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A State of Unlearning? Government as experiment

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With an appendix on
STS and political economy
by John Law

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Introduction: government as experiment, or towards a learning state

> 'Like it or not, the free market economy is the only show in town. Britain is competing in an increasingly impatient and globalised economy, in which the competition is getting ever stiffer.'*(Boris Johnson, November 2013)*[1]
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> 'There were not one but several economies' *(Fernand Braudel, 1985)*[2]

When the state and government are discussed in mainstream political science they are often elided with representative democracy and the common conclusion is that government is suffering from a democratic deficit that needs to be put right by the re-invention of mechanisms for participation. But there are other ways of thinking about state and government. One is to treat them as forms of *experiment and learning* which sometimes succeed and sometimes fail. If we understand government in this way, it becomes crucially important to explore the conditions which lead to success and failure. This is the task we set ourselves in this working paper for the particular case of UK economic and industrial policy.

Our suggestion is that British government experiments in these areas have got stuck. We argue that the UK has lived through a thirty-year experiment which started in 1979. The assumption was that the economy would prosper if markets were allowed to work properly. The idea was that competition would deliver efficiency and better services. The problem is that thirty-five years on government is still blindly running the same experiment even when its results are catastrophic. As a part of this, manifest failures in industrial policy are explained away by saying that the experiment is not working because it is incomplete: that, for example, what is needed is greater competition in energy rather than a basic policy rethink. Against this, our argument is that government has stopped learning because it is incapable of thinking constructively about the limits to its own assumptions and its experimental frame. After thirty years of centralised economic and industrial experiments and an increasing litany of failure, by now *we are living in a state of non-learning*. Our argument is therefore that it is time for government to explore new forms of experimenting, and to do so in ways that are plural and decentralised.

There are many understandings of learning. In the classic management literatures it is often taken to be a matter of internal organization around shared team vision.[3] However in what follows we draw on STS (Science and Technology Studies) analysis of experiment in the natural sciences. These emphasise how the *framing* of experiments emerges in an interaction between disciplinary assumptions and constraints on the one hand, and engagement with the external world on the other.[4] Looked at in this way, government becomes an experimental practice that uses an intellectual and material framework to test hypotheses about the external world. In this way of thinking good experiments are those that build on successes and recognise mistakes. Good experiments are also those that make space for other *kinds* of experiments when they start to fail. In developing this view, our aim is to displace neither political science nor management studies.

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[1] Johnson (2013)
[2] Braudel (1985)
[3] See, for instance Senge (1994).
[4] See, for instance, Kuhn (1970), Shapin and Schaffer (1985), and Latour (1998).

Instead it is to open up a supplementary perspective on the specifics of economic policy in the UK. Our hope is that this triangulation will not only make it possible to search for more successful experiments and ways of learning, but will also play its part in the re-animation of democracy and the re-organisation of managing institutions.

So what does this mean in practice? What are the framings in play? And what kind of reframing is needed? We have hinted at the argument above. Since 1979 the major parties and the Treasury have operated with a concept of '*the economy*'. This treats economic life as a single reality that poses a single set of problems that can be tackled with generic solutions. Boris Johnson's words exemplify this singular framing. '[T]he free market economy is the only show in town'.[5] And since this singular economy is global, the imperative is to make 'the market' work better. Successful competition will deliver beneficial results for individuals, firms and the nation alike: there is no alternative. Against this, Fernand Braudel (also quoted above) acts as a useful corrective. Braudel argued that economic historians of the early modern period had become preoccupied with one particular economy. This was the dynamic Western economy of commerce, innovation and economic growth which would in due course deliver industrial revolution and imperialism. He argued that these historians had lost sight of the fact that the world's population everywhere lived in a quite different mundane and slow-moving world of material life.[6] But Braudel's caution applies just as well to the present and as a corrective to Boris Johnson. Three implications follow: first, that it is important to explore economic life in ways that depart from the foregrounded singularity of 'the market'; second, that it is important to look for undisclosed differences and multiplicities, and subvert simple notions about the unity of time and space; and third, that it is crucial to find ways of resisting generic understandings, and attend instead to specifics.[7]

How, then, can we move from policies that treat the economy is as a single reality and rest on abstract understandings of 'the market'? How can we revive a sustainable and productive version of Britain's economy in the wake of a deindustrialisation has left the UK with an unsustainable form of capitalism built on house price increases.[8] 'Economic policy' covers many things, from the exchange rate through QE to expenditure cuts, so in the present paper we focus on mainstream, Treasury-influenced, regional and industrial policy. Current pro-competition and market-perfecting interventions treat regional policy as a matter of training and infrastructural improvement and industrial policy as state aid to redress market failures in commercialising innovation. To move from this will demand conceptual engineering to find new ways of thinking about both the economy and politics. In what follows we lay out one way of doing this. We first reframe 'the economy' by talking about a Braudel-like reality which we call *foundational economy,* an infra-economy that is often unworthy of attention. Second, we argue that the experimental system put in place in 1979 is no longer fit for purpose, and that the British government needs to experiment in new and different ways. Third we consider the importance of political and cognitive decentralisation for new forms of learning and experimenting in industrial policy. Fourth we explore the institutional and political arrangements needed for the creation of a learning state. And in the conclusion we summarise and

[5] Boris Johnson (2013)
[6] Braudel (1985, 23).
[7] Braudel's words resonate with a core finding from STS. This is that there is no such thing as a single 'scientific method'. In practice science learns in different ways through different kinds of experiments shaped in variably disciplinary ways. This is one of the reasons why it is so successful. See, for instance, Bloor (1976).
[8] Froud et al. (2012).

situate our argument. The paper also includes an appendix, singly authored by John Law, on the uses and limitations of STS in the context of political economy, industrial politics and policy.

Readers should note that this is a working paper which represents a preliminary attempt to clarify some issues. It explores work in progress by two authors who are members of a larger team. We expect to revise and refine the argument before it is worked into articles and books. This working paper is itself an experiment in reformulation from which we and others can learn.

Re-thinking the economy: the foundational economy, social licences and point value

In this section we re-conceptualise the economy to bring one part of the undisclosed into focus in a way that creates new possibilities for political intervention. The *foundational economy* is our new economic category. This is an economy that is politically and economically interesting because it is *socially licenced*. It is also sheltered and therefore not inevitably subject to the pressures of intensifying global competition. However the foundational economy is currently damaged by a singular understanding of 'the market' and by a 'point value' economic logic which gives priority to commercially advantageous individual transactions over larger, longer-term goals. To remedy this we argue that the foundational economy should be treated as a set of social licences or franchises susceptible to political intervention.

First we need to change the field of visibility in 'the economy'. As we have noted above, Braudel is our inspiration to set off with a new category, that of *the foundational economy*. This corresponds to 'material life' in the work of Braudel.[9] In the way we define the foundational, this includes a variety of productive activities that generate goods and services that are mostly mundane and taken for granted. These include: the pipe and cable utilities; some traditionally private activities such as retail banking, supermarket food and petrol retailing, together with food processing; transport; and some traditionally state activities including especially health, education and welfare, and social care. As is obvious, as with other economic classifications, the foundational economy is not a 'natural' category. Figures such as GDP or categories such as manufacturing are created because they do useful economic and political work.[10] They are tools that frame economic realities in particular ways. What they include and exclude is necessarily somewhat arbitrary, and the economy can always be measured in other ways. What is important is the work that they do. So what is the rationale for the 'foundational economy'? The answer comes in four parts.

