Utilities, Preferences and Choice

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In this paper we argue that theories of party choice are implicitly not about choice, but about electoral preferences or utilities. This distinction is not trivial, as individual choice can be deduced from individual preferences or utilities, whereas the reverse is not necessarily true. In spite of this, a large part of empirical electoral research is (implicitly) based on the analysis of 'revealed' preferences, i.e. preferences that have been deduced from choice by using interpersonal comparison to make up the informational deficit at the individual level. We argue that the risks of this approach can be avoided by an alternative approach, that entails the empirical observation of electoral utility. A practical procedure for doing so is presented, and some validating analyses are reported.

1. Individual Choice Theory

Theories of individual choice behavior conceptualize choice as a function of the characteristics of the decision maker, of the set of available alternatives and their attributes, and a decision rule. Given a fixed set of alternatives and their attributes, individual choice is commonly construed in two steps. First, individuals assess the utility of each alternative and derive, second, a choice based on the decision rule of utility maximization. The concept of utility therefore "assumes commensurability of attributes. This means that the attractiveness of an alternative expressed by a vector of attributes values is reducible to a scalar. This defines a single objective function expressing attraction of an alternative in terms of its attributes" (Ben-Akiva & Lerman 1985: 37).

A utility function may be constructed as yielding ordinal or cardinal utility. The first form is commonly known as a preference ranking of alternatives (respondent *n* prefers for example alternatives x>y>z). Cardinal utility implies the possibility to measure utility as a quantity, thus providing uniqueness of the numerical values that express someone's utility for a choice alternative. That is, cardinal utility provides additional information on how much more alternative x is preferred over alternative y, etc. In the discussion of this paper we will refer to ordinal utilities as *preferences* and to cardinal utilities as *utilities*, as this usage of these two terms seems to be most prevalent in the literature.

Contradictory to deterministic choice theory as presented so far, empirical studies show that individuals facing an identical choice situation do not always select the same alternative (see already Thurstone 1927). Moreover, when repeating the same choice experiment, single respondents do not always choose the same alternative. Probabilistic

choice theory has therefore been proposed as more appropriate approximation of individual choice processes. Luce and Suppes (1965) distinguish two probabilistic choice mechanisms: *constant utility* and *random utility.*

Recall that utility models consist of two steps: first, assessing the preference or utility of each alternative and, second, choosing the alternative with the highest preference or utility. Constant utility theory states that the second of these steps should not be regarded as deterministic, and that choice is a probabilistic function of preferences or utilities (Luce 1959). Suppose the following example in which a decision maker faces three alternatives x, y, and z and ascribes to these options the (cardinal) utilities $U_x = 45$, $U_y = 40$, and $U_z = 35$. Suppose furthermore that this decision maker faces the same choice situation infinitively often. Deterministic choice theory would predict that the decision maker chooses alternative x in *all* repetitions of the choice experiment. Probabilistic choice theory predicts that the decision maker chooses x more often (or, at least as often) as y and y more often (or, as least as often) as z.

The random utility approach, formalized by Manski (1977), assumes that individuals always select the alternative with the highest utility. The probabilistic element of individual choice lies in the first step of assessing utilities. Probabilistic choice theory in its random utility form implies that the individuals' reports of their preferences or utilities is not always the same under identical conditions, owing to measurement error or to random variation in the assessment of preference/utility by individuals (these two situations are formally indistinguishable, however). Utilities are not known with certainty to the analyst and are treated as random variables. Implied in this formulation is a distinction between latent and manifest utilities, with the latent one represented by the mean of a probability function, and the manifest one by a single observation that can be regarded as a random draw from this distribution. Depending upon one's assumptions about these distributions, the latent utilities (sometimes referred to as 'true' utilities) can be deduced from the relative frequency with which an individual chooses various alternatives under seemingly identical conditions.[1]

While probabilistic choice theory is of particular relevance for the discussion of this paper it is of course not the only suggested modification to traditional deterministic choice theory. Threshold models, for example, state in contrast to the decision rule of utility maximization that individuals choose an alternative if its utility exceeds some critical value.

[1] Because of the practical impossibilities of large number of repetitions across a single individual, replications can also be obtained across different individuals if they are identical in all relevant characteristics, or after controlling for their differences in relevant characteristics.

