REGULATORS AND REFORM: A QUASI-EXPERIMENTAL ASSESSMENT OF THE EFFECTS OF TRAINING INSPECTORS[1]

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ABSTRACT

Regulators face an array of initiatives designed to boost the effectiveness of policy delivery and cut administrative burdens. A good deal of analytical attention is given to these governance tools, but we know much less about how regulators themselves understand and learn about them. We use a quasi-experiment to assess the effects of training on local government inspectors' understandings of the Primary Authority (PA) initiative. Established in 2009 by the UK's Better Regulation Delivery Organisation (BRDO), PA partnerships are legally binding agreements that provide businesses with a single point of regulatory contact and inspectors provide advice and reduce duplication of inspections and paperwork. The scheme is complex, and marks a significant departure from the existing inspection framework. Our findings suggest that, regardless of training, the regulatory innovation is well understood among local authority inspectors. Training may make a difference however in aspects of regulatory reform which are contentious or could be taken as counter-intuitive to professional norms. The article also highlights the value of the quasi-experimental approach for policy-relevant public management research.

KEYWORDS

Inspectors; learning; Primary Authority; quasi-experiments; regulation; training

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INTRODUCTION

Changing attitudes, beliefs and 'culture' is a fundamental challenge for regulatory reform. In the UK, the government embarked on a 'cultural turn' with landmark 'Hampton Review' – *Reducing Administrative Burdens: Effective Inspection and Enforcement* (HMT, 2005). Hampton posits risk-based regulation as the key mechanism for burden reduction, and exhorts policymakers to develop new institutions and programmes to embed this idea. Ten years later, we can appraise the results of this ambitious effort. Most pertinently, we raise the question whether street-level bureaucrats (Lipsky, 1980; Pressman and Wildavsky, 1973) have responded to the risk-based regulation agenda: have they learned about institutional innovations?

This is a big question. In this article, we consider a dimension of this broader issue, by examining the effect of training on a hard to reach experimental population – regulatory inspectors at the forefront of Hampton's burdens reduction challenge. We report on a quasi-experiment designed to assess the effects of training on local authority inspectors' understandings of the Primary Authority (PA) scheme. Established by the Department for Business, Innovation and Skills' (BIS) Better Regulation Delivery Office (BRDO) in 2009, PA represents the central response to the issues raised by Hampton. PA is supposed to stimulate risk-based regulation by facilitating closer collaboration between regulators and regulated. We use a quasi-experiment to capture the effects of training interventions, designed and delivered by the BRDO, on inspectors' knowledge of the PA scheme and its underlying rationale.

We adopt the quasi-experimental method because assignment to treatment – i.e. PA training – could not be random; inspectors self-select to register on the training database. The absence of randomization can pose threats to internal validity: can we be sure that the intervention has caused the effect we observe? (Blom-Hansen, Morton and Serritzlew, 2015). These concerns are well known in the public management literature (and beyond). While laboratory experiments have historically been a 'neglected … stepchild' in public management research (Bozeman, 1992: 290), quasi-experiments fair far worse and are often considered the 'ugly sister' of the experimental method. Indeed Campbell, who knew well their potential messiness, memorably dubbed them 'queasy experiments' (1988: 322). Yet, as the special issue editors observe '… if randomization can never be sacrificed, many research questions need to remain unanswered' (Blom-Hansen, Morton and Serritzlew, 2015). While relaxing the requirements of randomization and control over the intervention associated with lab, field and survey experiments reduces internal validity, the greater flexibility of quasi designs enables researchers to access policy actors and address research questions important to academics *and* public managers. The challenge for those involved in quasi-experiments is to design their research in ways that mitigate the problems created by the absence of randomization as far as possible while celebrating the potential gains on external validity this design entails.

Here, the quasi-experimental approach offers a way to avoid the endogeneity problem whereby the effects of training on inspectors' understanding of PA cannot be disentangled from the effect of the policy itself (Blom-Hansen, Morton and Serritzlew, 2015). Comparing the knowledge of a trained treatment group of inspectors with an untrained control group *before* PA has taken hold, we can better address the counterfactual – what understanding would regulators possess in the absence of training?

Getting to grips with these questions is not simply a matter of academic enquiry for those interested in regulatory reform. The impact of training public sector employees across all policy sectors is an under-researched area. This article presents one way to evaluate training at low cost, and in a way that avoids confusing the impact of training from impact of the policy reform.

Section one presents the motivation for the study and outlines PA in depth. Section two discusses the workplace training evaluation literature and our hypotheses about the potential learning gains that result from training. Section three presents our quasi-experimental design. Section four describes the experimental conditions and the two sets of outcome variables we measure. We use vignettes to ascertain inspectors' comprehension of the PA scheme, and positional questions gauge their views of regulatory burden reduction and risk management. Section five presents and discusses the findings. We conclude by summarising the findings and our contribution to the public management literature.

