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How the Mechanism of Dynamic Representation Affects Policy Change and Stability

Abstract: In politics, we often observe stasis when, at first sight, no reason exists for such policy blockades. In contrast, we sometimes see policy change when one would expect blockades resulting from veto points or countervailing majorities. How can we explain these contradictory results concerning policy stability? In order to solve this theoretical puzzle, we develop an agent-based model (ABM). We combine established models of veto player theory (Tsebelis 2002; Ganghof-Bräuninger 2006) with the findings of political sociology and party competition. By aggregating previous party-level findings, we show that dynamic representation (Stimson et al. 1995) provides an additional mechanism that can explain these macro-level outcomes. Parties behaving responsively to their electorate do not automatically guarantee perfect responsivity on the party system level. Further, if opposition parties also fear punishment by the electorate for government inaction, the opposition behaves more accommodatingly than previous approaches have predicted.

1. Introduction

In politics, we often observe stasis when, at first sight, no reason exists for such policy blockades. The reverse is also observed; we sometimes see policy change when one would expect blockades resulting from veto points or countervailing majorities. In this article, we demonstrate how a mechanism-based approach can make use of an agent-based model (ABM) in order to explain these outcomes. We combine the situational logic of Veto Player theory (VP) (Tsebelis 2002) with the action-formation mechanism of dynamic representation (Stimson et al. 1995) in order to show how the transformational mechanism of influence (Coleman 1963) leads to these outcomes in multi-party democracies. Neo-institutional approaches in the tradition of Tsebelis' (2002) VP focus on institutions and the outcomes thus generated. However, VP theory does not take into account questions of voter representation and competition dynamics. This is the domain of political sociology and the empirical study of democracies. In our article, we show how the ideas and insights of neo-institutional VP theory can be combined with the ideas of political sociology in order to assess the mechanisms of representative democracies. In addition to previous VP model extensions (e.g., Ganghof/Bräuninger 2006) we do not remain on the meso-level. Utilizing a simulation approach, we add an aggregation process to the model and examine

how the mechanism of dynamic representation on the party level affects policy change on the system level. Real-world examples can illustrate the relevance of our research efforts. In September 2014, the German Green Party would have been able to veto the government's reform of the asylum law in the *Bundesrat*, the German upper chamber.[1] Although the Green Party Executive Committee had decided not to support the government, Winfried Kretschmann, the Green Minister-President of Baden-Württemberg, opted to vote for the new asylum law. Consequently, Kretschmann was accused of being a traitor to 'Green' interests and core issues (SPON, September 19, 2014). Even more spectacularly, in 2010 the German constitutional court forced the federal government to reform the social benefits system. However, the ruling government of Christian Democrats and Liberals was not able to find a compromise. The opposing Social Democrats held the majority in the *Bundesrat*. In 2011, finally, the opposing Social Democrats solved the government blockade by finding a compromise with the Christian Democrats in the Bundesrat. The ruling government later adopted this compromise in the first chamber (SPON, February 17, 2011). In this case, the opposition did not blockade and blame but even consciously helped the government! In July 2000, Social Democratic chancellor Gerhard Schröder found support in the Bundesrat for his fiscal reform plans. The Christian Democrats were in opposition at the federal level but led a majority of the sub-state *Länder* governments. Consequently, the Christian Democrats (CDU/CSU) dominated the *Bundesrat*. No one expected that Schröder would find a majority. Nevertheless, in the end, even three states governed by Christian Democrats voted for the tax reform bill, and it passed the *Bundesrat* (Welt, July 15, 2000).

Only a few years earlier, Germany had witnessed quite the opposite, namely 'stasis', which was called "*Reformstau*" during the 1990s. The long-term government, led by Helmut Kohl, was not confronted with any countervailing majority until 1997. However, the governing coalition of Christian Democrats and Liberals was unable to reform German society. In 1998, the coalition was finally defeated at the polls, and the *Reformstau* dissipated under the new coalition of Social Democrats and Greens led by Schröder (Zohlnhöfer 2004). Another example is present-day France. Despite a 2002 constitutional reform meant to harmonize the electoral cycles of the president and the parliament in order to avoid countervailing majorities and cohabitation, stasis remains. Neither the Sarkozy government (e.g. *The Guardian*, January 15, 2012) nor the Hollande government (e.g. *The Economist*, June 20, 2015) was able to conduct substantial reforms in order to reduce the budget deficit or to increase economic growth.

In explaining policy change when stability is expected, Ganghof and Bräuninger (2006) present an improved VP model, arguing that a combination of policy- and vote-seeking motives is responsible. However, we still lack an explanation for why stasis occurs when responsive parties should react to the electorate's demands and, at first sight, no institutional blockade can be observed. We argue

[1] Of course, in a narrow judicial sense, the German *Bundesrat* is not an upper chamber because it is representing sub-state governments. However, for explaining the systematic impacts of legislative veto points it is sufficiently comparable to other upper chambers in the world. For reasons of simplicity we will retain this terminology.

that "dynamic representation" (Stimson et al. 1995)—which is, concisely, parties' anticipation of voters' reactions—provides a common mechanism for generating contradictory outcomes. Our ABM includes the Ganghof and Bräuninger model as a specific, context-dependent outcome. We extend their explicit action-formation mechanism as well as a transformational mechanism. Decisive for policy change is the willingness to compromise across the relevant parties. This willingness increases the more parties do not stick to a single goal, but instead pursue multiple goals. This willingness is driven by the electorate's favor or punishment of governmental and opposition parties' courses of action. Consequently, our ABM detects the mechanism at the input side of the political process.

The article proceeds as follows. In the next section, we first describe the currently accepted means of explaining policy stability and change. Then, based on our mechanism-based approach, we integrate various threads into one theoretical model. In section five, we present this model and its implications. Since we generate about 80,000 repetitions, we rely on random parameterization. In order to inspect four-way interaction on the macro-level, in addition to standard test statistics we also use the consistency measurement offered by the Qualitative Comparative Analysis (QCA) framework (Ragin 2006). The combination of ordinary least squares regression (OLS) and QCA enables us to completely analyze the macro-micro-macro-relationships the model generates. While the OLS focus on macro-micro-micro-relations, with QCA we climb at the end from the micro- to the macro-level. In section five, we also apply the model-generated hypotheses to real-world politics. We show that the blockading effect of countervailing majorities is negated by parties' combinations of policy- and vote-seeking strategies and voters' evaluation of (missing) legislative outputs. Therefore, the assumption that a blockade is caused by veto player constellations depends highly on reduced heuristics and static model assumptions. Coalition partners might obstruct each other for the same reason, even in cases where no official veto player is taken into account. Our results are of interest for scholars of party competition, political institutions, and general mechanism-based approaches in the social sciences.

2. Explaining Policy Stability and Policy Change: The Mechanism of Relative Gain

In this section, we discuss the current state of the literature concerning policy stability and flexibility and its relation to modes of party responsivity. Starting from Tsebelis' famous veto player framework, we argue that it provides a situational logic but not a real action-formation mechanism. Such an action-formation mechanism was developed by Ganghof and Bräuniger (2006). They argue that parties have to consider both policy- and vote-seeking goals. Parties do not simply maximize only their own utility. They value relative gains compared to their competitor. Calculating this relative gain is the decisive action-formation mechanism in the Ganghof-Bräuninger model. However, we show that this approach can only explain a fraction of real-world phenomena. Hence, in section three we

will add the mechanism of dynamic representation to the Ganghof-Bräuninger model.

Micro-foundations of political party behavior are commonly based on the triad of policy-, office-, and vote-seeking (Strøm 1990). Although political parties face trade-offs between these three goals, studies combining these aims are rare. In the tradition of Anthony Downs' economic theory of democracy (1957), most studies concentrate on vote-seeking aspects. Parties are analyzed as though their only goal is to maximize votes. Downs assumes that voters act rationally by voting for the party producing the highest utility for them and that parties consider this rational voting calculus in their vote-seeking strategies. To explain policy stability and policy flexibility, currently the most popular approach is Tsebelis' (1999) veto player theory. Its merit is in analyzing the varying impacts of institutional context on party behavior (Tsebelis 1999, 591). The basic proposition is that parties are exclusive policy-seekers (Tsebelis 2002). Here, the core hypotheses are that both the number of veto players and the ideological distance between these actors increases policy stability (Tsebelis 1999, 592). A veto player potentially exists where a veto point exists. The existence of a veto point is a necessary but not a sufficient condition to function as a veto player (Kaiser 1997). Different veto points set different incentives for seeking the three above-mentioned policy goals (Franzmann 2011, 336–338). Therefore, the veto point approach provides us with a situational logic of institutional incentives for actor behavior. Tsebelis' veto player approach combines this logic with the policy-seeking logic of actor behavior. Nevertheless, it neglects other party goals. Thus, veto player theory cannot explain why and when a particular veto point is used for vetoing. Based on the exclusive policy-seeker assumption, this approach provides no answer to the discussed real-world puzzles. Neither the German tax reform in 2000 nor the social benefits reform in 2011 nor the German asylum reform in 2014 would have been predicted by veto-player models. We owe to Ganghof and Bräuniger (2006) an extension of Tsebelis' model that can at least explain the German tax reform in 2000. Reconsidering vote-seeking strategies by modeling a 'sacrifice ratio' as a trade-off between policy and vote-seeking, Ganghof and Bräuninger's (2006, 525) basic assumption is that voters evaluate government and opposition parties differently. Governing parties are seen as responsible for political action, but opposition parties are not. Applied to German politics, they show elsewhere (Bräuninger/Ganghof 2005) that potential blockades in the German political system do not primarily come from an opposition majority in the Bundesrat but from non-accommodative behavior on the part of the governing coalition. A second major innovation of the Ganghof-Bräuninger model is the introduction of an action-formation mechanism. This mechanism we would like to label as 'the mechanism of relative gain'. The absolute utility is not decisive for actors' behaviors within party competition. Parties maximize their utility in relation to the gains of their competitors. Although a massive improvement on veto-player arguments, and introducing an action-formation mechanism, this model neglects detailed aspects of electoral competition. Because electoral competition is the major pillar of representative democracy, including its dynamics will give us deeper insight into the mechanism