1. **Size**. *Foundational activities employ 40 % of the workforce and more than 2/3rds of women workers*. Size is important because if it were possible to transform the activities that make up the foundational economy this would in turn make a major difference to a large part of the labour force and its customers and other stake-holders. (Compare and contrast this with R and D intensive high-tech industries which account for just 1.76% of GDP[11]).

[9] The argument is developed more fully in Bowman et al (2013a).
[10] On the arbitrary character of GDP see Lequiller (2005) and van den Bergh (2009). On economic indicators see Mitchell (2008).
[11] Bowman et al, (2013a, 6).

2. **Distribution**. It is *spread out* across the UK. This is because foundational activities such as schooling or retailing are distributed according to population. The thinking here is that a successful attempt to improve the foundational economy would help to rectify the profound regional imbalances currently evident in our unbalanced economic recovery.
3. **Protection**. The foundational economy is *sheltered* either because it is implicitly or explicitly politically licensed (or in some cases franchised) by the state, or because it is protected by barriers from direct, non-territorial, competition. Enterprises in the foundational economy are in direct and mutually-dependent relations with communities or user-groups, often experience limited competition, and draw their customers and profits from those communities. The argument is that in return for their sheltered existence they owe something to those communities or groups.
4. **Political consent.** The foundational economy is more or less *politically dependent* and rests, as we have just noted, on political license. This may be explicit and contractual (rail franchising, social care) or regulatory (as in the relation between supermarkets and planning permissions). Alternatively, they may exercise *de facto* territorial monopolies (bank branches), or depend on state inducements (rural broadband rollout). The argument is that enterprises in the foundational economy lead a sheltered life in part for political reasons.

So the foundational economy is important, substantially sheltered, and more or less dependent on political consent. However, it is also almost imperceptible because it does not currently exist as a visible category for policy makers, politicians, economists, or commentators. As a result or as a part of this, along with other parts of the economy it has been conceptualised in terms of 'the market' and subjected to the abstraction of market logic. The assumption has been that what is appropriate to globally competitive industries is similarly appropriate to those parts of the economy that are sheltered. The idea that an alternative economic and political framework might be more appropriate to such sheltered activities has not available. Our counter-argument is that the foundational deserves attention conceptually, economically, and politically *because it is different*.

How to think about this? We have noted above that foundational enterprises depend on *more or less active political consent*. This means that it is possible to think of them as *social licensees*.[12] Licensing is an explicit or implicit arrangement that offers contracting enterprises privileges and rights whilst placing them under reciprocal obligations. This is explicit in the case of a franchised train operating company or a private provider of NHS services, and implicit in the case of a supermarket or high street bank. Our proposal extends the notion of social license. We want to argue that *all foundational enterprises should be understood as social licenses*. In return for the sheltered streams of revenue that we have briefly described above, such enterprises should be *required to offer social returns*. This is a suggestion that is simultaneously mundane and quite far-reaching. It is mundane because in large parts of the foundational economy this is already happening. In the 'para-state' sector, where the state outsources its services (including the railways, prisons and security services, education, and health and social care) the logic of social licensing of private providers from tax revenue is already in place. However, in other parts of the foundational economy (for instance retail banking or the supermarkets) revenue comes from customers. To treat a branch of a supermarket chain as a social license would require new policy mechanisms and political understandings of the character of economic activity.

[12] The argument was developed in Bowman et al. (2013a).

We finish this section with a down-to-earth example about social licensing and supermarkets. Out-of-town supermarket branches are socially licensed because British planning regulations limit direct competition between superstores[13] and thus give the successful applicant a license to take money from households in a surrounding catchment area. In our view the question arising is: if a supermarket chain benefits from a social license of this kind, should it be required to think about the effect of its conduct on its supply chains? This is the kind of question that can be asked if we think of firms in the foundational economy as social licensees. As it happens this is a question with a real and interesting response if we think of meat supply. TESCO and most of the other major supermarkets adopt a 'point value' approach to their pork suppliers. This means that they are primarily concerned with whether their individual trading transactions are profitable. The result has been devastating for the British pig industry. It has simply become unprofitable, and large parts of it have been driven out of business. The result is that a large part of the UK's supply of pigs is now sourced from Denmark and the Netherlands, with negative national consequences for the balance of payments. However, there is one supermarket chain that works quite differently. Morrison slaughters and processes its pigs in-house and has longer term relations with its (British) pig farmers. At the same time it still returns a handy profit on its pig meat.[14] The lesson is that in pig meat production a 'point value' logic is not even necessarily economically superior. If you have the expertise of a Morrison to run an effective integrated supply chain the results pay just as well if not better. The question presents itself: why could not the other supermarkets work in this way? Why is government not pressuring the supermarkets to work differently?

Government as experiment and non-learning: the 30 year experiment

In this section we explore the notion of government as experiment. The argument is that since 1979 the UK has been conducting the economic and industrial experiment discussed above. The commitment to an abstract and singular notion of the market has led to a series of experiments which seek to implement the conditions for this version of the market. Over the years this experimental commitment has been converted into a dogmatic and taken-for-granted framework. The result has been that while government often recognises that outcomes are unsuccessful, it is unable to entertain the possibility that such failures are being generated by the framework itself. The consequence is that government is in a state of profound non-learning. The accumulating evidence of failure is repeatedly explained as a consequence of insufficient marketization. Against this, we argue that the idea of social license opens up new kinds of experimental possibilities and novel ways of learning about and managing the economy.

Since 1979 the UK has been the test-bed of a social and economic experiment, the location of a large scale test of 'neo-liberal' theory and practice that has taken the form of privatisation, deregulation and marketization. The promise of the experiment was or has been a widely diffused prosperity. Though the outcome is contested, the experiment has been convincingly and sustainably carried through. At the same time, whatever the successes may have been, they need to be set again

[13] Planning regulation PPS 6 makes out of town centre development subject to a test of "need" so that one or two successful applications to build stores effectively close the door to competitors that cannot subsequently obtain permission because that need is already being met. See Friends of the Earth (2005).
[14] Bowman (2012).

increasing inequalities in wealth and income, regional disparities, the substantial de-industrialisation of the UK, and the 2008 financial crisis. Recently the behaviour of privatised utilities (such as energy companies) has also been widely criticised, and even those who remain committed to the deregulatory experiment are showing signs of anxiety.

So what to make of this uncertain state of affairs? As we noted in the introduction, the mainstream view in Westminster and Whitehall is that the experiment is incomplete and that the ills of (say) the National Health Service or energy supply will be remedied by introducing greater competition. At the same time it is assumed that the failures of service providers such as Serco and G4S or the operation of the rail franchise system can be resolved if contracts are written more carefully, and delivery is more carefully policed.[15] In energy supply, the recommendation for more competition comes from Labour centrists as much as from the Tory right. In autumn 2013, Labour's leader Ed Miliband responded to energy price rises with proposals for a price freeze backed up by policies that explicitly aimed to break oligopoly and 'the dominance of the big six energy suppliers'; three months later the right wing Conservative back bencher Tim Yeo, Chairman of the House of Commons Select Committee on Energy criticised the electricity companies' inadequate response to storm disruption as 'absolutely typical of a monopoly'.[16] It is clear that the political elites already know the answer to problems in the energy sector, and that the same answer appears everywhere in the face of accumulating industrial problems. It is never the *framing* of the experiment that is wrong. That is not a possibility. What is needed, rather, is that the experiment be properly conducted and that the framing be more thoroughly applied. The recipe, then, is more of the same, because it is taken for granted that competition will lead to the necessary efficiencies – just as it was going to achieve those efficiencies when the monopoly state utilities were initially privatised.