EVALUATING TRAINING IN THE PUBLIC SECTOR

Four decades of implementation studies demonstrate that street-level bureaucrats are policy shapers whose understandings of and attitudes toward policy programmes can make a material difference to how citizens and businesses experience regulation, and in doing so influence policy outcomes (Lipsky, 1980; Pressman and Wildavsky, 1973). The result can be a patchwork of policy practice – where some local authorities align with the central regulatory vision more closely than others. How do inspectors gain their understandings about regulation? What is the impact of training on these understandings?

Employee training is a central component for high performance human resource practices (Blume et al, 2010; Kelman, 2005), and competence at continuous learning a core employee attribute (Maurer and Weiss, 2010). But, what is the impact of such training? Empirically, we know that when compared with no-training or pre-training situations, training has an overall positive effect on job-related behaviour as employees learn (see Arthur et al, 2003 meta-analysis of 1152 effect sizes). But the majority of this evidence concerns private sector organisations.

What of the public sector? Training is considered to be key to capacity building in government (PWC, 2013). Public sector employees – particularly street-level bureaucrats –

face an on-going challenge to keep up-to-date with the new policy initiatives they are required to implement. But, they must also understand the deeper values that underpin those initiatives. Training is the main way that public practitioners are supported to understand the 'nuts-and-bolts' of programme innovation, and engage with the deeper ethos driving new policy delivery systems.

The public sector invests heavily in employee training. In 2007/08, UK public expenditure on employee training was £7.7bn; just under a quarter of the entire training and development industry expenditure that year (Schuller and Watson, 2009: 5). The picture is similar in the US where £18bn was spent in the public sector in 2011 (GAO, 2011). The majority of this training is designed and provided in-house, and takes place over one or two days (CIPD, 2014). The need to evaluate the learning generated by short courses is particularly important given that they are the most common in the public sector (CIPD, 2013). What difference can we expect such parsimonious training to make to inspectors' understandings and attitudes?[3]

The case to evaluate is pressing given that budgets allocated to training are under intense pressure (CIPD, 2014). Training must prove its worth. Yet, measurement of its effectiveness is rare (CIPD, 2014, GAO, 2011). In 2013, 74% of employers reported difficulties in evaluating learning activities (CIPD, 2013). Beyond the barriers created by lack of interest in investing in evaluation among senior management (see also CIPD, 2007), there are more practical constraints. In a recent survey, 46% of those investing in training pointed to lack of analytical skills as the main problem and 20% the difficulty in accessing timely data (CIPD, 2014: 26).

This project overcomes these barriers. Researchers were engaged by the government agency – BRDO – early in the PA scheme. This secured technical expertise early enough in the implementation of the scheme to provide data from two distinct but comparable trained and untrained groups.

What is a PA partnership, and why form one? Primary Authority enables local authorities to form partnerships with the businesses they regulate. Established in the UK by the 2008 Regulatory Enforcement and Sanctions Act (RESA) and launched in April 2009, the BRDO records the PA partnerships that have been formed and advice given; operates a dispute resolution procedure and, importantly, provides training courses for local authorities and businesses interested in forming or have already formed a PA partnership.

PA is the UK government's main response to complaints that while local authorities *should* apply environmental health, licensing and trading standards in a similar way, businesses operating across multiple local authorities are given contradictory advice; forced to duplicate work, and lack an effective dispute resolution procedure in instances where different councils disagree. PA allows businesses operating across council boundaries to

[3] We are grateful to one of our referees for raising this point.

form a statutory partnership with a single local authority to cover all environmental health and trading standards legislation, or specific functions such as food safety, petroleum licensing and age-restricted sales of gambling. The inspectors of that local authority become the 'primary authority' for that business. The aspiration is to provide businesses with reliable, accessible and consistent advice with the aim of reducing business costs, inspiring confidence and driving-up local regulatory standards (BRDO, 2009).

The mechanism underpinning these new arrangements is the provision of information from a single source – one local authority provides its partner business with advice to support regulatory standards that then hold across other local authorities. Once legally nominated by the BRDO, partnerships are automatically recognised by all local regulators. The principal goal is the elimination of information complexity and inconsistency of interpretation when the same business gets different advice from different inspectors in different authorities. At the heart of PA is a shift in the nature of how responsibility is shared and risk managed by inspectors. Those authorities that become primary authorities also become a resource for other so-called 'enforcing authorities' (EAs) '… providing valuable intelligence on businesses' operations through advice and the development of inspection plans' (BRDO, 2009: 4). These optional 'inspection plans', agreed with the regulators of the primary local authority, exist to guide enforcing authorities on what to take account of when carrying out inspections or dealing with apparent non-compliance. The advice and agreements contained within inspection plans must be respected by all enforcing regulators. If problems arise, the primary authority coordinates enforcement action to ensure consistent treatment for the business. Where disputes arise, the BRDO operates a resolution procedure.