The satisficing rule as proposed by Simon (1957) is probably the most well known threshold model. "In contrast to the large number of possible satisfying rules, however, only a few mathematical representations have been proposed. Perhaps the most popular model is due to Coombs' (1964) analysis of the 'pick any/m' task and Thurstone's (1959) work on the method of successive categories" (Böckenholt 2001: 11969). The major problem with satisficing models in electoral research is that they cannot explain which of various satisfactory options will be chosen.[2] The pick any/m analogy is not applicable in most electoral contexts (with the exception of approval voting) because most electoral systems severely limit the number of alternatives that can be chosen. Because of these reasons, we focus in the remainder of this paper on the probabilistic choice theory described above.

2. The Utility Concept in Electoral Research

The elements of individual choice theory are, implicitly or explicitly, present in most empirical electoral research. In some instances this is very explicitly so. The work of Downs (1957) and of those who belong to the so-called rational choice approach do so very explicitly. Sometimes, this rational choice approach is suggested to be (at least in part) incompatible with other approaches to the analysis of individual party choice. As far as the usage of individual choice theory is concerned, this is not correct, however. Sociological theories of voting (sometimes also referred to as social structural theories) and social-psychological theories (the Michigan model and its offshoots) can be entirely cast in these terms. They mainly make statements about the first step of the decision process of voting – the determinants of preferences/utilities – and leave the second step implicit. Campbell and his colleagues (1960) or Lazarsfeld and his colleagues (1944) did not explicate the relationship between preferences/utilities and choice (2^{nd} step of choice process), but they clearly imply that voters chose the most preferred party. Supporters of rational choice theories in electoral research differentiate themselves sometimes from those in other theoretical approaches by excluding certain considerations as 'rational'. Downs (1957: 36) for example defines (rational) electoral utility as (expected) benefits from (expected) governmental activity and excludes apolitical or expressive utilities as a rational basis for utility (see also: Brennan & Lomansky 1993). But this theoretical elaboration is not necessitated by the

[2] In different applications, one could hypothesize that an individual will chose the first satisfactory option that comes by. In electoral contexts this is of little help, however, as all choice options are basically presented.

perspective on individual voting as a two-step process involving preferences, utilities and choice. Individual choice theory as outlined so far fits is perfectly with any theory of voting that explains the genesis of voters' preferences (1st step of choice process).

On the methodological side, many of the analytical choice models that have become *en vogue* during the last decades (binary, multinomial, conditional logit/probit models etc.) are motivated by individual choice theory[3] (e.g., Ben-Akiva & Lerman 1985). Hence, if such analytical models are used in the context of sociological or social-psychological approaches, the analyst inherently uses individual choice theory, and inherently uses concepts about the relationships between utility, preference, and choice. Because of the great popularity of these analytical models in empirical research, a very large portion of empirical analyses of party choice published in the last 30 years, are based (mostly unconsciously) on individual choice theory. As a consequence, they contain (often unnoticed) estimates of electoral preferences and utilities based on observations of party choice and of attributes of parties and of voters.

What any substantive empirical model of party choice estimates and what voting theory in essence is interested in is the first step of the decision process: the factors that determine the utility of alternative parties for voters. That is we explain the overall electoral attractiveness of each choice alternative (utility/preference). Given these, there is traditionally much less interest in the decision rule that leads to vote choice (maximization, satisficing, etc). As a matter of fact, in most studies of electoral research the second step is assumed to follow the intuitively appealing rule of utility maximization. When discrete choice models of voting are estimated, and the results are interpreted to signify that, for example, members of the working class have a higher likelihood of voting for a socialist party than non-working class individuals, we are in fact not estimating vote choice but something else. The effect parameters we estimate pertain to the utilities that working class members ascribe to socialist and other parties, under the assumption that choice itself is based on utility maximization. This distinction may at first look like splitting hairs, but it is crucial from a conceptual point of view. It illustrates that effect parameters of independent variables (e.g., 'working class membership') are in fact related to 'party utility' and only indirectly (by means of an assumption) to 'party choice'.