of political actors' behaviors and their outcomes. Due to its original purpose, the Ganghof-Bräuninger model has not integrated the ideas of political sociology and party responsivity. That is not a shortcoming of the Ganghof-Bräuninger model, but a different focus, solely on the meso-level of actors' behavior. For our research question, we aim to provide a more general framework that reconsiders the full dynamics of political competition.

Therefore, we also rely on the action-theory of parties faced with the trade-off between policy-seeking and vote-seeking. For the sake of simplicity, we refrain from including office-seeking due to the model's complexity, but we add voters' calculus, following a rationalist approach in the tradition of Downs, in order to cover the full dynamic of electoral competition. As an impact on the institutional level, we focus on bicameralism. Bicameralism means that the parliament is divided into two chambers. The first chamber is the one directly elected to the federal government, while the second chamber represents the regional or state level. When the same party holds the majority in both chambers, veto-player theory assumes that the governing party or coalition can fulfill its ideal policies. In the following section, we will show that the addition of the mechanism of dynamic representation (Stimson et al. 1995) to the model enables us to inspect the full dynamics across the macro-, meso-, and micro-level. One might argue that Lijphart's approach is suitable to answer our responsivity-related research question. It is not, for at least two reasons. First, Lijphart's analysis is concentrated on the aggregate level. It does not consider dynamics evoked by the electorate. Second, Ganghof (2005) criticizes Lijphart for mixing institutional and behavioral variables. Thus, one is not able to differentiate whether the institutions or the party behavior caused the different outcomes. Consequently, Lijphart's idea underpinning his patterns of democracy is unable to explain institutionally structured outcomes. Its strength lies rather in the predictive power of the behavioral parties-and-executives dimension, but due to a lack of a micro-foundation, it cannot explain this contradictory outcome between the two dimensions. Taken together, Lijphart's approach is not suitable to detect and analyze different kinds of mechanisms.

3. Dynamic Representation as an Action-Formation Mechanism

In the previous section, we showed that the Ganghof-Bräuninger approach is suitable to fruitfully combine the logic of veto-points with an action-formation mechanism. For a more generalized approach to explaining policy stability, the dynamics of party competition should be integrated into the theoretical considerations. In this section, we argue that, by adding the mechanism of dynamic representation (Stimons et al. 1995), we are able to analyze the causal mechanism on the macro-, meso-, and micro-level. Combining Stimson's ideas, developed for two-party systems, with Ganghof-Bräuninger's multi-party competition model, we are able to precisely identify the transformational mechanism of influence leading to the macro outcome of policy stasis or policy change.

Democratic party competition can be understood as providing an institutional framework that structures parties' behavior, leading them either to contest or to cooperate: "Party competition is an institution in which parties strategically cooperate or contest as political actors to gain political power." (Franzmann 2011, 320) Parties offer policies in order to get votes and, in the end, political power (Downs 1957). Of course, parties are neither individuals nor do they act as unified persons. Social mechanisms consist of entities bringing about change (Hedström/Ylikoski 2010). For modeling purposes, we interpret parties as such entities representing members' cumulative desires, beliefs, and opportunities. Therefore, we transfer the desires, beliefs, and opportunities framework (Hedström 2005) to the realm of politics. At a basic level, parties have to decide whether to cooperate with or contest their competitors. For example, coalitions can be seen as a result of cooperative behavior between competitors. Democratic political systems provide institutional veto points that further shape the strategies of political actors (Kaiser 1997, 436). A strong second chamber included during the legislative process establishes a third type of interaction beyond cooperation and contest—negotiation (Kaiser 1997). Strong bicameralism and a strong second chamber are built on asymmetric competencies as compared to the first chamber (Lijphart 2012, 192–203). A symmetrical second chamber with the same competencies and modes of selection would simply double the standard interaction patterns of cooperation and contest. However, asymmetric competencies lead to differing goals between the members of the two chambers. Due to conflicts of interest, negotiators have to first find a common denominator regarding what to compromise. Thus, the willingness to compromise is decisive for policy change in the case of strong bicameralism. While Tsebelis expects a small or even empty winset and hence stasis when both chambers are differing in their ideologies, Ganghof and Bräuninger show that the government holding the majority in the first chamber should show accommodative behavior but the opposition should not. The choice of whether to take the opportunity to cooperate, contest, or negotiate is driven by the parties' desires—namely vote-seeking and policy-seeking. This is due to the logic of a bicameral veto point combined with the action-formation mechanism of relative gain as described above.

In democratic competition, an important third actor is involved beyond political parties: the electorate. The central idea of party democracy is that parties behave responsively to the electorate's preferences (Powell 2013). Responsivity is not a static but a dynamic process; voters react to policy change and permanently modify their judgments of the course of government (Stimson et al. 1995, 544). Parties anticipate voters' reactions to the course of government to achieve their goals. That is what Stimson et al. (1995) termed "the mechanism of dynamic representation". When a governing party reconsiders public opinion shifts in their course of action, this rational anticipation will drive policy in order to avoid an electoral loss in the next election (Stimson et al. 1995, 545). Consequently, when a governing party fears an electoral defeat in the election, its willingness to cooperate should increase. Since Stimson et al. (1995) only analyze the US two-party system, actors' decisions are transformed straightforwardly on the aggregate level. The two parties strategically influence each

other. However, as we are interested in a multi-party system, we expect a more complicated transformational mechanism. According to Coleman (1963), this transformational mechanism of influence relies either on trust or on sanctions. Influence evoked by trust relies on the cooperation of the different parties. The government and the opposition might cooperate, anticipating otherwise being punished by the electorate. Influence evoked by sanctions relies, on the one hand, on direct veto effects. This is the realm of veto player theory and its extension by Ganghof-Bräuninger. Dynamic representation, finally, links influence to indirect sanction effects. Not the institutional veto, but the anticipation of voters' and competitors' future evaluations of politics are decisive. The sanction lies in the public opinion shift and the threat of being punished in the next election. We combine the Ganghof-Bräuninger mechanism of relative gains with the mechanism of dynamic representation to create a single action-formation mechanism.

In a strict sense, the Ganghof-Bräuninger model concentrates on a meso-explanation of accommodative behavior. It does not add an entire micro-foundation because no voter calculus is specifically examined. Instead, it models parties to work with a rule of thumb expressed in the sacrifice ratio. Further, it is not devoted to analyzing the dynamic of democratic party competition. However, party democracy models without an explicitly modeled electoral contestation can be regarded as overly reductive because of the absence of what is likely the most important factor. As we are interested in the mechanisms of party responsiveness, we combine the model assumptions of Ganghof-Bräuninger with ideas coming from political sociology and integrate them into an ABM. We share with Ganghof and Bräuninger (2006, 523) the assumption that governing parties are viewed as primarily responsible for policy change. Thus, voters evaluate government action in two ways: whether change occurs, and whether the change is, in the view of the particular voter, an improvement on the status quo. As an extension, we include the possibility that the electorate also holds the opposition responsible for government action due to institutional settings, such as in Germany, where the opposition is represented in the second chamber sub-state governments and thus also participates in the federal legislative process.

Because government evaluation cuts through ideological links, we expect parties confronted with an electorate interested more in policy outcomes than in promoting ideal policies to accommodate, leading to a higher policy-change rate at the system level. Contrary to Ganghof and Bräuninger, our model does not determine the opposition party's course of action. We are interested in determining the circumstances in which opposition parties are willing to compromise and when not. In addition, we assume that dynamic representation regarding the governing parties does not deterministically lead to accommodative behavior. Again, we are interested in determining which particular circumstances increase accommodative behavior and when the same mechanism might provoke policy stasis.

