Promoting the good life and preventing the bad:
What impact does the language used in legislation have on the provision of life-changing public services? A natural experiment of homelessness provision in England and Wales.

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Abstract — What are the consequences of including adjectives in legislation? Presenting a dfference-in-differences analysis of a natural experiment, this paper demonstrates that the word 'vulnerable' had a strong and statistically significant effect on homelessness provision in England after 2002. When compared to Wales as a control group, comparator English local authorities identified using propensity score matching saw an average 81% drop in applying their duties to house. Using new panel data covering 728 local authority-years and testing four hypotheses under eight model specifications it will be shown that mixing legislative and natural languages significantly affects policy provision, even when controlling for political, financial and socioeconomic variables.

Keywords — language, semantics, bureaucratic drift, difference-in-differences.

What are the consequences of including adjectives in legislation? Can the inclusion or omission by the legislature of a single word make a significant difference to policy outcomes? These are the questions to be answered in this paper. Using a difference-in-differences methodology to model the findings of a natural experiment I will demonstrate that a single adjective — vulnerable — can fundamentally alter and even undermine the intended effects of a policy; in this case with regards to homelessness law in England as compared with Wales. The inclusion of an adjective transforms a binary 'if A then B' rule into an elastic set of possible outcomes: 'if A in

conjunction with B then C', where B is subject to subjective interpretation. In order for the elastic language to work as a rule of law, an agent of the legislature must apply analogue reasoning to assess the degree to which a specific case is similar to a comparator that is unspecified in the legislation. Use of analogic rather binary legislative language opens the otherwise essentially closed linguistics of legislation to the complexity of natural English. The consequences for policy are indeterminate scope of meaning and, thereby, discretionary and unpredictable implementation.

Whilst linguistic indeterminacy in legislation offers various practical advantages (Endicott, 2011), it creates the potential for bureaucratic drift, moral hazard, and, ultimately, unaccountable governance (Strøm, Müller & Bergman, 2003). I am here refining the argument that longer laws generally curtail executive and bureaucratic discretion (Huber & Shipan, 2002). It will be shown that if legislative length is increased through indeterminate parts of speech, bureaucratic drift will increase. This is where ordered policy objectives established by careful bargaining are disordered by incentives for agents of the legislature to shirk legal duties, leading to less predictable and more arbitrary policy implementation. In particular, where previous research has shown that pragmatic (context-dependent) parts of speech enhance powers, indeterminate semantics (such as adjectives) undermine duties. Both pragmatics and semantics can affect meaning, but when a power is used it is an action that creates a reaction and is more likely to be litigated. A court will more easily settle the meaning of semantics for future cases, where pragmatics are more likely to remain indeterminate (Williams, 2016). Failure to comply with a duty also creates victims and encourages litigation, but if the cause of indeterminacy is semantics the confusion will endure longer in a duty than in a

power simply because litigation is less likely where a victim is more difficult to identify if a duty is not performed as opposed to when a power is used. Therefore, contrary to the argument of Ronald Dworkin, semantics can affect the content and application of the law, but more so in duties than powers (Dworkin, 1986, pp. 239-240). Key to this particular case is the fact that no meaning was given to the word 'vulnerable' by Parliament. Its meaning was finally settled by the UK Supreme Court in the 2015 case of *Hotak & Others v London Borough of Southwark & Another.*[1] Because Parliament failed to give meaning to the word two distinct vocabularies were mixed: the closed language of legislation with natural English. The bureaucratic drift was checked by a court, not by Parliament.

Understanding the effects of legislative language is especially relevant to policymakers seeking to promote the good life. Policymakers must identify the impediments to the good life and either remove them or authoritatively provide structures and resources to surmount them. Either approach to social policy, negative or positive, requires the exposition of complex concepts within the closed coding language of legislation. A temptation for policymakers can be to forego the rigours of a closed, algorithmic clarity of language in order to take advantage of commonly used discourse. This can enable policymakers to exploit information asymmetries and divergent policy vernaculars, thereby tailoring the policy to variable contexts and enhancing subsidiarity. It also allows for post-legislative bargaining on policy specifics. The risk of this approach comes when subsidiarity is only partly intended by a policy. With housing policy, central government has long sought to be more than merely subsidiary in providing shelter for those in need. The desire to balance

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[1] (Rev 1) [2015] UKSC 30

local and central direction of a policy can lead to a messy game of chicken where powers and duties are disingenuously asserted or denied on both sides. The incentive for duty shirking is especially high for actors faced by resource scarcity and limited control over revenue; such as is the case with local authorities in the UK. These local policy agents are best incentivised to constrain the scope of a duty by taking advantage of the uncertainty created by the mixture of two separate semantic systems: the closed legislative and the natural. The implications for this analysis extend beyond the UK, despite law being akin to a dialect whose linguistic properties vary from country to country. The key causal link between language and duty shirking is the mixture of disconnected languages. This is a phenomenon that is not confined to the UK, nor is it anything new.

With England as the treatment group and Wales as the control it will be shown that a duty qualified by an adjective fundamentally transforms implementation. Both countries adopted identical secondary legislation pertaining to homelessness within a year of each other. The only difference between *The Homeless Persons (Priority Need) (Wales) Order 2001* and *The Homelessness (Priority Need for Accommodation) (England) Order 2002* (besides their names and dates) is the addition of the word 'vulnerable' to the latter (Luba & Davis, 2010, pp. 441-494). This means that in England the duty of local authorities to house those recognised as unintentionally homeless, eligible for assistance and in priority need is subject to the Housing Officers' assessment of an applicant's vulnerability, qualifying the same categories of priority need adopted by Wales — children of 16 or 17 years of age, young people under 21, those coming out of an institutionalised lifestyle such as prison, and those fleeing violence or threats of violence.

A difference-in-differences methodology can be used because both English and Welsh local authorities had to comply with duties to house those in 'priority need' with Part VII of the *Housing Act 1996*. Section 189(1)(c) of that Act also includes the adjective 'vulnerable' with regard to elderly individuals and those suffering with a mental or physical illness. However the Act also had priority need categories that were not qualified by the elastic adjective; namely for the sake of pregnant women, claimants with dependent children and those escaping an emergency. It is therefore possible to compare the recognition rate of priority need both before and after the secondary legislation of 2001/02 (Card & Krueger, 1994). England received the additional treatment effect of the single-word inclusion for all four of the new priority need categories, where Wales had the same categories with no 'vulnerable' qualification.

