

# Finding the Tie-Breakers: The Formation of Consideration Set and Final Party Choice<sup>1</sup>

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## Abstract

Consideration set models of party choice (CSM) present an intriguing remedy to the many challenges of analyzing a highly individualized voting behavior in multi-party systems. The point of origin is that voters search for and utilize different kinds of political cues and information depending on the size and content of their consideration sets. A CSM approach allows us to isolate the impact of various factors at various stages in the decision process, i.e. the consideration set formation process and the final party choice. This paper introduces and discusses the main concepts of the CSM approach, identifies the fundamental challenges in measurement and estimation, and provides an empirical example using a specially designed seven-wave campaign panel covering the Swedish national election 2014.

## Introduction

Many well established explanatory models of party choice are waning as increasing proportions of citizens in established democracies display a highly individualized and volatile voting behavior. Decades of electoral research have shown weakening ties between parties and voters. On the voter side (demand side) most democracies have experienced eroding social cleavages, increasing electoral volatility, and increasing proportions of late deciders (Thomassen 2005; Dalton 2006). At the same time, in contemporary West European multi party systems (supply side) there has been a toning down of ideological differences and a movement towards a “median voter” position (Dalton 2008; Sanders 2012) as well as an increase in the number of parties that compete for voter support. These trends have generated leeway for short term explanatory factors that represents a big challenge to electoral research today.

In spite of these well documented developments in electoral behavior, party choice tend to still be analyzed with the same models and methods as was the case in the more predictable and steady periods. That is, most theoretical models and empirical analyses implicitly make the assumption that most voters follow similar procedures

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when making electoral decisions. More precisely, electoral decision making is generally perceived as a single act of choice – selecting one alternative from the whole set of available options. Arguably however, making a rational choice among several parties with similar agendas suggests somewhat of a more complex task. While earlier generations of citizens often manifested group based interests or identifications by routinely supporting parties at elections, many voters in the 21st century are instead believed to engage in an actual decision making process. “Voters begin to choose”, to paraphrase the book title from Richard Rose and Ian Mcallister (1986).

Recognizing an increasingly complex voting behavior, a tentative assumption is that electoral research may potentially have much to learn from choice modeling in other disciplines. Recently, consideration set models (CSM) has come to present a promising way to cope with the many challenges outlined above (Thurner 2000; Rosema 2006; Steenbergen and Hangartner 2008; Wilson 2008; Steinbrecher et.al. 2014). In the field of consumer behavior, CSM that assumes sequential decision making has long been a central concept. The key assumption in CSM is that in complex choice situations involving several options, decision makers may choose from a subset of alternatives rather than the universe. Modeling choice from consideration set is thus argued to be a more accurate representation of the actual decision making process of consumers. The general idea behind applying CSM to electoral research is that at the time of elections, many voters actively consider more than one party. Voters are not however believed to consider the entire supply of parties, least not in multi-party systems. Rather, and more realistically, voters are believed to enter the election campaign with an existing subset of parties from which they subsequently select the party to vote for.

The logic of CSM is to a large extent consistent with many established theories of voting behavior including e.g. voter heuristics, information processing and the increasing importance of short-term factors. Further, the perception of voters as utility maximizers, similar to consumers, is well-established with Downs’ (1957) influential rational choice approach to political behavior. Also, since consumer researchers basically draws from the same empirical choice models as do political scientists, a logical extension of CSM is to the political arena.

In this paper we argue that many new and important insights in regards to electoral decision making can be gained by applying CSM to the study of party choice. The paper is organized as follows. First, we introduce the quite intuitive basic ideas and concepts of choice set theory. Secondly, we provide a short summary of our previous research on the many different ways voter’s consideration sets can be measured and how some of the key characteristics of voters’ choice sets (i.e. size, content, stability, relevance) typically develop in the course of an election campaign. Thirdly, we move on to the question of how long-term and short term determinants of consideration set formation and final party choice can be estimated using statistical modelling. Fourthly, we test the CSM approach empirically on new data collected in conjunction with the 2014 Swedish general election.

## **Theory**

The concept of consideration set (CS) is most commonly applied in the disciplines of marketing and transportation. Lately however, the role of CS in individual choice

behavior has also drawn extensive attention from scholars in other fields of research, such as psychology and economics. A general definition of a consideration set is given by Shocker et al. (1991) as “a purposefully constructed set which consists of goal satisfying alternatives salient or accessible (to the decision maker) on that particular (choice making) situation”. Hence, in many situations, the act of choice is a matter of selecting from a subset of alternatives rather than the universe of all possible choice options. While conventional choice models typically assumes that decision makers evaluate and thus have some preferences associated with all available alternatives, the consideration set model is argued to be a more accurate representation of the decision making process. In more complex decision contexts in particular, the choice process is instead conceived as a two-stage sequence. In the first stage, alternatives are narrowed down, forming the consideration set of tolerated alternatives that individuals consider to be valid and viable. In the second stage, trade-offs between the remaining alternatives in the new set are made to reach a final decision (Roberts 1989; Roberts and Nedungadi 1995). Further, distinctive decision rules are argued to be applied, thus characterizing the different stages of the decision making process. Gensch (1987) and Payne and Bettman (1992) e.g. finds that early stages of decision making is characterized by attribute based comparisons while the final stage include more comprehensive trade-offs between alternatives. More particularly, the initial consideration stage, involves a non-compensatory screening process while the choice stage comprises a multi-attribute compensatory choice process (Pramono and Oppewal 2012).

The notion of sequential decision making is also to a large extent consistent with many other recent streams in electoral research. E.g. analysts have long made distinctions between “long-term“ and “short-term” forces that influence voting decisions, (e.g., Campbell et al. 1960; Erikson et al. 2008) indicating that certain information and considerations (such as party identification, ideological preferences and demographic attributes) are available to the voter long before the election campaign even starts. While such factors are generally considered to be stable, short-term forces on the other hand, usually change from election to election with new candidates and various issues being salient. This distinction however, is rarely discussed in terms of stages in a sequential process. Yet, due to weakening party preferences as well as growing proportions of late deciders, short-term forces has been the subject of growing attention. Analyses of US national elections has shown that various short-term factors influence vote choice consistently (e.g. Miller and Shanks 1996; Shaw 2006) and in Western Europe, explanatory power of short-term determinants such as issue attitudes and performance based factors has increased significantly (van der Brug 2010; Karvonen 2010). Particularly, voting behavior of younger generations of voters, not being subject to strong political socialization by traditional cleavages, tend to be less structured by long-term factors due to the emergence of other issues, less related to left-right ideology (van der Brug 2010). This shifting of mechanisms in the “funnel of causality” certainly presents electoral researchers with serious challenges, which on the other hand, choice set models are explicitly designed to meet.