Modeling this complexity mathematically, starting from the micro level up to the macro level, leads to an equation system that one cannot solve analytically. In contrast, agent-based modeling provides an approach that allows us to model

nested actors in complex environments and to thus explain macro-level outcomes based on actors' behavior, even though complexity increases (Gilbert 2008). Furthermore, agent-based models (ABMs) of party competition have undergone impressive progress in recent years (cf. Laver/Sergenti 2012; de Marchi/Page 2014). Therefore, in the next section, we develop an ABM. We combine both common policy models and electoral competition models in order to attain deeper insight into the mechanisms of how parties deal with opposing majorities. Based on our ABM, we are able to identify precise situational, action-formation, and transformational mechanisms[2]. Our situational mechanisms consist of different majority constellations. The action-formation mechanisms are built on the parties' policy and vote-seeking calculus regarding the changing evaluation functions within the electorate. The transformational mechanisms are characterized by parties' anticipation of voters' evaluation functions, which represent the mechanism of dynamic representation. In the following section, we will further develop the basic decision rule of the actors and agents.

4. The Agent-Based Model

In the previous section, we outlined our central arguments explaining policy change and policy stability, reconsidering the current state of the literature. In this section, we translate our verbal model into a formal agent-based model. The ABM enables us to combine formerly separated branches of argumentation into a single framework. This section's first part provides an overview of the model's process and parameters. We then describe voter and party decision-making in detail. In particular, we outline which parameters are allowed to vary in order to inspect the plausibility of our intuitive deductions from the non-formal argumentation. We vary the presence of all explanatory parameters in the simulation runs. Therefore, we can examine counterfactual dependencies to specific simulation results' conditions (Marchionni/Ylikoski 2013, 325ff.). We have uploaded the entire source code online.[3]

4.1 General Sequence of Action and the Model's Properties

The model incorporates an initialization and an iteration phase. The initialization phase defines the properties of the situational mechanism. The initial starting constellation can vary according to the number of parties, the parties' ideological range, and voter distribution (for more details, see *table 1*). Furthermore, the parties' weight of policy and vote-seeking is determined for the whole simulation run. An election takes place based on this exogenously determined competition structure. After the election and during the coalition bargaining, parties form a 'minimally connected winning' coalition. This coalition

[2] This terminology is still not common in political science. Since our ABM is related to political sociology, we think it is useful within this special issue to refer to these terms; situational, action-formation, and transformational mechanism.

[3] Source code can be found at http://www.pruf.de/perma-links/abm-policy-change-and-stability.

determines whether parties belong to the federal government or the opposition during the later iteration phase. All opposition parties have a random chance to be a veto player in the second chamber. Thus, there are, on the one hand, simulation runs with no oppositional veto players and corresponding majorities. Here, only coalition parties' agreement is needed for a change of status quo. On the other hand, simulation runs with opposing majorities can also be present. In those runs, oppositional veto players' approval is also necessary for a policy change, assuming the existence of a second chamber. In the analysis, the variable 'opposing majorities' indicates runs with at least one oppositional veto player.

The whole model's simulation run represents a legislative period. After coalition formation, the iterative process starts. First, the agenda setters (the coalition parties) try to reach an agreement on a new policy position. These parties test the possibility of an agreement on all ideological positions. If there is more than one possible change, the position closest to the coalition parties' mean ideological position is preferred. In this bargaining process, the agenda setters also consider oppositional veto players' attitudes to find a new policy position, which position these parties will not veto in the second chamber. As a result, there are two possible outcomes of agenda setting and decision-making: policy stability and change. Afterwards, we include dynamic representation, as discussed in the previous section. Voters update their party preferences based on their evaluations of parties' behavior in legislative negotiations. Parties anticipate this reaction.

Thus, parties know their actual support by voters. This step does not influence parties' legislative power (or coalition status), of course. Based on the new (or unmodified) status quo and the altered voter preference distribution, the next iteration starts. A simulation run ends after forty iterations.[4] Furthermore, this number also determines the maximum number of policy changes in one legislative period. For the sake of simplicity, one ideological dimension represents the party system's ideological space (-10:+10).[5]

[4] In an earlier version, the number of iterations varied without influencing the analyzed dependencies. To economize computational resources, the number of iterations is fixed by forty iterations.

[5] The assumption of one dimensionality is an abstraction meant to reduce complexity in the simulation. In an earlier version of the model, we implemented a multi-dimensional, issue-based competition model. The higher complexity does not influence the model's results. In the tradition of Downs (1957), modeling party competition as a one-dimensional left-right or liberal-conservative space is very common in spatial models of political competition.

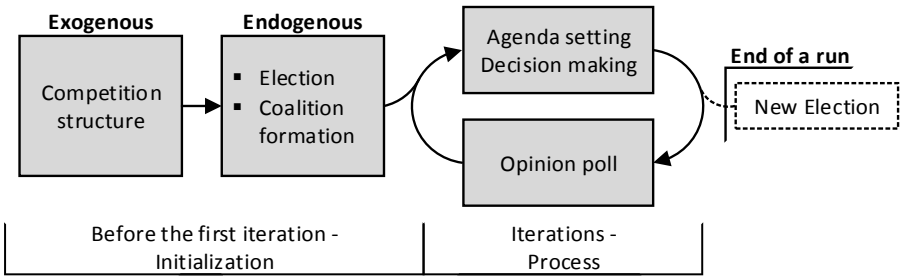

Figure 1: Simulation runs for a legislative period.

4.2 Parties' Decision-making

During the legislative bargaining process, parties have to decide whether to agree or disagree on policy change. Parties act rationally based on policy-seeking and/or vote-seeking goals (Strøm 1990). In a simulation run, parties' pursued goals are determined by a pre-defined parameter, the vote-seeking weight (w_v), which can be interpreted as the proportion of vote-seeking in decision-making. This variable varies between zero and one. In addition, policy-seeking weight (w_p) results from this parameter: $w_p = 1 - w_v$. Hence, there are three different party types integrated in the model: (1) exclusively policy-seeking parties ($w_v = 0$), (2) exclusively vote-seeking parties ($w_v = 1$) and (3) policy- and vote-seeking parties with mixed proportions. In a simulation run, all parties used the same weighting.

To make a decision, parties calculate their utility based on both goals. The utility of vote-seeking is determined by the vote-share (v), and the utility of policy-seeking rests on the standardized distance between (actual or bargained) policy positions and their own preferred policy ($\frac{d_i}{21}$) where 21 represents the number of ideological points on the dimension. Furthermore, parties have to anticipate the utility of an agreement and a disagreement to a potential new position. If the (supposed) utility income of the proposed bill is higher than the utility income of rejection, a party will vote for the government bill. In more detail, the utility function is formalized as follows: $U_i = w_p{}^* \left(1 - \frac{d_i}{21}\right) + w_v{}^* v$. It is important to note that these are hypothetical and not objective utility incomes. If there is (potential) future influence that depends on parties' choices, an actor's true utility income is thus related to other parties' actions. Nevertheless, parties have to make a choice before they know their competitors' behaviors. Therefore, parties can only try to anticipate the consequences of a decision. For simplification, a party suggests that coalition parties will agree with their own proposal and (other) opposition parties will decline.

4.3 Voters' Evaluation

In order to consider the full dynamic of electoral competition, we explicitly model voters' evaluations and potential voting behavior.

According to Downs (1957), voters choose a party because of their ideological preferences. In more detail, voters evaluate the distance between their own position (i_v) and parties' positions (i_p) on the ideological dimension: $d = (i_p - i_v)$. On this basis, voters choose the party with the lowest ideological distance from themselves. Up to this point, parties' legislative behaviors do not influence voting behavior. A further variable is thus integrated into voters' calculus, the evaluation factor: $d = (i_p - i_v) - e_p$.[6] Here, a positive evaluation of a party's behavior reduces the evaluated distance, whereas a negative evaluation increases this value. Each voter saves the evaluation of each party in a variable and updates these values based on the legislative bargaining process. At the beginning of a simulation run, all evaluation values are zero. During the iterations, we add parties' evaluations to the existing values. Thus, negative and positive evaluations can add up to higher values. Furthermore, we split the evaluation into two parts: the evaluation of policy change and of policy stability (also called penalizing). We decided to distinguish between the evaluation of change and stability because of two advantages. (1) Due to this differentiation, we can analyze the effect of stability evaluation independent of the effect of policy change evaluation, and vice versa. (2) We also consider a theoretical distinction between both types of evaluation in the formalization. When evaluating policy change, the voter evaluates the voting behavior of parties in parliament. In contrast, voters evaluate responsibility for the absence of a change. Thus, on the one hand, voters evaluate a voting choice during an event and on the other hand, they evaluate responsibility for a non-event:

(1) Evaluation of policy change: first, voters check whether they support the change. A voter will support an alteration if the distance between his own ideological position and the status quo lowers. Next, voters note parties' voting choices in parliament. If a party approved a supported policy change, a voter will grant this party a positive evaluation. In contrast, a voter evaluates negatively a party's approval of a non-supported policy change, and so forth. The granted evaluation is determined by a model parameter and can vary among the simulation runs (see *table 1*). Referring to Ganghof and Bräuniger's model (2006, 525), coalition parties can also receive an increased evaluation bonus due to their governing responsibility. We specify this bonus by a varying parameter.