To sum up: electoral research is mainly interested in explaining voters' preferences or utilities. The parameter estimates obtained from statistical models such as binomial or multinomial logit models, which come close to being dominant in electoral research, in fact

[3] For the application of these methods in multiparty elections see particularly Whitten and Palmer (1996), Alvarez and Nagler (1998), Quinn et al (1999), Thurner (2000), and Glasgow (2001).

estimate the relationship between independent variables and utilities. But, if that is the case, the problem becomes acute how these utilities – the actual dependent variables – are represented or measured in our data. Surprisingly, very few scholars so far have addressed this question.

There are principally two ways to generate empirical information on utilities of choice alternatives. First, one can attempt to *observe* them. One can ask respondents to report electoral preferences respectively utilities. Questions about voters' preferences for parties can be in the form of rankings, which yield ordinal utility, or, as indicated above, electoral preferences. If voters are asked to provide preference ratings, this may conceivably yield (cardinal) utilities. A second strategy to generate empirical information about preferences or utilities is to deduce them from behavior, which is what economists refer to as *revealed* utilities/preferences. The idea goes back to Lancaster (1966) who calls this indirect utility. He suggests that choice-alternatives are not themselves the objects of utility, rather, but that utility is derived from the attributes or characteristics of these choice options, in relation to the attributes or characteristics of the individuals that choose from these options. Thus, if we assume that all relevant attributes of the choice options (parties) and of the individuals that choose (voters) are observed, one can estimate indirect utility from observed choices. To accomplish this in practice observed information on voters' party choice and observed attributes of parties and voters are used to predict post hoc the utilities voters associate with parties. This procedure of generating revealing or estimating utilities used when applying discrete-choice analytical models (binomial, multinomial, conditional logit/probit etc).

3. Revealing Electoral Preferences/Utilities

As stated above, data on electoral preferences/utilities are implicitly generated when using discrete choice models. The observational foundation for such analytical approximation of electoral utilities/preferences is (party) choice, attributes of choice options (e.g. party stands on immigration issue), and characteristics of decision makers (e.g. church attendance of voters). Discrete choice models rest conceptually on probabilistic choice theory and are

either motivated by a probabilistic constant utility approach or by a probabilistic random utility approach (King 1989).[4]

The probabilistic constant utility approach states that a qualitative choice is a crude measure for multiple choice probabilities. Voters' ascribe to each party a certain choice probability that is functionally linked to the utility of each option. (Non-) linear probability models that are interpreted as representations of a constant utility approach assume equivalently that the dependent variable of the analysis is in fact continuous but happens to be measured poorly that discrete variable[5] (Aldrich & Nelson 1984). We have some doubts whether this way of conceptualizing choice is most relevant in the context of *electoral* choice. In most democracies voting truly is a qualitative choice that does not involve the expression of preferences in a continuous fashion.[6]

The second probabilistic approach to obtain revealed preferences or utilities – the random utility interpretation of discrete choice models – holds that qualitative choice is measured in its true form as a discrete variable. What is measured imperfectly, however, is utility ascribed to party alternatives by the individual voters. Because voting in most democracies a qualitative choice, we think that the random utility approach more accurately describes the act of voting as the constant utility approach (cf. Alvarez & Nagler 1998; Thurner 2000). Usually choice is observed and the approach of revealed preferences/utilities tries to deduce from this choice the underlying individual electoral utilities. Since this utility/preference is indirectly construed from observed information on choice and attributes, its prediction is of course only as good as the available indirect information. Such prediction therefore contains slippage that is due to measurement error, unobserved attributes, unobserved taste variation, and/or instrumental variables (Manski & McFadden 1981). The following section will illustrate why such a procedure is not always sufficient. After that we will focus on the alternatives to the revealed electoral preferences/utilities approach.

[4] King (1989) refers also to threshold models as a third theoretical foundation of discrete choice models. As outlined above, we do not think that threshold approaches adequately describe the process of party choice. We therefore restrict the discussion of discrete choice models to their probabilistic motivation.

[5] Thus, discrete probability models are tools to compensate for poor measurement. But as always, such compensation is only imperfect and a proper measurement of the concept of interest is certainly preferable. The straightforward conclusion from a probabilistic constant utility theory of party choice and its equivalent analytical tool, discrete probability model, is to observe the true form of party choice, multiple probabilities of party choice.