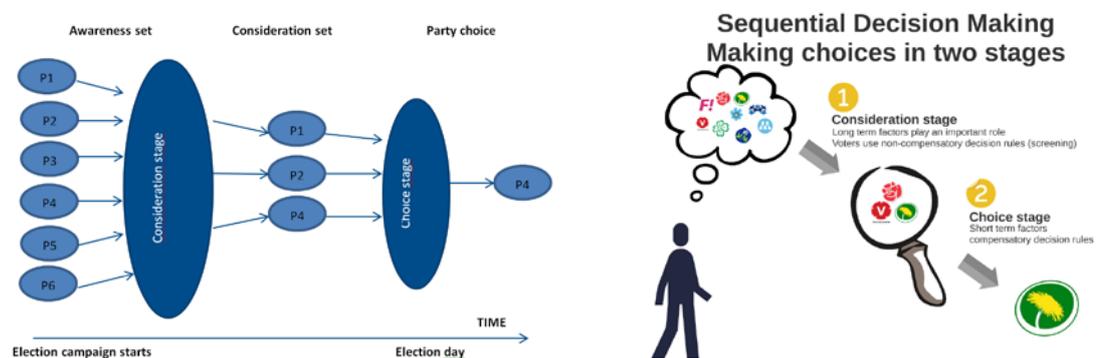
Further, the assumption that voters have choice set constrains is well in line with established theories of political psychology and individual information processing. According to these perspectives, human beings are often viewed as cognitive misers that try minimize the economic costs of making decisions and forming attitudes (Popkin 1991). In order to make political decisions manageable and facilitate rational electoral choices, voters are thus argued to use various cognitive shortcuts. Lau and Redlawsk (2006) find that these heuristics are at times employed by almost

all voters. For instance, voters rely on varying degrees of complex criteria, depending on their level of political sophistication and partisan ambivalence. Hence, voters' calculus involves a trade-off between cognitive efforts on the one hand, and the ability to elect the party that best represents their own substantive values, on the other (Basinger and Lavine 2005). Consequentially, voters do not collect information on all available alternatives. Rather, cognitive efforts are mainly directed at parties that meet basic demands while limited attention is paid to those which do not. From the individual's point of view, the election campaign thereby serves to provide the type of information that is needed to pick a winner from a preselected set of considered alternatives.

Splitting the choice process into two stages is an advancement, but may also still be a simplification. In consumer research when phased decision making processes are studied, more stages than two are often discussed. According to for example Shocker et al as well as Roberts and Lattin, an individual's decision process involves several nested steps. All possible options form the universal set, whilst the subset of options that the individual actually knows about forms the awareness set, of which some options are considered and others not. Thus, the CS is nested in the awareness set (Roberts & Lattin, 1991, 1997; Shocker, Ben-Akiva, Bocara, & Nedungadi, 1991).

Within previous studies of applying a CS approach to party choice the first two stages – the universal set and the awareness set – are generally excluded since the universal set (all possible parties) still present a more restricted number of options than is the case in most consumption research. And because of this, *the awareness set* is believed to have very limited variation between voters in established party based democracies, and this is why analyses of this initial stage is considered futile and the consideration set model for party choice generally distinguishes two separate stages in the decision process – the consideration stage and the choice stage (Steenbergen & Hangartner, 2008; Steenbergen, Hangartner, & Vries, 2011; Wilson, 2008; C. d. Vries et al., 2009). The consideration set model approach for party choice can be schematically illustrated as in figure 1.

**Figure 1 The consideration set model of voting behavior (CSM)**



## **The challenge of modelling a multi stage decision process**

As said, the key feature of consideration set models is that choice is conceived as (at least) a two-stage process. This general notion of sequential decisions however, is hardly any news in electoral research. Drawing on Downs (1957) spatial theory of voting, Riker and Ordeshook (1968) early conceptualized the voting decision as a two-stage process – first, the voter decides which of the candidates to elect and in a second step, whether to vote for the most preferred candidate or whether to abstain. Accordingly, different decision criteria apply in the two stages; policy distances in the multidimensional policy space in the first and alienation, indifference and party loyalty in the second (Davis, Hinich & Ordeshook 1970). This particular kind of sequential framing has thus come to characterize voting literature as the spatial model has been the dominating approach for the last decades.

In contrast to the stepwise logic of the spatial model, generally applied in two-party systems, the sequential consideration set model is feasible when multiple parties or candidates are available to the voter. However, rather than deciding what party to vote for, the voter first choose a subset of alternatives contained in the universal set of available alternatives: an individual choice menu. And second, the voter makes the final decision between the remaining alternatives in the resulting consideration set (CS). This logic is to a large extent consistent with the perception of consumers' decision making process in marketing research where the concept of consideration set is well-established. More particularly, the consideration set has proven its merits in this field as it allows for more flexibility in variables and degrees of influence that is presumed to occur at different stages in the decision making process.

Still, when modeling vote choice statistically, electoral researchers seem to implicitly assume that the decision making process involves one single choice. This assumption further implies that the voter selects one alternative from the whole set of available options and that this decision occurs at a single point in time. As this may be true for some proportion of the electorate, a more likely assumption is that the vote choice is formed over time based on both long- and short range factors such as experience, ideological predispositions, information and campaigns. While this notion indeed is well-established in theory – e.g. Campbell et al's (1960) classic "funnel of causality" – empirical models generally fails to take into account that different criteria might have different impact in various stages of the decision making process.

While the literature on voting behavior certainly supports the underlying assumptions of the consideration set model outlined above, empirical models of vote choice generally fails to take these into account. On the contrary, typical models of vote choice generally assumes that voters have identical choice sets and they do not differentiate between stages in voter's decision making process. This is problematic, not only due to the limited insights into voter's actual decision making processes that is gained from such analysis but also, models that do not explicitly take into account the heterogeneity of individual's choice sets can result in biased and inconsistent parameter estimates (Chaing et al 1999; Swait and Ben-Akiva 1986). Hence, extending the consideration set model to the electoral arena may not seem that distant from a strictly theoretical point of view. Rather, limitations in implementing consideration set models in electoral research might be more of a technical matter.

## **A consideration set model of vote choice**

From a methodological perspective, bridging consideration set models for consumer behavior and vote choice is not as far off as it might seem. Consumer research generally handles discrete choice problems and draws from the same kind of choice models described above. Namely, maximum likelihood models for categorical dependent variables with multiple outcomes, motivated in terms of random utility maximization (RUM). Hence, the act of choice is conceptualized as a utility function where the decision makers (who possess certain characteristics) assess the utility of each alternative and its characteristics. As the decision rule generally is assumed to be utility maximization, the decision maker then chooses the alternative that yields the highest utility (van der Eijk et al. 2006).

However, what distinguishes the consideration set approach from conventional choice models is the choice set from which alternatives and their utility is assessed. While conventional choice models generally assume all decision makers have some utility associated with all available alternatives, CSM instead estimates models using only the set of alternatives deemed to be in the consideration set. This procedure obviously has major implications for the estimation since the exclusion of non-considered alternatives drastically reduces variation in the design matrix (Carson & Louviere 2014). Technically however, discrete choice models, simple as well as conditional variants, allow for varying individual choice sets (McFadden 1984) and therefore, as Thurner (2000) points out, “if voters do not recognize all alternatives, it is possible to use their relevant alternative set and to preclude a modeling of competition, where in fact there is no competition at all”.