The difference-in-differences model is tested on panel data from all twenty-two Welsh local authorities and twenty-two English local authorities identified as comparable by Propensity Score Matching. The total data matrix is 728 local authority-years with data on four dependent and seven explanatory variables.[2] The effect of the word 'vulnerable' is both strong and statistically significant, even when controlling for political, financial and socioeconomic variation between local authorities and through time. The headline finding is that inclusion of just this one word in homelessness law in England led to a drop by 1.19 standard deviations below the mean rate of priority need acceptance. Where the average acceptance rate for England and Wales between 1997-2014 was 16 individuals per 10,000, in England

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[2] The panel data is unbalanced because of data on priority need acceptances in England are only available back to 1999, with Wales having data back to 1997.

after the word vulnerable was introduced the acceptance rate averaged at 3 per 10,000, a difference of 81%. Other findings show that the word vulnerable affects the recognition rate of individuals fleeing violence or threats of violence in England, and English local authorities have seen less volatile shifts in recognition rates year-on-year as they are better able to manage their housing caseload despite variable exogenous pressures. In brief, those seeking housing and, specifically, those fleeing violence, are significantly more likely to be housed in Wales than across the border. This paper offers the most accurate possible assessment of word choice on policy outcomes.

The paper will begin with a more detailed explanation of the theory, causal mechanism and hypotheses. This is followed by analysis of the difference-in-differences methodology, the dataset and the research design adopted. Finally the results are presented and analysed.

THEORY AND HYPOTHESES

I will describe the theory from the abstract idea to its concrete hypotheses and limitations. The base theoretical point of this article is that language is an important variable for explaining democratic outcomes. Clear communication between state institutions, and between institutions and voters is the primary mechanism of rule-bound and accountable governance. My interest in the language of legislation draws on the work of Vivian Schmidt's discursive institutionalism (Schmidt, 2008; Schmidt, 2010). The contribution to her work is to consider how

inter-institutional discourse affects bureaucratic drift (McCubbins, Noll & Weingast 1987). In other words, the aim is to assess how important the language used in authoritative communication is for enabling bureaucrats to deviate from policy objectives set by their principals. Previous work has demonstrated the effects of legislative language on the chances for judicial review of executive action in immigration law (Williams, 2016). The increased power of the courts is a function of the increased indeterminacy of parliamentary language. In this piece, I consider more directly the causal mechanism linking the language of the sovereign Parliament and the implementation of those instructions by street-level bureaucrats (Lipsky, 2010).

In analysing the effects of institutional discourse it is important to note that legislative language is not a fully independent variable. It is endogenous to other causal mechanisms. Language acts at the meso-level, linking macroscopic social forces to bureaucratic decisions at the micro-level. Nonetheless, variation in language can have an effect that is independent of the forces that created the language. It is not unusual for our words to take on a life of their own, potentially some way removed from our feelings and intent. As such, it is important to isolate and identify the expected impact of parts of speech in formal discourse. In line with the identification revolution in political science, a natural experiment gives greater inferential leverage than would be possible with other observational techniques that would struggle to pin down exogeneity.

In the case of the UK, if we take legislation to be a closed language, the inclusion of natural English contaminates the internal logic of the system, creating partial truth-values that can only be rectified by agents of the legislature. This is a fundamentally anti-democratic policy approach. It means the bargaining process of

legislation is only partially complete at promulgation and key authoritative decisions as to meaning are left to local politicians, bureaucrats and judges. Parliament is increasingly directed by the government to enact legislation containing incomplete or indeterminate language. This language enhances executive discretion and is desired for that reason. Discretion is achieved primarily through three parts of speech. These are: the use of noun modifying adjectives and adverbs, the use of conditional language (in particular *if* and *or*), and, more straightforwardly, the use of enabling language that explicitly delegates power to agents of Parliament (Huber & Shipan, 2002). In response to demand for comprehensive public policy solutions to social problems, government and parliament have enacted a greater volume of legislation that is increasingly indeterminate in its meaning (Williams, 2015). Legislative indeterminacy improves efficiency in policymaking and implementing, but it impairs representativeness and as a result can lack durability.

In UK homelessness legislation, the move to indeterminacy has been neither neat nor linear. Nonetheless, an upward trend in the use of indeterminate semantics (adjectives and adverbs) can be discerned from Fig 1. The graph displays the semantic content of every line of homelessness legislation enacted between 1920 and 2010. The data for this graph were taken from a discourse analysis of all 825 sections of legislation (Williams, 2015). Fig 1 displays an increase in the proportionate incidence of semantic indeterminacy, from being present in just over half of all sections to almost two-thirds over ninety years. In real terms there was a slump in the quantity of primary legislation in the 2000s, but this was after the 1980s and 1990s where up to eighty sections of primary legislation per decade employed indeterminate semantics.

Fig 1: Indeterminacy in Homelessness Legislation
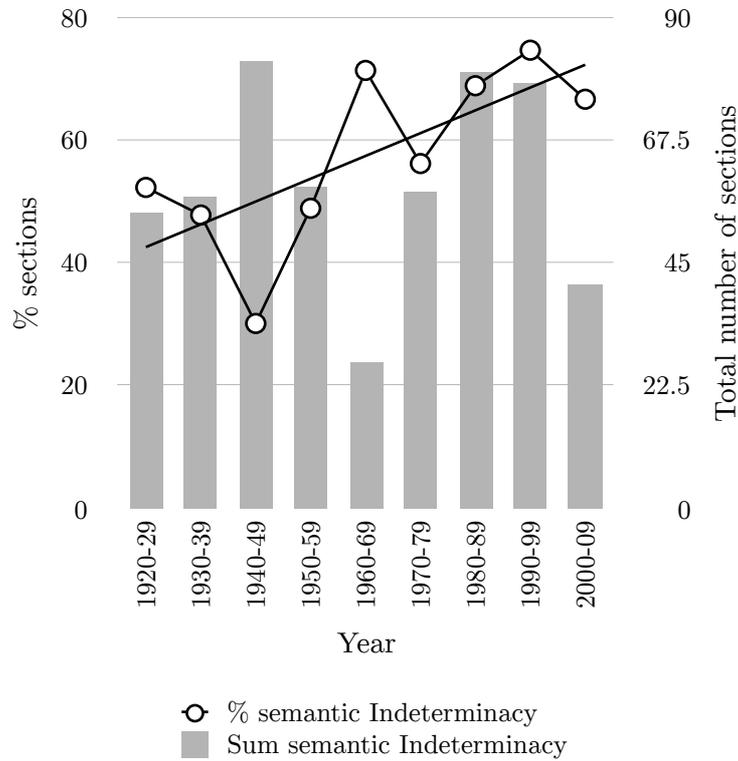
Why the change in language? My theory is an historical one. The change in language signifies a gradual deinstitutionalisation of politics. The governance model of formal instructions in statute law coupled with negative freedoms in common law is being adapted with more versatile legislation. This is so as to enable increased executive discretion to meet heightened policy demand. It is a model of governance that is increasingly dominated by the core executive (Rhodes & Dunleavy, 1995). With specific regard to homelessness, central government intervention in housing policy essentially dates back to a Royal Commission set up by Lord Salisbury in 1883. The model adopted was a social safety net, but the policy has since then been volatile due to changing political commitment. This is unsurprising given the weak constituency of the homeless. Housing has therefore been described as 'the wobbly

pillar under the welfare state' with persistent undersupply of social housing (Torgersen, quoted in Fahey & Norris, 2010). There were some piecemeal initiatives set up after Salisbury's Commission, and a statutory approach began in 1919. Local authorities were empowered and paid by Westminster to build affordable housing for social purposes. The *Housing and Town Planning Act 1919*, was a part of the New Liberal precursor to the welfare state. By using the state to improve lives, the 1919 Act transformed the self-improvement emphasis of the Poor Laws, which had existed in one form or another since Tudor England.