[6] A possible exception exists in electoral systems that allow *panachage* or elements of cumulative voting. But even there a conceptualization of choice in terms of constant utility and random choice is not unproblematic. Random utility conceptualizations seem less problematic in such systems too. More importantly, systems with elements of *panachage* and cumulative voting are quite rare.

4. Why Choice is Insufficient to Reveal Preferences/Utilities

Choice is only a partial observation of preferences or utilities because it reveals only the preference/utility ordering of the chosen alternative vis-à-vis all other ones, without any clue about the internal ordering of the alternatives that were not chosen. In a manner of speaking, we are here confronted with a kind of reverse 'Arrows' problem. Arrows (1951) points out that by individual preferences are not necessarily adequately translated into public choice. Conversely, when we can only observe choice, it is impossible to deduce preferences without additional assumptions or additional information. As an illustration, consider three voters holding the following preferences for parties x, y, and z:

1. x>y>z
2. x>y>z
3. z>y>x

Two of these voters would choose option x, one would chose option z, and none would chose option y. Yet it would be incorrect to deduce from this that voters prefer y least. Voters in this example actually prefer option z least (and y is the second preferred option).[7]

When only discrete choice is known, the uncertainty about preference increases with the number of parties one can choose from. In a two-party system (parties x and y) one can straightforwardly derive the underlying preference order from observed choice. Choosing x implies the preference order (x>y), choosing y implies (y>x). In a three party system (parties x, y, z), party choice only reveals part of the preference order, as shown above. For a voter who chooses x we can deduce two binary preference orders (x>y and x>z) but we cannot deduce the third one involving (y ? z). The ratio of binary preference orders that can be deduced from discrete choice is measured decreases with the number of alternatives. In a ten party system, for example, party choice provides information for only 20% of the binary preference comparisons (van der Eijk & Kroh 2002: 13)[8]. In the tradition of revealed preferences or utilities the remaining 80% of (intra-individual) preference orders are approximated by the (inter-individual) choice order.

As we have elaborated elsewhere, we have serious doubts about estimating electoral preferences by means of discrete choice models, particularly in multiparty contexts (van der

[7] Such differences between aggregate choice-rankings and preference-rankings are empirically common in electoral research.

[8] The functional relationship between the number of alternatives (k) and the number of binary preference orders is ½(k)(k-1). In a ten-party-system one can deduce from choice nine binary preference orders from a total of (½)(10)(9) = 45.

Eijk & Kroh 2002). One of the basic assumptions of discrete choice models in multiparty systems does not hold empirically and that results of such analysis are therefore biased. This assumption states that an approximation of (intra-individual) preference data by (inter-individual) choice comparisons comes close to unobserved preferences (McFadden 1973). More specifically, intra-individual preferences are assumed to follow the inter-individual distribution of choice among seemingly similar individuals, that is, individuals who can be regarded as replications of one another in terms of their relevant characteristics.[9] This requires that all individuals use the same set of attributes, the same weights and the same evaluation criteria when gauging their preferences/utilities for parties.[10] This is more than just a substantively innocuous assumption for the sake of mathematical or statistical convenience. It is frequently demonstrably implausible. Choice is a behavior or decision to behave, involving the selection of one of the available alternatives. The assumption that choice flows from utility implies that preferences can be partially deduced from choice, as the chosen alternative will be preferred over all other alternatives. Note, however, that if the number of alternatives is larger than 2, we cannot deduce from choice the ordinal utilities between the non-chosen alternatives. Furthermore, cardinal utility cannot be deduced from choice. Because of these considerations, we strongly promote to not reveal, but empirically observe electoral preferences/utilities. The following section discusses problems and possibilities thereof. It also discusses what properties such measures should have, and it presents a measure which holds up to such requirements.

5. Problems and Possibilities of Measuring Electoral Utilities/Preferences

As stated, there are basically two ways to obtain information on voters' electoral utilities/preferences: 'revealing' them or observing them. In view of our doubts about the merits of the first of these approaches we focus in this section on the second.

As electoral preferences/utilities are not directly observable from observable behavior, the individual voter is the only source to provide empirical information about them in the

[9] This usage of inter-individual variation to compensate for individual preferences/utilities that cannot be deduced from individual choice implies that different controls (which define the 'seemingly similar' individuals) result in different revealed preferences/utilities. These are in turn the actual dependent variables in subsequent analyses that estimate the effects of independent variables on preferences/utilities. Any misspecification of what constitutes 'seemingly similar' individuals is thus passed on to later stages of the analysis.

