The dynamics of political attention: public opinion and the Queen's Speech in the United Kingdom

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Abstract

This article represents the effect of public opinion on government attention in the form of an error-correction model where public opinion and policy-making attention coexist in a long-run equilibrium state that is subject to short-run corrections. The coexistence of policy-opinion responsiveness and punctuations in political attention is attributed to differences in theoretical conceptions of negative and positive feedback, differences in the use of time series and distributional methods, and differences in empirical responsiveness of government to public attention relative to responsiveness to public preferences. This analysis considers time series data for the United Kingdom over the period between 1960 and 2001 on the content of the executive and legislative agenda presented at the start of each parliamentary session in the Queen's Speech coded according to the policy content framework of the US Policy Agendas Project and a reconstituted public opinion dataset on Gallup's "most important problem" question. The results show short-run responsiveness of government attention to public opinion for macroeconomics, health, and labour and employment topics and long-run responsiveness for macroeconomics, health, labour and employment, education, law and order, housing and defence.

"… In economic systems, the stock market certainly has violent fluctuations, most usually sudden drops. Yet there is a sense in which these falls, large as they seem at the time, are in the long run bounded in magnitude. Is there some similar sense in which the accidents of legislative history may lead to results that differ but, broadly considered, are similar in nature and structure?" (Arrow 1999, 54)

One of the critical problems in economics and political science is whether, under certain conditions, the nature of the relationship between particular forces or variables is either stable or unbalanced. While the concept of equilibrium tends to be associated with the concept of statics, it has long been argued that it "…cannot be discussed except with reference to dynamical considerations" (Samuelson 1941, 102). As such, we are often interested in whether variables of interest tend to move together over time, whether these remain in an equilibrium state and whether disturbances of the status quo are corrected or persist in the long-run. The dynamics of feedback and equilibration are therefore integral to economic and political relationships when considered over time.

This article theorises the relationship between public opinion and government attention as exhibiting both equilibrium and disequilibrium processes where shocks are stabilized through negative feedback or are amplified through positive feedback. Public opinion and policy-making attention coexist in a long-run equilibrium and shocks to the equilibrium are subject to short-run corrections or the accumulation of equilibrium errors. The analysis builds upon a growing literature on policy-opinion dynamics (e.g. Erikson et al 2002; Soroka and Wlezien 2004; 2005; Stimson et al 1995; Wlezien 1995; 1996; 2004; Jennings XXXX) which measures the degree of responsiveness of policy-makers to public opinion at the macro-political level. It proposes a new approach through integration of core insights from the punctuated equilibrium model of political attention (Baumgartner and Jones 1991; 1993; Jones 1994; Jones and Baumgartner

2005a; 2005b) into analysis of agenda-opinion responsiveness. It contends that gradual adjustments and sudden recalibrations are integral features of opinion-responsiveness of macro-political attention.

This article argues that correspondence of public attention and policy-making priorities over time – that is, agenda-opinion dynamics – shares characteristics of both models and that this may be represented as an error-correction model. This framework is appropriate here, first, because of its analysis of both short-run changes and long-run equilibrium and, second, because of its potential for integration with tests for punctuated equilibrium in distribution of changes in public opinion and government attention. The article attributes the distinctive implications of studies of macro-responsiveness and macro-punctuations to theoretical differences in their conception of equilibrating feedback as a continuous or intermittent process and to differences in measurement using multivariate time series or univariate distributional methods, as well as to empirical differences in the degree of error-correction, over-correction or error-accumulation in attention-based dynamics compared against existing evidence of the dynamic representation of public preferences.

These propositions are tested for evidence from the United Kingdom, often characterised as an example of non-responsiveness – 'elective dictatorship' at its most extreme – because of its unitary system, its fusion of executive and legislative powers, a longstanding tradition of party discipline in the legislature and a relative absence of veto points in the political process. This article applies the policy content coding system of the Policy Agendas Project (see Baumgartner and Jones 1991; 1993; Jones and Baumgartner 2005a; www.policyagendas.org) for categorisation of the policy agenda set out on behalf of government in the annual Queen's Speech. It also uses a new public opinion dataset on Gallup's "most important problem" question that corrects a

number of errors in the published record and extends the available period back to 1959. The article first outlines the theoretical puzzle of contrast between models of macro-responsiveness and macro-punctuations before proceeding to detail its method and empirical analysis.

Dynamic representation and punctuations in political attention

Studies of the aggregate responsiveness of government to public opinion (for literature reviews see Burstein 1998; Manza and Lomax Cook 2002; Wlezien 2004) suggest there is an equilibrating relationship between public policies and public preferences over time (e.g. Erikson et al 2002; Franklin and Wlezien 1997; Soroka and Wlezien 2004; 2005; Wlezien 1995; 1996; 2004). The idea of dynamic representation (i.e. responsiveness) is structured in time, measuring the degree to which preceding changes in public opinion are correlated with subsequent changes in government policies such as expenditure or legislation. This conception of macro politics emphasises the continuous character of shifts and transitions in the behaviour of government officials and the public (Stimson 1991; Stimson et al 1995). It is premised upon the majoritarian model of democracy (Lijphart 1984) where responsiveness is constituted in the satisfaction of the preferences of a numerical majority of the people. Furthermore, it implies the presence of negative feedback within the political system (Stimson et al 1995; Wlezien 1995) since vote-seeking policy-makers have an incentive to respond to public opinion only if the public, in turn, notices and rewards such behaviour (and punishes non-responsiveness along the lines of Fiorina 1981). The continuous equilibration of public opinion and government behaviour, i.e. dynamic representation, is therefore dependent upon negative feedback; where there is an accurate and efficient flow of information to elected officials concerning public preferences or priorities.

The punctuated equilibrium model (e.g. Baumgartner and Jones 1991; 1993; 2002; Jones and Baumgartner 2005a; 2005b) proposes a quite different perspective regarding the dynamics of

political responsiveness. It observes that public policies are subject to extended periods of incrementalism, characterised by equilibrium or stasis, which are disrupted from time to time by rapid or dramatic realignments. The attention of policy-makers to particular issues or problems is therefore punctuated by episodic disruptions of its equilibrium state that overcome the cognitive and institutional friction inherent to government decision-making (see Jones et al 2003; Jones and Baumgartner 2005a; 2005b). That friction is a form of negative feedback that, True, Jones and Baumgartner argue, maintains the equilibrium of policies "… somewhat like a thermostat maintains constant temperature in a room" (True et al 2007, 160). At any moment in time the policy-making agenda is crowded with multiple issues in competition with each other for attention (e.g. Kingdon 1995). However, the scarce and bounded nature of government decision-making restricts its capability to attend to particular issues and secure the reversal or the realignment of policies. Instead, the disproportionate response of policy-makers to information signals, added to cascade effects in mobilizations of interests, institutions or ideas (e.g. Downs 1972; Schattschneider 1960), leads to rapid and urgent reprioritisations of attention. This is observed, for example, in macro-punctuations of budget change distributions in the United States and elsewhere (Baumgartner et al 2006; Breunig 2006; John and Margetts 2003; Jones and Baumgartner 2005a; Jones et al 1998; Jones et al 2003). As such, this model implies that extended periods of equilibrium are the product of negative feedback processes that resist change whereas policy punctuations are a result of bursts of positive feedback that, from time to time, propel public policies to new equilibria. Notwithstanding this fragile coexistence of positive and negative feedback, there is evidence of static correspondence between the issue attention of government and the public (Jones and Baumgartner 2004; 2005a).

As accounts of macro-politics, these models share a concern with the nature of feedback and equilibrium in political systems and the degree to which representative institutions translate

information signals into political outputs. Furthermore, both conceive macro-political outcomes as the aggregate of micro-level decisions and behaviour. There remains an outstanding puzzle concerning the degree to which punctuated equilibrium in political attention is compatible with the responsiveness of government to public opinion.