As we have noted above, our own view is different, and grows out of two traditions, political economy on the one hand, and science and technology studies (STS) on the other. Unlike though these may be in important respects, they also share one crucial feature: they are both concerned with *specifics*. Both, that is, work on the assumption that generic descriptions or explanations or policy recipes are likely to miss the point because they oversimplify complex realities. Our political economy focus on specific industrial sectors therefore leads us to an understanding of competition and monopoly effects that is quite unlike that of current orthodoxy, while our STS focus allows us to draw on a rich tradition for understanding how knowledge is generated in particular experimental arrangements – a tradition which we here use to reconceptualise the character of state experiments in industrial policy.[17]

Our own case study research raises increasingly fundamental questions about the binary *monopoly bad/competition good* assumptions common in mainstream politics. Building on earlier studies of meat supply and railway franchising, in a forthcoming book we present detailed case studies of telecommunications including broadband, supermarkets and retail banking.[18] We would not defend monopoly in telecommunications because marketization with BT as the dominant player has created problems about positioning for profit which have led to under-investment in infrastructure. But in supermarkets and retail banking the UK has created stereotyped forms of competition with mimetic

[15] On railway franchising, see Bowman et al. (2013b).
[16] On Miliband, see Packard and Rigby (2013) and Labour Party (2013); on Yeo see Chazan (2014).
[17] The relations between STS and political economy are explored more fully in the Appendix to this paper.
[18] Bowman et al. (2014, forthcoming).

business models focusing on return on equity at the expense of suppliers in supermarkets and customers in the banks. If the business models in these two sectors remains the same it seems likely that the addition of challengers to the big four or five players will make little or no difference, so the results of monopoly and competition are much the same. In both cases point value is being pursued by the major corporates at the expense of social needs, and margins are being improved at the expense of other stakeholders. It seems almost certain that these stories from the economy could be matched with others from social provision: the costly marketization of the NHS may well be impeding cooperative health care provision,[19] and, community care outsourcing combines poor quality of care with low pay and inferior conditions for low wage carers.

These misgivings are reinforced if we consider government through the lens of the STS understanding of experiment. Powerful though the rhetoric is, the idea that there is a single 'scientific method' is not sustained by the historical evidence. In practice, scientific experiments come in forms that are relatively specific, time-limited, and domain-related. As a part of this they are also more or less complex arrangements for developing, exploring and testing the workability of particular hypotheses in particular circumstances. Knowledge is therefore also substantially domain-related. Indeed it is often understood as a tool that works in specific locations for particular purposes, but therefore (and inevitably) not in others.[20] This means that the extent to which either knowledge or experimental forms can be generalised between domains is itself uncertain. In addition, forms of experiment and the knowledges that these generate are linked, which means that both are chronically uncertain. If an experiment fails then it is not immediately clear whether it is the conduct of the particular experiment that has gone wrong, or whether there is a more basic flaw in the way the experiment is framing the world. Thus though there may be pragmatic reasons for not immediately abandoning an established framing, a succession of large scale experimental failures becomes an increasingly powerful indicator that it may be the framing that is in need of revision rather than its application. [21] Indeed in its more radical versions STS adds that experimental assumptions tend to get embedded in and help to reproduce social and power structures and thus become increasingly difficult to change. Instead experimental assumptions and power relations are simultaneously re-validated.[22]

Both these STS arguments – that experiments are domain-specific, and that experimental arrangements can get locked into power and privilege so becoming indefeasible – inform this paper's argument about the UK state, its failings in the area of industrial policy, and the need for an experimental and learning state. This way of thinking implies that particular experimental practices may hold, but that this is a contingent achievement and is always uncertain. There are no safe havens, perfect theories, impeccable methods, or epistemological guarantees. In addition, this approach also emphasises that knowledge of the world is surrounded by that which is implicit or undisclosed, and indeed by collateral realities in the form of unintended and possible perverse

[19] In a survey reported on 6 January 2014, 88% of hospital managers were reported as agreeing that NHS competition and choice rules were in urgent need of change. Clover (2014)
[20] For this argument developed in an alternative idiom, see the classic work of Thomas Kuhn (1970).
[21] Again this is argued by Kuhn.
[22] The phenomenon is particularly obvious in the 'soft' sciences. See, for instance, Haraway (1989), but also Foucault (1979).

consequences.[23] The issue then becomes how knowledge and experiment handle such problems and anomalies. Are experimental failures taken to be *within* the framework? Is it assumed that they require some kind of *modification to the framework* through bolt-on auxiliary hypotheses?[24] Or is it the *framework* itself that needs to be challenged?

Our argument is that after 30 years of experimenting with marketization, there is a strong case for saying that it is now the last of these options that needs to be explored: that it is the framework itself that is failing. But if this is the case, then what can be done in practice? Politically the question is huge, multiple, and susceptible to no single answer. However, we approach it with a very simple set of linked propositions which also grow out of the STS approach that we have just described:

- *government is about experimenting*;
- *experimenting is about learning;*
- *learning is about building on successes but also about making mistakes;*
- *learning is also about recognising these as mistakes, and moving on.*

But what forms can learning take in and around the state? If we build on STS this suggests a series of possibilities:

- *learning may take place within the framework by using it to judge outcomes;*
- *learning may take the form of adapting the framework, to remedy a problem that has become detectable within its parameters;*
- *learning may take the form of gaming the framework either from above or below; classically it is clients that do this in order to score well in terms of performance metrics, but the state too can game measures to achieve its other policy objectives;*
- *finally, as we also noted above, learning may take the form of large scale reframing.*

Though we appreciate that there are many in the UK both within and beyond the state who have profound concerns about the conduct of policy and the way in which it is framed, our argument is nevertheless that in practice key parts of the British state – and in particular the Treasury – are no longer capable of learning because as institutions they have become dogmatically committed to a single form of experiment within a single and unquestioned framework. TINA, or 'there is no alternative', was Mrs Thatcher's slogan. Thirty years on this has now become TINAF, or '*there is no alternative framework'*. There is no alternative framework for government under New Labour and the Coalition. In the face of failure insiders often accept things are not working, but in practice they favour learning within the framework, by adapting the framework, or by gaming it. In part because of the power-embedded correlates of current experimental practice, they cannot effectively question the merits of an abstract version of competition and the market. As a consequence, and notwithstanding the misgivings, government institutions go on trying to impose this rather than exploring alternatives. If readers consider this to be an exaggeration, they should consider the

[23] Once more the argument can be derived from Kuhn, but it is also developed in an alternative idiom by Foucault. See, for instance, his (1976).
[24] Though we would not accept his solution, this argument was explored with extraordinary and withering power by Imre Lakatos. See Lakatos (1970).

official determination to persist with rail franchising to profit-seeking companies in the completely dysfunctional railway sector.[25]

None of this is necessary. If we think in terms of social licenses there are large parts of the foundational economy where *the state already has the levers it needs to require the players to make alternative and longer term (including community or supply chain) calculations*. But is not this happening because, as we have seen, the state cannot see beyond the single and abstract point-value understanding of economics that is shared by mainstream economics and the corporate players concerned with profits and prices at a point. The state continues to experiment in this mode, and this mode alone without attending to the specificities of particular markets.[26] Lacking the tools to see or think about the consequences of a point-value logic,[27] regional policy is about making markets work better through infrastructure and training, while industrial policy is about addressing market failure in early stage commercialisation of innovation in (quite small) high tech industries. The importance of the foundational economy for jobs, localities, supply chains, economic growth, import substitution, or environmental sustainability has been relatively difficult to discern or get into focus. At the same time the state has created close relations with powerful private sector clients[28] and its capacity to think independently of those clients has become limited, an inability exacerbated by the substantial failure of independent thinkers to offer alternative ways of framing economic realities.[29] Finally, the failure has been catastrophically exacerbated by the centralisation of the British state. Devolution to Wales and to Scotland aside, power has been progressively centralised to Whitehall, and within Whitehall to the Treasury.