A key consideration in allocating housing was whether the recipient deserved to be housed on account of their character and circumstances. This was an important component in making the redistributive policy palatable to voters. It was an update of the Victorian notion of the undeserving poor, those who were down on their luck rather than feckless or self-destructive. Local authorities had discretion to decide between candidates on the basis of 'reasonable preference'. Prioritising desert over need ended with the *Housing (Homeless Persons) Act 1977*. After this, central government curtailed the discretion of local authorities to allocate social housing (Fitzpatrick & Stephens, 1999). Central direction was achieved by describing categories of 'priority need', being those individuals to be housed regardless of their character. Priority need was defined in the same terms in the 1977 Act as in the successor 1996 Act, with recognition for those with children or in pregnancy, those becoming homeless on account of a disaster, and those who were 'vulnerable' on account of their age or because of a mental or physical disability.[3] The use of the

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[3] s 2 1977 Act.

word 'vulnerable' is therefore well-established in homelessness law, but the increased scope of its application was new for England after 2002.

The objectives of homelessness law in the UK have been variable, as a function of fluctuating ideological priorities. The policy cleavage has been between allocation according to need on the one hand, and letting according to desert on the other. But the use of 'vulnerable' to qualify the duty to house marks a compromise between these positions. Local authorities have a statutory duty to house those in priority need, but it is possible to assess who are the most vulnerable and deserving of housing within a particular category of priority need. This compromise is to be administered at the implementation phase of the policy, not in the legislative bargaining phase. It is the word 'vulnerable' and Parliament's failure to provide an authoritative definition of the word that creates discretion. The use of the adjective does not move the language from a binary (priority/ not a priority) to a triple relation, or a string definition. Instead, the word mixes two entirely different languages, one defined by Parliament and the other defined by common usage.

To demonstrate the difference between the countries' uses of langauge, here is how the Welsh Assembly framed the duty to house those fleeing violence:

'2.   The descriptions of person specified in articles 3 to 7 have priority need for accommodation under section 189 of the Housing Act 1996...

5. A person without dependant children who has been subject to domestic violence or is at risk of such violence, or if he or she returns home is at risk of domestic violence.'

And here is England's equivalent:

> '2. The descriptions of person specified in the following articles have a priority need
> for accommodation for the purposes of Part 7 of the Housing Act 1996...
>
> 6. A person who is vulnerable as a result of ceasing to occupy accommodation by
> reason of violence from another person or threats of violence from another person
> which are likely to be carried out. '

For bureaucratic drift to be the consequence of this semantic indeterminacy we must assume a local authority Housing Officer is incentivised to seek the minimal compliance with a duty. Minimalist compliance provides the best payoff given resource scarcity and insufficient revenue autonomy. A maximalist application of the duty would entail Housing Officers ignoring the adjective 'vulnerable' and recognising all applicants that present with evidence of a priority characteristic. This approach would be suboptimal for local authorities as it would be unpredictable by subjecting the authority entirely to demand-side pressures. Whilst one could argue that, for instance, 'fleeing violence and being vulnerable' is a tautology, this does not mean that the word vulnerable is inoperative and it does grant an opportunity to Housing Officers to ration supply. Ignoring the chance to filter claimants according to their relative vulnerability would be unpredictable and expensive. Also, given the small constituency and low participation rate of the homeless there are high costs to maximalist compliance for local politicians in their vote, office and policy-seeking (Strøm, 1990).

For this study I will analyse both priority need assessments in total and the specific impact on those fleeing violence, which is typically women escaping abusive relationships. The observable implications of the inclusion of 'vulnerable' in the 2002 England Order are hypothesised to be:

H1 — Local authorities applying the word 'vulnerable' to priority need assessments recognise fewer cases as meeting their duty to house.

H2 — Local authorities applying the word 'vulnerable' to cases of priority need for those fleeing violence or threats of violence recognise fewer cases as meeting their duty to house.

H3 — The volatility of duty recognition (the year-on-year change in the rate of recognition) is lower in local authorities applying the word 'vulnerable' to priority need assessments.

H4 — The volatility of duty recognition for those fleeing violence or threats of violence is lower in local authorities applying the word 'vulnerable' to priority need assessments.

The potential flaws with the thesis and hypotheses are, firstly, the reliance on rational actor assumptions downplays the ideological and sociological forces that affect the provision of local services (Green & Shapiro, 1994). I would not deny the importance of these variables, but would argue that the material constraints placed on local authorities encourage local politicians to take advantage of the indeterminacy in law to comply with the duty to the minimal degree possible. The second flaw in the argument is connected to this point. If the law is indeterminate

then the minimal level of compliance is also indeterminate. Would the logic of the argument not lead to the conclusion that *zero* compliance would be possible and rational by inclusion of indeterminate semantics? The very word 'compliance' is misplaced if the duty is indeterminate. It is impossible to comply with a non-existent or entirely contestable duty. The response is that, yes, complete non-compliance is possible. But persistent non-compliance would itself be risk-laden for local authorities, just as maximal compliance would be costly. Non-compliance would increase the risks of litigation and judicial review. This would incur both material costs and reputational harm. Nonetheless, it is impossible to determine *ex ante* precisely what the minimal legal compliance with a duty would be for a local authority. This calculation depends on demand for housing and local contextual variance in the meaning of 'vulnerable'. The threshold for acknowledging vulnerability will be higher in more deprived regions with higher demand than it would be in more affluent regions. One could not describe a minimax payoff matrix using game theory, because the smallest 'maximum' derivative of 'vulnerable' is fundamentally unknowable. But this is entirely the point. By abnegating the responsibility to define what vulnerable means, Parliament has allowed elastic implementation of the law where the Welsh Assembly has granted no such flexibility to its agents.

Another criticism could be that this conclusion is trite. Arguing that Parliament's use of language affects policy implementation is, to be blunt, obvious. Parliament would not include words without intended effects. As per Lord Rooker in the debate on the 2002 England Order:

'The key test in relation to those categories [of priority need] is whether applicants are vulnerable: that will be for local housing authorities to decide in individual cases.'[4]

A reasonable fear associated with the 'identification revolution' is that use of natural experiments focusses on minutiae and confirms what is already obvious (Huber, 2013). However, there is hot debate on the impact of including or omitting words from law (Tsebelis & Nardi, 2014). In particular, operationalising and observing the impact of specific parts of speech remains a prominent research domain (Laver *et al*, 2003; Evans *et al*, 2007). Exploiting a natural experiment to assess the impact of adjectives in legislation is timely and important. This is especially so given that we have little concrete evidence of how much of an impact adjectives can have on policy outcomes.