[6] In contrast to division (e.g., $d = \frac{(i_p - i_v)}{e_p}$), the formalization with subtraction expresses that the evaluation is conducted independently from the ideological distance to the evaluated party. Thus, all parties receive the same bonus (or handicap) for the same action.

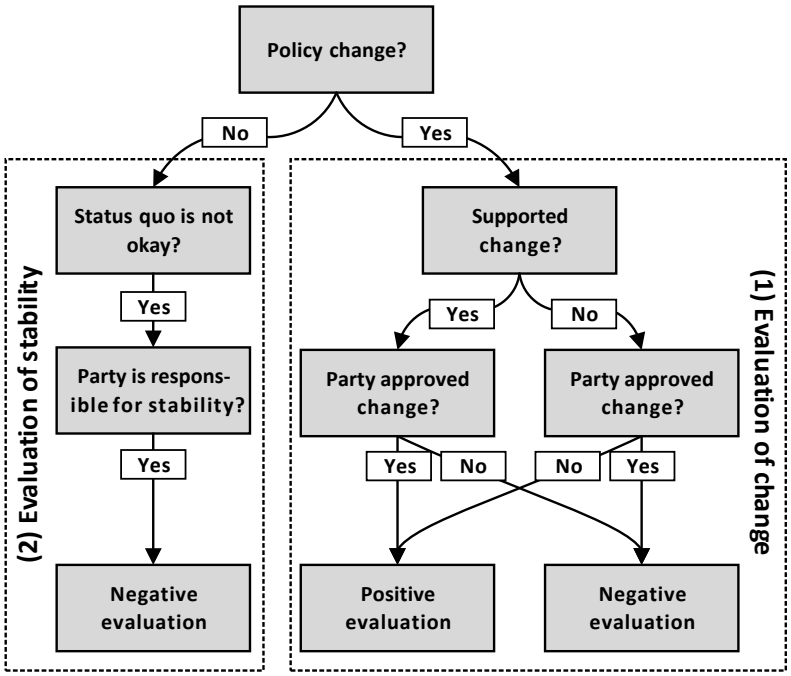

Figure 2: Voter's evaluation of parties' legislative behavior.

(2) Evaluation of policy stability: in the case of absence of change, voters initially check their accordance with the status quo because it would be illogical for a voter to penalize parties if the current status quo is congruent with their own preferred position. However, if the gap between preference and actual policy position is too large, voters will negatively evaluate those parties which voters hold responsible for inaction. There are two different voter perspectives on parties' responsibility: either only coalition parties or all veto players are held responsible for lack of change. The threshold of penalty (which defines when the gap is too large), the factor of stability's evaluation, and responsibility are varying parameters (see *table 1*).

Furthermore, a parameter defines the maximum (evaluated) distance needed for a voter's participation in an election. If the lowest evaluated distance of a voter is higher than this threshold, the voter will not choose any party. Thus, the possibility of non-voting is included in the model. Finally, we weight all evaluations by time. Thus, recent occurrences have a bigger impact than past decisions. At the end of an iteration, we multiply all evaluation values by the time factor.

	Variable	Variation
Initial competition structure	(ideological) range of parties	2 to 20
	number of parties	2 to 8
	voter distribution (type)	bimodal or unimodal
	S.D. of voter distribution	30 to 60
	Initial status quo	Ideological center
	number of …	
	coalition parties	based on coalition formation
	veto players (opposition)	0 to number of opposition parties
party goals	vote-seeking weight	0 to 1
voter evaluation	evaluation of change	absent or 0.1 to 1.4
	coalition bonus	absent or 0.1 to 1.4
	evaluation of stability	absent or 0.1 to 1.4
	threshold of penalizing	absent or 0.1 to 1.4
	penalizing all veto players	true or false
	time factor	0.80 to 0.99
	non-voting threshold	2 to 8

*The minimum and maximum of the variation represent an extreme manifestation of the respective factor. The constraint of input parameter's variety reduces the model's complexity. Thus, we can focus on the mechanism of interest within theoretical plausible constellations. For example, an evaluation factor of 0.1 has a minimal effect on voters' decisions, whereas in forty iterations a factor of 1.4 can have a great impact regarding the maximal ideological range. Higher (or lower) values lead to special scenarios, which we are not interested in. Thus, an evaluation value and a time factor above the maximum would lead to a scenario, where voters only decide on the basis of evaluation and forget everything after two iterations. Although small differences in maximum and minimum do not make any difference regarding the results (e.g., 1.5 instead of 1.4), we have to define a threshold. In the variation of the parameters, we focus on moderate values that capture our theoretical argumentation.

Table 1: Model's parameters.*

4.4 Formalized Mechanisms

We summarize the basic ideas of our model by referring to the social mechanism as defined by Hedström and Swedberg (1998, 23). Starting on the macro-level, political institutions and policy status shape a party's opportunities to act strategically in legislative bargaining. Institutional veto-points set incentives for different strategies and shape parties' perceived room for manoeuvre. On the party-level, we examine the action-formation mechanism as a combination of Ganghof-Bräuninger's idea of relative gain with Stimson's idea of dynamic representation. Due to anticipated evaluation by voters, electoral preferences are dynamically represented in a party's willingness to compromise. The intensity of this mechanism varies depending on the party's calculus. A party with a higher proportion of vote-seeking will take more notice of the voters' wishes.

Finally, we add an aggregation step to the model. Thus, each party's separate willingness enables or prevents a policy change depending on the veto players' accordance. Due to the disparity of parties' situations in competition, the aggre-

gation is not simply the sum of their willingness. In fact, the specific distribution of willingness among the relevant parties is crucial. Policy will change if all potential veto players agree to a new status quo. According to Parsons (1963), and especially to its critique and extension by Coleman (1963), we label the following as the political mechanism of influence:

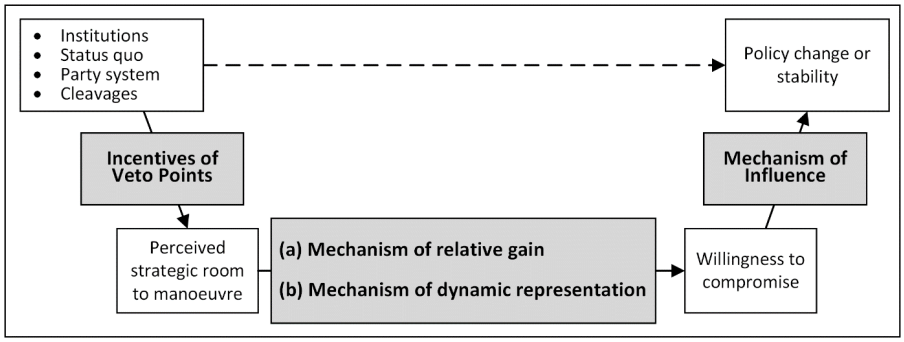

Figure 3: The process of multiparty dynamic representation.

5. Strategy of Analysis

We have run approximately 80,000 repetitions.[7] For analyzing the ABM, we rely on random parameterization (Izquierdo et al. 2009, 4.1–4.6). A full parametrization such as grid sweeping (Laver/Sergenti 2012, 57–58) is impossible because of the necessary number of generated constellations regarding the limited computational resources. Therefore, we interpreted the computed results as a random sample of all possible constellations. To test the validity of the results, we use test statistics. Combined with regressions analysis, descriptive statistics, and, lastly, Boolean algebra, we present a comprehensive overview of the model's patterns and mechanisms. Regarding conclusions about the general model, this strategy implies an inductive reasoning process. However, because of the model's complexity, an analytical solution with the described formal assumptions is not achievable. Hence, there is no feasible alternative approach to analyze this model. Nevertheless, the revealed results of the test statistics show that the error probability is quite low.

[7] In the first test simulation, we generated a sample of 10,000 repetitions. However, we found that the number of cases was too low for the analysis of special input parameter configurations. For example, we examined the party's willingness to compromise in specific competition constellations and under varying evaluation types (see *section 5.3*, *table 3*). Here, the revealed standard errors were high in relation to the mean value. Therefore, we decided to increase the number of simulation runs. To allow an analysis with sufficient assurance, the objective was to simulate at least 80,000 repetitions. We actually realized 87,653 repetitions within the timetable.