With respect to industrial policy (and much else) the consequence is that *one size is almost always taken to fit all*. And this leads us to our core diagnosis of the failures of industrial policy since 1979. *The British state is stuck in an experimental time-warp because it is institutionally and politically unable to admit the possibility of (and the necessity for) an alternative framework.* It is still playing with the experimental apparatus that it put into place after 1979 and adjusting the details of this apparatus, without admitting that it is no longer working. The idea that the experiment itself is flawed is out of bounds: failures, if they are recognised at all, are merely treated as evidence of that the experiment needs to be conducted more thoroughly. This is the British predicament of the 2010s. We live in a state which registers endless failures without entertaining the possibility that those failures have to do with the initial framing of the experiment. We live in a country that is no longer governed by a *learning state*. Successive administrations have carried on doing the same experiments, and they have carried on making the same mistakes. Democratic deficit under these

[25] Bowman et al. (2013b)

[26] Interestingly the unsurprisingly, the economic actors involved in the foundational economy are much more attached to those specificities, at least in the context of lobbying. Thus the train operating companies know exactly which version of the market is in their economic self-interest, and very often this is specific in form.

[27] So, for instance, horizontal competition (e.g. between supermarket chains) is policed but vertical consequences up and down the supply chain are ignored.

[28] This is visible in energy, the water companies, the train operating companies, and the services sector with firms such as G4S. For the example of the train operating companies see Bowman et al. (2013b).

[29] This has been a persistent failure for several decades, but has become more visible since 2008 where it is most obvious in the discipline of economics. Here discontent has reached such a pitch that students are currently joining the chorus of complaints about the apparent irrelevance of economic orthodoxy to the real world. (See, for instance, Inman (2013).) However, the phenomenon of intellectual clientism is much more general.

circumstances is scarcely surprising. Large numbers of citizens have rightly concluded that many areas of government economic policy lie beyond the reach of political influence.

Decentralising and learning

In this section we consider the conditions required to move from the current state of non-learning to one in which the state can once again learn from a diversity of experiments and experimental forms in industrial policy. Most important is decentralisation, understood both politically and conceptually. Government devolution of powers will create the possibility of multiple sites of experimentation. Conceptual or cognitive decentralisation will encourage diversity and, most important, a concern with specificity in which it is recognised that different approaches are appropriate to different economic and political circumstances. Though a lively exchange of ideas will be crucial to learning, the 'best practice' idea that one solution or model is appropriate in all contexts will be abandoned

The central state has exhausted itself and decimated British industry in the pursuit of the abstract dogma of point value. So how can we lever change? There can be no single right answer, but there is one that is obvious. *The British state needs to be decentralised*. All the experiments cannot take place in a single location. All the experiments cannot take place within a single framework. All the experiments cannot be fitted to the framework dogma of the Treasury. We need to create spaces for different kinds of industrial experiments, and the simplest way to do this is to diversify the ability to experiment. There is therefore need for *political devolution* on the one hand, and *conceptual pluralism* on the other; the case for this is developed in this and the next section.

The argument for political devolution is again grounded in an analysis of specifics. Centralised experiment is inherently risky insofar as it rests on a governmentality of legibility and simplification. Indeed, as Scott and others have argued, centralised experiment with thin knowledge and metrics of success has been a repeated recipe for disaster.[30] But at the same time we need to be cautious. This is because centralised big government has also had its brilliant successes. Notable among these was the creation of the post war settlement in the UK which was rightly described by Nye Bevan as 'the most remarkable piece of social reconstruction the world has ever seen'.[31] This success came under specific conditions: it was a progressive conjuncture when liberal collectivists such as Keynes and Beveridge were empowered by the mobilisation for world war and the pressures of powerful unions plus a mass Labour party which included Bevan and Bevin. In policy areas such as health, the NHS centrally-imposed system imposed minimum standards by sweeping away a jumble of private provision and local initiative. The object was to level up to the standards of successful local experiments such as that of the Tredegar Workmen's Medical Aid Society. But, this is not any kind of pattern for our country in the 2010s at the end of a 30 year period when we are suffering from dogmatic centralised experiment without any reflection on the framework. Here, devolution is the more sensible proposition. Politically Wales and Scotland are still tied to Whitehall in important ways, but post-devolution they have had some room to conduct experiments in the foundational economy in ways that depart from the Treasury-imposed abstractions. But of course they also *need*

[30] Scott (1998); Mitchell (2002).
[31] House of Commons (1951)

to do precisely because the devolved nations are different industrially, historically, politically and culturally. Devolved governments are in a position to ask territorially-relevant questions about how they might best shape social licenses. Within limits the Scottish and Welsh experiments in devolution have been successful. Further political devolution – probably to several levels – would make it possible for industrial experiments to take different local or regional forms. This is what is needed at this juncture if we are to turn the state back into an experimental apparatus capable of learning from its failures rather than simply repeating them. *A truly experimental form of industrial policy will need powerful and substantially autonomous elected authorities*. This is our first substantive recommendation, but it cannot stand alone.

The idea that there is one best version of industrial policy is currently deeply entrenched in the national policy making machine. But this 'one size fits all' assumption will also have to be abandoned if effective policy experiments are to be undertaken. This is because a learning state will be one that is able to think and experiment in a variety of different ways. It will be one that thrives on and learns from *conceptual pluralism*. This means that it will need to cultivate a particular kind of *cognitive multiplicity* and *tolerance for difference*. This in turn implies two difficult and somewhat counter-intuitive adjustments. First, it will mean that what are taken to be important issues or good forms of policy in one location may not look that way in another. It will become necessary to tolerate this difference. Second, and more difficult, it will also mean that what *counts* as success may look different from location to location. Thus it is not only that policies will be plural, but the *framings* for thinking about them and learning from them will also need to become pluralist. So this is our second substantive recommendation: *a truly experimental form of industrial policy will cultivate cognitive modesty*. Policy makers and politicians will need to understand that their particular frameworks for thinking about success or failure can only reach so far, and that alternative criteria will be appropriate in other locations. Cognitive differences will become the norm, a shift that will in turn require difficult and possibly painful adjustments to how we think about expertise in the context of industrial policy.

So that is the new framework: we are arguing that a learning state will be one in which there is both administrative devolution and cognitive multiplicity. But what might this mean in practice?

A social enterprise might be one that:

- *sustained itself economically*;
- offered fair value to *consumers*;
- was locally owned, or returned a percentage of its profits to the *locality*;
- that maximised its *local purchase* of goods and services or supported local *artisanal production*;
- sought to source its supplies *ethically*;
- minimised its *carbon footprint* or otherwise sought to be a *good environmental citizen;*
- thought through the implications of its purchasing for *supply chains*, and built these to achieve local or regional sustainability;
- *paid fairly*, *limited pay differentials*, and offered a *share in profits* to its employees;
- offered high quality *training* to its employees;
- sought to *devolve its decision making* to the local level, and involved a range of stakeholders;
- was *transparent* in its decision making, and *adaptable* in its attempts to become an excellent social enterprise.