As for the statistical properties of modeling choice from consideration sets, Carson and Louviere (2014) underline several important issues that analysts of CSM inevitably have to take into account. First, reduced variation in the data matrix (due to exclusion of non-considered alternatives) will increase confidence intervals for the preference parameter estimates. Moreover, commonly used goodness-of-fit statistics like McFadden’s (1974) pseudo  $R^2$  will tend to be biased downward as “a fully parameterized model almost always will be better at predicting that options outside consideration sets have lower probabilities of being chosen relative to options in consideration sets” (Carson & Louviere 2014). Hence, and quite intuitively, the explanatory power of a model estimated from a small set of alternatives, close in utility space, will be lower compared to a model containing options in less desirable parts. To avoid drawing erroneous conclusions, analysts of CSM are thus urged to incorporate the selection mechanism used for the inclusion of alternatives in the consideration set in the model.

Conceptualizing the decision making process of vote choice as sequential, the first step – inclusion of parties in voters choice set – is naturally a vital part in understanding the outcome of an election. Thus, if one is to capture the sequential nature of the choice, the research design should incorporate the inclusion of parties in the CS, as well as the final choice between the parties in the CS. In order to do this, our research design requires that the data matrix is stacked, as proposed by van der Eijk et al. (2006). This means that instead of individuals, voter-party dyads will be the basis for the analysis. The key implication of this procedure is that instead of explaining which party an individual votes for, we are able to model the probability that a party is voted for. In this case we multiply each respondent with nine of Swedish parties, resulting in a data matrix where every respondent is represented

nine times, once for each party. Stacking the data matrix thus enables us to add party characteristics to our analysis which is a requirement for conditional choice models. Moreover, by adding party characteristics we are also able to generate a variable which indicates whether a party is considered or not. This variable thereby allows us to estimate the probability of a party being included in the respondents consideration set, as well as limiting the choice set, only to comprise the respondent's considered parties. However, in order to take advantage of CSM, a crucial condition is that voter's consideration sets are accurately measured. Therefore, as Pramono and Oppewal (2012) points out; "To avoid choice model misspecifications it is therefore important for analysts to obtain an accurate definition of the consideration set".

### **The challenge of measuring consideration sets**

Although the concept of CSM is well established and also intuitively valid also in the realm of voting behavior, there is still no definitive or preferable measurement of consideration sets. On the contrary, accurate measurements are largely depending on the particular context and choice situation. In other words, when studying party choice, capturing the parties voters *actually* consider voting for, has proven to be the most pressing measurement issue. Unfortunately, a satisfying and reliable measurement in regards to voter's consideration sets is not yet established in standard election studies surveys. In other words, there is a quite large variation in terms of size and content of voter's presumed consideration sets depending on which instruments researchers chose to rely on (i.e., Oscarsson 2004, 2009; Oscarsson, Gilljam & Granberg 1997; Steinbrecher et.al 2014). Resorting to various kinds of indirect measurements of voter's consideration sets, as is done in most previous studies applying CSM to vote choice, thus produces inconsistent and often times unrealistic results.

Within the Swedish National Election Studies Program (SNES), several instruments have been applied in order to effectively identify Swedish voter's consideration sets. This includes feeling thermometers, ticket splitting and second best party preferences. Yet, based on extensive comparisons and evaluations, the best choice of instrument so far is to explicitly ask respondents which party or parties they consider voting for. This kind of survey instrument has been included in SNES panels and official election studies since 2006 and has proved to behave well in line with theoretical expectations.

In conjunction with the Swedish "super election year" of 2014, the Swedish National Election Surveys program (SNES) carried out a seven wave web panel survey, especially designed to monitor the sequential choice process of voters, leading up to the National election. Based on descriptive analysis, six characteristics – the *occurrence, size, content, stability, relevance* and *subjective process* - of voter's consideration sets was mapped out and evaluated (Boije, Oskarson & Oscarsson 2015). In short, the results show that about two thirds of the panel participants actually consider more than one party (occurrence). The average CS *size* hover around two parties and parties that are considered are generally ideological neighbors (content). Further, CSs containing more than one party are fairly unstable over the course of the campaign, meaning that parties are frequently being included in/excluded from CS. For almost 98 percent of the panelists the final party choice was included in the pre-election panel wave CS (relevance). Finally, the development of individual CSs is to a high degree consistent with the panelist's own subjective choice process – the more parties considered, the more difficult the final choice was perceived and the closer to Election Day the final choice was made. In

conclusion, empirical results show that defining CSs based on direct questions is the most valid measurement while alternative measurements, based on party evaluations, result in weak correlations in terms of CS size and content. These results are also confirmed by similar panel studies in Germany (Steinbrecher et al. 2014)

## Method and data

In estimating the inclusion of parties in the consideration set as well as the party choice within the choice stage, we will use a conditional logit model (CL). As demonstrated by e.g. Alvarez and Nagler (1998) and Thurner (2000), this statistical model can be used to properly estimate spatial voting in multi-party systems as it allows attributes of both voters and parties to be taken into account. Wilson (2008) estimates a similar CSM using conditional probit. However, her study is conducted in a three-party setting using a substantially different operationalization of the CS, based on local party strength. The Swedish setting with nine viable parties on the other hand, indicates a probit model is computationally inappropriate, or even deemed impossible, with this many choices (Long 1997). Moreover, it is argued by Dow and Endersby (2004) that the simpler logit is oftentimes preferable to the more complex probit when studying elections in multi-party systems. Not only is the probit model susceptible to several estimation problems with a limited number of observations and several options. But also, in most applications the property of “independence of irrelevant alternatives” (IIA) which is usually the main reason for using probit over logit, is “neither relevant nor particularly restrictive” (Dow & Endersby 2004). Finally, the flexibility of CL allows us to include party-specific variables in the model. This enables us to gain a deeper knowledge about how generic variables might have different effects in relation to different parties.

To test the consideration set model we will here use data from the “CSM web panel survey” referred to above, covering the seven month period from 11<sup>th</sup> of March to the weeks after the Swedish national election in September 2014<sup>2</sup>. The panel consists of a probability based sample of the Swedish electorate, recruited through postcards in March of 2014. In total 2,053 people signed up to participate in the panel which means a participation rate of almost 8 percent. Yet, due to panel attrition, 815 respondents will be the basis for the following analysis. Although both participation rate and panel attrition are at expected levels, the sample is fairly skewed with an overrepresentation of politically interested voters and some bias compared to population demographics<sup>3</sup>.