In October 2011, 389 businesses had forged partnerships with 69 local authorities of the 433 in the UK; by April 2014, this had grown to 1595 businesses in partnership with 120 authorities (BRDO, 2014). Despite this increasing scope and the fundamental changes PA implies for UK regulation, little is known about the scheme outside specialist arenas. In terms of evaluation design, the PA scheme ticks boxes that other training subjects do not – notably its implementation is still low enough to ensure an exogenous quasi-experimental design.

TRAINING AND LEARNING HYPOTHESES

The Kirkpatrick model provides the most common concepts for training evaluation (CIPD, 2014). Kirkpatrick (1959) outlines four levels of training evaluation: *reactions* (e.g., short check boxes and Likert scales questionnaires handed out at the end of training sessions); what has been *learned* (knowledge, attitudes and skills), the transfer of training to

organizational behaviour (at level 3) and *organizational outcomes* (level 4) (see Blume et al 2010).

Our evaluation addresses the impact of training at level 2 – the learning affected by training in *knowledge* and *attitudes*. The importance of evaluating learning in our case is clear – an incorrect understanding of the PA scheme, or the persistence of attitudes that run counter to the ethos of burden reduction, undermines the adoption and smooth running of PA partnerships. Most commonly, measuring learning takes the form of pre- and post-test questionnaires. But, where possible, the ideal is to establish a quasi-experiment that compares a trained group with an untrained comparison group where the test items are closely matched to the actual objectives of the training intervention. The advantage is that we avoid 'response-shift' bias associated with pre- and post-test questionnaires where the intervention changes the standards subjects apply to the dimensions being measured (Campbell and Stanley, 1963).

Two levels of training are available for local authority inspectors who are either interested in creating, or already part of, a PA[4]. Both courses are provided by the BRDO at venues around England. Provided since 2010, both courses comprise a one day workshop for a maximum of 15 inspectors. The training format at each level follows the same structure. An expert trainer, who has successfully established PA partnerships, uses a slide presentation and group work to outline the scheme and its underlying philosophy. The group work uses examples of best practice cases of established PA partnerships where participants are given hypothetical vignettes. These are used as the focus for questions that reveal participants' comprehension of the scheme and links to the regulatory reform ethos.

The training interventions are not heavily influenced by the inspectors being trained in a way that would influence the effect measures. Rather, the courses follow a prescribed format, and are designed to deliver specific messages about the intricacies of the PA scheme and its underlying philosophy. The fact that the trainer is also an inspector is important – the source and receiver are homophilous (Rogers, 1962).

The content of the two training levels moves from the general to specific. Level 1 offers an introduction to the scheme; while level 2 is designed for those who want a deeper insight into how to build a successful PA partnership. Though there is no requirement that participants in either level of training are already part of a PA partnership, the specificity of the courses means that participants are at least interested in establishing one. Since the completion of level 1 training is not a pre-requisite for participation in level 2, we cannot assume that those trained at level 2 have a deeper knowledge and understanding than those at level 1. And so, we combine the two groups to create a single experimental cohort to be contrasted with our untrained comparison group.

Our hypotheses build on Kirkpatrick's (1959) training model:

[4] It should be noted that membership of a PA does not require any training to have been completed.

H1. Participation in training increases awareness and understanding that regulatory risk can be decomposed for other professionals – i.e. it increases the understanding of the operational aspects of the PA scheme.

H2. Participation in training leads to a greater awareness of the multiple identities implied by becoming a PA – where inspectors become regulators and advisors – i.e. it moves professional identities of inspectors toward business' needs.

Some more detail on the content of the training interventions, and what participants are expected to learn, is in order. Level 1 training – 'Becoming a Primary Authority' outlines the main aspects of the scheme focussing in particular on the status of the advice given by a PA to its business partner and the differentiation of the roles assumed by primary and enforcing authorities. In terms of the wider regulatory ethos underpinning the scheme, level 1 emphasizes effective regulation as the product of partnerships between regulators and regulated, and explores the value of PA for businesses and citizens. Communication, burden reduction, proportionate risk management and flexibility are all themes that recur in this session. Level 2 training – 'Making an Impact Through Your Partnership' – covers all of these themes, and also offers a more detailed account of managing a partnership and building a working relationship between primary authority and businesses.

QUASI-EXPERIMENTAL DESIGN: GROUP COMPARABILITY, MOTIVATION TO TRAIN AND CONTAMINATION LIMITATION

On 26 February 2013, a hyperlink to an online survey (see Appendix 1) was emailed to the 565 local authority inspectors registered on the BRDO's PA database. A follow-up email reminder was sent a week later. The questionnaire remained accessible for a further week. To avoid possible framing effects of the survey coming from the BRDO, it was hosted and the emails sent by the University of Exeter. In total, 172 useable questionnaires were completed, representing a response rate of 30.4% (table 1 provides a breakdown).