5.1 Descriptive Statistics of the Policy Change Ratio

As our central outcome, we inspect whether a policy change occurred. Beyond the binary measurement of change or no change, we also measure the amount of policy change within a legislative period. In order to provide a descriptive overview, *figure 4* shows the distribution of policy changes distinguished by corresponding and opposing majorities. We define as the policy change ratio the number of any policy changes divided by the number of iterations. Consequently, a value of zero indicates policy stability during a legislative period, whereas the maximum (one) indicates runs with policy changes in each iteration. The distribution reveals a left-skewed shape with an upswing in the last class (>0.8). In a considerable number of simulation runs, policy stability can be observed (overall 51.6%). Furthermore, repetitions with a ratio above 0.2 are rare in the entire sample. Regarding the type of majorities, there are considerable differences:

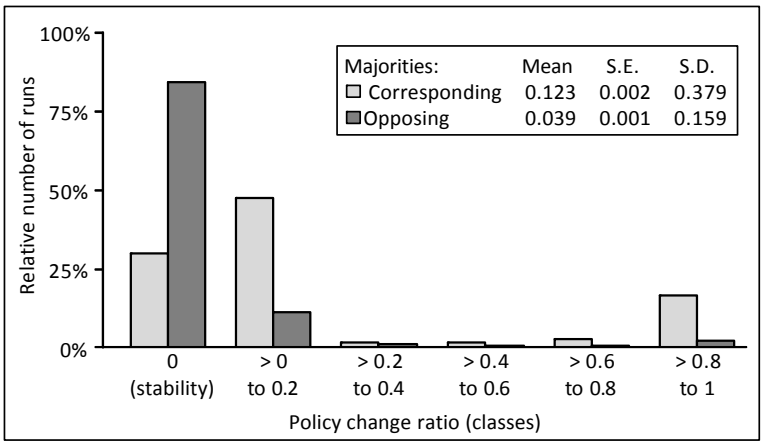

Figure 4: Policy change ratio among simulations runs.

First of all, the mean and median are lower in runs with opposing majorities. Further, approximately 84 percent of these repetitions show no change at all. In contrast, the number of runs without any policy change is relatively lower in systems with corresponding majorities. Here, almost 70 percent show one or more policy changes during a simulation run. In consequence, there is a negative correlation of -0.46 ($p<.001$)[8] between opposing majorities and the policy change ratio. However, the results also imply that policy change occurs in many constellations, even though oppositional veto players are present. In more detail, 5,557 runs with oppositional veto players show policy changes. Thus,

[8] Because of the policy change ratio's missing normal distribution, a nonparametric correlation coefficient is used: Kendall's Tau-b.

initial findings show a considerable impact on the policy change ratio resulting from veto player occurrence, but the influence is not deterministic.

The question arises as to why some repetitions show policy change even though there is an oppositional majority in the second chamber. If there is no policy change possible without worsening any veto player's policy-seeking calculus, policy stability will occur in standard veto player theory (Tsebelis 2002). Considering the level of iteration, it becomes clear that, in most cases, compromise is necessary for policy change. Some of the actors have to 'sacrifice' (Ganghof/Bräuninger 2006) their policy preferences:

			Number of oppositional veto players					
			0	1	2	3	4	Overall
Need a compromise?	no	%	21.8%	0.3%	0.0%	0.0%	0.0%	13.2%
		N	458441	3378	57	0	0	461876
	yes	%	78.2%	99.7%	100.0%	100.0%	100.0%	86.8%
		N	1648159	1120302	244703	29360	1720	3044244
n (iterations)			2106600	1123680	244760	29360	1720	3506120

*Cramer's V .312, chi²-test p<.001.

Table 2: Necessity of a policy compromise.

Even though there are corresponding majorities, in most cases stability occurs from the perspective of veto player theory (78.2%) because of the missing possibility of changing the policy status quo without compromising. The necessity of compromising decisively increases with the number of oppositional veto players. Regarding *figure 4* above, the policy change number is higher than the iteration number without the necessity for compromise. Thus, there is a policy change in 349,411 iterations even though one veto player's policy-seeking calculus worsens.

5.2 The Impact of Different Calculi

To open the black box, we shift the perspective to the level of a party's action-formation. *Figure 5* reports descriptive vote- and policy-seeking weights in conjunction with policy change and the majority's type. Distinguishing by calculus, the figure distinctly reveals a relationship between the calculus's weight and the policy change ratio:

First, runs with exclusively policy-seeking parties have the lowest level of change ratio. Those repetitions show policy stability during the entire legislative period in 57.8 percent of cases. In both types of majorities, the level of change ratio increases with the proportion of vote-seeking, but differences between opposing and corresponding majorities remain under the terms of different vote-seeking weights. However, compared to runs with high vote-seeking calculi and opposing majorities, policy change is lower in repetitions with corresponding majorities and a low level of vote-seeking. Furthermore, the level of policy stability is lowest with a high (but not maximal) weight. Thus, vote-seeking has

a positive but not completely linear effect on policy change in the model (Tau-b 0.16, p<.001). In addition, the correlation of opposing majorities with policy change ratios still exists even though the vote-seeking proportion in parties' calculus is high (Tau-b -0.359, p<.001; only cases with vote-seeking weight above 0.6 considered).

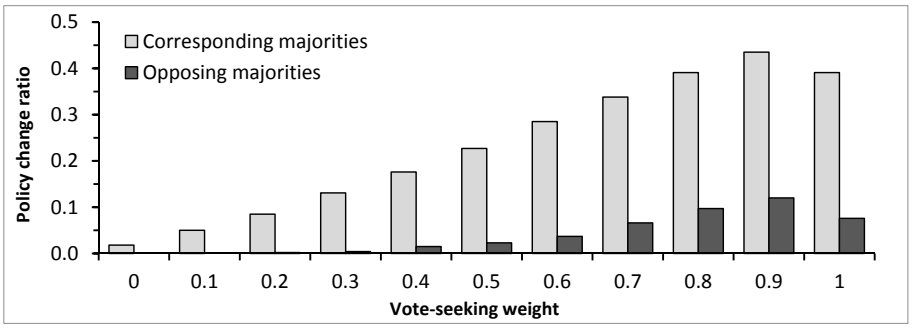

Figure 5: Policy change ratio distinguished by vote-seeking weight and majority type.

Next, the variable of interest is a party's 'willingness to compromise'. This variable includes the number of ideological positions a party would agree to for a policy change even though policy-seeking calculus worsens. The variable is measured at the party level for each iteration. Thus, the maximum will be twenty, if the status quo is the party's actual position. In addition, the minimum is always zero. Distinguished by vote-seeking weight and coalition status, the distribution of mean willingness to compromise is as follows:

As expected, the mean willingness rises with a higher proportion of vote-seeking in party calculus. However, the growth is not linear. In particular, parties with a vote-seeking weight of 0.1 and 0.2 barely differ from exclusively policy-seeking parties (weight of 0 in *figure 6*). Furthermore, the willingness increases appreciably with a high proportion of vote-seeking. This upswing is shown whether or not a party is part of the coalition. However, there are differences regarding the mean level. Coalition parties are, on average, more willing to compromise when vote-seeking weight is greater than 0. Furthermore, opposition parties with the opportunity to veto a policy change are slightly more willing to compromise than opposition parties without.

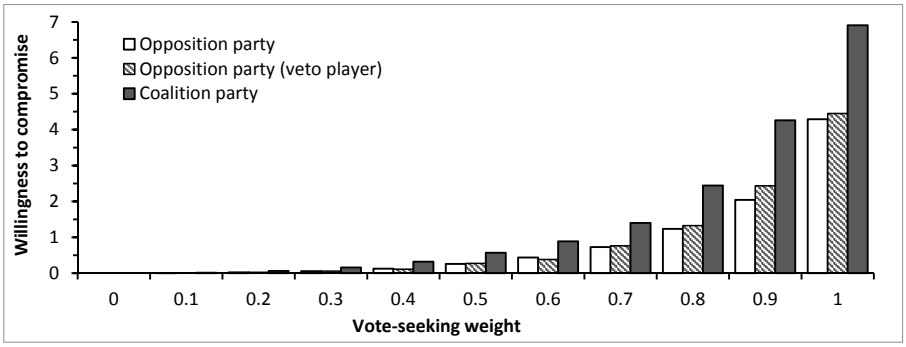

Figure 6: Willingness to compromise regarding calculus and coalition status.

5.3 The Impact of Different Situational Mechanisms

Next, we inspect party willingness to compromise depending on different situational mechanisms. In *table 3*, we distinguish different constellations by a party's governmental status (coalition or opposition) and the ideological neighbors of the particular party. Furthermore, we separately report the mean willingness to compromise by the type of voter evaluation.