Error-correction and error-accumulation in agenda-opinion dynamics

Theories of macro-responsiveness and macro-punctuations provide reasons to suspect that attention of the public and policy-makers to particular issues or problems might sometimes exist in a long-run equilibrium state, where shocks that disturb the normal distance between the variables are corrected over time through a process of feedback. The architecture of the error-correction framework is able to capture both short-run and long-run processes, as well as diagnosing negative and positive feedback processes that give rise to either equilibrium or disequilibrium. Since introduction of error-correction models in econometrics (Davidson et al 1978) and theoretical proof of their representation of cointegrated variables (Engle and Granger 1987), political scientists have adopted the error-correction framework for analysis in a number of different contexts (De Boef and Keele 2008); including models of governing and opposition party support (Clarke and Stewart 1995; Clarke et al 1998; 2000), the public mood (Durr 1993; Erikson et al 2002), trust in government (Keele 2007) and specific policy-opinion dynamics (Jennings XXXX). Its application here is directed towards investigation of feedback and equilibration, in combination with tests of non-normality of input and output distributions and model residuals.

While error-correction models tend to be isomorphic with the concept of cointegration for political scientists (see De Boef and Keele 2008),[1] this framework is appropriate for modelling feedback and equilibrium relationships in stationary as well as non-stationary data (Banerjee et al 1993; Davidson and MacKinnon 1993; De Boef and Keele 2008). The presence of cointegration in political relationships remains contentious while reliance upon the Engle-Granger two-step procedure has been shown to be problematic (De Boef and Granato 1999). Furthermore, most diagnostic tests for unit root possess low power against local alternatives (De Boef and Granato 1997; 1999), meaning it tends to be difficult to ascertain whether series are (co)integrated with confidence. This analysis therefore specifies the dynamic and equilibrating relationship between public and policy-making attention in the form of a single equation error-correction model:

$$\Delta AGENDA_t = \alpha_0{}^* + \alpha^*{}_1 AGENDA_{t-1} + \beta_0{}^* \Delta OPINION_t + \beta^*{}_1 OPINION_{t-1} + PARTY_t + \varepsilon_t$$

That is where short-run changes in the attention of policy-makers to a particular issue ($\Delta AGENDA_t$) are a function of short-run changes in public attention to that same topic ($\Delta OPINION_t$), and where the lagged value of the dependent variable ($AGENDA_{t-1}$) measures the speed of re-equilibration ($\alpha^*{}_1$) in response to shocks to the long-run agenda-opinion equilibrium. This model, like other models of dynamic representation (e.g. Wlezien 2004), also includes a variable ($PARTY_t$) to capture contemporaneous effects of indirect representation through partisan control of government.

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[1]. The error-correction framework also avoids the problem of spurious regressions that is experienced with integrated (Granger and Newbold 1974) as well as near-integrated (De Boef and Granato 1997) data, without differencing and therefore losing information about the long-term relationships that exist between variables.

Within the error-correction framework, changes in government attention are estimated as a function of contemporaneous changes in public opinion and the degree to which these are outside their usual equilibrium in the previous time period. This suggests that if there is a deviation from that long-run equilibrium, when policy-makers commit either "too much" or "too little" attention to a particular issue, responsiveness is equal to the rate and strength of error-correction that restores congruence between policy-making attention and public opinion (i.e. issue representation) to its earlier status quo. Although the punctuated equilibrium model instead observes error-accumulation in extended periods of incrementalism, it also recognises that political institutions "… impose error correction by providing incentives to those who make course corrections" (Jones and Baumgartner 2005b, 334). The responsiveness of policy-making attention is therefore constituted both in the strength of short-run effects and in the degree of error-correction or error-accumulation in response to disequilibrium. This representation is consistent with theoretical expectations about political behaviour, as policy-makers should respond to disturbances to the long-run equilibrium with a view to re-election. That equilibrium state is a function of cognitive or institutional friction that absorbs the effects of shocks on government policies and public opinion and implies long-run attraction towards the equal ranking of issue priorities by policy-makers and the public. This counteracts error-accumulation through a process of negative feedback. At the same time it is conceivable that although government might respond to public concerns about particular issues, the effect on public opinion might sometimes be self-perpetuating (i.e. increasing at times of high attention and decreasing at times of low attention) rather than countercyclical. It follows that policy-makers' attention might be responsive to public opinion in the sense that these move together over time in a long-run equilibrium state but not insofar as government attentiveness is guaranteed to dampen public concern about an issue.

The error-correction representation of agenda-opinion dynamics implies that feedback is a continuous rather than an intermittent process. This differs from adjustment through punctuations where responses to additive information signals are non-linear and bring about new equilibria. When input (public opinion) and output (policy-making attention) series are drawn from an aggregate leptokurtic distribution, periods of positive feedback are inferred from outliers in the fat tails of that distribution and negative feedback from incrementalism in the tall slender peak of the distribution. For theoretical reasons that are detailed later, effects of error-accumulation might be expected to be different in the context of the error-correction framework. The technicalities of theoretical specification are therefore critical for the diagnosis of negative or positive feedback between policy-making and public attention.

At the same time, estimation of parameters of the error-correction model also enables detection of positive feedback in a number of different forms. First, positive feedback is identifiable where the input or output series is an explosive process and integrated of an order greater than one.[2] Second, while the error-correction parameter (α^*_1) is supposed to be negative according to its formal construction, a sign reversal where the value of the coefficient is positive indicates that agenda-opinion dynamics are procyclical instead of countercyclical. That means that policy-making or public attention to a particular issue increases at times of high attention and decreases at times of low attention reinforcing the disequilibrium. Whereas thermostatic mechanisms act to cool the system temperature as it increases, procyclical mechanisms amplify disturbances causing it to become unstable and spin out of control. This is shown in a graphical illustration of the effect of parameter values in Figure 1. If the value of α^*_1 is greater than 0, then equilibrium

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[2]. For a first-order autoregressive process $Y_t = \varrho Y_{t-1} + \varepsilon_t$, Y_t is an explosive (i.e. non-linear) process where $| \varrho | > 1$, such that shocks are subject to exponential amplification.

errors accumulate at an exponential rate. In other words, a positive error-correction parameter indicates that disequilibrium in agenda and opinion congruence is not corrected through negative feedback. It might instead suggest that the long-run equilibrium is fragile and mis-specified. This is an explosive process since the effect of a shock grows over time. Subject to this kind of positive feedback, a disturbance to the long-run equilibrium state would lead to responses of increasing magnitude from policy-makers.

[insert Figure 1 about here]

If the value of α^{*}_{1} is negative and equal to between 0 and -1, equilibrium shocks are (in contrast) corrected at a gradual rate. The closer the parameter is to -1, the faster the rate of re-equilibration. This form of equilibration is the theoretical expectation of models of macro-responsiveness, as policy-makers have electoral incentives to respond to shifts in public opinion. Indeed, the empirical evidence reflects this process of equilibration (e.g. Stimson et al 1995; Erikson et al 2002; Wlezien 2004).

However, if the value of α^{*}_{1} lies between -1 and -2, then the correction of errors oscillates between positive and negative values but dissipates over time, tending towards zero. This generates an iterative process where, for example, policy-making attention under-corrects and then over-reacts in response to disturbance of the public's concern about a particular issue, eventually returning to its long-run equilibrium. It is therefore possible for processes of re-equilibration to be unbalanced within the error-correction framework. This over-reaction of feedback is not equivalent to positive feedback, but is characteristic of disproportionate information processing (Jones and Baumgartner 2005a; 2005b) in the sense that policy-makers over-weight new information signals about public opinion. In contrast, if the value of α^{*}_{1} is less than -2, the effect of a shock to the equilibrium state oscillates between positive and negative

responses that are of increasing magnitude; exhibiting the characteristic of 'sensitive dependence upon initial conditions' that is associated with chaotic processes where small perturbations to the short-run relationship can lead to large deviations of the long-run equilibrium. This captures positive feedback processes where policy-makers under-react and over-react with escalating force so that government attention becomes more and more distant from equilibrium public opinion. In practice, this sort of process is implausible since correction through the institution of elections would tend to curtail such disequilibrium before the disjuncture of government priorities and public opinion became too extreme.