[10] In effect, this assumption asks us to believe that Coombs' (1964) distinction between 'judgment' and 'preference' can be disregarded.

context of an interview, or by completing a questionnaire of some sort. The relevant questions can be of several kinds. For mass surveys one may ask respondents to report in one form or another party *preferences* or, alternatively, to report party *utilities.* Party preferences can be obtained in several ways, but the two most obvious ones are asking respondents to make binary preference comparisons for pairs of parties or by asking them to provide a full preference order of parties. Neither of these options is without problems in terms of practical data collection. The number of binary (i.e., pairwise) comparisons that a respondent needs to make in order to provide full information is a function of the number of parties in a political system. In a two party system, the number of comparisons is one (is preference x>y or y>x?) In a five party systems the number of such comparisons is ten, and when the number of parties is 10 no less than 45 binary comparisons have to be made (see footnote 8). Not only would such a repetitive task erode the motivation of the respondent, it would also constitute a large burden on a valuable and scarce resource: questionnaire space. Hence, paired comparison techniques have their limitations when a large number of parties compete in elections.[11] At first sight, it may seem that asking respondents to report a full rank-order of preferences is easier to do, but this too, has serious drawbacks when there is a large number of parties. Providing a full rank-order from most to least preferred for ten parties (or more) turns out to be a considerable burden for many respondents.[12] As a result, one often obtains incomplete or partial rank orders, or one reaches practical limitations in survey research if respondents have to order, for example, ten parties. A task like this presumes the existence of transitivity and completeness on the basis of (implied) pairwise preferences. When this presumption is unjustified, the respondent is provided with a problem (s)he cannot really solve.[13] Finally, even if electoral preferences could be obtained in this fashion, the analyst

[11] The number of pairwise comparisons may not be a problem in many political systems, but in some systems it is. These differences between countries make this way of observing electoral preferences less appropriate for country-comparative research. Preferably, a procedure for observing electoral preferences/utilities should be applicable in all political systems.

[12] One of the most friendly formats to present this task, is to provide the respondent with loose cards containing the names of the parties, and to ask to place them on order. Such a format is obviously not suited for telephone interviews, telepanel methods or self-completion questionnaires.

[13] An additional problem that is related to measures of electoral preferences is that at some point it becomes very difficult for respondents to report unequivocal preferences, particularly for parties that are not considered viable options of party choice. To give an example from the Dutch case, in the 1994 parliamentary election three small orthodox-Protestant parties competed (each obtained less than 2 percent of the valid votes): SGP, GPV, and RPF. For many voters these three parties will be close to indistinguishable (in fact two of these parties merged later into a new party, the Christian Union). Many voters would find it exceedingly hard to say which of these parties they prefer over which of the others. We therefore doubt the validity and reliability of rankings at the low end of the preference order.

experiences at the end of the day that pairwise, partial or complete preference orderings are exceedingly difficult to analyze, as everyone can attest who has ever tried to do so.[14]

Instead of asking about electoral preferences, one could attempt to let respondents report electoral utilities.[15] This means that respondents are requested to report on some kind of scale the utility they would derive from voting for each party in turn. The most apparent advantage compared to measuring electoral preferences is that only as many responses have to be given as there are parties in a political system. In a ten party system, for instance, respondents have to give only 10 responses instead of 45 when asking about binary party preferences.

A common problem for survey questions on electoral preferences and electoral utilities is how to formulate them. The concepts of utility and preference are core elements in many theories of voting behavior, but it is unlikely that these words would have the same meaning for respondents as they have for political scientists. The words utility, preference and choice are quite common in everyday language, but their meaning is considerably less precise, and sometimes even opposed to their meaning in specialized academic 'jargon'. In contrast to the position of 'preference' in individual choice theory as being directly antecedent to choice (individuals choose for their first preference, if the first preference is not available they choose for the second preference, etc) it's meaning in everyday language is predominantly directed towards positive evaluations and sympathy. Consider, for example, the following sentence: "I'd prefer to stay home but since there is a lot of work waiting for me, I go to work". In the terminology of individual choice theory one would state that the first preference is 'work' and the second one 'stay at home', quite opposite from the meaning of preference in this example. 'Preference' in everyday parlance is associated with cheerful options, with what one 'likes', whereas in choice theory it is understood in a broader way and entails all kinds of standards that are not necessarily cheerful, such as obligations, avoiding costs of various kinds, doing things that are 'necessary' in a given situation, etc. Therefore questions that are formulated explicitly in terms of 'preferences' or in terms of 'likes' (and 'dislikes') are likely to be understood differently by respondents than as they are intended by researchers.