Table 3 depicts crucial differences in a party's mean willingness depending on voters' evaluation types and parties' competition situations. Unsurprisingly, a party does not compromise when voters do not evaluate its legislative decision, as a result of the missing impact on vote share. If there is an evaluation of policy change (e_e), averages increase whether or not the party is part of the coalition. Further, the mean willingness of a coalition party rises more in simulations run with a coalition bonus of voters' evaluation (e_c) or a penalizing of stability (p_c). By contrast, an opposition party's mean is lower in those runs. In addition, opposition parties are unwilling to compromise if only coalition parties are negatively evaluated as a result of stability. Opposition parties can take advantage of such a situation. They can successfully contest the government, because the electorate only punishes the governing coalition for inaction. Nevertheless, if the oppositional veto player is also punished (p_a), its average of willingness changes decisively. Hence, handicaps or advantages on *some* veto players regarding voting competition lower the willingness of the *other* veto players decisively. Remarkably, *table 3* also reveals that the specific competition situation matters. All parties are less cooperative when they only compete with (other) coalition parties because here the positive evaluation of change or the negative evaluation of stability cannot become such a (dis)advantage. For example, if coalition party A only competes with two other coalition parties, a negative evaluation of stability will concern all three parties in the same way. Thus, the chance of losing votes is extremely low for party A and exists only because of the possibility of non-voting.

Party's governmental status	Competitors	-	e_e	e_c	p_c	e_e+p_c	e_c+p_c	p_a	e_e+p_a
Opposition	Only coalition	0.0 (0.00)	2.2 (0.01)	0.4 (0.01)	0.0 (0.00)	0.2 (0.01)	0.1 (0.01)	0.2 (0.01)	0.1 (0.00)
Opposition	Opposition and coalition	0.0 (0.00)	5.8 (0.02)	2.8 (0.01)	0.0 (0.00)	2.8 (0.01)	1.8 (0.01)	2.7 (0.01)	1.9 (0.01)
Opposition	Only opposition	0.0 (0.00)	4.4 (0.01)	4.4 (0.01)	0.0 (0.00)	3.4 (0.01)	3.1 (0.01)	3.2 (0.01)	2.8 (0.01)
Opposition (vp)	Only coalition	0.0 (0.00)	1.6 (0.02)	0.2 (0.01)	**0.0** (0.00)	0.8 (0.02)	**0.6** (0.02)	1.9 (0.03)	0.9 (0.02)
Opposition (vp)	Opposition and coalition	0.0 (0.00)	6.0 (0.03)	2.9 (0.03)	**0.0** (0.00)	3.2 (0.03)	**1.4** (0.02)	2.4 (0.03)	1.6 (0.02)
Opposition (vp)	Only opposition	0.0 (0.00)	4.4 (0.02)	4.3 (0.02)	**0.0** (0.00)	3.5 (0.02)	**3.1** (0.02)	1.4 (0.01)	1.6 (0.02)
Coalition	Only coalition	0.0 (0.00)	1.3 (0.01)	1.4 (0.01)	1.9 (0.01)	3.1 (0.01)	3.6 (0.01)	3.0 (0.01)	3.4 (0.01)
Coalition	Opposition and coalition	0.0 (0.00)	6.3 (0.01)	6.9 (0.01)	4.4 (0.01)	4.5 (0.02)	4.9 (0.02)	4.3 (0.02)	5.1 (0.02)
Coalition	Only opposition	0.0 (0.00)	7.1 (0.03)	7.3 (0.03)	6.9 (0.03)	8.1 (0.05)	7.9 (0.05)	7.3 (0.05)	8.0 (0.05)

*Shortcuts: vp: veto player, "-": no evaluation, e_e: equal evaluation of change, e_c: biased evaluation of change, p_c: penalizing of stability (only coalition parties), p_a: penalizing of stability (all veto players), +: logical and.

Table 3: Mean willingness to compromise (S.E.).*

5.4 Explaining Policy Change and Stability

Finally, we examine causes of change or stability. Therefore, we test different parameter states and configurations in explaining policy change on the level of simulation runs. The outcome of interest is now simply whether or not change occurred during a legislative period. Here we examine whether or not the assumed macro-level correlations occur based on the analyzed party-level mechanisms. Regarding the test statistics, we assess the generalizability of the correlations within the model.

In the logistic regression analysis, the effects of different input parameters are tested (see *table 4*). Adding variables of party system fragmentation and voter distribution in the first model reveals significant coefficients and a Pseudo-R^2 of approx. 0.07. These variables have a small but noticeable ability to explain policy change statistically on a legislative level. Furthermore, number of parties and a bimodal voter distribution lower the chance of policy change. Referring to the discussed mechanism, the effect of parties' quantity is comprehensible, because a higher number of parties should increase the chance of contesting

parties. In the next model, opposing majorities have, unsurprisingly, a negative effect. Hence, the presence of oppositional veto players reduces (significantly) the chance of policy change. Even controlling for the other input parameters, this effect remains. Furthermore, Pseudo-R^2 rises remarkably. Interestingly, the ideological range between the parties has a positive impact on policy change. Given a higher ideological range between the parties, gaining new voters by sacrificing policy is easier compared to situations where parties are ideologically close to each other. This finding supports our ABM approach because it shows that introducing dynamics leads to results contradicting the policy-seeking-based and static approach of Tsebelis.

In model three, we add different evaluation types. Again, evaluation of change and stability both have positive effects on policy change. In addition, the parameter 'coalition bonus' decreases the probability of change because of its negative impact on oppositional veto players' willingness to compromise. Lastly, adding vote-seeking weight increases the Pseudo-R^2 again. Regarding an exclusively policy-seeking calculus, all mixed calculi have a significant positive effect on policy change. High proportions of vote-seeking reveal the highest logits (0.7 through 0.9). The two exclusive calculi (0 and 1) do not differ significantly from each other. Both increase stasis during a legislative period compared to mixed calculi.

The regression approach can only speak to associations. Because we are interested in mechanisms and counterfactual dependencies on the macro-level, we must also inspect the logical structure of the data. We rely on the Qualitative Comparative Analysis framework (QCA; Ragin 1987) in order to inspect the model data. Because we do not expect deterministic relationships in our huge sample, we analyze the consistency and coverage of sufficient conditions given different configurations (Ragin 2006). Consistency and coverage are developed within a fuzzy set logic framework. Nevertheless, its application is also based on Boolean algebra (Schneider/Wagemann 2012). Consistency of a sufficient condition X represents "the proportion of the cases with the condition X where we also find the outcome Y, relative to all cases with X" (Grofman/Schneider 2009, 665). Hence, a value of one indicates a truly sufficient condition for the outcome. By contrast, coverage of a sufficient condition outlines the proportion in relation to all cases with Y (Grofman/Schneider 2009, 665). Thus, this value shows the proportion of cases with Y which can be explained by the sufficient

	Model 1- Logit B (S.E.)	Model 2- Logit B (S.E.)	Model 3- Logit B (S.E.)	Model 4- Logit B (S.E.)
Constant	1.062*** (0.025)	1.251*** (0.029)	0.280*** (0.032)	-0.096** (0.035)
Number of parties	-0.238*** (0.004)	-0.111*** (0.004)	-0.122*** (0.004)	-0.133*** (0.005)
(ideological) range of parties	0.007*** (0.001)	0.016*** (0.002)	0.018*** (0.002)	0.020*** (0.002)
Voter bimodal	-0.061*** (0.014)	-0.177*** (0.016)	-0.196*** (0.017)	-0.209*** (0.018)
Opposing majorities		**-2.423*** (0.018)**	**-2.794*** (0.020)**	**-3.106*** (0.023)**
Evaluation of change[1]			0.906*** (0.021)	0.988*** (0.022)
Evaluation of change (coalition bonus) [1]			-0.115*** (0.024)	-0.132*** (0.025)
Evaluation of stability (coalition)[1]			1.240*** (0.022)	1.346*** (0.023)
Evaluation of stability (all veto players) [1]			0.406*** (0.025)	0.435*** (0.026)
Reference: vote-seeking weight 0.0				
weight of 0.1				0.212*** (0.047)
weight of 0.2				0.367*** (0.048)
weight of 0.3				0.556*** (0.050)
weight of 0.4				0.924*** (0.049)
weight of 0.5				1.226*** (0.049)
weight of 0.6				1.544*** (0.051)
weight of 0.7				2.072*** (0.054)
weight of 0.8				2.283*** (0.054)
weight of 0.9				2.488*** (0.056)
weight of 1.0				-0.007 (0.021)
Pseudo-R^2 (Nagelkerke)	0.068	0.356	0.458	0.522
n (Simulation runs)	87,653	87,653	87,653	87,653

*Significance levels: *** p<.001. Variables, which are recoded as dummy (0 = 0 "absence of the factor"; >0 = 1 "presence of the factor"), are identifiable by ([1]).[9]

Table 4: Logistic regression AV: policy change during a legislative period (0: no, 1: yes).[10]*.