Third, if residuals generated from estimation of the error-correction model are non-normal (i.e. leptokurtic), skewed or time dependent (i.e. heteroscedastic) this might suggest the process of equilibration is erratic or volatile, where errors either accumulate over time or for the duration of an observed period. This indicates a form of disequilibria in agenda-opinion responsiveness, where the variables drift apart for a period of time though in some instances might revert to a long-run equilibrium. This is consistent with theories of punctuated equilibrium since periods of drift might be attributed to the incrementalism of policy-makers and public opinion. The parameters and residuals of the error-correction framework can therefore be used to represent both linear and non-linear processes. This enables the diagnosis of equilibration through negative feedback, such as in studies of macro-political responsiveness, or disequilibrium through positive feedback, such as in studies of macro-punctuations. Indeed, this framework provides a formal representation for the characterisation of processes such as agenda expansion (Schattschneider 1960) and positive mobilization (Downs 1972).

Leptokurtosis and the error-correction framework

The punctuated equilibrium model suggests that while government policies/outputs and public attention tend to be nonstationary processes, they are drawn from aggregate non-normal (leptokurtic) distributions.[3] That is a potential concern because error-correction models are derived under the assumption that the errors are independent and identically distributed (i.i.d.) normal $N(0,\sigma^2)$ and because least squares estimates are sensitive to departures from normality. If the leptokurtosis of input and/or output distributions produces leptokurtic and/or heteroscedastic residuals, there is a danger of misleading inferences concerning dynamics of equilibration (in particular in cases where adjustment processes are nonlinear). However, while aggregate distributions of political attention are found to be leptokurtic for particular countries, issues and institutions (e.g. Baumgartner et al 2006; Breunig 2006; Jones et al 1998; Jones et al 2003) it is possible for the long-run moving equilibrium to remain intact, and for the estimated residuals to be i.i.d. normal, if variables drift together over time despite the presence of punctuations. In other words, if disproportionate shocks to (univariate) input or output distributions are contemporaneous then the combined effect on the (multivariate) error-correcting equilibrium might be i.i.d. normal as the relative distance between the variables remains stable. Non-normal distributions of the residuals are therefore a potential indicator of positive feedback when the equilibrium state becomes unstable for periods of time.

Data and methods

The Queen's Speech

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[3]. The punctuated equilibrium model implies a leptokurtic distribution of policy-making change (e.g. Baumgartner et al 2006; Breunig 2006; author; Jones et al 1998; Jones et al 2003); where extended periods of incrementalism are observed in a large, slender, central peak and infrequent, extreme disturbances are observed in fat tails.

The measure of policy-making attention for this project is the Queen's Speech: a formal statement of the programme of legislative measures that the government intends to enact in the next parliamentary session. This list of legislative proposals tends to receive the support of the legislature because of the British tradition of party discipline, where extant research finds that there is a high likelihood that these intentions are translated into policy outputs further down the policy-making chain (MacDonald and Budge 2005, 164). Such a convention of executive agenda-setting is a feature of both presidential and parliamentary systems; such as the president's State of the Union Address in the US, the presidential New Year's Address in France, and King's or Queen's Speeches in the UK, Denmark, Spain and the Netherlands. While there is evidence of opinion-responsiveness in symbolic rhetoric of the US president (Cohen 1997), the Queen's Speech is an integral part of the legislative process in the UK. The head of state does not have a personal role in drafting the speech, which is drawn up by the government and approved by cabinet, but delivers it line by line with great solemnity at a lavish ceremony in parliament. Through this statement, the government sets out its formal programme for legislative enactment in the forthcoming session of parliament, often linked to specific parts of the executive (e.g. ministries of state), as well as dealing with matters of foreign policy. Evidence on congruence of manifesto pledges, Queen's Speeches, budgetary statements and Prorogation Speeches (i.e. the government statement at the close of each parliamentary session) confirms that the majority of specific pledges are implemented in parliament (Bara 2005). In the British context, the Queen's Speech therefore provides a valid and reliable measure of the legislative agenda and policy outputs. It also indicates priorities of policy-makers in domains, such as foreign policy, where the amount of expenditure or legislation does not always signal change in policy outputs.

The text of each Queen's Speech was coded at the quasi-sentence level for policy content according to a UK version of the coding framework of the Policy Agendas Project (see Table 1,

www.policyagendas.org.uk).[4] This analysis is based upon the frequency of policy statements

referring to a given major topic in each speech,[5] which provides an unbounded measure of

legislative attention (rather than a percentage share).

[insert Table 1 about here]

The "most urgent problem" 1959-2001

The Gallup Organization's poll question about the "most important problem" (MIP) is the most

continuous time series measure of public attention to issues in both the United States (1935) and

the United Kingdom (1959). This is sometimes used as an indicator of public preferences or

attention (e.g. Jones and Baumgartner 2004; 2005a; MacKuen and Coombs 1981; McCombs and

Shaw 1972; Jennings XXXX). However, the MIP question is not perfect as a measure of the

public's preference for specific policies (see Wlezien 2005). There is a significant distinction

between the importance of an issue, its importance relative to other issues, and its salience; not

to mention the extent to which it is considered an "issue" or a "problem". Nonetheless, it

remains the best and oldest available indicator of the public's relative prioritisation of the focus

of government attention and activities on particular topics.[6] At worst the MIP provides an

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[4]. Two researchers compared the assigned codes and reconciled them. This procedure leads

to about 95 per cent inter-coder reliability for most years.

[5]. The "public lands and water management" topic from the US Policy Agendas Project is

referred to as "territorial issues" because the preponderance of attention to this topic in the

UK is concerned with Commonwealth and Northern Ireland issues (i.e. sub-topic code 2105,

"U.K. Dependencies and Territorial Issues").

[6]. Between December 1959 and December 1964, Gallup UK asked the question "Which of

these is the most important problem facing the country today?", identical to its counterpart

approximate measure of what is on people's minds, even if we cannot be sure how this corresponds to preferences. For public opinion to emit negative feedback like a thermostat it must be stationary (Wlezien 1995): that is, its statistical properties (i.e. mean, variance and autocorrelation structure) remain constant over time. Opinions in previous time periods are irrelevant to feedback about the present state of affairs. It is conceivable that public attention might in some instances exhibit longer-term persistence in extended periods of incrementalism. In other circumstances, policy-makers might stimulate public attention to particular issues or policies rather than dampening it, in a form of positive feedback. For example, public concern about homeland security might increase, rather than decrease, as policy-makers assign more and more attention to the issue, reinforcing public beliefs about its relative importance. At the same time, it is plausible that those same public anxieties could be reassured by announcement of legislative initiatives or executive action. As such, there is theoretical reason to suspect that it is possible for public opinion to exhibit positive, as well as negative, feedback in responsiveness to political attention. The error-correction framework accommodates this possible co-existence of positive and negative effects; as policy-makers' and public attention drift upwards or downwards together over time while the long-run equilibrium state is maintained through corrective negative feedback.

This analysis uses an enhanced MIP dataset compiled through its reconciliation of the surveys reported in *British Political Opinion, 1937-2000* (King et al 2001) and the original *Gallup Political and*

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in the US. From March 1965 Gallup UK began to ask the question "Which would you say is the most urgent problem facing the country at the present time?". Gallup UK discontinued its political polling in May 2001.

Economic Index (1959-2001).[7] The MIP data were coded according to the Policy Agendas framework, and response totals were standardized to equal 100 (i.e. these were equal to between 94 per cent and 146 per cent in the Gallup Index, but with 354 of 426 observations in the range between 98 per cent and 102 per cent, with a mean 101.0 and standard deviation 5.2). To calibrate agenda-opinion dynamics the mean of standardized responses was calculated for the parliamentary session that preceded each Queen's Speech, instead of the mean responses for each calendar year. This ensures that estimations of responsiveness refer to MIP responses that were either before or after the Queen's Speech, where specification of a lag of one calendar year is unable to model the empirical interaction between government attention and public opinion (i.e. in practice the Queen's Speech tends to be presented in October or November, so it can respond to public opinion in that calendar year or in the preceding year). As a result, no empirical data is lost because the parliamentary session is not concurrent with the calendar year. This prevents detection of responsiveness in the wrong direction where the underlying set of MIP observations is active before and after the Queen's Speech. The pattern of issue attention over time of the Queen's Speech and MIP is illustrated in Figure 2.