On the specific causal mechanism linking the use of adjectives to bureaucratic drift, one could argue conversely to my thesis that adjectives reduce drift. It could be argued that enabling local contextual variation to be recognised in legislative language enables local authorities to manage their resources and allow for more not less predictable policy implementation. This is essentially the expectation outlined in H3 and H4. Without the word vulnerable, local authorities would be entirely beholden to demand-side variation and would have have restricted means of year-on-year budgeting and modelling of housing need. Whilst I would accept that the inclusion of the word vulnerable does enable more controlled and managed policy implementation, it is less predictable for claimants as to whether they will qualify for

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[4] HL Deb 16 July 2002 vol 637 col. 1166.

housing. The unpredictability created by the use of adjectives is placed on service users and taken off service providers. Given that the point of recognising priority need was to facilitate housing those most in need, it is a threat to the policy objectives if local authorities have discretion over recognising the vulnerability of applicants in a manner that can vary from place to place.

METHODOLOGY AND DATA

Causal inference in this field is frustrated by the endogeneity problem and the ambiguity of expected effects of a treatment. Using a difference-in-differences (DD) approach offers key advantages to identifying and isolating the impact of language without having to control for the innumerable factors that led to the choice of that language. The utility of DD was notably demonstrated in Card and Krueger's study of the effects of minimum wage laws on employment rates in New Jersey and Pennsylvania (Card & Krueger, 1994). They showed that when New Jersey introduced a higher minimum wage in 1992 it had no significant impact on employment. This was concluded by analysing 410 fast food restaurants in the state and the neighbouring state of Pennsylvania. Their DD approach compared the treatment (NJ) to the control (PA) both before and after the treatment was administered. To support the claim that the treatment had no effect they needed to observe parallel trends for NJ and PA before the treatment continuing in a parallel fashion after the treatment. This was observed and the null could not be rejected. If NJ experienced a change in the unemployment rate after the treatment its rate of

change would have converged or diverged from PA's and the null could, with trepidation, have been rejected. Therefore the comparison groups had to be similar, such that they had near parallel employment trajectories before the treatment. The macroeconomic and demographic similarities of the two states was key to the model. Also, pre-treatment trends may be similar but in DD analysis the researcher has to be aware of other policy and contextual changes that occur at the same time as the treatment. A natural experiment is ultimately an observational study and the researcher does not have the control enjoyed in a laboratory experiment.

Despite these methodological limitations, the DD approach is well-suited to my research problem. There was a shift in policy in two countries where the only difference between the groups was a single word. This allows us to focus closely on the impact of that word 'vulnerable'. Specifically, the DD equation for testing H1 and H2 is as follows:

$$\sigma_{it} = \sum_{j=1}^{4} \alpha_j + \beta_1 + \beta_2(POSTLAW) + \beta_3(ENG) + \beta_4(POSTLAW.ENG) + e_{it}$$

The model estimates the deviation of local authority i's rate of recognising priority need from the mean at time t. There are four intercepts across the y axis because the DD approach compares the treatment and control groups both before and after the treatment is administered, making for the comparison of four lines. There are also, therefore, four coefficients to be estimated. The variable $POSTLAW$ is a dummy that captures whether in England or Wales the time t is after the passing of the Priority Need Orders. The variable ENG is a fixed effects dummy for

all local authorities in England both before and after treatment. The DD parameter of interest is $POSTLAW.ENG.$ To have any confidence in rejecting the null we would need this coefficient to demonstrate a very low probability of occurring by random chance. Other variables were added to this basic model to measure political, financial and socioeconomic differences between local authorities.

The DD equation for testing H3 and H4 is:

$$\Delta z_{it} = \sum_{j=1}^{4} \alpha_j + \delta_1 + \delta_2(POSTLAW) + \delta_3(ENG) + \delta_4(POSTLAW.ENG) + e_{it}$$

The dependent variable here is the Delta of the z-score. This estimates the change in the extent of deviation of local authority i from the mean at time t when compared to the deviation at t-1. This model is similar to that used by Matthew Slaughter to test the impact of trade liberalisation on income convergence across countries (Slaughter, 2001).

Before the DD analysis could be conducted it was necessary to select cases for comparison. England and Wales have many significant differences in institutions, law, politics, finance and socioeconomics that can frustrate comparative analysis. It is not necessary for the treatment and control groups to be identical, but it is important that they be as similar as possible such that they have near parallel pre-treatment trajectories in homelessness recognition. However it would also not be acceptable to select cases on the dependent variable, so similarities had to be found on predictors of demand for housing — unemployment, weekly income and population density. Demand for housing from homeless claimants is highest in local authorities with high

population density, high weekly wages but low rates of employment. In other words, rich, urban or suburban areas with high barriers to labour market entry see the greatest demand for housing from homeless claimants. Of course, there are many other explanatory variables that could have been used to predict demand for housing, but these three have the distinct advantage of complete data sets for the period across England and Wales provided by the Office for National Statistics.[5]

Using propensity score matching (PSM) I identified the 22 English local authorities that are most similar to the 22 Welsh local authorities. Data was compared for all 323 local authorities responsible for housing in England on three separate years — 1999, 2004 and 2009 — making a data matrix of 969 local authority-years for England to compare with 66 local authority-years in Wales. Using the MatchIt function in R, the following English local authorities were identified as the most similar to Wales on the explanatory variables of interest:

England — Bedford, Boston, Calderdale, Carlisle, Chiltern, Darlington, Doncaster, Dover, Durham, Fenland, Great Yarmouth, Hartlepool, Lancaster, NE Lincolnshire, Northumberland, Pendle, Redcar and Cleveland, Rother, Scarborough, Tendring, Torridge and Wakefield.

These were compared with all of the local authorities in Wales:

Wales — Blaenau Gwent, Bridgend, Caerphilly, Cardiff, Carmarthenshire, Ceredigion, Conwy, Denbighshire, Flintshire, Gwynedd, Isle of Anglesey, Merthyr Tydfil, Monmothshire, Neath Port Talbot, Newport, Pembrokeshire, Powys, Rhondda Cynon Taf, Swansea, Torfaen, Vale of Glamorgan and Wrexham.

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[5] Official Labour Market Statistics were retrieved from https://www.nomisweb.co.uk/ on 12 February 2016. ONS data is subject to Crown Copyright.

Some of the authorities changed their institutions between 1997 and 2014. Most notably, In England in 2009 some previously two-tier authorities were merged into unitary authorities, thereby increasing their powers and budgets. This affected Bedford, Durham and Northumberland of the authorities studied for this paper. All Welsh local government is organised into unitary authorities, whereas in England it is typically the lower-tier authority that deals with housing. Despite these institutional differences between England and Wales the duties for housing the homeless are essentially identical. The major differences pertain to resources for the authorities, which are at any rate significantly greater per capita for Wales than for England. This is an important difference between the two countries, but it is worth recalling that the treatment and control groups need not be perfectly identical, just as New Jersey is not identical to Pennsylvania. The key to DD analysis is minimising the differences pre-treatment and this has been achieved with PSM.