INSERT TABLE 1 HERE

The introduction of this special issue outlines two core criteria for a quasi-experiment (Blom-Hansen, Morton and Serritzlew, 2015). First, there must be a comparison between an experimental treatment group and an untreated group. We surveyed trained and untrained local authority inspectors. In common with the characteristics of quasi-experiments outlined in the special issue introduction, assignment to the trained or untrained groups is not random. Inspectors' participation in training is voluntary. And, as intimated in section 2,

training is not a pre-requisite for participation in a PA partnership. Rather, inspectors self-select to train because they are interested in establishing a PA.

The absence of randomization does not present insurmountable methodological problems. The challenge is to ensure group comparability which will enable us to conclude that differences between the trained and untrained groups are the result of the experimental intervention and not any initial differences (Shadish et al, 2002). We need to be sure that when we find a significant effect of training this is not determined by other biographical conditions that make the two groups different in the first place.

We first need to ensure that the trained and untrained groups can be assumed to possess similar levels of professional knowledge. Specifically, if we are to separate out the impact of training, groups require similar levels of interest in the regulation and risk agenda inspired by the Hampton report and PA. To do this, we use the 565 inspectors registered on the BRDO's PA scheme database as our sample. These are inspectors who have requested to be trained in the PA scheme; all of those who have been trained are registered (N=410) along with a further 155 untrained inspectors who are on the training waiting list. Inspectors' self-selection to enhance their knowledge leads us to consider them a group of regulatory 'innovators' – those who have a high level of interest and awareness in the Hampton agenda regardless of whether or not they have been trained in PA.

It is unlikely that all initial differences can be ruled out, however this sampling offers the most promising way of ensuring roughly comparable levels of knowledge and interest. Of the 12,500 staff employed in UK local authority regulatory services in 2011 (CIPFA, 2011), 5000 inspectors are eligible to be involved in a PA as part of their role (BRDO email communication, 9 August 2012). Without any fine-grained biographic information on this 5000, we are unable to draw firm conclusions about how closely our respondents match the wider universe. However, given the widespread acceptance and comprehension of Hampton among local authority inspectors (CIEH, 2011; NAO, 2008), there is reason to be optimistic on external validity.

We do know however that our 172 respondents are representative of the 565 universe of regulatory innovators. As table 1 details, there are no significant differences between our two groups (of trained and untrained) and the 565 on four biographical variables that could influence inspectors' understandings – gender; length of service; job role, and membership of a PA[5]. We found that trained and untrained subsamples are relatively homogenous with chi-square tests falling short of statistical significance on our four biographical items[6].

[5] Case-by-case matching was ruled out as the sample size is not large and removing subjects would determine a loss of statistical power that we want to avoid.

[6] Respectively: _Training and gender: Chi-square exact test p=.261; Fisher exact test p=.261; df=1; Cramer's V=.090
_Training and length of service: Chi-square exact test p=.631; Fisher exact test p=.631; df=1; Cramer's V=.041
_Training and professional role: Chi-square exact test p=.715; Fisher exact test p=.695; df=3; Cramer's V=.091
_Training and PA membership: Chi-square exact test p=.870; Fisher exact test p=.870; df=1; Cramer's V=.015

To check whether any of these four items had any effect in explaining differences in the responses, we performed chi-squared tests for each item on each question. Gender, length of service, and job role do not significantly correlate with any of the output variables. 'PA active' – the item tracking whether respondents are members of a PA or not – was found to significantly correlate with some of our outcome variables[7], suggesting that this condition is relevant in explaining differences. This does not threaten the comparability of our samples as the cross-tabulation between this variable and our quasi-experimental intervention gives us a picture of almost total homogeneity on that item across the two groups (table 1). And so, we can reasonably conclude that the two groups are similar in their approach toward the PA scheme, and that training is the central factor differentiating them. A thorough analysis of the discovered differences due to PA membership is the object of a further dedicated study. Here, we only explicitly consider that variable where it is significant *along with* a training effect (i.e. items 11.6 and 12.1).

The second feature of a quasi-experiment, outlined by the special issue editors, concerns assignment-to-treatment exogeneity. To study the impact of training we must be clear that participation is exogenously determined. Being trained suggests an active choice – especially where the course is entirely voluntary. The danger is that training is not a discrete variable which affects the dependent variable – learning about PA – but also becomes a consequence of factors that relate to the introduction of PA itself. Inspectors who know little about PA may opt for training to ease these problems, while those who are untrained may be more confident about their knowledge. The reverse may also be the case; greater knowledge about PA leads to curiosity and thus training, and lack of knowledge results in no interest in training.

Either way, to the researcher studying the impact of training on inspectors' understandings these scenarios encapsulate the problem of policy endogeneity or reverse causality. Such problems can be fatal to experiments as the reverse effects of these motivations cancel out training effects. These potential problems of endogeneity go some way to explaining why the evaluation of the impact of training on individuals rarely goes beyond level 1 smile sheets and level 2 is dominated by pre- and post-test questionnaires.