[insert Figure 2]

Equilibrium and feedback in agenda-opinion responsiveness

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[7]. This new dataset validates the King et al (2001) data against the original *Gallup Index*, adding the fieldwork dates where available and records the source of each observation. In this, some categories from the original data were reconstituted and transcription errors from King et al were corrected. This dataset reports an additional 21 observations from the original *Gallup Index* (that includes 5 missing observations for 2001 and the data for January 1976 which is a typographical error in King et al).

From visual inspection of Figure 2, it appears that most of the Queen's Speech and the MIP series tend to drift together over time and share a similar stochastic trend. That is consistent with evidence of correspondence between government and public attention over time from the US. The distinct similarities in trends of both government and public attention in the UK over a period of more than forty years is itself notable. These tend to reflect conventional wisdom on the rise and fall of certain issues on the political agenda. For example, it shows gradual increases in concern with health issues after the 1980s, spikes in attention to labour issues around the time of the 'winter of discontent' in the late 1970s, an expansion of interest in economic issues between 1960 and 1980 and something of a contraction thereafter, and a decline of international affairs from the 1980s onwards due to the end of the Cold War. It also suggests that for a number of issue topics public opinion and policy-making attention coexist in a dynamic long-run equilibrium state.

Results

Topics were selected where the mean for both the Queen's Speech and MIP was greater than two per cent over the period between 1960 and 2001. This focuses analysis through selection of topics according to their longer-term salience. As a result, the environment (7), energy (8), transportation (10), social welfare (13), banking, finance and domestic commerce (14), space, science, technology and communications (15), foreign trade (18), and government operations (20) topics are excluded from this analysis.[8]

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[8]. The results of the Elliott-Rothenberg-Stock (1996) test statistics, where the optimal lag is selected according to the modified AIC method, suggest that most QS and MIP variables are integrated failing to reject the presence of unit root in each series in level form; with a few

Error-correction models of agenda-opinion dynamics

In order to consider the equilibrating responsiveness of the Queen's Speech to public opinion concerning the MIP, single equation error-correction models of agenda-opinion dynamics are estimated for macroeconomic issues (ΔQS1), civil rights and immigration (ΔQS2), health (ΔQS3), labour and employment (ΔQS5), education (ΔQS6), law , crime and family issues (ΔQS12), community development and housing (ΔQS14), defence (ΔQS16), international affairs (ΔQS19) and territorial issues (ΔQS21). These models are reported in Table 2. The results include short-run components to measure both the contemporaneous effects of public opinion (ΔMIP$_t$) and partisan control of government (ΔPARTY$_t$) on policy-making attention and an error-correction component (ΔQS$_{t-1}$) to capture the rate of adjustment to the long-run equilibrium in response to disturbances. The error-correction parameter indicates the extent of negative (or positive) feedback between the Queen's Speech and the most important problem.

[insert Table 2 about here]

The short-run parameters of the error-correction models (ΔMIP$_t$) indicate that there is a contemporaneous effect of public opinion on policy-making attention, significant at the 90 per cent confidence level, for macroeconomic issues (QS1), health (QS2), and labour and employment issues (QS5). This finding is consistent with accounts of the dominance of economic concerns and the welfare state in the post-war British context. The long-run parameters of the model (ΔQS$_{t-1}$) suggest that shocks are stabilized in policy-making attention as each error-correction parameter is significant at the 99 per cent confidence level. For example, the results for macroeconomic issues indicate that shocks to the agenda-opinion equilibrium are

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exceptions: the MIP for labour (MIP5), law and order (MIP12) and territorial issues (MIP21) and Queen's Speech for labour (QS5) and territorial (QS21) issues.

corrected at a rate of 88 per cent in the Queen's Speech (ΔQS_{t-1} = -0.884). Thus 12 per cent of the initial disequilibrating shock remains after one year, 1.3 per cent after two years, 0.001 per cent after three years, and so on. Notably, immigration (QS2), health (QS3) and education (QS6) are topics where there is evidence of over-correction ($\Delta QS_{t-1} < -1$), reflecting the hyper-sensitive nature of policy-maker's attention in these domains. For education, a shock to the agenda-opinion equilibrium is corrected at a rate of 117 per cent (ΔQS_{t-1} = -1.165), with a 17 per cent over-correction in the first year, a 2.7 per cent correction after two years, a 0.4 per cent over-correction after three years, and so on as it tends toward the long-run equilibrium state.[9]

In contrast, the error-correction parameter is weakest in defence ($\Delta QS16_{t-1}$ = -0.740) and international affairs ($\Delta QS19_{t-1}$ = -0.687). These are issues where policy-making attention might be expected to be more insulated and less responsive to shocks. Also, estimates of the effect of partisan control of government ($\Delta PARTY_t$) are consistent with conventional wisdom: Conservative governments tend to prioritise defence (QS16) and international affairs (QS19) since the estimated parameters are negative, although the latter is not significant at the 95 per cent confidence level, and Labour governments tend to emphasise the economy, health, labour and employment and housing. Labour control also appears to be associated with heightened attention to law, crime and family issues, which is somewhat counter-intuitive given the Conservative's claim to be the party of law and order.

To further consider the nature of this equilibrating dynamic, it is possible to calculate the long-run multiplier (k_1). That is the total short-run and long-run effect on policy-making attention of

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[9]. The Breusch-Godfrey statistics reported in Table 2 indicate residual autocorrelation for education (QS6), while the Durbin-Watson d-statistics do not suggest presence of serial autocorrelation in any of the estimated models.

a one-point increase in public opinion distributed over future time periods,[10] where the total impact of a shock is greatest the closer the error-correction parameter is to zero (when all other short-run and long-run variables are held constant). For example, a one per cent increase in the public's attention to macroeconomic issues results in an additional 9.2 mentions of this topic in future Queen's Speeches (k_1 = 9.210). The size of the long-run multiplier is greatest in magnitude for the education (QS6) and law and order (QS12) topics, indicating that the impact of MIP on the Queen's Speech is most sustained in these domains (although the effect is nonetheless significant in most other domains).

Spurious responsiveness? The Queen's Speech, most important problem and the misery index

As Soroka and Wlezien (2005, 668) note, this kind of representation provides a measure of responsiveness in a statistical sense, since it is conceivable that priorities of policy-makers and the public might respond at the same time to exogenous variables that are not included in the model. For example, changes in economic conditions might cause government attention and public opinion to move in tandem over time, generating an appearance of responsiveness that is spurious. To control for this, the annual 'misery index' (i.e. the inflation rate added to the unemployment rate) can be tested as a lagged independent variable ($MISERY_{t-1}$) in each agenda-opinion model. This is insignificant at the 95 per cent confidence level for each of the ten topics, so is dropped from the results reported in Table 2.

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[10]. The long-run multiplier (k_1) can be represented in the form: $k_1 = \dfrac{\beta_3}{\beta_2}$, where β_2 is the error-correction mechanism and β_3 is the long-run effect of the independent variable (where standard errors for the long-run multiplier can be calculated using the Bewley transformation, see Banerjee et al 1993).

For macroeconomic issues (QS1), although the lagged misery index it is not significant itself, its inclusion eliminates statistical significance of the short-run effect of the MIP on the Queen's Speech (see Column 2, Table 4). This suggests economic conditions might still be a factor in agenda-opinion responsiveness for this particular topic. What if some combination of public opinion and economic conditions drive government attention to macroeconomic issues? To consider this, an interaction term was created and included as a short-run and long-run variable in the model, instead of public opinion. The results are striking (see Column 3, Table 4). The short-run and long-run effect of the interaction term is significant at the 99 per cent confidence level. Furthermore, the error-correction term is equal to -1.000, suggesting perfect equilibration. This implies that policy-makers are responsive to objective economic conditions as well as to public opinion, consistent with the extensive literature of economic voting. Nevertheless, it also suggests policy-makers do not respond to prevailing economic conditions in isolation. Agenda-opinion responsiveness for macroeconomic issues is not spurious even though it interacts with exogenous factors.