Table 1 shows the distribution of the dependent variable – i.e. the final party choice – in the CSM panel compared to the actual official election result of the general election in September 2014. In general, the two largest parties, the proportion of voters for the Moderate party and the Social democrats are typically underestimated in web surveys. In this particular sample, the small left wing parties (Left Party and

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<sup>2</sup> The fieldwork was prolonged when the Swedish Prime Minister informed that he would call for an extra election in March 2015 due to the failure of the government’s budget proposal. The constitution does not allow this until three months after the ordinary election. However, just days before the extra election was proclaimed, a broad agreement between the government and the right-bloc opposition parties was reached in order to ease minority rule.

<sup>3</sup> For more information about the data set see Boije 2014 and Oskarsson, Oscarsson & Boije 2015.

the Feminist Initiative) are overestimated. For the purposes of these analyses, no weighting of the data has been attempted.

**Table 1**  
**Proportion of party votes in the probability based CSM panel compared to the official election results (percent, deviation).**

	L	S	C	Lib	M	CD	Gr	SD	FI	Other
<b>Official election result</b>	5,7	31,0	6,1	5,4	23,3	4,6	6,9	12,9	3,1	1,0
<b>CSM panel</b>	13,1	20,1	7,2	8,5	16,4	5,0	12,0	8,8	7,9	1,0
<b>Deviation</b>	+7,4	-10,9	+1,1	+3,1	-6,9	+0,4	+5,1	-4,1	+4,8	±0

**Note:** Number of respondents in the CSM panel: 815. L=Left Party, S=Social democrats, C=Centre party, Lib=Peoples party liberals, M=Moderates, CD=Christian democrats, Gr=Green party, SD=Sweden democrats, FI=Feminist initiative.

The outcome variables in the following analysis are considered parties and vote choice. In the stacked data matrix, these are both dummy-variables indicating whether a party is considered<sup>4</sup> or not and whether a party was voted for or not. The set of independent variables which will be used to estimate the model are all alternative-specific, which means that they vary over the alternatives (in this case the nine parties). This further implies these variables are considered to be generic, i.e. have virtually the same utility for all parties. However, we are able to generate alternative-specific specifications of choice-specific variables by splitting up these generic utility parameters, thereby allowing us to analyze whether generic variables actually are of different importance for different parties. We also want to specify the observed component of utility by including a constant. As well as the other variables the constant is alternative-specific and thereby captures the average effect on utility of all factors that are not included in the model.

To scholars of voter behavior, our choice of independent variables in the model is quite straight forward. As the focus of this paper is on developing the CSM approach and on the modeling strategy, no new determinants have been selected as part of the model. As main determinant of consideration set formation we use the absolute distance between the respondent's self-placement on the left-right ideology scale (0-10) and her assessment of each of the parties on the same scale. Also, we include a similar distance-variable (0-10) based on a multi-cultural dimension<sup>5</sup> in an effort to cover the most prominent secondary ideological dimension in the Swedish party space. Further, we include vote choice in the 2010 (0-1) Swedish national election. Arguably, these three variables capture stable long-term predispositions such as group identification, party identification, ideological orientations and voting habits. As "middle-range" predictors we include two variables which indicate whether the party and the party leader are the respondents "best" (0-1). These

<sup>4</sup> See the section "the challenge of measuring consideration sets" for a more detailed description of measurement and operationalization.

<sup>5</sup> The question reads: "It is sometimes said that there is a trend towards a society where many cultures and different lifestyles meet and are parallel. What is your attitude towards such a multicultural society?" The respondent is then asked to place herself at a scale from 0 to 10 where 0 indicates "Negative towards a multicultural society" and 10 indicate "Positive to a multicultural society". On the next question the respondent is then ask to place the parties according to the same scale.

measures are based on party- and party leader evaluations<sup>6</sup> and the value 1 indicates that the respondent likes a particular party/leader better than all the other parties/leaders. If there is a tie between several parties/leaders, the variable is coded 0. The “best leader-variable” is aimed at analyzing whether the party leader has a “tie-breaking” function between parties in the consideration set while “best party” is mainly used as a control variable.

Finally, as short-term determinants of party choice (the choice stage) we include issue competence variables that indicate whether a party is considered to have the best policy on eight different issues (0-1)<sup>7</sup>. Issues selected are the election’s eight most important, according to the respondents, based on an open ended question from the previous panel wave.

In total, we will estimate four models with the purpose of demonstrating the usefulness of a CSM approach in analyses of electoral choice. In the first two models, we estimate the impact of generic variables in the consideration stage and also, between parties in the choice stage. Next we repeat the same procedure, except we split up the generic alternative-specific variables in order to estimate whether they have different impact for the different parties. Splitting up generic variables however, means a proliferation of coefficients, since all chooser-specific attributes is multiplied by nine. This means the full model will include 125 coefficients, including alternative-specific constants (ASC). Therefore we will only report significant “party effects” along with fit statistics, in comparison to the generic models.

## Results

The presentation of empirical results is divided into three parts: First we will illustrate the impact of long-term predispositions on voters initial consideration set formation. Next, we estimate a model of final consideration set formation and vote choice in conjunction with the 2014 Swedish national election. Finally, we extend this model by splitting up the fixed generic coefficients into party-specific reactions. This allows us not only to explain which parties that managed to capitalize on different issues – additionally, we can show that a non-significant generic parameter does not necessarily imply that there is no impact from such a variable.

### *1) Initial consideration set formation*

We start by illustrating the importance of supposedly stable and long-term predispositions for initial consideration set formation. Initial consideration set formation refers to the parties that respondents state they are considering voting for in the 2014 Swedish national election, in the first panel wave of March 2014. This is thus about six months before the national election in September. We estimate three separate models with “inclusion in consideration” set as dependent variable and in

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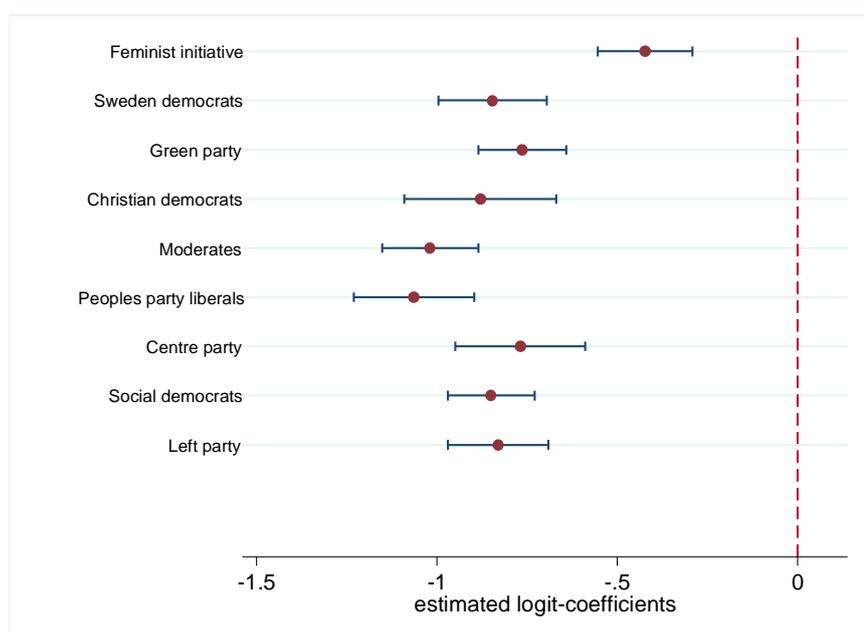
<sup>6</sup> The respondent is asked to evaluate nine parties and ten leaders on a like-dislike-scale (-5 – 5) where -5 indicates strongly dislike and 5 indicate like strongly. Since the Green party has two leaders the variable is coded 1 if both or any of the leaders are ranked the “best”. Both questions are asked in the post-election panel wave.