[10] Two input parameters are not considered in the regression analysis: 'non-voting threshold' and 'time-factor'. Both factors have no considerable influence on policy change. To focus our analysis on the crucial factors, we decided to exclude both input parameters in the regression analyses.

condition. With QCA, we are able to analyze multiple interaction effects. In regression analysis, including the interaction of four variables leads to models that can hardly be interpreted. Hence, QCA gives us an insight into the complex configurations of our ABM, which one cannot make solely using regressions. As a result, we can identify configurations of conditions that lead to policy stasis or change. Compared to common QCA applications, it is important to consider that this simulation data differs from the small-n datasets of countries. Here, we have a model with stochastic elements and a large-n sample. Furthermore, coverage values depend partially on the model's parameterization. Therefore, consistency values are more interesting in analyzing simulation data.[11]

No.	Configuration	Outcome	Sufficient condition	
			Consistency	Coverage
Explaining policy change:				
(1a)	~O	~B	0.70	0.87
(2a)	O	~B	0.16	0.13
(3a)	O * V(0.7 – 0.9)	~B	0.45	0.06
(4a)	O * V(0.7 – 0.9) * P(c)	~B	0.64	0.03
(5a)	O * V(0.7 – 0.9) * P(v)	~B	0.81	0.02
(6a)	O * V(0.7 – 0.9) * P(v) * E(c)	~B	0.91	0.01
(7a)	O * V(0.7 – 0.9) * P(v) * E(e)	~B	0.96	0.01
Explaining policy stability:				
(1b)	~O	B	0.30	0.35
(2b)	~O * V(0.7 - 1)	B	0.35	0.18
(3b)	~O * V(0.7 - 1) * ~P(c)	B	0.63	0.16
(3b)	~O * V(0.7 - 1) * ~P(c) * ~E(c)	B	0.70	0.13
(4b)	~O * V(0.7 - 1) * ~P(c) * ~E(c) * C	B	0.75	0.12
(5b)	~O * V(0.9 - 1) * ~P(c) * ~E(c) * C	B	0.84	0.12
(6b)	~O * V(1) * ~P(c) * ~E(c) * C	B	0.90	0.11

*Shortcuts: B: Blockade/policy stability (change ratio = 0), O: Opposing majorities, V(x): vote-seeking weight of x, E(e): Voters' equal evaluation of all parties, E(c): Voters' evaluation in favor of coalition parties, P(c): Voters' penalizing of coalition, P(v): Voters' penalizing of veto players, C: Coalition present (no single party cabinet), * logical and, + logical or, ~logical negation.

Table 5: Consistency and coverage of different sufficient conditions of (non) policy stability.*

[11] It is important to consider the fact that the coverage of a necessary condition is the consistency of the sufficient conditions of the same configuration, and vice versa (Ragin 2006, 297, 301–303).

Reconsidering Hug's (2013) critique of QCA, we use this technique deductively. We inspect step-by-step whether the inclusion of pre-defined variables has the assumed impact. We are in search of logically consistent paths that can explain non-intuitive outcomes.

First of all, corresponding majorities are only to some extent a consistent sufficient condition for policy change (no. 1a $\sim O \rightarrow B$). Regarding the coverage value, this condition is more consistent and necessary (0.87) than consistent sufficient condition (0.70). In contrast, (only) opposing majorities are, as argued earlier, neither a necessary nor a sufficient condition (no. 2a). The purpose of this inversion of the theoretical argument ($O \rightarrow B$ to $O \rightarrow\sim B$) is to identify a configuration that is a sufficient condition even though there are opposing majorities.

Above, we found a high (but not exclusively) vote-seeking weight corresponding with the highest amount of policy change ratios. Therefore, we add the presence of highly weighted vote-seeking in the next configuration (No. 3a). On the one hand, the consistency value increases noticeably, but on the other hand this configuration is still not a consistent sufficient condition. Adding voters' evaluation of inaction (No. 6a through 7a), the consistency values rises. However, there exist differences depending on the evaluation's type. Consistency is lower when voters' evaluation of change is in favor of coalition parties (no. 6a) or when only coalition parties are evaluated negatively due to inaction (no. 4a). This effect is understandable because opposition parties' willingness to compromise is decisively lower in those constellations. Thus, if there is an equal evaluation of change and all veto players are penalized by voters, the configuration no. 7a—the presence of an unbiased evaluation of change and stability, highly vote-seeking parties, and opposing majorities—is a consistent, sufficient condition for policy change as the outcome.

We finally inspect which configuration can explain policy stability given the absence of opposing majorities. Only adding a high proportion of vote-seeking 'V (0.7 - 1)' does not result in a consistent, sufficient condition to explain stability (2b). The absence of penalizing stability reveals the first remarkable improvement in consistency. Nevertheless, combining high vote-seeking with the absence of negative evaluation is still not truly a sufficient condition (3b). Combined with a coalition government, however, an acceptable consistency value of 0.75 is generated (4b). Modifying the configuration with a very high vote-seeking weight 'V(0.9 - 1)' and an exclusive vote-seeking 'V(1)' weight, increases consistency even further (5b and 6b). These last model implications corroborate that, exclusively in vote-seeking aspects, coalition partners are unwilling to compromise.

5.5 Applying the Model as 'Best Explanation'

After honing the theoretical mechanism, we now discuss its application to real-world phenomena to clarify the model's usefulness. Does it really provide a 'better explanation' compared to existing explanations (Bartelborth 1999, 102)? The aim of the ABM was to unify neo-institutional explanations of VP theory with political sociological considerations regarding electoral competition. Tse-

belis' VP provides a framework for a sample of models that can each explain one single aspect regarding the outcome of stability and change (Ganghof 2015).[12] Contrary thereto, our ABM provides one single model to explain numerous different outcomes by adding mechanisms of dynamic representation. Not only institutional constellations and the relative gain compared to the competitors, but also the anticipating behavior of parties towards the electorates' reactions, can evoke counter-intuitive outcomes. Furthermore, we are able to demonstrate that parties that behave responsively to their electorate might lead, in the aggregate, to a result that does not mirror responsivity on the system level due to unwished outcomes.

We began the article by discussing puzzling situations. Although the opposition had held the majority in the German *Bundesrat* and declared it would veto the government's bills, parts of the opposition defected and voted with the government, or even the whole opposition helped the government by solving government's internal blockade. Beyond these spectacular events, the general rate of agreement between opposition and government is astonishingly high. It has been stated that in Western European democracies, the opposition does not support more than 8 percent of the government's bills (Andeweg 2013). It is, in fact, the other way around; the German *Reformstau* of the 1990s and the current lack of policy innovation in France occurred in constellations in which the opposition had and has no chance to blockade. Consequently, opposing majorities might explain much variation in policy change rates, but it is far from delivering a necessary or a sufficient condition.

Therefore, the following questions arise: When is an opposition successful in organizing a blockade of governmental politics via the second chamber? Why does policy stability occur when no oppositional veto exists? The *Bundesrat* veto of tax reform in 1997 might be a suitable case. After fifteen years of government led by Helmut Kohl, the Social Democrats (SPD) achieved a majority in the second chamber. Lafontaine was the SPD party leader, cooperating in leading the second chamber majority with the electoral front-runner and later SPD Chancellor Schröder. The SPD majority vetoed the government tax reform bill. As discussed earlier, ironically, a similar tax reform was implemented three years later by the SPD-led government. Why did this blockade work even though all SPD members in the second chamber were also representing sub-state chief executives?

First, after fifteen years of being in government with corresponding majorities, the attempted blame-shifting of the Kohl government onto the opposition was not credible. Even holding the majorities in both chambers, the late Kohl government had been accused of inaction (*Reformstau*). Given this situation, the SPD sub-state governments did not have to fear being penalized for the blockade. Without such a penalizing function at work for the opposition, our

[12] Ganghof 2015 provides a typology giving an extensive overview of the purposes to which the VP models are applied within political science. This article hints to another purpose, namely taking the analytical solutions of VP theory for building ABM in order to analyse dynamics that cannot be covered by mathematical methods. This general purpose of mathematical models and its relation to ABM is extensively discussed in de Marchi and Page 2014.

model predicts an increased probability of blockades. Second, even without an opposing majority, stasis had existed before. Our model shows that, even in corresponding majorities, exclusive vote-seeking leads to policy blockades. These blockades are not induced by the opposition. They are caused by the coalition parties' rivalry. As Downs (1957) has earlier discussed, in a neglected sub-chapter of the *Economic Theory of Democracy*, coalition parties act "irrational[ly]" to a certain extent, in the sense that they do not seek to maximize the votes of the governing coalition. Rather, they concentrate on maximizing their own votes to get a bigger weight within the coalition. Hence, they veto a change due to the anticipation of a potentially higher voter bonus in favor of the coalition partner. Even a loss of votes to the coalition partner is likely then, because it is often an ideological neighbor addressing the same parts of the electorate. The German *Reformstau* of the 1990s, as well as the current stasis in French politics, can be explained by coalition partners sticking to their core electorate and core issues driven by a fear of losing votes to their partners. In particular, the German case can be well explained by our ABM implications. During the 1990s, the liberal Free Democratic Party (FDP) had ideologically come very close to the larger Christian Democrats. Thus, both parties revealed a high overlap in their electorate. Because the FDP was struggling to break the 5 percent threshold to enter the parliamentary arena, an improvement in the electorate's evaluation of the Christian Democrats might have led to a defeat of the FDP. Inversely, the Christian Democrats feared losing their position as the largest party to the Social Democrats. Hence, both coalition partners blockaded each other (cf. Dittberner 2014, 68–73).