[insert Table 4 about here]

Agenda-opinion responsiveness and leptokurtosis

The results indicate that policy-making attention does respond in a corrective, and sometimes over-corrective, dynamic to changes in public opinion concerning the most important problem facing the country. That is even though the input (MIP) and output (QS) distributions are drawn from a general distribution of percentage attention change that is leptokurtic (see Table 3). The kurtosis score is positive and equal to 9.259 for the Queen's Speech and 57.843 for the MIP, which suggests public opinion is more punctuated than policy-makers' attention. This non-normal distribution of government and public attention is confirmed by significance of the

Kolmogorov-Smirnov D statistic and the Shapiro-Wilk W statistic, at the 95 per cent confidence level. The long-run multipliers indicate that changes in public opinion have a sustained impact on policy-making attention across a number of topics.

[insert Table 3 about here]

These findings concerning agenda-opinion responsiveness suggest equilibrium dynamics are characterised by negative feedback, despite presence of punctuations in distributions of policy-making and public attention (Table 3). As a result, there might be some doubt concerning the presence of non-linear processes in agenda-opinion dynamics. This might be attributed to the constitutional format of the Queen's Speech, which is subject to little institutional friction in the sense that there are few substantive constraints on changes in its content.[11] However, residuals from the estimated models are indicative of some kind of non-linear process in a few cases. While similar to the positive feedback measured with the leptokurtosis of input and output

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[11]. If a vector error-correction framework is used to model agenda-opinion dynamics as a (closed) endogenous system of variables where there is also feedback from public opinion, the error-correction parameters for the ΔMIP equation are positive for the labour (5) and defence (16) topics. This suggests there might be positive, rather than negative, feedback in this relationship, so the forces of equilibration and stabilization in attention-based dynamics appear to emanate from government not the public. This is confirmed if single equation error-correction models are estimated in the opposite direction, since the error-correction parameter (MIP_{t-1}) is significant at the 95 per cent confidence level for four of the ten topics and the value of each parameter is equal to less than 0.5, indicating that the correction of equilibrium errors is slow. Also, the model residuals are leptokurtic in nine of the ten topics, suggesting that MIP-responsiveness suffers from severe error-accumulation.

distributions, the non-normality of the error-correction model residuals indicates that the series drift apart as the variance fluctuates over time; where the skewness of the residuals suggests the process of equilibration is unbalanced as well as time dependent. This is illustrated in Figure 3 where the estimated residuals for the immigration topic (QS2) become more and more volatile over time. This suggests equilibrating responses of government attention to public opinion become more and more unreliable and volatile as errors accumulate. For territorial issues (QS21) the residuals are more volatile for a period during the 1970s, suggesting there is some drift and disequilibrium in agenda-opinion responsiveness, but that this is corrected over time.

[insert Figure 3 about here]

Discussion

The results presented here are important for a number of theoretical, methodological and empirical reasons. First, long-run congruence of the political agenda and public opinion provides evidence of dynamic attention-based representation in the UK context, adding to findings on issue representation from the US (Baumgartner and Jones 2004) and dynamic representation from the UK (Soroka and Wlezien 2004). The significance of the long-run impact (k_1) of public opinion on government's attention to macroeconomics (QS1), health (QS3), labour and employment (QS5), law and order (QS12), housing (QS14) and defence (QS16) is consistent with established accounts of the particularities of Britain's post-war consensus regarding expansion of the welfare state combined with a more conservative focus upon macroeconomics, defence and law and order (Kavanagh 1987; Kavanagh and Morris 1994; Marquand 1988). In addition, the significance of short-run effects of public opinion on the government's attention to macroeconomic issues ($\Delta MIP1_t$), labour and employment ($\Delta MIP5_t$) and health ($\Delta MIP3_t$) corresponds to those issues subject to the greatest share of public attention over time (i.e. the first, second and third topics ranked in terms of the mean value of MIP). The degree of

attention-responsiveness is also symmetrical to public attentiveness, consistent with theoretical expectations (see Wlezien 2004). The findings for effects of partisan control of government are consistent, in most instances, with the perceived issue ownership of Labour of health, education, housing and employment and the Conservatives of defence and international affairs. The exception is the positive effect of Labour control on policy-making attention to law and order which is observed in the rise of crime on the political agenda since the mid-1990s.

Second, this evidence adds to the growing literature on macro-political responsiveness in the US (e.g. Stimson et al. 1995; Erikson et al. 2002; Wlezien 2004) and elsewhere (e.g. Franklin and Wlezien 1997; Hobolt and Klemmensen 2005; Soroka and Wlezien 2004; 2005; Jennings XXXX), at the same time as showing that attention-based dynamics can exhibit responsiveness to public opinion. The significance of the error-correction parameter (α^{*}_{1}) for each topic confirms the long-run equilibration of attention of successive governments on the principal concerns of British politics since 1960. As such this provides evidence of negative feedback in dynamics of government attention in the UK. In some instances, policy-makers over-react to divergence from the long-run equilibrium. This is observed in values of the error-correction parameter for immigration, health and education that are equal to less than -1, as well as in stochastic fluctuation in content of the Queen's Speech around a longer term trend illustrated in Figure 2.

Third, the leptokurtosis of both the aggregate input and output distributions (see Table 3) suggests that the British public is subject to acute cognitive friction in its attention to the MIP, while government is subject to a degree of cognitive or institutional friction in its formulation of the Queen's Speech. Note that in some instances the kurtosis scores for individual input and output series do not suggest the presence of punctuations in government or public attention.

While the format and political function of the Queen's Speech statement is not subject to formal or restrictive constraints (i.e. institutional friction) it is nonetheless surprising that public responses about the MIP tend to be far more punctuated than policy-making attention. That notwithstanding, the leptokurtosis of the aggregate distributions is consistent with the presence of positive feedback in changes in government and public attention (Jones et al 2003; Jones and Baumgartner 2005a; 2005b).

Fourth, the punctuated distribution (where the kurtosis score is equal to more than 3) of residuals from the estimated error-correction models of agenda-opinion responsiveness for immigration (QS2), health (QS3), housing (QS14), international affairs (QS19), and territorial issues (QS21) suggest that there is an element of drift and error-accumulation in long-run equilibration of government attention in response to public opinion. These do not correspond in all instances to topics where both the input and output series are leptokurtic, though this is the case for the immigration, health, and territorial topics. As such, the error-accumulation processes that are identified here are not interchangeable with punctuations in the source distributions.

These empirical findings reinforce the theoretical difference between the composition of positive feedback diagnosed with the error-correction framework and that implied in the punctuated distribution of political attention. The former is a continuous process, where feedback between public concern about the MIP and content of the Queen's Speech is estimated for the duration of the entire period between 1960 and 2001. The latter is an intermittent process manifested in short episodic bursts of positive feedback. Thus empirical claims about the relative strength of error-correction or error-accumulation are a function of this particular specification and measurement of feedback. The former detects negative or positive

feedback in the long-run parameter of the error-correction model while the latter infers positive feedback from fat tails of non-normal, leptokurtic distributions of government attention and/or public opinion. Moreover, error-correction models refer to a multivariate moving equilibrium whereas punctuated models refer to a univariate movement between multiple equilibrium states. The evidence for the UK is therefore consistent with accounts both of equilibration (Erikson et al 2002; Wlezien 2004) and error-accumulation (Jones and Baumgartner 2005a; 2005b).

Conclusion

This article contends there are both theoretical and empirical reasons to represent the dynamic interrelationship between public opinion and government attention in the form of an error-correction model. The data presented here on ten of the dominant topics of government and public attention in the UK for the period between 1960 and 2001 provides a test of attention-based macro-responsiveness: that is, the effect of public opinion concerning the most important problem facing the country (the MIP) on British government's attention to specific issues in the legislative agenda it sets out in the Queen's Speech. There is evidence of responsiveness of political attention in the UK: short run effects of public opinion for the macroeconomics, health, and labour and employment topics and sustained long-run effects (as estimated from the long-run multiplier) for macroeconomics, health, labour and employment, education, law and order, housing and defence. While the long-run equilibration of political attention is observable from significance of the error-correction parameters, there is evidence of drift and disequilibria in leptokurtic distribution of the estimated residuals for immigration, health, housing, international affairs and territorial issues where the errors accumulate and are absorbed into the long-run equilibrium. These counter-opposed forces of equilibrium and disequilibrium are not perfectly symmetrical according to topic since the error-correction parameters remain significant even when the residuals are punctuated and therefore reveal drift in the long-run equilibrium. At

the same time, leptokurtosis of aggregate input (public opinion) and output (government attention) distributions suggests the presence of positive feedback due to extreme disturbances in the fat tails.