<sup>7</sup> The question reads: “Which party do you consider to have the best policies on the following issues?”

all models we include alternative-specific constants in addition to the independent variable.

To a large extent, left-right ideological orientations still structure the Swedish party system and in general, swedes have little trouble placing themselves and the political parties on an ideological left-right scale. Hence, as expected, ideological proximity is largely a key condition for including a party in the consideration set. As illustrated in figure 2, ideological predispositions is virtually equally important for all parties except the Feminist initiative which has a significantly lower effect on left-right distance.

**Figure 2**  
**The effect of ideological left-right distance (0-10) on the probability of inclusion in consideration set (log odds)**



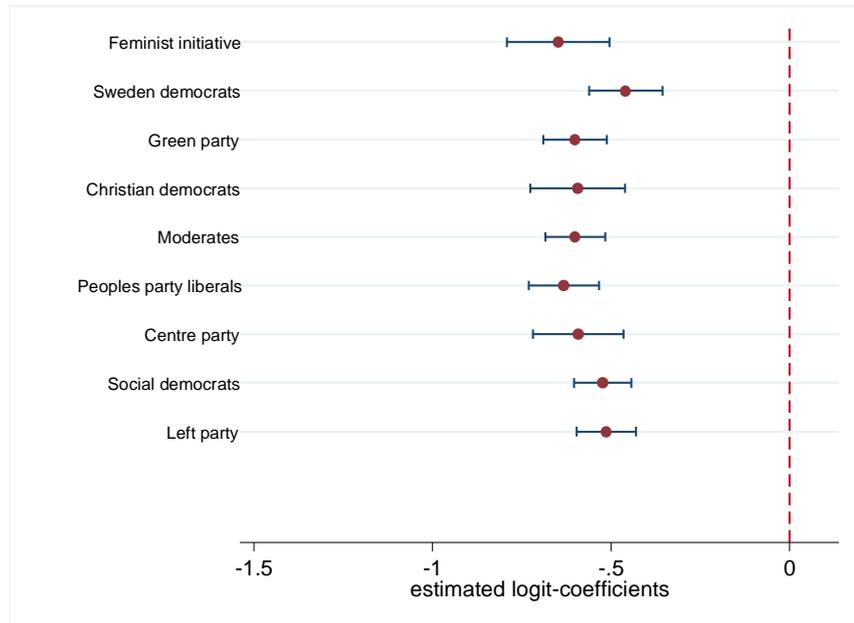
**Note:** Pseudo  $R^2$ : 0.44. Number of observations: 8 627.

As indicated by the pseudo  $R^2$ , the distance between the voter and the parties has a large explanatory power (0.44) and for every one unit increase on LR-distance, the log odds of including a party in the consideration set decreases considerably. As shown in the figure, ideological distance is however a relatively unimportant factor for considering the Feminist initiative. This result is thus in line with the current evolution of the Swedish party space where it is evident that some parties rather compete on other, alternative ideological dimensions.

One such alternative dimension that is often highlighted is the multicultural dimension which is argued to have created leeway for the emergence of various anti-immigrant, xenophobic and other niche parties. Yet, as illustrated in figure 32 below, neither party seems to distinguish itself on this dimension, even if the perceived multicultural distance has a substantial effect on inclusion in CS.

**Figure 3**

**The effect of ideological distance on multicultural scale (0-10) on the probability of inclusion in consideration set (log odds)**



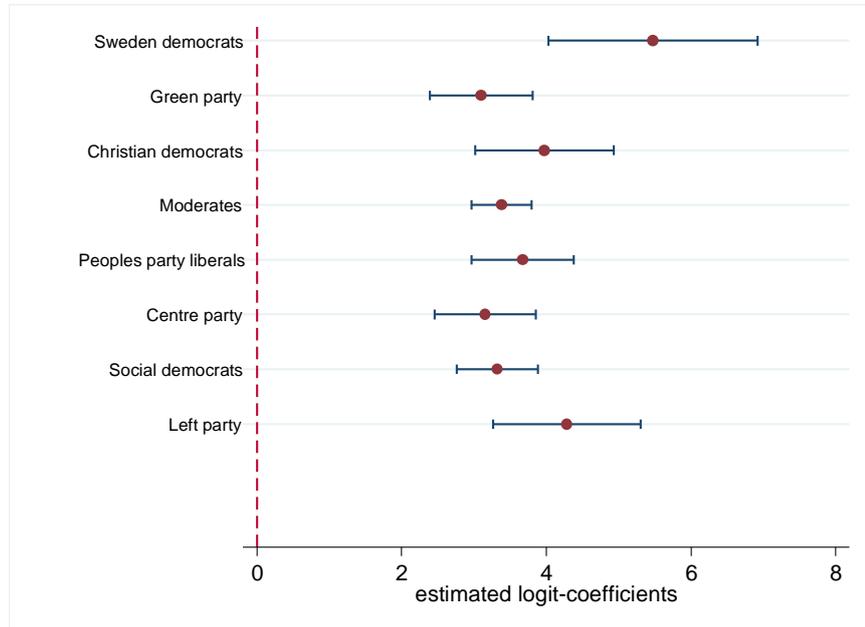
**Note:** Pseudo  $R^2$ : 0.27. Number of observations: 8 627

Since each new demographic variable that enters the model, such as age, sex, income, etc. would mean eight new coefficients per variable; we choose not to include these in our models. For one thing, including such personal characteristics would lead to extremely large and complex models. Also, these factors contribute with limited insights, relevant to our scope in this paper. Instead, we let vote choice in the previous, 2010 Swedish national election represent the third and last component in order to capture long-term predispositions. Not surprisingly, having voted for a specific party in the previous election largely increases the probability to include it again in the CS at the next election. As shown in figure 4, previous vote has virtually the same impact for all parties but a slightly larger effect is observed for the Sweden democrats, compared to several other parties.

Before moving on to the multivariate models it is important to underline that the figures shown above illustrate the impact on respondents' initial consideration set in March. However, as we have repeatedly measured consideration sets we can also show that the effects and explanatory power of long-term predispositions for including parties in CS thereafter decreases continuously, throughout the election campaign. Arguably, parties are thus either included or excluded according to other criteria as the election approaches.