Having identified the forty-four local authorities for analysis, data was collected on each for the recognition of priority need and on key political, financial and socioeconomic variables. Comprehensive data on priority need is provided by the Welsh Government from 1997 to 2014.[6] For England, data is not in the public domain but was granted on request to the Department for Communities and Local Government.[7] Comprehensive data on priority need decisions in England only go back to 1999. This data provided both the total number of priority need acceptances (TPN) and the disaggregated figure for just those accepted for fleeing violence or

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[6] https://statswales.wales.gov.uk/Catalogue/Housing/Homelessness/Acceptances-and-Other-Decisions/householdsacceptedashomeless-by-area-priorityneed, accessed on 12 December 2015.

[7] Replication data is available on request.

threats of violence (TFV). From the data of total acceptances it was possible to measure the change in acceptance in year t as compared to t-1 (DPN/DFV). All data on recognition of priority need are measured as the number of individuals recognised per 10,000 of the local authority population. The reason for not measuring the proportion of priority need acceptances from the number of applicants is that the models would be predicting the number of applicants as well as the rate of priority need recognition. The focus is solely on the rate of recognition on the supply-side, rather than the nature of demand.

In addition to measuring the rate of recognition at time t, I also included a time-lag dummy (LAG) to test for delays to policy implementation. There is no legal reason for delay as the Priority Need Orders both came into force immediately, but there may have been delays in establishing the infrastructure and assigning the resources to comply with the duty.

Other variables included for analysis can be grouped as political, financial and socioeconomic. For political variables, every year a local authority is run by Conservative administration was coded (CON). The Conservative Party generally supports more restricted access to public services in favour of individual self-reliance and fiscal security for the government. One would therefore expect Conservative-led local authorities to have more restrictive recognition of priority need. But, there are two caveats to this. Firstly, the Conservative government authored the *Housing Act 1996*, so the party's policies are not uniformly averse to acknowledging priority need. Secondly, the Conservative Party is not a fully independent variable and their impact begs the question of why some local electorates are more likely to vote Conservative.

Nonetheless, it is a useful variable to consider in conjunction with other variables to assess the potential effects of different parties' ideologies. The other political measure coded for the coherence of local authority leadership (COH). A local authority is scored as 1 if it is run by a single party and 0 if it has no overall party control. A possible causal mechanism is that a volatile party system and/or multi-party governance inhibits long-term policy coherence, typically to the advantage of service users. A single party of any description could develop coherent housing strategies that will be more likely to rely on substantive restrictions to achieve long-term housing goals.

The financial variables analysed the effect of the Revenue Support Grant (RSG) and the change in this central government funding year-on-year (RSGD).[8] RSG replaced the rate support grant in the early 1990s. It is distributed as a formula grant to local authorities to supplement local tax revenue. More generous central government funding (high RSG) and less volatility in allocation (low RSGD) could explain more generous recognition of priority need applications. Conversely, where local authorities face insecure finance this may put pressure on Housing Officers to restrict provision to homeless claimants.

The socioeconomic variables measure unemployment (UNE), local mean weekly income (INC) and population density (DEN). These variables consider the demand-side rather than the supply-side. If a local authority experiences major changes in these variables it is to be expected that it will affect demand for housing. It is necessary to control for these demand-side variables, as well as the political and

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[8] Data on the RSG is provided publicly by the Welsh Government. Data for England was released in a Freedom of Information request and is available as replication data on request.

financial variables on the supply-side, to isolate the significance of the change in legal language. It must be noted that the explanatory variables intercorrelate and could not all be included in a single model without multicollinearity. Therefore, variables were included in models as interaction terms or not at all if there was no significant correlation found in bivariate OLS regression. Table 1 provides descriptive statistics for all variables.

Table 1: Descriptive statistics for all variables

Variables	Control — Wales 1997-2014						Treatment — England 1999-2014					
Dependent variables	Min	Mean	Med	Max	SD	N	Min	Mean	Med	Max	SD	N
Total/10,000 in priority need (TPN)	2.18	19.49	17.40	61.07	10.80	396	0	11.41	8.91	42.35	8.86	332
Total/10,000 recognised as fleeing violence (TFV)	0	2.36	1.92	13.54	2.12	396	0	0.46	0	8.77	0.90	332
Annual increase in recognition of priority need (DPN)	-32.90	0.09	-0.01	27.68	6.62	374	-19.96	-0.58	-0.41	11.89	4.30	310
Annual increase in recognition of fleeing violence (DFV)	-7.96	0.04	0	6.58	1.44	374	-8.77	-0.06	0	2.58	0.76	310
Control variables												
Conservative run authority, 0/1 (CON)	0	0.03	0	1	0.17	396	0	0.26	0	1	0.44	332
Ideological coherence, 0/1 (COH)	0	0.57	1	1	0.5	396	0	0.48	0	1	0.50	332
Revenue support grant, real terms/ capita (RSG)	460	894	909	1,368	203	396	0	123	48	670	179	266
% change in RSG on previous year (RSGD)	-6.88	3.73	3.79	12.01	3.89	374	-100	3.55	-2.17	460.98	47.49	244
Unemployment, % working age (UNE)	2.32	6.51	6.20	14.70	2.11	396	2.10	6.50	6.10	14.60	2.20	332
Income, median weekly (INC)	244	390	396	582	66	396	270	416	411	743	77	332
Population density, per hectare (DEN)	0.24	4.02	3.06	23.70	4.55	396	0.57	4.06	3.82	9.79	2.57	332

RESULTS AND DISCUSSION

Before presenting the results of the OLS and DD analyses, Figs 2-5 present data on the frequency of priority need recognition in time series.

