dynamic systems in engineering and medicine. The design question is the extent to which the system parameters can be continually ‘tuned’ so as to steer the trajectory of the system: not necessarily in fine detail, but sufficient to avoid tipping it into undesired zones and forms of system behaviour. Social processes are of course different. Human agents reflect upon their world and are agile in re-weaving its elements, contesting the attempts of policy makers and others to exercise control, and instead seeking to drive it in their own preferred direction. In the social world therefore, control systems are forever being imposed but are also forever being contested,

¹⁰ For an earlier and eloquent critique of such ‘futurology as prediction’, see Goldthorpe (1972).

exploited and by-passed. This means that the task of policy tuning is unavoidably political; it involves not only anticipating patterns of human behaviour, but also exposing the range of possible futures that they face and among which they can in some degree choose (Toulmin, 2001: 93).

How is the policy maker to steer the dynamic synergies of Figure 3 as they unfold? A number of writers on policy making have outlined what such practice involves:

- Hirschman (1958) calls on policy makers to seek not equilibrium and stability but ‘chains of disequilibria’ – what we might equally refer to as ‘dynamic synergies’ – and to ‘maintain tensions, disproportions’ as the ‘mechanism ... for ... the development process’ (p 66)..
- Schön (1983) is concerned with the ‘reflection-in-action’ practised by professionals, including planners and public policy makers. The very complexity of the world requires that they ‘converse’ with the policy landscape, allowing it to ‘talk back’ and learning to interpret its ‘signals’. Each move made is a ‘local experiment’ which, from its own specific vantage point, ‘contributes to the global experiment of reframing the problem’ (p 94). Each such local experiment helps the policy maker build a repertoire not only of images and understandings but also of ways of acting (Ch 5).
- Kingdon (1984: Ch 8) describes the purposeful opportunism that this involves: watching for new openings, whether arising from sudden crises or from the conjunction of policy-making calendars; seizing on precedents and widening their application; hooking policy solutions onto particular problems and both onto new political fashions.
- Finally, and building on the preceding writers, Room (2011: Postscript) provides a toolkit of ‘on-board guidance’ for agile policy-makers.¹¹

6. CONCLUSION

The ontological objections we have raised do not mean the wholesale rejection of EBPM as the assessment of impact. Nor do they necessarily mean the abandonment of the randomised controlled trial as its benchmark and gold standard. It is a matter of practical judgement, how far these procedures can still provide useful guidance in particular empirical situations. Figure 1 will often therefore remain a valuable point of reference. The multiple contingencies of Figure 2 and the transformative synergies of Figure 3 are not all-pervasive. Some degree of uniformity and stability are preconditions of all policy-making. What must not however be overlooked is that they are contingent.

At the start of this paper we saluted Campbell, one of the original champions of EBPM and experimental design. As we saw, Campbell viewed experimentation also as a form of evolutionary development. Such an evolutionary framework has inspired our own critical appreciation of Pawson and our ontology of transformative realism. This recognises however that in human societies, evolution is not blind: people in some degree make their own history. This is a contested process, an unending struggle for positional advantage. Interests and power and politics therefore move centre-stage, as Campbell himself recognised.

Intrinsic to such struggles is the very definition of different societal ‘problems’. Who is to be blamed for these problems and how far is there a responsibility on the public authorities to address them (Butler and Drakeford, 2005)? What standards of evidence are demanded for different problems, as a precondition for the investment of public resources? Which problems require a novel response - and when is such novelty no more than a way to avoid hard political questions?

The struggle is moreover not only for resources and position but also over the very way that we ‘see’ the world, both as it is and as it ought to be. It is therefore, not least, a cultural struggle, over the legitimating symbols that give stability to our social world and the cultural hegemony of powerful groups.

It is on just such a stage that policy analysts attempt to develop an evidence base for policy and practice. What they provide must therefore take full account of the political economy and distribution of power within

¹¹ See also <http://people.bath.ac.uk/hssgjr/agile-policy-making-toolkit.html>

which struggles over the future of the social and political order are being waged.¹² If they sanitise and cloud this task, in the language of technical measurement and reified system dynamics, this is itself a political choice.

POSTSCRIPT: A CASE STUDY IN TRANSFORMATIVE REALISM

Pawson offers case studies that illustrate his realist ontology. Here we do the same for our own ontology of transformative realism.

Our case study harks back to the Great Society experimental programmes of the 1960s with which Campbell was associated or, more precisely, their UK spin-offs.

In the late 1960s, the Labour Government in the UK faced mounting concern about social and economic conditions in inner-city areas. Policy makers wanted to know what forms of intervention would ameliorate these conditions. The evidence base was however both limited and contested; and the political stakes were high.

The Democratic administration in the US had already set in train an array of locally-based action-research projects to tackle inner-city disadvantage. Reviews of that experience inspired the British effort (Marris and Rein, 1967, 1974; Sundquist, 1969).¹³ Similar forms of practical experimentation were therefore launched, to provide an evidence base in the UK context, but also to demonstrate a political commitment to address these public concerns.

The **Educational Priority Area** programme (EPA) built on the experience of Head Start (Halsey, 1972; 1974).

It targeted schools in four local areas with high rates of social deprivation. Consistent with our Figure 1, a novel pre-school language development programme was launched and tested across all of the project areas and compared with control groups. Nevertheless, as Pawson might have anticipated, stakeholders in each project area soon went their own ways, developing a variety of supplementary projects attuned to local professional and community interests. These then became a vehicle for building home-school links. Indeed, in some cases, it was these dynamic and transformative synergies between school and community – rather than the pre-school language development programme or any of the other discrete experiments – that made the biggest difference to those involved: teachers, pupils and families (Midwinter, 1972).