**Figure 4**

**The effect of previous party choice (0-1) on the probability of inclusion in consideration set**



**Note:** Pseudo  $R^2$ : 0.37. Number of observations: 8 627

## 2) Final CS formation and tie-breakers – generic utility parameters

Moving on to the multivariate models we now turn to analyze voter's final consideration sets (CS) and the final vote choice (VC). I.e. dependent variables in following analysis are respondents' stated CS and VC in the post-election survey, dispatched the day after the election. Consequentially, a lot has happened in regards to individual CS size and content since March (Oskarson et al. 2015). Voters have experienced two intense election campaigns and one European parliament election. Hence, while some voters have narrowed down their CS and are virtually decided, others have extended it and stand fairly ambivalent before their final decision. As mentioned above, the impact of long-term predispositions on CS has diminished throughout the campaign, which is important to keep in mind when interpreting the following results.

Looking at the left section of table 2 below (consideration stage), it becomes clear that CS formation is largely characterized by non-compensatory decision rules, i.e. all independent variables are highly significant in all three models. Seemingly, having any kind of utility, whether it is ideological proximity, past vote or issue competence, associated with a party is sufficient for including it in the CS. Starting with model 1, ideological distance and previous VC still brings substantial explanatory power to the model. However, estimates of the alternative-specific constants indicate there are biases, not related to these predispositions, towards several parties.

**Table 2** Conditional logit estimates (log odds) of the probability of inclusion in consideration set and final vote choice.

Model	Consideration stage			Choice stage		
	1	2	3	1	2	3
<b>Alternative Specific</b>						
<b>Constants (S ref.)</b>						
Left Party	0.10	0.12	0.80***	-0.02	-0.04	0.43
Centre Party	-0.55***	-0.47**	0.29	0.19	0.32	1.25**
Liberal Party	-0.38**	-0.31	0.13	-0.29	-0.37	0.34
Moderate Party	0.09	-0.07	-0.15	-0.16	-0.27	1.02*
Christian Democrats	-0.66***	-0.55**	0.31	0.16	0.48	1.21**
Green Party	-0.09	-0.08	0.44	-0.12	-0.40	0.46
Sweden Democrats	0.76***	0.70**	1.01***	0.26	0.37	0.99*
Feminist Initiative	-0.52***	-0.54***	0.19	0.31	0.24	1.33**
<b>Long range determinants</b>						
LR-distance	-0.62***	-0.60***	-0.47***	-0.16**	-0.05	-0.01
MC-distance	-0.46***	-0.43***	-0.33***	-0.16***	-0.11*	-0.07
Party vote 2010	2.50***	1.84***	1.49***	0.91***	0.52***	0.44**
<b>Mid-range determinants</b>						
Best party		4.27***	2.82***		2.00***	1.46***
Best leader		1.78***	1.34***		0.14	-0.06
<b>Short-range determinants (issue ownership)</b>						
Employment			0.84***			0.71**
Economy			1.65***			-0.11
Environment			1.35***			0.51*
Social security			1.39***			0.80***
Health care			0.70***			0.20
Education			1.31***			0.31
Gender equality			1.55***			0.38*
Immigration			1.48***			0.71***
Pseudo R2	0.53	0.60	0.70	0.10	0.27	0.38
Log likelihood	-1370.23	-1150.32	-879.47	-488.78	-395.14	-336.89
AIC	2762.47	2326.64	1800.95	999.57	816.28	715.78
N	7 343	7 343	7 343	1 535	1 535	1 535

Note: \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001.

Including the party evaluation based measures, best party and leader, in the model do not suggest any real implications in the consideration stage other than that the direct effect of previous vote is slightly diminished. Adding issues on the other hand clearly diminishes the effect of ideological distances which indicates parties are also being included in CS on the account of their issue competence. e.g., whether the party is considered to having the best policies on economic issues, which has the

strongest effect in the consideration stage, is more important than both previous vote and party leader.

Moving on to the right section of table 1 (choice stage), some clarifications need to be made. While the models estimating CS include all respondents – i.e. even those only considering one party – the choice stage estimation is limited to respondents considering more than one party. In other words, the choice set is limited only to include considered parties instead of all, which was the case in the consideration stage. Hence, the large drop in  $n$  is mainly due to party-dyads being excluded from the model, rather than respondents<sup>8</sup>. One could obviously argue that only respondents considering more than one party should be the basis, also for the CS estimations. At this stage however, we chose not to delimit ourselves to a subset of the electorate. Moreover, excluding respondents only considering one party has more or less no impact on consideration stage coefficients.

Now looking at the choice stage section, model 1 indicates long-term ideological predispositions is not doing a very good job explaining VC between parties in the CS. Thus, in the narrow utility space between parties in CS, a one unit increase in ideological distance has a relatively small effect on VC. In model 2, LR-distance no longer has an effect while there is still a small effect in regards to multicultural distance. Previous VC serves as a tie-breaker but in comparison to “best party evaluation” the effect is small. The party leader however, appears not to have any tie-breaking function at all.

Including mid- and short range factors in choice stage models implies both absolute and relative improvement of explanatory power, compared to the consideration stage. Out of the eight issue-competence measures, social security and immigration are significant at the 0.001 level and proves to be the strongest tie-breakers apart from “best party”. Further, employment, environment and gender equality also serves as generic tie breaking issues. Economy on the other hand, which was the most important issue for inclusion in consideration set, has no effect in the final choice stage. To summarize, the generic models implies that there indeed are different criteria at play in various decision stages. The consideration stage is thus characterized by non-compensatory decision rules with long-term predispositions having the largest impact. In the choice stage however, long-term factors proves rather irrelevant while instead short-term factors are employed in discriminating between parties in the CS.

### *3) Extension with party-specific utility parameters*

The generic models offer compelling insights into the sequential decision making process of voters. E.g. we saw that ideological distance is crucial in the consideration stage but when making the final choice, competence on certain issues matters more. The generic models do not however tell us which parties that managed to capitalize on these issues. At the same time, non-significant generic utility parameters might still have an impact for certain parties. In order to explore this, we now split up generic utility parameters into party-specific specifications. As this procedure means 125 coefficients will be estimated in the full model we chose only to report significant ( $p < 0.05$ ) issue reactions. The party with the largest effect is thus listed first on each row.

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<sup>8</sup> The number of parties considered by respondents included in table 1 (consideration stage) is: 1 party: 22.5 %, 2 parties: 43.1 %, 3 parties: 27.5 %, 4 parties: 6.3 %, 5 parties: 0.7 %.

Starting with consideration set formation (Table 3); we see that ideological predispositions and previous VC is indeed generic, with equal importance for all decision processes. Except for the Feminist initiative (previous VC) all party-specific parameters are highly significant in model 1 which is quite evident since it is a new party. Including mid- and short-term factors however, implies a direct effect of LR-distance only applies to the Green and the Left party. Previous VC is most important for the two biggest parties (S and M) and we see direct leader effects for L, FI and Lib. Further, all parties managed to capitalize on at least one issue in the consideration stage.