These findings demonstrate how negative and positive feedback, and equilibrium and disequilibrium, are relevant, coexistent and important characteristics of the relationship between public opinion and government attention in a modern democracy. While institutional characteristics of the parliamentary system in the UK might be expected to generate some differences in responsiveness to public opinion as well as punctuations of attention in comparison with other political systems, extant research suggests that both macro-punctuations and macro-responsiveness are a matter of degree (see Baumgartner et al 2006; Breunig 2006; Soroka and Wlezien 2004; 2005), rather than direction.

Models and methodologies that incorporate equilibrium and disequilibrium are ideal for the analysis of attention-based political responsiveness. The error-correction framework is appropriate for modelling feedback and equilibrium relationships in stationary as well as nonstationary data (Banerjee et al 1993; Davidson and MacKinnon 1993; De Boef and Keele 2008). This model specification enables investigation of short-run and long-run effects and measures negative or positive feedback through the value of the error-correction parameter. It draws further inferences of negative or positive feedback from leptokurtosis of the aggregate input and output distributions, as well as from the model residuals. For the aggregate distributions, negative feedback processes are exhibited in incrementalism in a tall slender peak while positive feedback processes are observed in punctuations in the fat tails. For model residuals, drift and disequilibrium are manifested in accumulation of errors as responses of government or the public become volatile at particular points in time. The combination of an

error-correction framework with tests for leptokurtosis enables diagnosis of different forms of positive feedback, providing a sophisticated theorisation of sources of both equilibration and punctuations in macro-political models. This provides insight on different feedback processes through which governments adjust in a corrective fashion to short-run or long-run movements in public opinion or otherwise lurch between different equilibrium points as errors accumulate as a result of institutional or cognitive friction.

This model specification provides new insights on distinctive implications of accounts of macro-responsiveness and macro-punctuations that have to date tended to operate in separate spheres. While punctuated equilibrium in government attention and public opinion might, at first, seem at odds with notions of macro-responsiveness and processes of continuous equilibration, the error-correction framework illustrates how both policy-makers' and public attention can coexist in a moving equilibrium, despite the presence of punctuations. The longstanding differences between these models of macro-politics therefore appear to arise because of a number of factors. First, it is plausible that there are empirical differences in the degree of error-accumulation and error-correction for dynamic representation of leftward or rightward shifts in the public mood (e.g. Erikson et al 2002) relative to government allocation of attention (e.g. Jones and Baumgartner 2004; 2005a). This might be attributed to differences in the electoral consequences of effective processing of information signals about public preferences compared with issue attention. Second, these conceive negative and positive feedback in different forms: as a continuous process for models of macro-responsiveness and an intermittent process for the punctuated equilibrium model. This contrast in these accounts of macro-politics might therefore be attributed to the particularities of model specification and empirical measurement. Third, studies of macro-responsiveness consider a multivariate moving equilibrium between government policies and public opinion whereas studies of macro-punctuations consider

univariate movement between multiple (punctuated) equilibrium states. For these reasons, and in light of the empirical evidence presented here, further comparative investigation is required into the degree of responsiveness of political attention in presence of non-normal input and output distributions in contexts outside the US and UK.

References

Arrow, Kenneth J. 1999. "Comments on the Commentaries", in James E. Alt, Margaret Levi and Elinor Ostrom (eds.), *Competition and Cooperation: Conversations with Nobelists about Economics and Political Science*. New York: Russell Sage Foundation.

Banerjee, Anindya, Juan J. Dolado, and John W. Galbraith. 1993. *Integration, Error Correction, and the Econometric Analysis of Non-Stationary Data*. Oxford: Oxford University Press.

Baumgartner, Frank R., Martial Foucault, and Abel François. 2006. "Punctuated Equilibrium in French Budgeting Processes." *Journal of European Public Policy* 13(7): 1082-99.

Baumgartner, Frank R., and Bryan D. Jones. 1991. "Agenda Dynamics and Policy Subsystems." *The Journal of Politics* 53(4): 1044-1074.

Baumgartner, Frank R., and Bryan D. Jones. 1993. *Agendas and Instability in American Politics*. Chicago: University of Chicago Press.

Baumgartner, Frank R., and Bryan D. Jones. 2002. "Positive and Negative Feedback in Politics", in Frank R. Baumgartner and Bryan D. Jones (eds.), *Policy Dynamics*. Chicago: University of Chicago Press.

Breunig, Christian. 2006. "The More Things Change, the More Things Stay the Same: A Comparative Analysis of Budget Punctuations." *Journal of European Public Policy* 13(7): 1069-85.

Burstein, Paul. 1998. "Bringing the Public Back In: Should Sociologists Consider the Impact of Public Opinion on Public Policy?" *Social Forces* 77(1): 27-62.

Clarke, Harold D., Karl Ho, and Marianne C. Stewart. 2000. "Major's Lesser (Not Minor) Effects: Prime Minister Approval and Governing Party Support in Britain since 1979." *Electoral Studies* 19(1): 255-73.

Clarke, Harold D. and Marianne C. Stewart. 1995. "Economic Evaluations, Prime Ministerial Approval and Governing Party Support: Rival Models Reconsidered." *British Journal of Political Science* 25(2): 145-170.

Clarke, Harold D., Marianne C. Stewart, and Paul F. Whiteley, 1998. "New Models for New Labour: The Political Economy of Labour Party Support, January 1992-April, 1997." *American Political Science Review* 92: 559-75.

Cohen, Jeffrey E. 1997. *Presidential Responsiveness and Public Policy-Making: The Publics and the Policies that Presidents Choose.* Ann Arbor: University of Michigan Press.

Davidson, James E. H., David F. Hendry, Frank Srba, and Stephen Yeo. 1978. "Econometric modelling of the aggregate time-series relationship between consumers' expenditure and income in the United Kingdom." *Economic Journal* 88(352): 661-692.

Davidson, Russell and MacKinnon, James G. 1993. *Estimation and Inference in Econometrics.* Oxford: Oxford University Press.

De Boef, Suzanna, and Jim Granato. 1997. "Near integrated data and the analysis of political relationships." *American Journal of Political Science* 41(2): 619-40.

De Boef, Suzanna, and Jim Granato. 1999. "Testing for Cointegrating Relationships with Near-Integrated Data." *Political Analysis* 8(1): 99-117.

De Boef, Suzanna and Luke Keele. 2008. "Taking Time Seriously." *American Journal of Political Science* 52(1): 184-200.

Downs, Anthony. 1972. "Up and Down with Ecology: The Issue-Attention Cycle." *The Public Interest* 28: 38-50.

Durr, Robert H. 1993. "What Moves Policy Sentiment?" *American Political Science Review* 87(1): 158-70.

Elliott, Graham, Thomas J. Rothenberg and James H. Stock. 1998. "Efficient Tests for an Autoregressive Unit Root." *Econometrica* 64(4): 813-836.

Engle, Robert F., and Clive W.J. Granger. 1987. "Co-integration and error correction: representation, estimation and testing." *Econometrica* 55(2): 251-276.

Erikson, Robert S., Michael B. MacKuen and James A. Stimson. 2002. *The Macro Polity*. Cambridge: Cambridge University Press.

Fiorina, Morris P. 1981. *Retrospective Voting in American National Elections*. New Haven: Yale University Press.

Franklin, Mark, and Christopher Wlezien. 1997. "The Responsive Public: Issue Salience, Policy Change, and Preferences for European Unification." *Journal of Theoretical Politics* 9(3): 247-263.

Gallup. 1959-2001. *Gallup Political and Economic Index*. London: Gallup Organization.

Granger, Clive W.J., and Paul Newbold. 1974. "Spurious regressions in econometrics." *Journal of Econometrics* 2(2): 111-120.