The list in the box is purely indicative, but it helps us to see the kinds of issues that will need to be tackled once we start to think about felicitous forms of social licensing. Most obviously such issues include the following:

- **Contestation**. Social concerns are *heterogeneous*. Our list includes employee, consumer, local, ethical, environmental, supply chain and organisational concerns. These cannot be reduced to a single dimension. Inevitably there will be trade-offs, and equally inevitably there will be disagreements. There will be *no single right answer*.
- **Judgement**: This means that decisions about social franchises will involve *irreducibly complex political and technical judgements* about priorities, preferred bidders, and appropriate organisational forms. Not only will algorithms never be able to replace judgements, but those judgements will or should be more or less local and specific.
- **Discussion**. Judgements will or should be made *deliberatively, democratically*, and *transparently,* though what this means will also be controversial. In particular, how expert advice can appropriately intersect with the concerns of consumers or citizens will vary, will itself be contestable, and will be a proper a matter for experiment.[32]
- **Tinkering**. Fourth, we might expect *judgements to change* with changing circumstances, priorities, and experience with existing experiments, successful or otherwise. In the complex world of social licensing no solution will ever be perfect, and the process will be one of social, economic and industrial tinkering.[33]

So how can we move from the present cognitive and policy monopoly in industrial policy to a state that tolerates or encourages the contestation, multiple forms of judgement, transparency, and tinkering needed for experimental learning? This is the final question that needs to be tackled.

Cognitive monopoly and the institutions for conceptual pluralism

Knowledge cannot exist in the absence of appropriate institutional mechanisms. If policy-relevant forms of knowledge are to become cognitively plural, the current institutions will also need to change in ways that foster difference. In this section we explore this and suggest the need for mechanisms that: support contrarian academic research; the creation of pluralistic tools and indicators; devolved research and tool making; and make it possible to share procedures, tools and successes and failures

Cognitive multiplicity is difficult both conceptually and politically. The political difficulty is that current industrial policy is ordered by the idea that abstract competition in an abstract market is the framework that is appropriate everywhere. But this is linked to a conceptual assumption that though the world is complex, in any domain (for instance economic life) *there is in principle a single best way of knowing it*. This powerful assumption underpins and legitimates much academic work, and is embedded in many versions of expertise and policy. The search is for the single best solution and the assumption is that if we can only work out what this is then one size will fit all.

[32] There are considerable resources for thinking about in (for instance) participative technology policy. See
[33] Mol, Care

The importance of conceptual pluralism is recognised in many current academic discourses about policy disasters. From political science Anthony King and Ivor Crewe in *The Blunders of our Governments*, analyse policy fiascos such as the poll tax and Public-Private Partnership on the London Underground). They frame their analyses very narrowly, arguing that privatisation is 'now almost universally accepted as having been a success'.[34] Nevertheless, they implicitly recognise the need for expertise, commitment and pluralism, because the fiascos they describe are attributed to civil service amateurism, transient ministers and an absence of informed challenge by outsiders. The lesson is all the more clear if we shift attention from unfortunate blunders to the continuing and almost obsessive-compulsive experiment around competition and markets.[35] It is hubris to assume that there is a single best way of knowing the economy or to build policy on a single model of 'the market' or competition. What is needed is *conceptual pluralism*. But this will only be possible if several conditions are fulfilled. We need a concept like that of the foundational economy which renders economic and industrial life open to local and regional experiments because it is widely distributed across the UK. We also need institutional mechanisms to support that pluralism, together with a widespread tolerance of difference and the recognition that what is true for (say) Reading simply does not apply to Ebbw Vale. So how to do this?

If we start with the academy, the discipline of economics is useful as a case-study of what *not* to do if we want to foster academic pluralism. Academically, status and employment has only been available to those who practise micro-economic quantitative modelling. This is an international phenomenon (the dominant peer-reviewed journals are American), but it has been exacerbated by the UK's propensity for centralised policy-making – and specifically in the form of the Research Excellence Framework (REF).[36] If we think in terms of practicalities, the first need is therefore for:

- **Institutional support for contrarian research**. At a national UK level funding agencies should ring-fence a specific proportion of their research budgets for *heterodox forms of industrially and economically relevant academic research*. A possible way of achieving this would be to allocate a proportion of the funds for economically and industrially-relevant research (including basic research) to a *contrarian research council*. It is clear that REF successor projects would also need to incorporate effective mechanisms for supporting pluralism.[37]

A second area of concern reflects *the tools for economic and industrial analysis and experimentation* that make it possible to identify, articulate and work in ways that move from generic 'one size fits all' approaches to the specificities of particular parts of the foundational economy. Practically, then, there is need for the:

- **Creation of pluralistic tools and indicators**. Some such tools would take the form of metrics, but since judgements are complex and specific, others would be discursive. The mechanism for generating such tools is for discussion, but in part it would need to respond to requests from the devolved agencies of the state to create procedures for articulating and judging the character

[34] King and Crewe (2013, 5).
[35] See, for instance the 2013 Labour Party policy on energy: Labour Party (2013).
[36] The latter has drawn on and reproduced academic orthodoxy both directly, by prioritising high status (and therefore orthodox) publications, and indirectly with the knock-on consequences of this for recruitment by university economics departments.
[37] These might include recognition of excellent but heterodox work published in 'low status' academic locations.

and quality of social licenses. So there might, for instance, be a 'supply chain programme', an 'employee programme', an 'environmental chain programme', and 'ethical consumer programme', a 'locality programme', and so on. Since there are many resources already available in these domains, in part it would be a matter of collating these and making them available to those awarding franchises.

Since the learning state would be *devolved* there will also be need for:

- **Devolved research and tool making**. The mechanisms here are again for discussion, but each region might create a research organisation to direct funding to its own particular priorities and concerns.[38]

The learning state will be an experimental state – the two are inseparable. But experiments can fail too. The issue is how we can best learn from the cocktail of failures and successes and the plurality of tools after devolution and the end of cognitive monopoly. This suggests the need for:

- **A mechanism for sharing procedures, tools, successes and failures**. How to create this is a matter for discussion, but it must work in a way that allows for honesty, and values and rewards failure and adaptability as much as success. It must also avoid the trap of assuming that there is a single 'best practice'. Mechanisms might include colloquia and various electronic media including websites and blogs or even 'no fault' reporting as is standard in the airline industry.

Conclusion

In this section we summarise the argument of the paper, and insist on the specificity of our own approach. Thus if more competition and marketization (and industrial policy for market failure) cannot or should not be seen as generally applicable abstractions, the same is true for our own intervention which is a response to the current predicament in the UK rather than a formula that is generally appropriate in all circumstances. Indeed, as we earlier noted, the creation of the NHS was a triumph of centralisation which worked sustainably to support the common good. This is why we have emphasised the importance of the sheltered foundational economy after fifty years of national relative failure in tradable goods. It is also why we have pressed for devolved and pluralistic experimental forms after thirty years of centralised and dogmatic experiment.

In this paper we have argued for a concept of the 'foundational economy' as an anchor for new kinds of intervention to achieve sustainable prosperity in the UK. Picking up on an argument developed more fully in a recent paper,[39] we have suggested that enterprises working in the foundational economy are sheltered, and that the state can and should take the initiative and treat these enterprises as social licenses, awarding and modifying contracts to corporate players that are willing to respond in one way or another to the wider needs of localities, consumers, work forces, forms of supply chain security, and environmental sustainability.