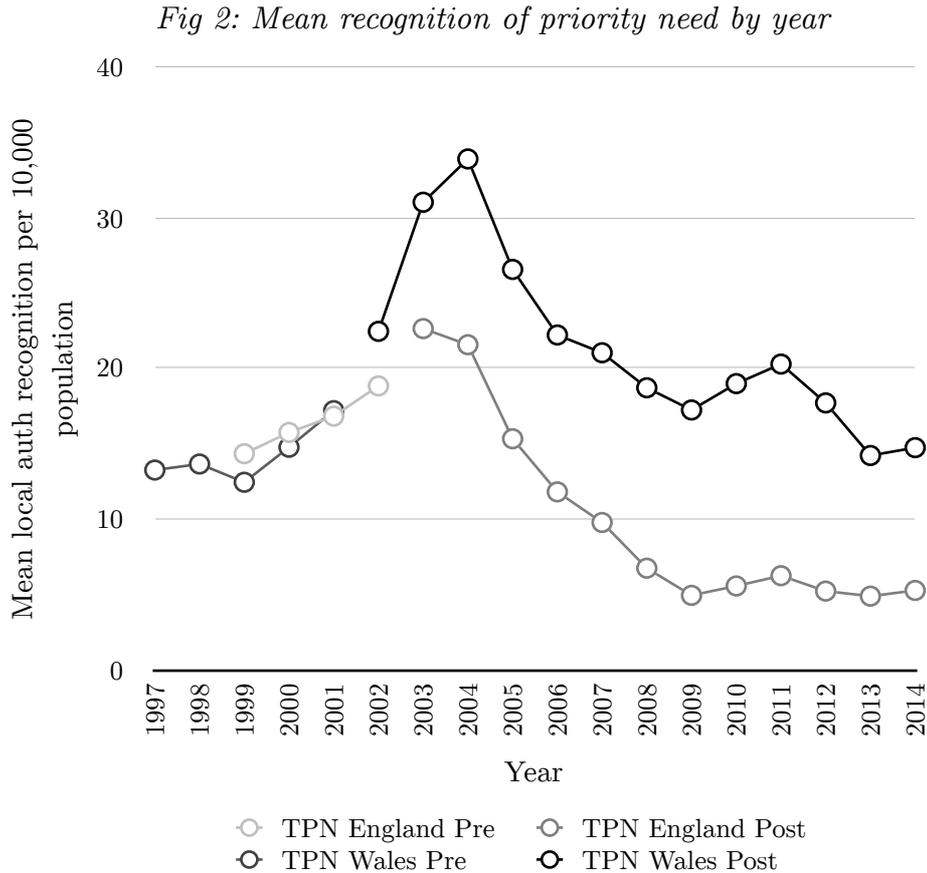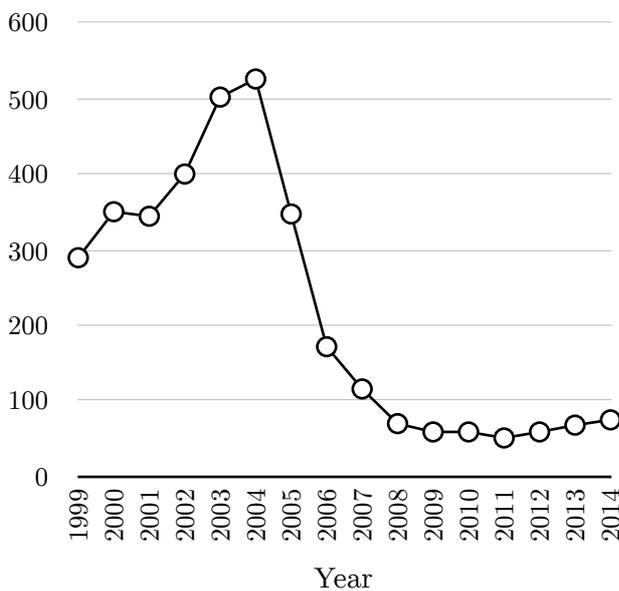*Fig 2: Mean recognition of priority need by year*

Fig 2 describes similar levels of priority need recognition in England and Wales before the introduction of the Priority Need Orders. After the Orders there was a divergences in trends. Wales experienced an initial spike in recognition of priority need whilst England saw a more modest increase followed by a more precipitous decline. It is interesting to note that by the end of the period under observation the two countries had returned to parallel trends but significantly further

apart than at the beginning of the period. In 2014 the mean rate of priority need recognition in England was five people per 10,000 of the local population, where in Wales it was three times as many at fifteen.
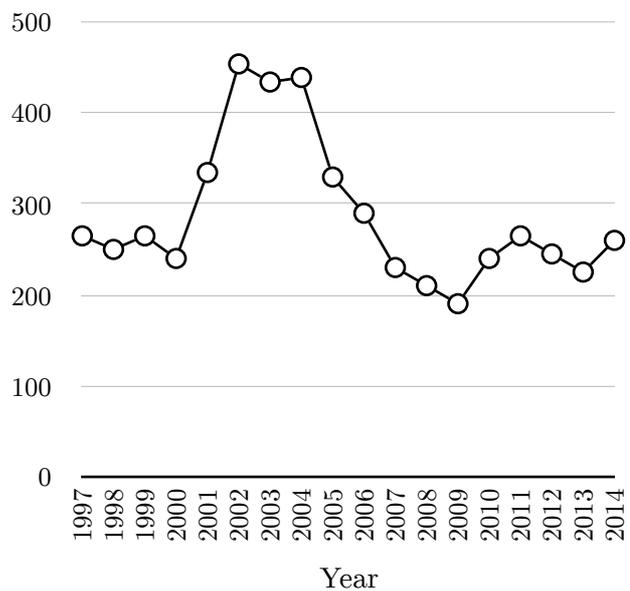
Translated into real terms, Figs 3 and 4 assess two representative and comparable local authorities.

Fig 3: Calderdale, real terms recognition

Fig 4: Caerphilly, real terms recognition

Figs 3 and 4 display the total number of individuals recognised as priority need in the two authorities. Caerphilly experienced a more haphazard rate of recognition, suggesting the recognition rate was largely determined by demand. In Calderdale, by contrast, there was a smooth decrease in the number recognised as priority need after an initial post-Order spike in recognitions. This suggests that the Housing Officers were somewhat better able to manage demand and delimit supply. In 2014, Calderdale Metropolitan Borough Council recognised 74 individuals as being

in priority need where Caerphilly County Borough Council recognised 260 individuals in the same year.

Fig 5 displays the mean results for all local authorities in recognising individuals fleeing violence or threats of violence.

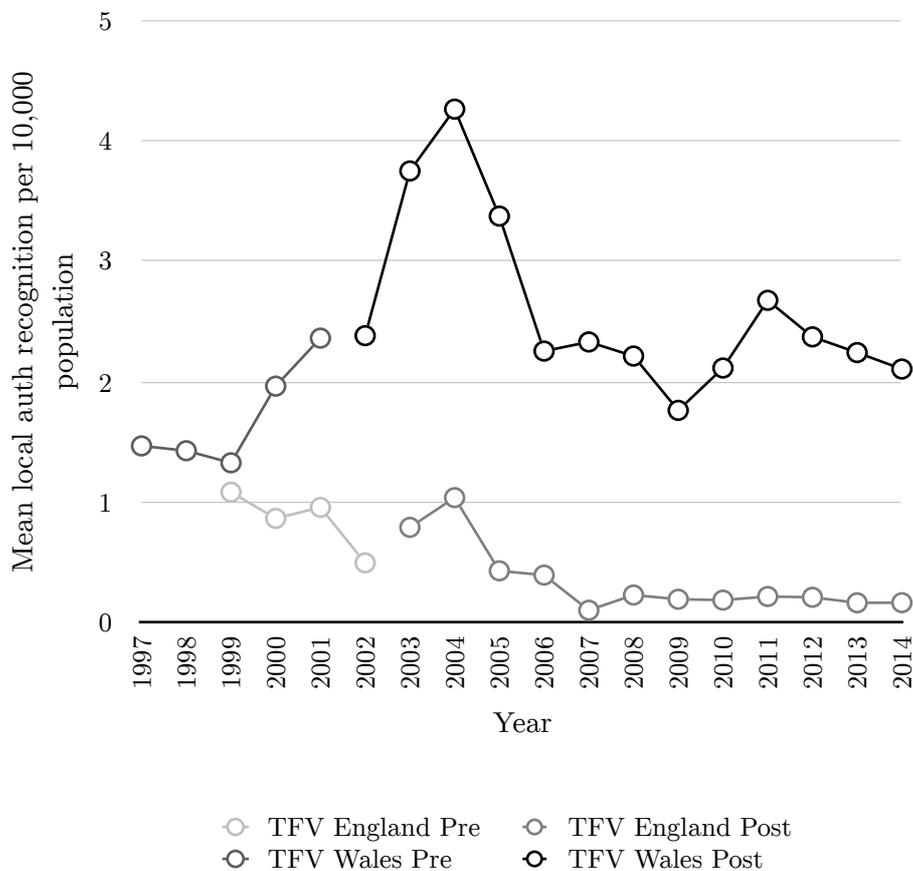*Fig 5: Mean recognition of priority need for fleeing violence by year*