The solution is to study exogenously induced participation in training. The PA training makes this possible. While the intervention is not fully controlled by the researcher and random assignment impossible, assignment to treatment exogeneity in the quasi-experiment is possible. Three features of assignment to PA training provide a situation of 'as if exogeneity'.

The population of 565 inspectors had all registered on the BRDO database to be trained. At the time of the experiment, we had a ready-mixed population – 410 trained and 155 awaiting training. While we cannot discount the possibility that some in the untrained

[7] These are items 6, 10, 11.5, 11.6, 12.1, 12.2

cohort had superior knowledge, the fact that the entire study population had self-selected to train coupled with the specialist knowledge received in training produces a situation of similar motivations. Beyond being next on the training waiting list, some inspectors' training status will have been determined by their ability to attend a training course on a particular day in Birmingham or London. Finally, beyond schedules, inspectors' uptake is also influenced by the number of Continuing Professional Development (CPD) credits they still require for that year[8]. Those with sufficient credits would be expected to hold off training until the next training year (Dunlop, fieldnotes, 25 July 2012).

One last issue to be addressed concerns the possibility of contamination – where the comparison group of inspectors find out about the content of the training treatment from their trained counterparts. While this is a legitimate concern, it seems unlikely given that training has only been available since 2010, and the number of inspectors who have been trained is relatively modest.

OUTCOME VARIABLES

We explore how two different dimensions are influenced by PA training: inspectors' understanding of the PA scheme itself, and the underlying regulatory reform philosophy. We link the test items to the training intervention using two sets measures that mirrored those used in the sessions.

First, we evaluate whether trained inspectors show a deeper understanding of the scheme than those who are untrained by presenting respondents with three different vignettes (Appendix 1, questions 5 to 10) that describe hypothetical dilemmas raised by the PA scheme that they may face. To ensure we were accurate in our understandings of the scheme, and that the language was accessible, these vignettes were adapted from similar examples using in training sessions[9].

The vignettes are designed to speak to aspects of the training that emphasise the different ways in which regulatory risk is shared between businesses, the local authority PA partner and the enforcing authority. The aim is to measure the respondents' understandings of the scheme, but also how training affected respondents' ability to attribute responsibility for problem resolution to the appropriate actor(s). We then checked respondents' understandings with a follow-up question that asked 'how much say' particular actors would have in the scenario posed. Each of the vignettes have a 'correct' answer, therefore our

[8] Local authority inspectors are required by their professional bodies to undertake CPD activities each year. For example, the Chartered Institute of Environmental Health (CIEH) – the professional body for environmental health inspectors – expects its regular members undertake 20 hours of CPD every year. Members must sign an annual declaration to that effect, and keep a record of their CPD certificates.

[9] We studied the training materials used and attended level 1 and level 2 training days as academic observers, took fieldnotes (totalling some 6500 words) and discussed the scheme with the trainer and participants during coffee and lunch breaks.

expectation – H1 – is that trained participants will give the correct answer more frequently than their untrained counterparts.

Second, we explore whether inspectors' participation in training results in different perceptions of their role and professional identities. This second outcome measure uses two sets of positional questions to explore inspectors' views on the role of inspectors from EAs and those of the PA (Appendix 1, questions 11 to 12). Responses to these questions are categorized on a 4-point Likert scale. Again, questions mirror the training sessions' break-out exercises where participants used flipcharts to differentiate the roles of the various parties. Here our expectations – H2 – are that trained participants will tend to give 'business-friendly' answers more frequently than those without training.

FINDINGS

H1 was examined using our three vignettes (Appendix 1 questions 5 to 10). In a nutshell, no training effect is found in any of the vignettes. Trained and untrained participants do not differ in their understanding and knowledge of the PA initiative. Now we analyse each vignette in turn (see table 2).

Vignette 1 (question 5) is essentially about the PA as mechanism that 'pulls the business toward compliance' (Dunlop, fieldnotes, 25 July 2012) where the business and PA inspectors share responsibility for helping companies like ABCo tackle a typical compliance challenge. When asked about responsibility, the large majority of respondents from the trained group selected the 'correct' answer – (answer 1. that business and PA share responsibility for helping companies tackle such compliance challenges). Other 'incorrect' options were evenly distributed between the trained and untrained groups (table 2).

INSERT TABLE 2 HERE

Each vignette contains a follow-up question as a check on understanding (question 6). We expect trained inspectors to be more likely to respond that ABCo had at least 'some say' in how the legislation was interpreted, and less likely to say 'no say'. These expectations are not fully borne out. Again, untrained inspectors are broadly in agreement with those trained showing a homogeneous (and correct) understanding of PA.

Vignette 2 (question 7) presents a dilemma discussed in training sessions where an inspection plan has been established by a PA leaving an officer from an EA unable to make unilateral changes where there is 'one bad apple' in their area (Dunlop, fieldnotes, 25 September 2012). Rather, they must work with the PA inspectors (answer 3. PA + EA) to

negotiate a solution that fits the inspection plan and involve changes that can realistically be applied across all that business's sites.