[38] It is easy to see that the priorities for a South East foundational economy research unit would differ quite radically from those of its North Eastern England equivalent

[39] Bowman et al. (2013a).

Currently the state in the UK is unwilling or unable to play this role in part because it is committed to a generic understanding of economic and industrial activity in which the role of the government is to secure more competition and abstract market conditions for successful enterprise through structural reform and horizontal measures. As a part of this it accepts a point value understanding of economic conduct which is also the working principle of shareholder value and private equity. The state is barely interested in the larger or longer term consequences of individual economic exchanges and, since point value ignorance is bliss, neither does it have or need an understanding of the specificities of particular industrial or market sectors.

The context for this argument is our concern with sector specifics, and our suggestion that governing may be understood as a form of experimentation. Since 1979 the UK has been a laboratory for a large scale experiment in privatisation and marketization which reflects and reproduces an abstract and generic commitment both to more competition and to a single version of 'the market'. The extent to which the experiment has been a success is a matter for debate, but both the long-term deindustrialisation of the UK and recent economic and political controversies suggest that the experiment in generic marketization has reached its limits. Though many realise that much is wrong, sadly those institutions most committed to the experiment are unwilling or unable to draw this conclusion. Our argument is therefore that the state in the UK has lost the capacity to learn about the limits of what it takes for granted. So how is it possible to rebuild the capacity to learn in the context of industry? How can new forms of experimentation be created?

In the present conjuncture, two large moves are needed to undo the monopolistic control exercised by the UK's central government apparatus. First there is urgent need for devolution. The experiences and the problems of the nations, the regions and the cities and towns of the nation are radically different. If devolved administrations are given the power to award social licenses then it seems most likely that they will prioritise different concerns, and experiment with these in different ways. This means that the possibilities for industrial learning will be dramatically increased. Second, we urgently need to create tools for recognising, thinking about, and managing the problems and the possibilities of particular sector-specific industries. These tools and the forms of knowledge and expertise that go with them will themselves need to be relatively specific. They may transfer from one location to another, but it is equally possible that they will not. At the same time, to the extent that they proliferate, the experiments undertaken by the state at its different levels will become more diverse. If this works as we believe it will, the state will once again become a structure that is able to learn from its experiments. So how to achieve this? The political and intellectual task is huge, but in addition to the need for devolution we have proposed a series of institutional mechanisms for creating pluralistic toolkits and policies.

We have also tried to apply this commitment to specificity to our own intervention. Along the way we have brushed up against some large issues including the problem of the democratic deficit and partially philosophical issues to do with the character of knowledge and expertise. At the same time we have sought to remain specific as authors who have some knowledge of the specificities of railways, meat supply and other industries that underpin everyday life. Though all of these need exploring, we have not addressed the tasks of repairing democracy in general, understanding democracy-market relations, or the role of expertise in a democracy. The problem that we have tackled is practical and economic, and our interventions have been equally specific. But they are also located in the centrist, radical and pragmatic tradition of British politics represented heroically in the

'middle way' of Harold Macmillan and the liberal collectivism of John Maynard Keynes and William Beveridge who all saw that the prerogatives of the capitalist form had to be socially directed or, as we would say, licensed. The thirty year experiment has proceeded on the assumption that this is unnecessary if competition and markets are created. It is not too late to reclaim the centre ground by creating new kinds of economic policies. But first we need to create a state that is capable of learning.

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Appendix: STS and political economy

By John Law

'Political economy' and 'STS' are both complex and multiple traditions. The version of political economy mobilised in this paper is: practical, historically informed, thoroughly empirical, has no strong commitment to a particular theoretical framework; informed by a practical concern to understand the failures of financial, economic and industrial policy in the UK; and an attempt to explore forms of possible political and policy reframing that would rectify some of those failings in a way that reflects a commitment to broader social justice. STS is a relatively recent discipline that explores how science and technology are shaped, and in turn reproduce social, cultural, institutional and economic forms. The version of STS that informs this paper draws primarily on actor network theory.

Though there are versions of political economy within STS, the combination of political economy with an actor-network approach is unusual. This Appendix is a situated reflection that explores the overlap in the present paper from an STS perspective. The object is to understanding how the two traditions might productively work together in other collaborations.

- **Specificity**. All versions of STS prioritise empirically and historically variable specifics, and exhibit a reluctance to make general claims – a reluctance that in part reflects the origins of STS as a reaction against idealised and simplified accounts of the 'scientific method'.[40] This sensibility is also reflected in the case study approach common in STS in which theoretical arguments are developed through specific empirical materials. (For the same reason, STS is rather suspicious of 'general theory' if this is empirically ungrounded.) This overall STS orientation has an elective affinity with the version of political economy or 'political arithmetic' developed in the Centre for Research in Socio-cultural change and the successor 'Manchester Capitalism' project. Both have a related but independent commitment to specificity in industrial policy, and are suspicious of abstract generalisation. This shared commitment lies at the core of the paper and gives the argument its overall shape.
- **Knowledge is specific and located**. STS works on the assumption that knowledges are specific and located. The argument is that if generalisations travel this is because work has been done to achieve their transportability: usually that the place to which they have travelled (for instance a laboratory) has been reconfigured so that it has the same shape as the point of departure.[41] This implies the need for caution and modesty in making general claims about knowledge. Such claims are possible, but they depend on the creation of a social, technical and cultural infrastructure if they are to count as true. A consequence of this is that it is not a weakness to acknowledge that a form of knowledge (including one's own) is located: such is the case for all forms of knowledge. On the contrary, it is more misleading to insist that knowledge is general or that truth is universal without, at the same time, exploring how this is achieved at different

[40] As mentioned in the working paper, STS grew in part out of a detailed reading of Thomas Kuhn's *Structure of Scientific Revolutions* (1970), where scientific knowledge is understood as an expression of practices in communities of scientists, and theories are embedded in and arise out of those practices. For a recent reinterpretation of the growth of STS see Law (2008).

[41] For this argument, see Bruno Latour's (1987) argument about 'immutable mobiles'.

sites.[42] This is the STS reason why the present paper tries to avoid making claims about (say) democracy in general, or the proper conduct of policy. But it again resonates with the pragmatic political economy concern to offer particular suggestions for reframing economic and industrial policy which move away from claims about the general, sector-indifferent, relevance of point value market forces to industrial policy.