Fig 5 appears to display less of a pre-treatment parallel trend between the countries than was seen in Fig 2. However, the y-axis scale is cast in a significantly smaller range than was the scale for Fig 2. Both England and Wales ranged between 0.5-2.36/10,000 individuals recognised before the Orders, where after the Orders this

range spread to 0.17-4.26/10,000. The deviation is especially striking because evidence suggests there has been no significant decrease in recorded domestic violence in England or Wales over the period (Woodhouse & Dempsey, 2016). So why England has significantly decreased the recognition of priority need for those fleeing violence cannot be explained on the demand-side and a strong case is emerging for the impact of legislative language.

Tables 2 and 3 display results of bivariate OLS regressions and the DD analysis, respectively. All variables were standardised into z scores, with a mean of 0 and standard deviation of 1. This allows for the most effective comparison of regression coefficients which are all z scores. Results from the bivariate regressions was used to inform model specification in the multivariate DD analyses.

Table 2: OLS bivariate regression results for all variables

	Variable	TPN (H1)	N	TFV (H2)	N	DPN (H3)	N	DFV (H4)	N
Linguistic/ legal	ENG	-0.75***	727	-0.98***	727	-0.12	683	-0.08	683
		(0.07)		(0.06)		(0.07)		(0.07)	
	POSTLAW	0.16*	727	0.18	727	-0.21	683	-0.09	683
		(0.08)		(0.09)		(0.09)		(0.13)	
Political	CON	-0.15***	727	-0.17***	727	0.03	683	0.009	683
		(0.03)		(0.02)		(0.04)		(0.03)	
	COH	-0.02	727	0.08**	727	0.03	683	0.03	683
		(0.04)		(0.04)		(0.04)		(0.04)	
Public funding	RSG	0.33***	661	0.45***	661	0.01	617	0.02	617
		(0.03)		(0.03)		(0.04)		(0.04)	
	RSGD	-0.03	614	0.003	614	0.05	614	0.03**	614
		(0.03)		(0.04)		(0.1)		(0.01)	
Economy	UNE	-0.21***	727	-0.04	727	-0.03	683	-0.02	683
		(0.03)		(0.03)		(0.03)		(0.03)	
	INC	-0.2***	727	-0.1***	727	-0.13***	683	-0.03	683
		(0.03)		(0.03)		(0.04)		(0.03)	
	DEN	0.07**	727	0.07	727	-0.0007	683	-0.009	683
		(0.03)		(0.03)		(0.04)		(0.03)	
Time	LAG	0.03	727	0.04	727	-0.13***	683	-0.03	683
		(0.03)		(0.04)		(0.03)		(0.05)	

Notes: Heteroscedasticity-robust standard errors in parentheses. *** denotes p<0.01, ** denotes p<0.05, * denotes p<0.01.

Table 2 displays statistically significant correlations between almost all of the explanatory variables and the total number of applicants recognised as priority need (TPN). The exceptions are political coherence (COH), changes to central government funding (RSGD) and the time lag of one year (LAG) that display no significant correlation. The most substantively significant correlations are between TPN and the jurisdiction of an English local authority (ENG), and the provision of central government funding (RSG). It is important to note that English local authorities are

significantly less well-funded by the RSG than their Welsh counterparts. Therefore ENG and RSG intercorrelate, and it is important to note that ENG has a stronger coefficient (-0.75) than RSG (0.33).

Similarly significant correlations are derived from bivariate analyses of the total number recognised as a priority need for fleeing violence (TFV) against the explanatory variables. Again, ENG provides the most substantive and statistically significant correlation (-0.98). The analyses of the changes in year-on-year recognition (DPN and DFV) reveal fewer correlations. The exceptions are weekly income (INC) and the time lag (LAG) correlate with the changing recognition of priority need (DPN). Also, changing central government funding (RSGD) correlates with changing recognition of priority need for those fleeing violence (DFV). *Prima facie* there is little evidence to reject the null in favour of hypotheses 3 and 4 on the basis of the OLS regressions.

Table 3: Difference-in-differences analysis

Variable	Model 1 TPN (H1)	Model 2 TPN (H1)	Model 3 TFV (H2)	Model 4 TFV (H2)	Model 5 DPN (H3)	Model 6 DPN (H3)	Model 7 DFV (H4)	Model 8 DFV (H4)
DD Parameter	-1.19***	-1.05***	-0.86***	-0.86***	-0.28*	-0.61***	0.13	0.12
	(0.16)	(0.16)	(0.17)	(0.17)	(0.22)	(0.17)	(0.27)	(0.28)
ENG	0.2**	0.08	-0.3*	-0.3*	0.13	0.42**	-0.19	-0.19
	(0.09)	(0.14)	(0.16)	(0.16)	(0.2)	(0.19)	(0.26)	(0.27)
POSTLAW	0.71***	0.66***	0.54***	0.66***	-0.09	0.25	-0.13	-0.12
	-0.11	(0.11)	(0.14)	(0.15)	(0.14)	(0.18)	(0.27)	(0.16)
RSGD								0.03**
								(0.01)
UNE		-0.18***						
		(0.03)						
INC				-0.08***		-0.25***		
				(0.03)		(0.09)		
INC*ENG						0.24***		
						(0.1)		
Intercept	-0.21**	-0.2**	0.03	-0.07	0.13	-0.17	0.15	0.14
	(0.1)	(0.09)	(0.12)	(0.13)	(0.12)	(0.15)	(0.14)	(0.14)
Adjusted R^2	0.2	0.23	0.27	0.28	0.007	0.02	0.001	0.002
N	728	728	728	728	684	684	684	615

Notes: Heteroscedasticity-robust standard errors in parentheses. *** denotes p<0.01, ** denotes p<0.05, * denotes p<0.01.