The results (table 2) suggest uncertainty across both trained and untrained inspectors. The majority of respondents allocated responsibility to the business and PA rather than to inspectors of the PA and EA (the 'correct' answer). This uncertainty echoes what the research team observed at the training events: participants posed a variety of questions concerning what happened to the EA inspector where a PA partnership had been established (Dunlop and Radaelli, fieldnotes, 25 July 2012 and 25 September 2012).

We should not overstate the degree of uncertainty, however. Responses to the follow-up (question 8), concerning how much say the enforcing authority has in this scenario, reveal the majority of respondents appreciate that the EA officer does still have 'some say' or 'a lot of say' in getting the company to reappraise their practice (table 2).

Vignette 3 (question 9) covers the doomsday scenario of inspection plans that lead to no inspections – a possible pathology of the PA scheme. This worst-case scenario was raised in both sessions we observed. Some participants were concerned that inspection plans could end up being owned by no one – where both EA inspectors and PA inspectors assume the other is monitoring compliance.

The findings go some way to allaying these concerns. 50% of trained inspectors agree that the responsibility is a shared one between the PA and EA (option 3. – our 'correct' answer). At 37.9%, our untrained sample is a little way behind their trained counterparts. The overall picture is mixed – with both the EA alone, and the Business and PA, being earmarked as responsible to ensure implementation of the plan. The correlation test confirms what we would expect – training has no role to play in this varied picture.

The follow-up question (question 10) asks 'how much say' respondents think the business – *Wired-up* – would have about the level of inspection it received on Health and Safety. A majority of both trained and untrained cohorts selected the 'correct' response – 'some' (table 2). But, again there is no training effect here.

Now, we move to the results of our two sets of positional statements (see Appendix 1 questions 11 and 12). These were used to explore H2, that participation in training leads to a greater awareness of the multiple identities implied by becoming a PA – where inspectors become regulators *and* advisors.

The first set of positional questions (item 11) concern the role of an enforcing authority, while our second set of positional statements looks at the main role of the Primary Authority (item 12). For each of the seven statements, participants were invited to *strongly disagree; disagree; agree; or agree strongly*. We only outline the four instances with statistically significant differences due to the treatment (11.1, 11.4, 11.6, and 12.1).

Statement 11.1 explores a key aspect of the PA scheme – the PA inspector must direct EA inspectors to focus on particular aspects of business practice using the inspection plan. Table 3 summarises participants' responses.

INSERT TABLE 3 HERE

The results show that this principle is clearly understood by respondents. Nonetheless, a higher number of untrained participants 'disagree' as compared with their trained counterparts. Analysis shows that there is a significant and fairly strong association[10]. The statistical significance of these differences is confirmed highlighting that those who are trained tend to 'strongly agree' or 'agree' more often than those untrained, further indicating a training effect for this item[11]. The research team's observation of training sessions sheds light on this finding. Participants repeatedly questioned the trainer on 'what role was left' (Dunlop, fieldnotes, 25 September 2012) for the EA where a PA partnership has been formed with a different local authority. It is plausible that without the benefit of these discussions, untrained inspectors would disagree in greater numbers.

Statement 11.4 asserts that an EA's main role is to improve standards and safety. Again, the majority of respondents 'agree' or 'strongly agree' (see table 3) - which conforms to the key vision of the PA scheme.

The only unexpected figure was that the untrained sample 'strongly agreed' with the statement in lower numbers than their trained counterparts (27.6% versus 43.9%) and that as much as 13.8% of the untrained participants responded 'disagree' (versus 5.3% of the trained group). Further analysis shows a fairly strong training effect for this positional item[12], but we approach this finding with caution, given that the numbers that (strongly) agree are overwhelming across both cohorts.

Statement 11.6 explores the view that the EA's main role is to prevent over-compliance. This reflects a key ambition of Hampton and the PA scheme; to deliver cost savings regulators should be alert to potential gold-plating. The frequencies reveal that trained participants 'agree' or 'strongly agree' more than their untrained counterparts (respectively, 44.7% versus 29.3%). This difference is statistically significant[13]. Again, this finding chimes what the research team observed during the training. It was clear from discussions at these sessions that inspectors required reassurance that, while they should not dissuade a business from aiming for best practice, they should outline to them what satisfactory minimum standards are in a particular context. As one officer remarked it seems to 'go

[10] Chi-square exact test p=.0.43; Fisher exact test p=.045; df=3; Cramer's V=.217
[11] U=2815.500, p (one-tailed)=.045
[12] Chi-square exact test p=.038; Fisher exact test p=.041; df=3; Cramer's V=.219
[13] U=2751.000, p (one-tailed)=.028

against the grain' (Dunlop, fieldnotes, 25 September 2012) to do anything that may prevent best practice.