When does policy change occur despite the government confronting an opposing majority that officially declares it will not vote with the government? Let us reconsider two spectacular cases in German politics, the failed blockade of the tax reform in 2000 and the asylum law reform in 2014. Our ABM suggests that the anticipation of voters' reactions led parts of the opposition to the conclusion that they would benefit more from supporting the bill than from vetoing it. In 2014, the mechanism of dynamic representation seems to have been decisive, because Green Minister-President Kretschmann had to reconsider being held responsible for government action in 2014. At the time of decision, the federal party executive committee of the Greens had almost no government responsibility. Hence, it did not have to fear being penalized for inaction. In contrast, Kretschmann, as a sub-state chief executive, had to take into account the election the following year. Under the model's assumption, he had to reconsider to avoid being penalized, and, as our model predicts, he was willing to accept a policy proposal that was far away from the Greens' ideal point in immigration politics. This gives an insight into a potential mechanism of party democracy. The German Greens are keen on separating party executive and state offices (Poguntke 1993). A person holding government office is not allowed to be a party spokesman at the same time (cf. statute of Bündnis 90/Die Grünen 2014, §15(4)). The idea is to strengthen intra-party democracy. However, as our model suggests, this separates the calculus of expected utility incomes within a party and disincentivizes acting as a unified opposition party. Bearing in mind

that the literature on party democracy claims that the better organized and unified the opposition, the higher the probability of getting into office next time (Steffani 1979), this tradition of office separation may have unintended negative effects for the Greens' electoral fate.

At first glance, the situation of the Christian Democrats in 2000 differs from the Greens in 2014. The opposition majority in the *Bundesrat*, represented by the Christian Democrats, relied on sub-state chief executives. However, both negotiation leaders, Friedrich Merz and Angela Merkel, were not integrated into these sub-state government networks. Therefore, the situation is comparable to the one described in 2014: the party executive was acting, most probably, according to a different calculus than all (!) of their party members in the second chamber. In addition, the Schröder government's policy proposal was, even from the CDU standpoint, an improvement on the status quo (Bräuninger/Ganghof 2005). The CDU sub-state governments were likely being punished for provoking inaction.

One might argue that the erosion of potential blockades has been caused by intra-party heterogeneity, but that this heterogeneity would not have been included in the model. However, it is in fact included. The number of opposition parties we inspect can also be interpreted as the number of intra-party factions willing to compromise (or not). Nevertheless, a more detailed modeling of intra-party aspects seems promising for extending present party competition models.

6. Conclusion

Based on an ABM, we have integrated different theoretical considerations on policy change and policy stability from neo-institutionalism and political sociology into a single framework. The ABM enables us to detect causal mechanisms working behind real-world phenomena that current standard theories do not highlight. We first define the situational logic of veto-points, concentrating in this article on situations that can be provoked by strong bicameralism. Second, we combine the neo-institutional action-formation mechanism of relative gain with the political sociological mechanism of dynamic representation. Finally, we model the transformational mechanism of political influence with an ABM. With our extension of the Ganghof-Bräuninger model by dynamic representation, we are able to analyze party-electorate dynamics. In addition to the findings in Ganghof-Bräuninger (2006), we show that it is not always the case that the opposition will accommodate less and the government more. In cases where the electorate also punishes the opposition for inaction and government parties fear that a rival coalition partner would profit from a change of the status quo, the opposite is true. This result is also a consequence of transferring the mechanism of dynamic representation from two-party to multi-party systems.

Our ABM can specify a particular mechanism of influence under which parties are or are not willing to compromise. Two factors are decisive. First, voters evaluate the actions of government and opposition parties. The more voters hold the opposition responsible for government action, the more likely policy

change is. Second, the more parties rely on vote-seeking considerations (but not exclusively on them), the more the probability for policy change rises. This is an important insight, as approaches relying only on institutional impact and focusing only on policy-seeking motives (Tsebelis 2002) systematically underestimate the opportunities for policy change.

Beyond the narrow focus of our political science driven research question, our article demonstrates how to make use of a mechanism-based approach in order to improve macro-meso-micro-level explanations. ABM enables us to integrate two different branches of literature into a single theoretical action-formation mechanism and inspect transformational impacts on macro-level outcome. Applying a QCA to our sample of simulation runs, we are able to determine necessary and sufficient conditions for explaining macro-level outcomes. The combination of OLS and QCA is suitable for first going down from the analytical macro- to the micro-level via the OLS, and then, by the QCA, we are able to climb up to the analytical macro-level again.

Of course, our study is not without limitations. ABM can handle complexity, but with complexity, interpretability also suffers. Hence, we reduce the ABM to its most crucial factors. This leads to a model including the veto point on a very abstract level. We reduce bicameralism to the question of whether an opposing majority must be considered in decision-making. For instance, we do not examine whether the second chamber has veto power only in some circumstances and not in others. Nevertheless, the ABM covers the most common situation of a first chamber majority seeking agreement with opposition parties in control of the second chamber.

Up to this point, the presented model has not integrated assumptions about parties as complex rather than unified actors. However, further thinking regarding the model's results can explain an already outlined empirical observation: in the model, willingness to compromise depends mainly on the party's situation in competition and the second chamber's composition; even members of the same party are in quite different situations in their sub-states. The electorate and the parties' issue positions differ. Therefore, the model would assume varying behavior from *Bundesrat* members. For example, Kretschmann, as Minister-President of Baden-Württemberg, is not accountable to all German voters—ignoring possible other ambitions. Furthermore, similar chains of delegation and hence presumably similar mechanisms underlie other second chambers in the world. So far, we have learned that the democratic mechanism of dynamic representation can work against deadlock and blockades. We have further learned that parties behaving responsively do not automatically guarantee perfect responsivity on the party system level. Further extensions of our or other ABMs should inspect the differences between parties' responsiveness and party system responsivity in more detail.

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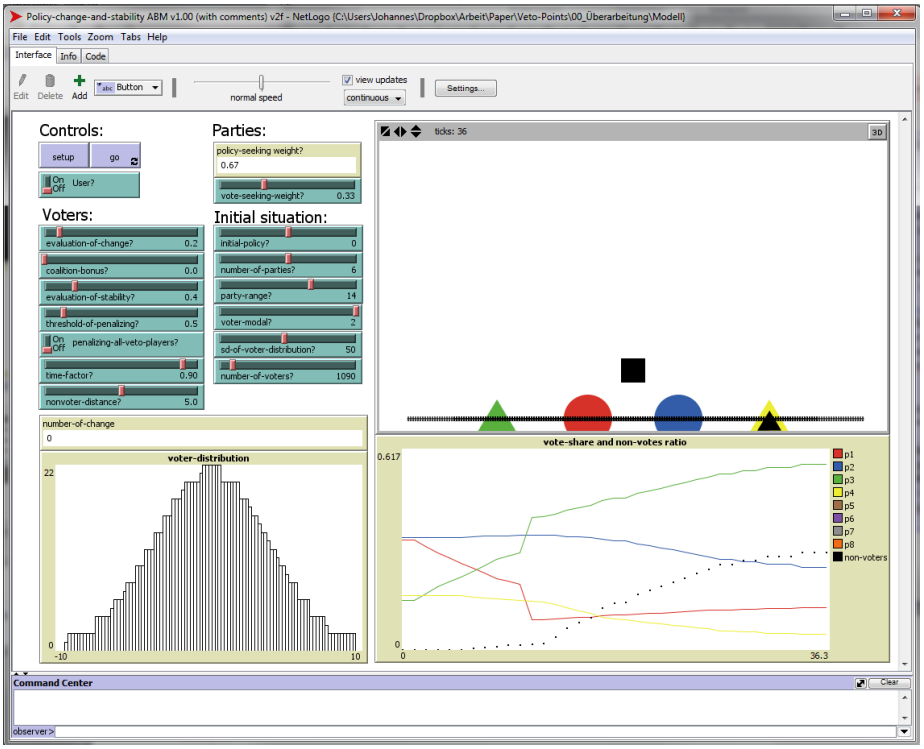
Appendix



*The model is formalized in NetLogo and includes the entire source code as well as a graphical user interface. The pictured interface plots the output during a simulation run, e.g. the changing vote share of each party, the willingness to compromise, status quo and policy changes. Thus, different input parameter constellations can be manually tested in their influence on model's results. In addition, a huge number of runs can also be automatically computed to abstract from some example constellations to the general model. The source code can be downloaded at http://www.pruf.de/perma-links/abm-policy-change-and-stability and NetLogo can be downloaded at http://ccl.northwestern.edu/netlogo/.

Figure 7: The outlined model in NetLogo.*