The coefficients of greatest interest in Table 3 are the DD parameters (*POSTLAW.ENG*). For all of the models, bar models 7 and 8, these coefficients are statistically and substantively significant. The addition of the word 'vulnerable' is modelled as effecting a drop of 1.19 standard deviations from the mean in model 1. In real terms this is a deviation from a mean priority need recognition of 16 individuals per 10,000, to an acceptance rate of 3 per 10,000; a drop of 81%. Given the mean population for the twenty-two English local authorities between 1999 and

2014 was 141,498, model 1 expects a recognition rate of 226 individuals to drop to 42. That is 145 individuals not housed on account of their priority need. This evidence allows for a tentative rejection of the null for H1.

Model 2 adds unemployment (UNE) to the model specification, as the only variable with statistical and substantive significance in the bivariate analyses that is not a proxy measure for England. Model 2 has a marginally higher R-squared than model 1, and the model shows that when controlling for another variable the DD parameter retains its statistical significance. Models 3 and 4 similarly suggest that when disaggregating the priority need data the same pattern emerges in priority need recognition for those fleeing violence or threats of violence. This gives some support for rejecting the null in favour of H2.

Models 5 and 6 suggest that including the word vulnerable does decrease the variability of priority need acceptances year-on-year. This is evidence in support of rejecting the null for H3. Model 6, in particular includes an interaction term for weekly income and England (INC*ENG) as these variables correlate positively. Again, controlling for socioeconomic variables does not remove the importance of the language of law on the observations.

Models 7 and 8 do not provide evidence for rejecting the null in H4. It is likely that variance year-on-year is too small for those fleeing violence to register a statistically significant difference. The mean number of individuals seeking recognition of priority need in fleeing violence was just 7 for the English local authorities studied between 1999 and 2014. Nonetheless, it is important to note that H4 must be rejected.

Model fit is greatest for models 2 and 4. Model 6 presents strong statistical significance but with an R-squared of just 0.02, the model fit is very low. For all of the models the R-squared is not high but this is unsurprising given that multiple lines are being modelled simultaneously.

Diagnostics

The same assumptions that apply to OLS also apply to DD. It is a parametric approach relying on the assumptions of a normal distribution of errors, the conditional independence of cause and effect, stationarity in time series and no multicollinearity between explanatory variables. Firstly, with regard to normality, the universe of data on the forty-four local authorities was deliberately used to avoid possible selection biases in random or stratified sampling. Nonetheless, the use of heteroscedasticity-robust standard errors is in recognition that different local authorities will likely have different degrees of error variance. Secondly, with regard to endogeneity, the conditional independence of cause and effect is theoretically plausible in that the recognition of individuals as priority need will not cause the adoption of new language in policy within the timeframe of data analysed. Of course it is possible and probable that implementing homelessness policy will inform the language used in future policy, so complete conditional independence of cause and effect cannot be assumed. Some variables were not considered for inclusion in the models because of the likelihood of voiding the conditional independence assumption. For instance, crime rates could not be used as a predictor of changes in the recognition rate for fleeing violence. This would be akin to using violence to predict

those recognised as fleeing violence. It would mean having the same term on either side of the equation. Furthermore, with regard to endogeneity, it is important to consider why England and Wales adopted the different language in the first place. The language is not just causative but symptomatic of the Welsh government's insistence that local authorities apply their duty to recognise priority need to the utmost. Wales is leading the way on homelessness provision in the UK according to a recent report (BBC, 2016). It is clearly a stronger policy commitment in Wales than across the border. Nonetheless, this meso-level situation of legislative language is precisely why the DD approach was used. Of course, the different origins of the language matter, but it is only with PSM and DD that we can closely observe the impact after the language has been adopted on bureaucratic drift.

Thirdly, autocorrelation in time series is theoretically likely in England, given that local authorities can better manage their caseload. Decisions at time t can influence decisions at t+1. However, the reason for this lack of stationarity is the impact of the language of homelessness policy, as can be seen in analysing England before the 2002 Order. This lack of stationarity is again much the point of using DD analysis, as a shift post-treatment is expected and was the basis of H3 and H4.

Finally, testing for multicollinearity (using variance inflation factors, for instance) is frustrated because parallel trend lines included in the DD model ought by definition to covary. So the key is to analyse correlations between explanatory variables before specifying models. This was performed and enabled cautious model specification. With DD analysis, the typical robustness test of the parallel trend assumption is analysing in isolation some pre-treatment data, and applying a 'placebo' treatment to several years before the treatment. The problem here is a lack

of data going back sufficiently before the 2002 treatment. The 'Table 773' data on priority need decisions in England supplied by the DCLG only go back as far as 1999.

Therefore, despite the caution taken to specify models without voiding assumptions it must be clearly stated that the relative paucity of data means that the null hypotheses can only tentatively be rejected. There is strong evidence to suggest a significant post-treatment effect of the word 'vulnerable', but it will not do to exaggerate this finding. More research in different policy domains will be required to improve the robustness of the findings.

CONCLUSION

There is strong evidence to suggest that the use of natural language in the otherwise closed coding language of legislation creates the capacity for bureaucratic drift. It had been the intention of Parliament to recognise more individuals as being in priority need for housing, but in England after the 2002 Order there were significantly fewer individuals recognised than was the case in Wales. The word vulnerable appears to have created such indeterminacy as to enable significant supply-side restriction on the duty to house those in need. This was not the intention of the sovereign Parliament. So said the UK Supreme Court in 2015.

Part of the problem is that Parliament's intentions were in all probably left deliberately in an indeterminate state. Pre-promulgation clarity of intent was avoided in return for greater post-promulgation flexibility in policy delivery. This approach to the rule of law puts greater emphasise on the rulers than the law. It is an executive centred policy approach that poses a significant risk to democratic accountability.

How can agents of the legislature know of their powers and duties if those power and duties are indeterminate? Despite the various advantages of flexible policy implementation, the mixing of two semantic systems creates such confusion as to undermine the purpose of crafting legislation as a secure record of sovereign intent.

Besides clarity in the law, there are alternative means available to improve executive accountability. Local authorities have, in particular, undergone significant reforms with the intention of improving their accountability to local electorates. The *Local Government Act 2000* forced local authorities to adopt a clearly separated executive and to describe their powers in a local constitution. These reforms will only be partially successful in securing accountability if central government continues to deny fiscal autonomy to local government and provides semi-authoritative instructions on policy; such as the 2002 England Order.

The broader implications of this research point to the importance of language for democracy. Mixing vocabularies in law makes for confusion in inter-institutional and state-citizen discourses. Even semantics can have a significant effect if words are not incorporated fully into the formal coding of legislation. If Parliament had merely provided an authoritative definition of 'vulnerable' and not left it to be determined by common usage it is likely that bureaucratic drift would have been avoided.

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