**Table 3**  
**Party-specific issue reactions on the probability of inclusion in consideration set and final vote choice (conditional logit estimates).**

Model	Consideration stage			Choice stage		
	1	2	3	1	2	3
ASC (S ref.)	M, Lib	SD, C, FI	CD, FI, V, C	None	None	None
<b>Long range determinants</b>						
LR-distance	All	L, Gr, SD, M	Gr, L	C, Gr	None	SD (positive)
MC-distance	All	Gr, M, S, C	Lib, Gr, M, S, C	FI	None	None
Vote 2010	All but FI	S, L, M, Gr	M, S	CD, L, S, Lib, M	CD, L, S	SD, CD, L
<b>Mid range determinants</b>						
Best party		All	All		All	All but CD
Best leader		L, Lib, FI, S	L, FI, Lib		L, S	None
<b>Short range determinants</b>						
Employment			C, S			C, S
Economy			M, S			None
Environment			Lib, Gr			Gr
Social security			S			SD, Lib, S
Health care			C			C
Education			L			L
Gender equality			L, FI			None
Immigration			CD, SD			FI, Lib
Pseudo R2	0.54	0.79	0.83	0.12	0.32	0.50
Log likelihood	-1340.20	-586.01	-486.21	-478.38	-359.03	-264.62
AIC	2750.40	1278.03	1222.42	1026.76	824.05	759.26
N	7 343	7 204	7 204	1 535	1 482	1 482

**Note:** \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ . L=Left party, S=Social democrats, C=Centre party, Lib=Peoples party liberals, M=Moderates, CD=Christian democrats, Gr=Green party, SD=Sweden democrats, FI=Feminist initiative. The party abbreviations represents significant ( $p < 0.05$ ) "party effects" with the strongest effect first on each row.

Moving on to the choice stage it is apparent that including a party in the CS on account of a certain issue does not necessarily mean that issue will serve as a tie-breaker in the choice stage. E.g. strong effects on previous VC and economy towards the Social democrats and the Moderates in the consideration stage are non-

existent in the choice stage<sup>9</sup>. Instead it is SD, CD and L that capitalizes on previous VC in the choice stage while economy proves to be irrelevant. Health care and education on the other hand, which had no effect in the generic, choice stage model, is however capitalized by the Left party (education) and the Centre party (health care) in both stages.

Although gender equality served as a tie-breaker in the generic model, no specific party managed to capitalize on the issue which indicates net effects towards several parties cancel each other out. Another interesting implication of moving from generic to party specific issue reactions is that although the anti-immigrant party SD, indeed got considered on the account of immigration, they capitalized on social security in the final choice stage. Instead, it was parties, more liberal towards immigration that capitalized on the issue in the choice stage.

Finally, when looking at fit statistics, it is evident that splitting up generic parameters improves explanatory power of the models (Pseudo  $R^2$ ) as it uses more information. In the consideration stage models, long-range determinants produce similar measures of fit for generic and party-specific parameters. When including mid- and short range determinants however, there is a considerably larger improvement in model fit (pseudo  $R^2$ ) for the party specific model (0.83) as compared to the generic (0.70). Also, Akaike's information criterion (AIC), indicate the party-specific model is a better fit for the data.

Also in the choice stage, estimating party-specific parameters indicates larger improvement in explanatory power relative to generic, especially when including short-range determinants. AIC on the other hand suggest the generic model is a better fit for the data as the large amount of coefficients relative to numbers of observations produces huge standard errors and confidence intervals<sup>10</sup>. Identical analyses conducted on the much larger<sup>11</sup> opt-in sample thus indicate a party-specific model is a better fit even in the choice stage. Further, using the opt-in sample indicates overall results are essentially confirmed, only with a larger number of significant issue reactions.

## Concluding remarks

As justifications for introducing and applying consideration set models in electoral studies, we initially highlighted three general points: First, developments towards an increasingly heterogeneous and individualized electorate imply a decrease in explanatory power of conventional models that poses a threat to our ability to reach valid conclusions of electoral behavior. Second, we argued that consideration set models harmonize better with political psychological theories of individual decision making and information processing and third, the study of electoral decision-making have much to learn from other disciplines, studying and modeling individual choice. Insights from other disciplines that also model multi-stage decision processes – such as marketing research and consumer behavior – can inspire new approaches in voter behavior and the analysis of democratic elections.

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<sup>9</sup> Even with respondents only considering one party excluded, the Moderates and the Social democrats are the only parties with significant effects on previous vote choice and economy in the consideration stage.

<sup>10</sup> Significant difference in model fit is confirmed by a Likelihood-ratio test, using STATA 13.

<sup>11</sup> Number of observations in models using opt-in sample: 89 752 (consideration stage), 18 894 (choice stage).

In this paper we have demonstrated that many new insights into the outcome of a single election – the 2014 Swedish national election – can be gained by assuming; (1) for a large share of the electorate, voting for a party in an election is a sequential decision rather than one discrete choice and; (2) for a large share of the electorate the final party choice is a choice between two or three alternatives rather than a choice between a full set of alternatives. By using voters' own stated consideration sets as a dependent variable as well as an instrument for limiting the choice sets, we have been able to show that different criteria have fundamentally different impact in various stages of the decision making process. For instance, the long-range ideological predispositions prove to be more valuable in analyses of which parties is being considered by voters and less valuable in analyses of voters' final choice. As expected, our results demonstrate that, indeed, the choice stage involves compensatory decision rules and is influenced by short range determinants.

To illustrate the sequential nature of electoral decision making, we opted for variables intended to represent long-, mid- and short term determinants of vote choice. We acknowledge however that several other components should be included and elaborated with in order to specify a more accurate model. Yet, we are convinced that this approach will allow us to get even closer to voters' considerations in the final stages of the election campaign. Still, we argue that a key condition for conducting and taking advantage of CSM in an electoral setting is a valid and reliable measure of voter's actual CS. Hence, we propose that surveys should ask explicitly about which parties respondents consider voting for rather than using indirect measures. Moreover, a panel design is obviously ideal in order to monitor developments during the election campaign and get at causality but it is not a necessity for CSM. Many new insights can be gained from modeling CS formation and choice within CS, also using a cross-sectional design.

### **Implications for further research**

The consideration set approach provides a theoretical framework and a vocabulary that is, at least in part, new to the study of electoral research. The ideas of a multi stage decision process, of primary, secondary and compensatory decision rules, of tie breakers, and of generic and alternative-specific characteristics, are all intuitively appealing, and brings a new way of thinking about how voters' actually make up their minds in multi-party electoral settings. However, thus far, the approach brings no entirely new sets of determinants to the table. So far, the approach allows compatibility with most traditional theories of electoral choice. However, CSM have also a potential to bring new focus on specific features of the individual choice context.