- **Knowledge is a tool**. STS usually assumes a pragmatic approach to knowledge. Knowledge is taken to be a tool that works in particular circumstances (in which case those who use it tend to say that it is true) or doesn't (in which case they tend to find that it is false). This commitment to pragmatism runs through the paper.[43] One consequence is that it is not necessary (or indeed possible) to say that some forms of knowledge are true whereas others are (for instance) ideological, a distinction that works poorly once it is clear that no epistemological guarantees attach to a single version of the scientific method. Instead the issue is one of workability, which again is similar to the political economy sensibility mobilised in the paper which treats economic knowledge as a matter of pragmatics.
- **Practice**. STS focuses on practices, scientific and otherwise, and these are usually its unit of analysis. Though STS scholars understand practice in a range of different ways, they typically assume that knowledges are both embedded in and arise out of materially complex arrangements. The focus, then, is on how practices work. There is not a lot of talk about this in the present paper, but it is implicit throughout, and again it is implicit in the CRESC political economy concern with specificity.
- **Experiment**. STS reasons that if everything is specific and located in time and space, then in some sense every time a practice seeks to recreate or reproduce itself this can be understood as an experiment. This means, however, that since the world is unpredictable there are no guarantees, and practices including knowledge practices may go wrong. In addition, STS attends in particular to scientific experiment. The issue is often to ask what is being put at risk in an experiment. As we note in the paper, in principle this might be: the particular hypothesis being explored or tested; the experimental practicalities; the competence or otherwise of the experimentalists; the adequacy of the larger context; or the overall theoretical framework. Indeed there is no way of knowing in principle what causes any failure since any or all of these might be at fault.[44] Though they shy away from philosophical criteria of demarcation, more radical versions of STS are also critical of the self-sealing versions of experiment that try not to put anything profound at risk but prefer to re-validate themselves.[45] This line of argument dovetails with the intuitions of political economy, and lies at the core of the paper's argument about the UK state and its failings, and about the need for an experimental and learning state.
- **Heterogeneity, tension, incompleteness**. Implied in what is said about experiment is that while particular practices may hold and that their knowledges may be taken as true, this is a contingent achievement and is always uncertain. The STS understanding of practices (scientific and otherwise) is broad, and includes knowledges, social relations, cultural assumptions, textual traces, embodiments, subjectivities, elements of the material world immediate material configurations and tools, and larger contexts or chains of infrastructural relations. Practices are

[42] This argument is developed by Haraway (1991b).
[43] STS's pragmatism again grows in large measure out of Kuhn's history of science. See Barnes (1977).
[44] For the original version of this argument see the debates in Lakatos and Musgrave (1970); for the argument in an STS version, see Collins (1975).
[45] Haraway (1989).

therefore heterogeneous processes that hold these together for the time being. This implies that what is being assembled does not necessarily fit together well. Here those parts of STS close to actor-network theory draw not only on the Kuhnian understanding of practice, but also on the notion of assemblage from the poststructuralist writing of Deleuze.[46] The implication is that practices assemble together bits and pieces, chains and/or networks of materials and orderings that are heterogeneous both materially and discursively. This means that such arrangements are always in tension and potentially unstable.

- **Care and tinkering**. This in turn means that there is only ever incomplete and temporally unfolding satisficing. Optimisation or perfection are pipe-dreams. Practices may therefore be understood as forms of tinkering, and care (for example medical care) may also be treated in this way. Since practices are materially heterogeneous the extent to which discursively articulated and rational 'point-choices' can be made is limited. Indeed 'choice' is a poor model for many and perhaps most processes of decision making. [47] In practice, the notion of decision making is used in the paper which raises the possible difficulty that it carries too much rational choice baggage. However, despite the language, the core object of the paper is to show that what is at stake in experimenting (including state experimenting) resembles tinkering much more than rational choice.
- **Matters of concern**. In STS what counts as a fact depends both on holding the practice (or the assemblage) together, and on the concerns that are embedded in or motivate the practice in question. This implies that facts cannot be wished into being. STS is not relativist because despite the fantasies of the climate change deniers, holding assemblages together is not trivial. On the other hand, neither are facts entirely independent of concerns. So the notion of 'matter of concern' may be understood as a way of insisting that facts and values cannot be disentangled: that each implies the other.[48] An instance of this is the notion of the 'foundational economy' which simultaneously describes a set of facts about the world, and yet is also driven and shaped by political and social concerns. But the same is true of all economic (and other) indicators.[49]
- **Drawing things together or common worlds**. STS is variably interested in 'democracy'. There are substantial literatures within the discipline on expertise and participative decision making in (for instance) technology policy.[50] Other more actor-network-influenced parts of the discipline borrow from political theory by assuming that democracy is about assembling different concerns and types of actor into a more or less coherent collective that, in some way or another, respects the different agendas and concerns of whoever or whatever is being assembled.[51] Whether this move is satisfactory is a matter for discussion within STS (perhaps things are assembled together in ways that don't assume the provisional creation of a collective or common world?[52]) but this assumption nevertheless informs some of the sections on decision making about social franchising in the present paper.

[46] Deleuze (1988); for commentary see Law (2004).
[47] For this argument, see Mol (2008) and Mol, Moser and Pols (2010).
[48] Latour (2004b).
[49] This is beautifully explored in Mitchell (2002).
[50] Wynne (1996); Waterton and Wynne (1999).
[51] Callon, Lascoumes and Barthe (2009); Latour (2004a); Asdal (2008).
[52] For a typology of different modes of overlapping including democracy, see Law et al. (2014)

- **Multiplicity**. For STS practices and arrangements are multiple. More exactly, in STS a practice or an assemblage that holds is both single (because it holds) and multiple (because it is heterogeneous and non-coherent). There is a tension in actor-network-inflected STS between those who tend to stress multiplicity,[53] and those who press on the temporary singularity achieved in the creation of provisional common worlds (see immediately above). The text reflects both positions (see the note on common worlds), but is deeply informed by the idea that different practices in different places are indeed different, and that there is therefore need for a politics that reflects and respects multiplicity, rather than the (somewhat oversimplified) account of) cognitive monopoly described in the text. Here the resonance with a political economy of decentralisation is strong.
- **Performativity**. STS tends to assume that practices are performative: that they more or less successful enact realities. As is well known, the argument has been pressed in the STS work on markets.[54] It is probably useful to disentangle the latter (which is in large measure a very specific argument about the performative effects of the discipline of economics) from the more general argument about performativity. It is the more general version of the argument that informs the present paper. It is assumed, for instance, that creating tools for knowing the economy differently may be performative and that these may (or may not) have effects on how the economy is managed.[55] So, for instance, if the notion of 'foundational economy' circulates, then in one way or another it will become performative.
- **Ontological difference**. Large parts of STS work on the assumption that practices are heterogeneously performative, one way or another, and that since practices vary, so too does what they are enacting into being. The counter-intuitive implication of this argument is that realities are multiple. Sure, they overlap. Sure, they get included in one another. But the reality for one practice is likely to be different to the reality for another.[56] This is implicit in the paper, but it is not made explicit because it makes no sense within the dominant metaphysics of Western tradition which assumes that there is a single complex world, and then suggests that different practices (social locations etc.) have different perspectives on it. The paper therefore works on the assumption that in the policy domains that are its focus it is not necessary to make the ontological argument.
- **Networks**. There is an elective affinity between the actor-network interest in heterogeneous networks and the concern with broader economic and social contexts which grows out of CRESC work on political economy. In the STS sensibility practices always include or depend on, but also work to reproduce (this is the performativity) limitless networks of actors of one kind or another. This is why actor network theory is called 'actor network theory': actors are also networks. This dovetails with the political economy concern with thinking about the specificities of particular social licences in particular locations in the foundational economy. Supply chains, conditions of work, and relations with the locality, with financial institutions, with technological infrastructures, and all the rest – these can readily be understood as 'networks' in the actor-network idiom, though nothing stands or falls with the term. Note that STS is very good at tracing such networks, and less good at knowing when to stop.[57] This is because in principle they

[53] Mol (2002); Law (1994; 2002).
[54] Callon (1998); MacKenzie, Muniesa, Siu (2007)
[55] Barry (2001)
[56] Mol (2002); Law (1994; 2002); Verran (1998).
[57] Strathern (1996).

ramify without limit. In the context of the foundational economy this transmutes into a specifically political problem: what do we want to include and make explicit within a social licence, and what will we let go? Since this is a political problem this means that it is necessarily contested, which is fine.