Hobolt, Sara B., and Robert Klemmensen. 2005. "Responsive Government? Public Opinion and Government Policy Preferences in Britain and Denmark." *Political Studies* 53(2): 379-402.

Jennings, Will. XXXX. "The Public Thermostat, Political Responsiveness and Error-Correction: Border Control and Asylum in Britain, 1994-2007." *British Journal of Political Science* XX(X): XXX-XXX.

John, Peter, and Helen Margetts. 2003. "Policy punctuations in the UK: fluctuations and equilibria in central government expenditure since 1951." *Public Administration* 81(3): 411-432.

Jones, Bryan D. 1994. *Reconceiving Decision-making in Democratic Politics: Attention, Choice, and Public Policy*. Chicago: University of Chicago Press.

Jones, Bryan D., and Frank R. Baumgartner. 2004. "Representation and Agenda Setting." *Policy Studies Journal* 32(1): 1-24.

Jones, Bryan D., and Frank R. Baumgartner. 2005a. *The Politics of Attention: How Government Prioritizes Problems*. Chicago: University of Chicago Press.

Jones, Bryan D., and Frank R. Baumgartner. 2005b. "A Model of Choice for Public Policy." *Journal of Public Administration Research and Theory* 15(3): 325-351.

Jones, Bryan D., Tracy Sulkin and Heather A. Larsen. 2003. "Policy Punctuations in American Political Institutions." *American Political Science Review* 97(1): 151-169.

Kavanagh, Dennis. 1987. *Thatcherism and British Politics: The End of Consensus?* Oxford: Oxford University Press

Kavanagh, Dennis, and Peter Morris. 1994. *Consensus Politics from Attlee to Major*. Oxford: Basil Blackwell.

Keele, Luke. 2007. "Social Capital and the Dynamics of Trust in Government." *American Journal of Political Science* 51(2): 241-254.

King, Anthony, and Robert Wybrow. 2001. *British Political Opinion 1937-2000*. London: Politicos.

Kingdon, John. 1995. *Agendas, Alternatives and Public Policies*. New York: HarperCollins.

Lijphart, Arend. 1984. *Democracies: Patterns of Majoritarian and Consensus Government*. New Haven: Yale University Press.

MacDonald, Michael D., and Ian Budge. 2005. *Elections, Parties, Democracy*. Oxford: Oxford University Press.

MacKuen, Michael B., and Steven L. Coombs. 1981. *More Than News: Media Power in Public Affairs*. Beverly Hills, Sage Publications.

Manza, Jeff, and Fay Lomax Cook. 2002. "Policy Responsiveness to Public Opinion: The State of the Debate". In Jeff Manza, Fay Lomax Cook and Benjamin Page (eds.). *Navigating Public Opinion: Polls, Policy, and the Future of American Democracy*. Oxford: Oxford University Press.

Marquand, David. 1988. *The Unprincipled Society: new demands and old politics*. London: Cape.

McCombs, Maxwell E., and Donald L. Shaw. 1972. "The Agenda-Setting Function of Mass Media." *Public Opinion Quarterly* 36(2): 176-187.

Samuelson, Paul A. 1941. "The Stability of Equilibrium: Comparative Statics and Dynamics." *Econometrica* 9(2): 97-120.

Schattschneider, Elmer E. 1960. *The Semi-Sovereign People: A Realist's View of Democracy in America.* New York: Holt, Rinehart and Winston.

Bara, Judith. 2005. "A Question of Trust: Implementing Party Manifestos." *Parliamentary Affairs* 58(3): 585-599.

Soroka, Stuart N., and Christopher Wlezien. 2004. "Opinion Representation and Policy Feedback: Canada in Comparative Perspective." *Canadian Journal of Political Science* 37(3): 331-59.

Soroka, Stuart N., and Christopher Wlezien. 2005. "Opinion-Policy Dynamics: Public Preferences and Public Expenditure in the United Kingdom." *British Journal of Political Science* 35(4): 665-689.

Stimson, James A. 1991. *Public Opinion in America.* Boulder: Westview.

Stimson, James A., Michael B. MacKuen and Robert S. Erikson. 1995. "Dynamic Representation." *American Political Science Review* 89(3): 543-565.

True, James L., Bryan D. Jones and Frank R. Baumgartner. 2007. "Punctuated-Equilibrium Theory: Explaining Stability and Change in American Policymaking", in Paul Sabatier (ed.) *Theories of the Policy Process* (2nd edition). Boulder: Westview Press.

Wlezien, Christopher. 1995. "The Public as Thermostat: Dynamics of Preferences for Spending." *American Journal of Political Science* 39(4): 981-1000.

Wlezien, Christopher. 1996. "Dynamics of Representation: The Case of U.S. Spending on Defense." *British Journal of Political Science* 26(1): 81-103.

Wlezien, Christopher. 2004. "Patterns of Representation: Dynamics of Public Preferences and

Policy." *The Journal of Politics* 66(1): 1-24.

Wlezien, Christopher. 2005. "On the salience of political issues: The problem with 'most

important problem'." *Electoral Studies* 24(4): 555-79.

TABLES AND FIGURES

Table 1. Policy Agendas major topic codes (UK)

1. Macroeconomics	13. Social Welfare
2. Civil Rights, Immigration & Civil Liberties	14. Community Development & Housing Issues
3. Health	15. Banking, Finance & Domestic Commerce
4. Agriculture	16. Defence
5. Labour & Employment	17. Space, Science, Technology & Communications
6. Education	18. Foreign Trade
7. Environment	19. International Affairs & Foreign Aid
8. Energy	20. Government Operations
10. Transportation	21. Public Lands & Water Management (Territorial Issues)
12. Law, Crime, and Family Issues	

Table 2. Single equation error-correction models of agenda-opinion responsiveness, 1960-2001

	ΔQS 1	ΔQS 2	ΔQS 3	ΔQS 5	ΔQS 6	ΔQS 12	ΔQS 14	ΔQS 16	ΔQS 19	ΔQS 21
Short-run effects: ΔMIP_t	9.218†	0.074	11.720*	8.813†	-4.088	-4.229	11.256	33.724	-9.703	-2.794
	(4.826)	(21.898)	(4.807)	(5.190)	(20.699)	(23.784)	(13.366)	(25.774)	(22.352)	(19.181)
Long-run effects: MIP_{t-1}	8.142**	-0.082	9.143**	7.313	55.690***	47.518**	14.621	21.710*	-25.847	-5.206
	(2.741)	(12.447)	(2.718)	(4.520)	(15.260)	(13.968)	(8.229)	(8.477)	(18.586)	(13.398)
Long-run effects (ECM): QS_{t-1}	-0.884***	-1.113***	-1.165***	-0.824***	-1.131***	-0.835***	-0.954***	-0.740***	-0.687***	-0.750***
	(0.174)	(0.169)	(0.148)	(0.155)	(0.151)	(0.138)	(0.166)	(0.150)	(0.162)	(0.167)
Partisan control of government: $PARTY_t$ (Con=0, Lab=1)	3.500**	1.936*	1.449***	1.281*	0.054	1.649*	1.153†	-1.426†	-2.138	-0.441
	(1.175)	(0.818)	(0.391)	(0.510)	(0.724)	(0.678)	(0.619)	(0.730)	(1.682)	(0.800)
Constant	1.538	1.579**	0.947**	1.325*	2.239***	2.471**	1.013*	4.584***	15.042***	5.685***
	(1.414)	(0.527)	(0.287)	(0.513)	(0.591)	(0.747)	(0.494)	(1.054)	(3.814)	(1.362)
Adjusted R^2	0.355	0.539	0.663	0.414	0.570	0.474	0.423	0.383	0.259	0.304
Serial correlation										
Durbin Watson d-statistic	2.006	2.133	1.968	2.098	2.121	1.885	2.102	2.170	2.135	2.048
Breusch-Godfrey χ^2 (1)	0.017	4.154*	0.065	0.929	0.854	0.242	2.024	1.941	1.375	1.541
Heteroscedasticity										
ARCH χ^2 (1)	2.683	0.000	0.370	0.786	4.154*	0.832	0.355	1.434	1.020	0.404
Normality										
Skewness/Kurtosis χ^2	2.61	27.26***	7.54*	2.38	1.70	3.52	7.12*	1.10	4.73	8.63*
Kurtosis	2.298	11.102	3.648	2.227	2.322	2.439	3.728	2.584	3.258	4.193
Long-run multiplier: total effect of MIP on QS (k_1)	9.210***	-0.073	7.848***	8.875†	49.250***	56.910***	15.319†	29.353*	-37.624	-6.941
	(2.445)	(11.180)	(2.021)	(4.976)	(12.552)	(15.423)	(8.345)	(11.732)	(25.083)	(18.006)
Mean MIP (1961-2000)	0.513	0.023	0.063	0.078	0.029	0.026	0.042	0.028	0.054	0.020
	(0.229)	(0.029)	(0.085)	(0.067)	(0.026)	(0.027)	(0.036)	(0.052)	(0.053)	(0.031)