CSM is suggested as an answer to a highly individualized voter behavior in multi-party systems where the number of choice options is high and the actual choice process may be a more demanding task for the individual voter. However, the approach may also, in the end, turn out to be too complicated compared to the actual gain in insight about electoral, political and societal change. CSM is a demanding approach in many ways, since it requires more intensive data collection and the use of new instrumentation and very sophisticated analyses techniques.

CSM allow us to gain more insights to individual decision making but the analyses can also be extended to help understand more about the aggregated outcomes of

elections, i.e. to explain election results, and be an important part of a larger analysis of political change in democratic societies. This is important because not all voters belong to the considering kind. The aggregated effects of mid- and short range determinants of voter behavior (i.e. issues, campaign events and messages, tactical considerations, and the like) must be evaluated bearing in mind that large proportions of the electorate still never consider to vote for more than one party.

## References

- Alvarez, R. Michael, and Jonathan Nagler (1998). 'When Politics and Models Collide: Estimating Models of Multiparty Elections', *American Journal of Political Science*, 42:1, 55–96.
- Campbell, Angus, Phillip Converse, Warren Miller, and Donald Stokes. 1960. *The American Voter* New York: Wiley and Sons.
- Carson, Richard. T. and Louviere, Jordan. J. (2014) "Statistical Properties of Consideration Sets." *The Journal of Choice Modelling*. 13, 37-48.
- Chaing, Jeongwen, Siddhartha Chib, and Chakravarthi Narasimhan. 1999. "Markov Chain Monte Carlo and Models of Consideration Set and Parameter Heterogeneity." *Journal of Econometrics*. 89:233-248.
- Davis, O., Hinich, M.J., Ordeshook, P.C., 1970. An expository development of a mathematical model of the electoral process. *American Political Science Review* 64, 426–448.
- Dow, Jay K. and James W. Endersby. 2004. "Multinomial Probit and Multinomial Logit: A Comparison of Choice Models for Voting Research." *Electoral Studies*. 23:107-122.
- Erikson, R.S., MacKuen, M.B., Stimson, J.A., 2008. *The Macro Polity*. Cambridge University Press, Cambridge.
- Downs, A. 1957. *An Economic Theory of Democracy*. New York: Harper and Row
- Gensch, D. H., 1987. A Two-Stage Disaggregate Attribute Choice Model. *Marketing Science*, 6(3), 223-239.
- Karvonen, L., 2010. *The Personalization of Politics*. ECPR Press, Colchester
- Lau, R. R., & Redlawsk, D. P. (2001b). Advantages and disadvantages of cognitive heuristics in political decision-making. *American Journal of Political Science*, 45, 951–971.
- Lau, Richard and Redlawsk, David (2006). *How voters decide. Information processing during election campaigns*. Cambridge: Cambridge University Press.
- Luce, R.D. (1959), *Individual Choice Behavior*, Wiley.
- McFadden, D., 1974. Conditional logit analysis of qualitative choice behaviour. In: Zarembka, P. (Ed.) *Frontiers in Econometrics*. Academic Press, New York.
- McFadden, Daniel. 1978. "Modelling the Choice of Residential Location." In *Spatial Interaction Theory and Residential Location*, ed. A. Karlquist et al. Amsterdam: North-Holland.
- McFadden, Daniel. 1981. "Econometric Models of Probabilistic Choice." In *Structural Analysis of Discrete Data*, ed. C. F Manski and D. McFadden. Cambridge: MIT Press.
- McFadden, D., 1984. Econometric analysis of qualitative response models. In: Griliches, Z., Intriligaor, M.D. (Eds.) *Handbook of Econometrics*, vol. II. North-Holland, Amsterdam.
- Miller, W.E., Shanks, J.M., 1996. *The New American Voter*. Harvard University Press, Cambridge.

- Oscarsson, H., Gilljam, M., & Granberg, D. (1997). The concept of party set: A viable approach or just another way to slice the same cheese? Göteborg University: Department of Political Science.
- Oscarsson, H. (2004). Verkligen väljande väljare [Virtually Voting Voters]. In S. Holmberg & H. Oscarsson (Eds.), *Väljare. Svenskt väljarbete under 50 år* [Voters. Fifty Years of Swedish Voting Behavior]. Stockholm: Norstedts Juridik AB.
- Oscarsson, H. (2009). Identifying voters consideration sets. Paper presented at the ECPRconference, Potsdam, Germany.
- Payne, J. W. and J. R., Bettman, 1992. Behavioral decision research: A constructive processing perspective. *Annual Review of Psychology*, 43(1), 87-131.
- Pramono, A, and Oppewal, H. (2012). Accessibility and the role of the Consideration Set in Spatial Choice Modelling: A Simulation Study. *Journal of choice modelling*, 5, pp 46-63
- Quinn, K.M., Martin, A.D., Whitford, A.B., 1999. Voter choice in multi-party democracies: a test of competing theories and models. *American Journal of Political Science* 43, 1231–1247.
- Riker, W., and P. Ordeshook. 1968. "A theory of the calculus of voting." *American Political Science Review* 62:28-42.
- Shaw, D.R., 2006. *The Race to 270: The Electoral College and the Campaign Strategies of 2000 and 2004*. Chicago University Press, Chicago.
- Shocker, A. D., M., Ben-Akiva, B., Boccara and P., Nedungadi, 1991. Consideration set influences on consumer decision-making and choice: Issues, models, and suggestions. *Marketing Letters*, 2(3), 181-197.
- Steinbrecher, M., Plischke, T., Schoen, H., & Wiegand, E. (2014). Vote choice and consideration sets in a multi-party setting: Comparing different measures of consideration sets. Paper presented at the General Conference of the European Consortium for Political research (ECPR), Glasgow, Great Britain
- Schofield, N., Martin, A.D., Quinn, K.M., Whitford, A.B., 1998. Multiparty electoral competition in the Netherlands and Germany: a model based on the multinomial probit. *Public Choice* 97, 39–76
- Swait, Joffre, and Moshe Ben-Akiva. 1986. "Incorporating Random Coefficients in Discrete Models of Choice Set Generation." *Transportation Research*, B. 21:92-102
- Thurner, P. W. 2000. The empirical application of the spatial theory of voting in multiparty systems with random utility models. *Electoral Studies* 19: 493-517
- Thurner, P. W and Eymann, A. (2000). "Policy-Specific Alienation and Indifference in the Calculus of Voting: A Simultaneous Model of Party Choice and Abstention", *Public Choice*, 102 (1-2), 49-75
- Van der Brug, W., 2010. Structural and ideological voting in age cohorts. *West European Politics* 33 (3), 586–607
- Van der Eijk, Cees, Wouter van der Brug, Martin Kroh, and Mark Franklin. —Rethinking the dependent variable in voting behavior: On the measurement and analysis of electoral utilities| *Electoral Studies* 25: (2006): 424-47.