- **Tools, apparatuses, indicators**. As mentioned earlier, STS is rather strong on the importance of tools and gadgets in formatting social life. These are important in laboratory science, where they convert heterogeneous materials into rows of figures or traces on a graph. These both format the experiment, shaping and limiting what it can learn, but also render learning possible in the first place since regularities emerge only after such formatting simplification.[58] But what is true for laboratories also applies other kinds of practices, including those of economic and industrial policy. The standard indicators such as GDP format economic realities, but so too do alternatives such as the notion of the foundational economy. The insistence in the paper on the proliferation of different kinds of tools is also way of saying the heterodoxy needs to create ways of formatting the world that cut across the concerns of orthodoxy. It is only by elaborating such tools that novel forms of knowledge and intervention can be created and tested.
- **Framings**. As a part of this, STS similarly interested in how knowledges get framed, either through tools, or forms of discourse or narrative. The argument, which draws on Foucault as well as the Kuhnian tradition in STS, is also that in many respects framings are implicit, and while they making knowing and acting possible, they also limit the conditions of possibility.[59] The issue is, does this matter? This is a question that is simultaneously political and analytical. So, for instance, until feminists got to work the gendering of much scientific discourse and practice was invisible to most historians. So it is with economic life. The implicit framings of economic policy discourse and practice (try to) reproduce point value assumptions – but also a whole set of individualist assumptions about what a society is (for instance, a set of individual economic actors with the capacity for rational choice). One of the moves in the present paper is to articulate such implicit framings, and then to suggest that they can be changed, though there is much more work to be done on this.

The STS toolkit is therefore woven into and makes its contribution to the argument of the paper even much of this apparatus is implicit. At the same time there are places where STS is arguably in greater tension with the main concerns of the paper. Here are four.

- **Democracy**. As noted above, there is considerable work in STS on democracy, but there is also a fundamental tension between STS and a focus on democracy. To talk of democracy, rule by the people, or sovereignty drawn from the people, is to draw a fundamental distinction between human beings on the one hand and the other 'non-human' agents that STS assumes to exist in the world on the other. In STS (or the ANT version of it) it is not argued that people don't exist. Rather it is assumed that people are consequences or effects of practices, and that it is not possible to assume the difference between humans and non-humans if we want to explore how those practices are assembled and the human is constituted. An analogous argument applies, therefore, to a political system such as democracy which is probably an expression of the will of a territorially bounded collection of people. In the present paper, alongside the discussions of practice, there is none the less talk of democracy, and indeed, of people. Thus the major political

[58] Latour (1987);
[59] Law (2009)

move – the argument about the need for devolution – can be understood as an argument about political practice which might fit with actor-network STS, but the argument works on the assumption that it is more convenient and closer to common sense to imagine this as regional (etc.) self-government by electorates – that is of people. In this context the pragmatic and political gain of doing so outweighs any insistence on treating people (or collections of people) as effects.

- **Institutions**. Actor-network STS often has relatively little to say about institutions except as effects of heterogeneous practices (though this means that there are indeed large and instructive literatures on how organisations and institutions assemble themselves).[60] In other words, at least in its ANT versions STS is reluctant to make assumptions about the backdrop of institutions and the inter-institutional relations that shape negotiations and interactions in (for instance) a policy context. There are good reasons for this. In particular, this makes it possible to show how institutions are 'granted' power in practices and therefore offers the possibility of unravelling how this works and offering the possibility of alternatives.[61] But in the present policy context it is clear that there is need for an institutional analysis which locates and makes assumptions about the government machine, the Treasury, powerful stakeholders and lobbyists and all the rest, as against the relative powerlessness of (say) local government. Again, the pragmatic and political gain of doing this outweighs the inconveniences.
- **Power**. The same argument applies to power. In STS power is usually understood as an effect of heterogeneous relations, but the present paper treats it (so to speak) as a cause. Again the gain is greater than any loss. The argument parallels the case above for institutions.
- **Description versus normativity**. Much of STS has a tendency to describe rather than prescribe. It learned this in its infancy when it tried to describe what scientists actually do, as opposed to what epistemologists thought that they should be doing. The commitment to description has become a vastly powerful deconstructive tool which makes it possible to show how (for instance) truth or power get done. But though STS tends to prefer to describe, it is also clear that description cannot be neutral (see the comments about 'matters of concern' above.) If descriptions carry and (tend to) reproduce arrangements then these are also normative or political. A 'choice' is being made to describe in one way rather than another: to foreground certain features of reality, and leave others undisclosed.[62] All this said, there is also a powerful subset of authors in STS who weigh in politically and are happy to do so quite explicitly. Indeed, this is how they define their task, because the object is to make a political, social, and/or economic difference by (for instance) reframing how particular issues are cast.[63] This paper fits fair and square with the latter pattern. It is explicit in its normativity.

What are the limitations of this paper STS-wise? No doubt there are many possible responses, but one has to do with the balance between singularity and multiplicity (this was mentioned above.) Practices are multiple, but they achieve (and usually proclaim themselves to be) singular and coherent. (This is Bruno Latour's definition of 'non modernity'[64] but it runs like a thread through much of STS). The assumption of coherence is very important, in part because it is performative. But

[60] Latour (1988).
[61] Law (2011).
[62] See, for instance, (Haraway: 1989; 1991a; 1991b).
[63] See, for instance, the Haraway citations above, Mol (2008) and Moser (2008).
[64] Latour (1993).

it is also, and at the same time, unrealistic because (again as mentioned above) STS treats practices as assemblages. Another way of saying this is that practices oscillate between coherence and non-coherence (think of the figure/ground oscillations beloved of the gestalt psychologists.) Indeed, it can easily be shown that even those institutions most committed to coherence are also non-coherent.

The present text skates over this in its treatment of central government policy. If we look at the latter carefully it is obvious that notwithstanding the power of the Treasury, in practice policy is multiple. However, the paper stresses the singularity or coherence of policy (in the argument about point value and the abstract and singular market) in industrial and regional policy. The question is: is this a difficulty? And if so, then is it a difficulty for the paper or for STS?

In one way it is a problem for the paper. Recognising that central government is more supple than is suggested in the paper – and that it is more capable of learning – will be important as the argument is nuanced and developed in subsequent publications. At the same time it raises questions for STS. Thus the paper makes the bet that whatever central government may be learning, it is also, and very thoroughly, in the business of non-learning – including non-learning about the 'foundational economy'. This bet in turn reflects an intellectual and political strategy which emphasises discontinuity or rupture rather than continuity. Thus the paper treats the marketization-point-value complex as a basic and limiting epistemic framework. It argues that this is a restriction that does not seem to be visible to many or most of those caught up in it. The issue, then, is how to crack the self-evidence of this frame. The paper attempts this by proposing the foundational economy as a politically and intellectually preferable alternative. For this reason it treats the two as qualitatively different. This is an intellectual and political strategy that operates by opening up difference and maximising the distance between alternatives. Understood STS-wise, it therefore adopts a political and intellectual strategy that borrows from Foucault by emphasising epistemic difference rather than continuity. This kind of strategic simplification is only patchily found in actor-network versions of STS where it often takes the form of the ontological multiplicity described above, and may also overlap with postcolonial analyses of difference.[65] The issue (simultaneously analytical and political) is always this: where to simplify and where to complexify. This is a question to which there can be no general answer.

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[65] de la Cadena (2010).

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