Being a member of a PA – 'PA active' – also had a statistically significant effect on this item[14]. Analysis of the joint effect of training and PA membership on this response shows that being trained *and* a member of a PA predicts a positive answer to this question more than any other condition[15].

Finally, statement 12.1 explores a core part of the leadership role assumed by the PA inspector who must direct their EA colleagues to focus on particular aspects of business practice using the inspection plan. The results show that this principle is clearly understood by respondents. Nonetheless, a higher number of untrained inspectors 'disagree' or 'strongly disagree' (32.8% versus 14%). This is a statistically significant difference[16]. Further analysis confirms that those who are trained tend to 'strongly agree' or 'agree' more often than those untrained. Being a member of a PA also had a statistically significant effect on this item[17]. We analysed the joint effect and found that, as with item 11.6, for those who are trained being a member of a PA partnership predicts a positive response to this question more than any other condition(s) (though training has a stronger effect than PA membership)[18].

This supports the results for item 11.1 which explored this issue from the EA's viewpoint. That PA inspectors can effectively 'pull rank' over their EA counterparts (under certain circumstances) was one of the most contentious issues discussed at training. Indeed, in both the observed sessions, participants needed the trainer to make this facet of the PA scheme explicit on more than one occasion, and discussion of this feature of the PA scheme spilled over into break times (Dunlop and Radaelli, fieldnotes, 25 July 2012 and 25 September 2012).

CONCLUSIONS

Our findings contribute to the field in different ways. Empirically, they show that the regulatory philosophy endorsed by UK governments since the Hampton Report of 2005 has become embedded in the public sector. Whether trained or not, local authority inspectors have absorbed the burdens reduction message and have understood that this implies a differentiation of regulators' roles in risk regulation.

Our empirical analysis also shows the absence of a strong training effect. But, this does not mean there is no role for training. While the vignette analysis finds no training effect, three

[14] PA active subjects agreed or strongly agreed more than their inactive counterparts by 44.8% to 31.4%. This effect is statistically significant: Chi-square exact test p=.037; Fisher exact test p=.041; df=2; Cramer's V=.272. U=2766.000, p (one-tailed)=.006

[15] Respectively, dummy: U=2580.000, p (one-tailed)=.001; 4-level: Chi-square=11.100, p=.011, df=3 – Kruskal-Wallis Test

[16] Chi-square exact test (2-sided) p=.021; Fisher exact test p=.021; df=3; Cramer's V=.236. U=2538.500, p (one-tailed)=.003.

[17] U=2977.500, p (one-tailed)=.033

[18] Respectively, dummy: U=2813.500, p (one-tailed)=.006; 4-level: Chi-square=11.215, p=.011, df=3 – Kruskal-Wallis Test

of our four statistically significant positional items suggest that training may provide greater awareness of the different roles implied by PA. Training served to reassure inspectors that alerting businesses to over-compliance is the appropriate course of action in the burdens reduction context and it provided explicit clarification on a contentious area of the scheme – the direct effect of PA over EA, under certain conditions.

This article also contributes to the literature on implementation, public sector training, and the use of quasi-experiments in public management. Let us take them in reverse order. The quasi-experimental method suffers from well-known limitations. But our project shows that to address policy-relevant issues in a practical, cost-effective way there is no perfect method, only a series of trade-offs among equally desirable properties of the method. With quasi-experiments we cannot think in terms of direct treatment effects. There are however gains on external validity. By relaxing the randomization requirements we are able to carry out research and provide policy-relevant results on a hard to reach group of participants – inspectors are not readily available for policy experiments. There are always trade-offs across types of experiments. Public policy researchers must balance 'policy relevance', 'internal validity' and 'external validity'. Maximizing only 'internal validity' results in projects that would not fare particularly well in terms of policy relevance. So, while the classic student population or representative cross-section of citizens would have allowed for randomization; the gains in internal validity would be meaningless given that such non-specialist populations do not actually understand PA. Experimenting with a specific population also avoids the biases associated with particular groups established by psychometric research.

Turning to training in the public sector, we can go beyond 'smile sheets' and still be in the region of evaluation costs that are affordable in an era of fiscal retrenchment. All too often, the measurement of learning is limited to pre- and post-test questionnaires. Instead, we argue that the ideal is to establish a quasi-experiment that compares a trained group with an untrained comparison group where the test items are closely matched to the actual objectives of the training intervention. This way we do not have the problem of 'response-shift' bias.

Finally, our project contributes to the literature on implementation by providing a template for studying the street-level bureaucrats that crucially influence the outcome of major policy reforms. The lessons to draw from our empirics are limited, but the evidence about the differences we found in the content of innovations and the attitudes towards risk and regulation is strong, and worth-exploring with further projects in this field, possibly comparing inspectors across countries and time, to control for the role of the institutional context and differences in the regulatory agendas of different governments.