Halsey's review of EPA thus draws together evidence garnered by reference to each of our three ontologies and Figures. It illustrates the way that practical policy-making can draw on all three. This does not mean that the distinctions among these three ontologies are of merely theoretical interest. It is after all the ontology of Figure 1 that is regularly invoked as the preferred model, in arguments about practical policy-making. As long as this remains the case, alternative ontologies need to be articulated in no less clear terms. This has been the goal of the present article.

The **Community Development Project** (CDP) was the second strand of the UK programme. It involved community-based action-research projects in 12 urban locations. As with EPA, the initial inspiration was consistent with Figure 1. Those involved however quickly learned to acknowledge the variety of contextual factors, across the different locations, which affected the implementation and effects of the projects (Marris, 1982). This was more consistent with Figure 2. Nevertheless, the analysis which developed within CDP increasingly focussed on the sort of dynamic synergies which Figure 3 highlights, in its 'transformative realism'.

The first project was based in Coventry. The government had embraced a theory of inner-city deprivation which blamed high rates of family and community breakdown and poorly functioning local authority services. The Coventry project tested these assumptions; found them empirically ill-founded; and groped for

¹² For discussion of the possibilities and pitfalls of such accounts, in relation to evidence-based medicine, the heartland of Figure 1, see Mykhalovskiy and Weir (2004).

¹³ In due course they would also inspire similar efforts across the European Community (Dennett et al., 1982; Room, 1986; 1993)

a more adequate account, both as theory and as a guide for intervention. The focus was, increasingly, on the political economy of the city and the larger region and their transformative synergies (Benington et al., 1975).

In regards to the *rise and persistence* of inner-city deprivation, the Coventry CDP developed an analysis in terms of past patterns of economic and industrial development and land use planning: all driven predominantly by the economic interests of corporations and the better-off communities within the area. This is a picture of resilient inequality, with local and national policies for social and economic development being tilted towards - and co-opted by - those interests. These were the dynamic synergies that had consolidated urban poverty and helped explain why other social policy interventions had not worked. They also help make sense of the precarious livelihoods adopted by residents of Coventry's inner neighbourhoods, on the margins of the industrial economy and low on the priorities of local authority services.

CDP illustrates how a policy intervention not only 'impacts' on a 'problem', but also in some degree exposes the interlocking array of *previous* interventions. It invades and probes an ancient policy ecosystem and the dynamic synergies around which it was formed, testing and re-working them. This therefore requires a *historically-oriented* type of 'systematic review', as argued in Section 5.1 of this paper.

In regards to *action in the present*, the Coventry CDP developed a programme aimed at re-weaving and thus reorienting these dynamic synergies of resilient inequality. It is not inevitable that policies on industrial development, transport and land use should be geared to reinforcing such inequalities: public policies can be driven in new and more equitable directions. To do this however requires the building of a constituency for reform. This is why, in its action strategy, the Coventry CDP progressively shifted its attention, from direct engagement with the everyday livelihoods of the inner-city poor themselves, to political coalitions with other communities and stakeholders, across the city and the wider region. This is intervention not as behaviour change or service reform, but as capacity- and resilience-building for inner city communities, in their race against time with the powerful.

In building a constituency for reform, the Coventry CDP also articulated *an alternative hope for the city's future*, an alternative socio-political settlement among its stakeholders. It became moreover a moral and political entrepreneur, allocating responsibility and credit and blame, and calling the existing order of things into question. This is quite different from the simple model of political consent that underpins Figure 1, where it is sufficient, if policy decisions are to command public support, that they are justified by evidence of their impact.

The Coventry CDP may have been the first to be launched, but it was followed by a further eleven. Together they were meant to span a variety of deprived inner-city communities, with diverse histories and prospects. Systematic assessments of their experience – but taking account also of experience in the US in particular - would provide a robust evidence base for tackling inner-city deprivation.

Some such overall assessments were indeed undertaken by a variety of external reviewers (Marris, 1982: Ch 2). In addition, the projects themselves undertook collective reviews of their experience, learning from each other rather than conducting their 'experiments' in relative isolation. The Coventry CDP, as first mover, became the spearhead of that process. The collective story, emerging from CDP as a whole, closely mirrored the account that Coventry had crafted, in its stress on political economy, urban-industrial history and the empowering of working class communities (CDP Inter-Project Editorial Team, 1977). Only in Liverpool did a somewhat different account emerge: one that gave less weight to the political economy of inner city deprivation (Topping and Smith, 1977). Here instead was a 'social democratic' vision, which stressed the significant role that local government could play in ameliorating social conditions. Here therefore was evidence of a larger variety of dynamic synergies and trajectories of development than the one which Coventry had championed. Which of these dynamics were highlighted depended on the many contingencies of urban politics, community traditions and the professional visions held by the action-researchers themselves.

The bringing together of evidence from across CDP would hardly be recognised as a systematic review by present day exponents. It can however be viewed as a process of shared learning and experimentation, pooling experience and honing guidelines for practice. Pawson (2006: 32) recognises such sharing as being in many ways benign. It is also consistent with Schön's account of the reflective practitioner. It locates

systematic review and local preview within the practices of a professional epistemic community, rather than within the academy or the laboratory; and it gives due recognition to political economy and value choices. To this extent, CDP serves in some degree as the forerunner – albeit incomplete – of evidence-based policy-making rooted in the transformative realism which this paper has championed.

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