* p ≤ .05, ** p ≤ .01, *** p ≤ .001, N=41, Start=1960, End=2001 † p ≤ 0.10

Table 3. Tests of normality for the percentage change in attention based on raw data

	Queen's Speech, frequencies (1960-2001)	Most Important Problem, percentages (1960-2001)
Kurtosis	9.259	57.843
Skewness	2.021	5.303
Kolmogorov-Smirnov D statistic	0.189***	0.182***
Shapiro-Wilk W statistic	0.851***	0.682***
N	659	393

Note: changes from 0 to 0 attention are dropped in order to avoid systematic bias in favour of non-normal distributions.

Table 4. Single equation error-correction models of macroeconomic-opinion responsiveness and the misery index, 1960-2001

	Δ**QS** 1	Δ**QS** 1	Δ**QS** 1
Short-run effects: ΔMIP_t	9.218† (4.826)	7.108 (5.190)	-
Long-run effects: MIP_{t-1}	8.142** (2.741)	4.733 (4.160)	-
Long-run effects (ECM): QS_{t-1}	-0.884*** (0.174)	-0.934*** (0.179)	-1.000*** (0.173)
Partisan control of government: $PARTY_t$ (Con=0, Lab=1)	3.500** (1.175)	3.328** (1.182)	3.252** (1.003)
Misery Index$_{t-1}$	-	0.158 (0.145)	-
Short-run effects: $\Delta MIP*$Misery Index$_t$	-	-	0.439** (0.153)
Long-run effects: $MIP*$Misery Index $_{t-1}$	-	-	0.380*** (0.103)
Constant	1.538 (1.414)	1.751 (1.424)	3.863 (1.050)
Adjusted R^2	0.355	0.358	0.438
Durbin Watson d-statistic	2.006	1.972	2.032
Breusch-Godfrey χ^2 (1)	0.017	0.001	0.353
ARCH χ^2 (1)	2.683	4.234*	3.874*
Skewness/Kurtosis χ^2	2.61	2.94	4.80
Kurtosis	2.298	2.188	1.962
Long-run multiplier: total effect of MIP or MIP*Misery Index on QS (k_1)	9.210*** (2.445)	5.068 (4.366)	0.380*** (0.075)

* p $\leq$ .05, ** p $\leq$ .01, *** p $\leq$ .001, N=41, Start=1960, End=2001   † p $\leq$ 0.10

Figure 1. Graphical illustration of the dynamic effect of different ECM parameters
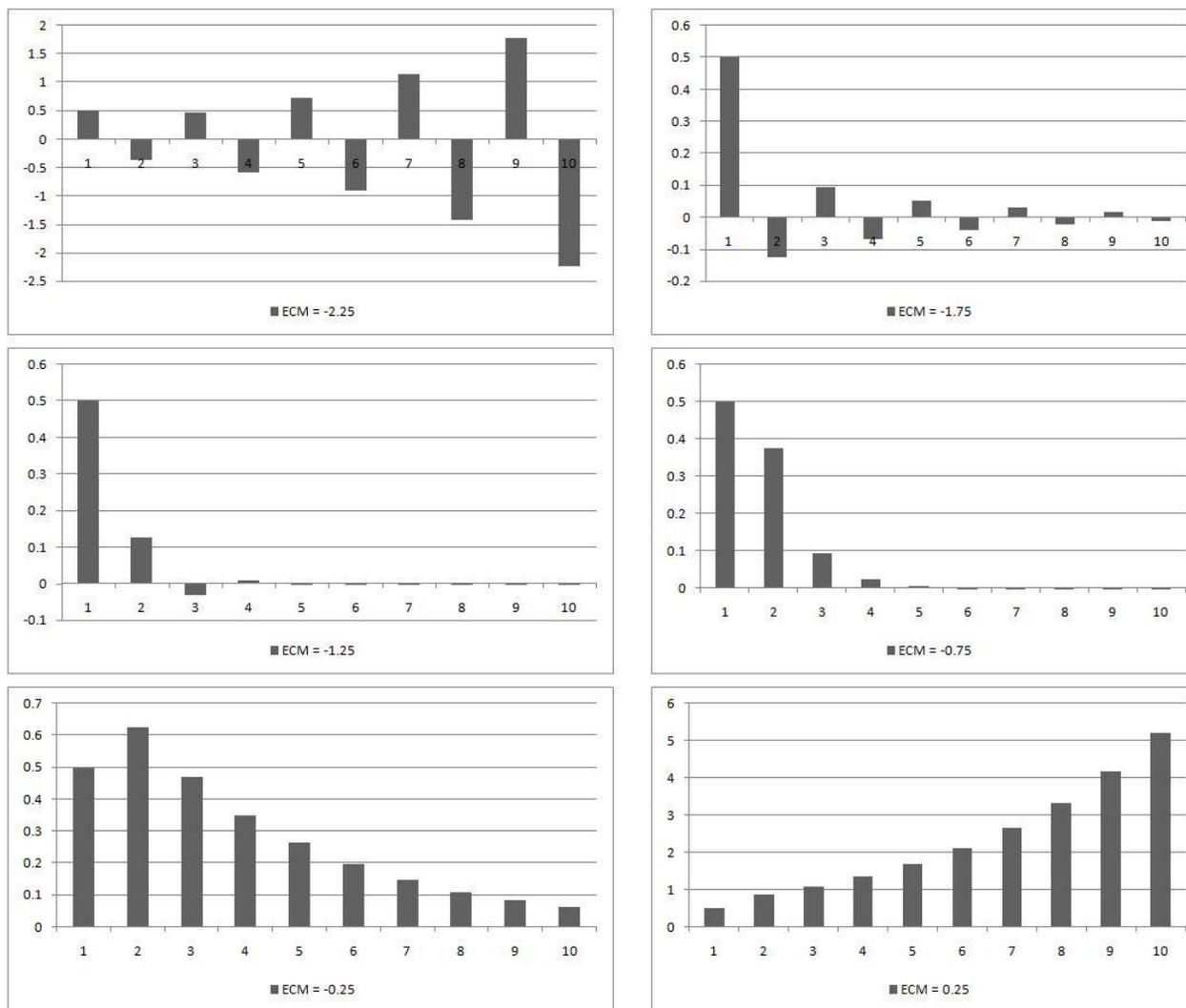
Note: the simulation is generated for an autoregressive distributed lag (ADL) model, $Y_t = \alpha_0 + \alpha_1 Y_{t-1} + \beta_0 X_t + \beta_1 X_{t-1} + \varepsilon_t$ (following De Boef and Keele 2008), that is derived from an ECM, $\Delta Y_t = \alpha_0^* + \alpha_1^* Y_{t-1} + \beta_0^* \Delta X_t + \beta_1^* X_{t-1} + \varepsilon_t$, where $\beta_0^* = 0.5$ and $\beta_1^* = 0.25$ (where the Bardsen transformation proves that $\beta_0^* = \beta_0, \beta_1^* = \beta_0 + \beta_1, \alpha_1^* = 1 - \alpha_1$).

Figure 2. Attention to topics: MIP (%) and Queen's Speeches (frequencies), 1960-2001

Figure 3. Residuals from error-correction models of agenda-opinion responsiveness, 1960-2001.