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TABLE 1: SAMPLE DATA

Responses and Respondents

	Complete Responses (N)	% of Respondents	N	% of Sample
Trained	114	66.3	410	72.6
Untrained	58	33.7	155	27.4
Total	172	100	565	100

Sample and Group Comparability

		1) Treatment group % (N=114)	2) Comparison group % (N=58)	3) Total sample % (N=172)	4) Universe % (N=565)	One sample Chi-square test – exact test p-values		
						1-4	2-4	3-4
Gender	Female	54.3	44.8	51.2	52.05	.640	.295	.819
	Male	45.7	55.2	48.8	47.95			
	Total	100	100	100	100			
Years in service	< 20 y	49.1	53.4	50.6	51	.709	.793	.939
	> 20 y	50.9	46.6	49.4	49			
	Total	100	100	100	100			
Role	Team Leader	17.5	12.1	15.7	13.7	.481	.925	.694
	Manager	32.5	29.3	31.4	30.9			
	Officer	47.4	55.2	50	51.0			
	Other	2.6	3.4	2.9	4.4			
	Total	100	100	100	100			
PA active	Yes	60.5	62.1	61	63.5	.560	.892	.526
	No	39.5	37.9	39	36.5			
	Total	100	100	100	100			

Cross Tabulation of Treatment and PA Membership

	PA active	PA inactive
% within trained subjects	60.5%	39.5%
% of trained subjects in PA active/inactive	65.7%	67.2%
% within untrained subjects	62.1%	37.9%
% of untrained subjects in PA active/inactive	34.3%	32.8%

Chi-square exact test p=.870; Fisher exact test p=.870; df=2; Cramer's V=.015

TABLE 2: VIGNETTES

Responsibility Allocation					
	Answers[19]	**Treatment group %**	**Comparison group %**	**Treatment group frequencies**	**Comparison group frequencies**
Vignette 1 (question 5)	1. B + PA	64.9	62.1	74	36
	2. B	34.2	32.8	39	19
	3. PA + EA	0.9	5.2	1	3
	4. EA	0	0	0	0
	Total	100	100	114	58
Vignette 2 (question 7)	1. B + PA	50.9	48.3	58	28
	2. B	7.9	5.2	9	3
	3. PA + EA	36	37.9	41	22
	4. EA	5.3	8.6	6	5
	Total	100	100	114	58
Vignette 3 (question 9)	1. B + PA	28.1	32.8	32	19
	2. B	2.6	5.2	3	3
	3. PA + EA	50	37.9	57	22
	4. EA	19.3	24.1	22	14
	Total	100	100	114	58
'How Much Say?'					
	Answers[20]	**Treatment group %**	**Comparison group %**	**Treatment group frequencies**	**Comparison group frequencies**
Vignette 1 (question 6)	1. A lot	27.2	17.2	31	10
	2. Some	41.2	43.1	47	25
	3. Little	23.7	34.5	27	20
	4. No	7.9	5.2	9	3
	Total	100	100	114	58
Vignette 2 (question 8)	1. A lot	18.4	19	21	11
	2. Some	49.1	53.4	56	31
	3. Little	29.8	20.7	34	12
	4. No	2.6	6.9	3	4
	Total	100	100	114	58
Vignette 3 (question 10)	1. A lot	16.7	19	19	11
	2. Some	43.9	44.8	50	26
	3. Little	29.8	22.4	34	13
	4. No	9.6	13.8	11	8
	Total	100	100	114	58

[19] B+PA = Business and Primary Authority; B = Business; PA + EA = Primary Authority and Enforcing Authority; EA = Enforcing Authority. The correct answer is shaded.
[20] The 'correct' answer is shaded.

TABLE 3: POSITIONAL STATEMENTS[21]

	Answers	Treatment group %	Comparison group %	Treatment group frequencies	Comparison group frequencies
Statement 11.1	1. Strongly Disagree	5.3	6.9	6	4
	2. Disagree	8.8	24.1	10	14
	3. Agree	43	32.8	49	19
	4. Strongly Agree	43	36.2	49	21
	Total	100	100	114	58
Statement 11.4	1. Strongly Disagree	5.3	1.7	6	1
	2. Disagree	5.3	13.8	6	8
	3. Agree	45.6	56.9	52	33
	4. Strongly Agree	43.9	27.6	50	16
	Total	100	100	114	58
Statement 11.6	1. Strongly Disagree	13.2	20.7	15	12
	2. Disagree	42.1	50	48	29
	3. Agree	36.8	22.4	42	13
	4. Strongly Agree	7.9	6.9	9	4
	Total	100	100	114	58
Statement 12.1	1. Strongly Disagree	3.5	5.2	4	3
	2. Disagree	10.5	27.6	12	16
	3. Agree	50	44.8	57	26
	4. Strongly Agree	36	22.4	41	13
	Total	100	100	114	58

[21] The 'correct' answer is shaded.