Problems of question wording are no less when attempting to measure electoral utilities. Words such as 'utility', 'electoral utility' or 'party utility' would either not be

[14] The scarcity of practical and flexible algorithms for the analysis of preferential choice data (to use Coombs' terminology) testifies to this.

[15] In principle, ordinal utility can only be gauged in relation to a set of (at least 2) alternatives, whereas cardinal utility can be assessed for a single alternative, or for sets of alternatives one at a time. Moreover, ordinal utility can be derived from cardinal utility, but the reverse is not true.

understood at all, or their meaning for respondents would likely be quite different than for the analyst. Descriptions such as 'overall attractiveness of party alternatives' are simply not part of everyday language, let alone that they would elicit the same association as in choice theory. Moreover, we know from fieldwork experience that many respondents find the distinction between overall attractiveness, preference, and choice cumbersome. To circumvent these problems, an indirect approach may be more appropriate than directly using theoretical concepts in the wording of survey questions.

Citizens think and talk about voting and preferences more often in terms of party *choice* than in terms of party *preference* or party *utility*. Consequently, formulating survey questions about preferences and utility in terms of choice may be quite comprehensible for respondents. Binary party preferences can, for example, be obtained by asking respondents to report on hypothetical choices: "Suppose you can only choose between party A and party B. Which one would you choose?" (respectively: "which one would you vote for?") Full preference orders may similarly be obtained by asking respondents a series of consecutive questions about choices. "Which party did you chose (or did you vote for) in the previous election?" [1st preference] "Suppose this party does not exist, which party would you choose instead?" [2nd preference], and so on. As argued above, asking for electoral utilities may be less demanding for respondents than asking for electoral preferences. Moreover, if successful, the resulting measures are more easily incorporated in empirical analyses than preference orderings. When trying to avoid the term 'utility' in question wordings, and using at the term 'choice' (or 'voting for') instead, one has to keep in mind that voting procedures contain familiar restrictions to respondents, often in the form that one can only vote for (or choose) one of the alternatives on the ballot. In order to obtain utilities for parties that the respondent did not vote for, or is not intending to vote for the question has to be formulated in such a way that these restrictions do not apply. One way of doing so is by asking about choice probabilities with respect to *intended* voting behavior in an upcoming election (Maas, Steenbergen, & Saris 1990; Burden 1997). Respondents are requested to report the probability for each of the parties receiving their vote. When these probabilities are asked in the form of percentages, the constraint on the responses is that they sum to 100. These kind of questions have proven themselves particularly useful to study how, during an election campaign, voters gradually narrow down the set of parties they consider as viable options to vote for. Yet, in order to satisfy such constraints, their administration is rather cumbersome.[16] Moreover, even

[16] The constraint that the responses sum to 100% usually requires a set of iterations of tentative responses leading up to a final response that satisfies this constraint. For many respondents, the assistance of a computer or

though choice probabilities may be functionally related to utilities, they are not the same thing, because utilities pertain to single parties (cf. section 1) whereas the constraint that they have to sum to 100% gives probabilities a relational (or preferential) character.[17]

In order to obtain measures of electoral utility, while at the same time capitalizing on the familiarity of respondents with tasks cast in terms of choice (or voting for), it is necessary to eschew the constraints that voting procedures impose, as well as those that are implied in choice probabilities. In the late 1970s Van der Eijk and Niemöller have been experimenting with projections into an undefined future to accomplish this. They settled on a formulation that has been used in all Dutch Parliamentary Election Studies since 1982, in the European Election Studies since 1989, and in a growing series of national election studies and other surveys elsewhere (including Britain, Ireland, Spain, Germany). In this formulation, respondents are requested to indicate on a given scale the likelihood that they will 'ever' vote for each of the parties in their country. We assume that the responses are based on current electoral utilities rather than on some kind of prognostic capability. Hence, voters are assumed to express current utilities when answering the question on the likelihood of 'ever' voting for a party. Minor variations in question wording do exist[18] that seem not to affect this question's performance as long as two conditions are fulfilled. First, the 'ever' is left unspecified, and not related to a specific election or a given time period. Second, the responses for each of the parties are in no way constrained, they have not to add up to a constant sum, or anything like that. In the 1999 European Election Study this question was asked to respondents in all member states of the EU, and was formulated as follows:

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of a well-trained interviewer is indispensable in this respect. This makes this approach less suited for telephone interviews or self-completion questionnaires. This problem has two origins. One is the difficulty for many respondents to quickly grasp the (arithmetic) implication of scores they give to some parties for the scores they can they give to other parties. The second is the well-documented difference between 'subjective probabilities' and probabilities in the statistical sense of the word.

[17] Cardinality of utility should be reflected in non-ipsativity of observations (i.e., the number of observations equals the degrees of freedom). Probabilities are obviously ipsative, owing to the fact that they sum to a fixed total (i.e., df is smaller than the number of parties). An additional problem with ipsative data is that owing to the constraints that are placed on responses, the resulting values for the parties are not independently obtained, thus violating one of the common requirements of many methods of analysis. (see also footnote 14).

[18] For instance, in the Dutch Parliamentary Election Study 1994 (DPES'94) the formulation was a bit more wordy, but contained the same core elements: "Some people are quite certain that they will always vote for the same party. Others reconsider in each case to which party they will give their vote. I shall mention a number of parties. Would you indicate for which party how probable it is that you will ever vote for this party? Mention to me the number that applies to the party. If you do not know a party or if you have no answer, feel free to sat so and we shall continue with the next party. The <party>?" [Presenting showcard with scale scores].

We have a number of parties in <country> each of which would like to get your vote. How likely is it that you will ever vote for the following parties? Please specify your views on a 10-point-scale where 1 means "not at all probable" and 10 means "very probable". If you think of the <party>: what mark out of the ten best describes how probable it is that you will ever vote for the <party >? [This question was asked for each of a series of parties of a country][19]

We assert that this question yields what we are interested in: direct observations of (current) electoral utilities for the available choice alternatives. This claim is based on the results of a series of validating analyses that will be discussed below.

6. Some Validations

What criteria are to be applied for validating data that are claimed to be measures of electoral utility? From the logic of individual choice theory follows that validity hinges first and foremost on the extent to which such measures correctly predict the party respondents' actually report to vote for or have voted for. Moreover, if preferential information is available in the form of, e.g., so-called (hypothetical) second-choice (or even lower choice) questions, then we would desire such second choices also to be predicted correctly by utility information.

The empirical data for the validating analyses we report below come from the Dutch Parliamentary Election Study of 1994 (DPES94).[20] DPES94 data are available to the research community without restrictions by way of Steinmetz Archives, the ICPSR and other data repositories. The multi-party context of the Netherlands provides an appropriate opportunity to test properties of observed electoral utilities. In the 1994 elections nine parties gained electoral representation. Each of these was included in the set of questions concerning electoral utility and they are all included in the analyses reported below.

[19] At first glance it appears to be just an ordinal level scale, possibly to be treated as semi-interval. Tillie (1995:55-65) calibrated the categories of this scale by comparing the responses to our electoral utility question to the responses to identical questions for which only the mode of response was different. These alternative response modes were taken from the tradition of magnitude-estimation (cf. Lodge 1981; Wegener 1982), a class of methods that yields at least interval- level measurements. The conclusion from this exercise was that the 10 categories of the scale represent almost equidistant intensities of utility, i.e. that the original scores, ranging from 1 to 10, may for all practical purposes be regarded as interval-level scores.

[20] The number of cases in DPES is 1812 in the pre-election interview and 1527 in the post-election wave. Data reported below come from the post-election interviews. Similar validating analyses on other DPES datasets, or on the comparative datasets from the European Election Studies (EES) have been reported elsewhere, see, e.g., van der Eijk and Niemöller (1984), van der Eijk and Oppenhuis (1991), Tillie (1995), Oppenhuis (1995), van der Eijk & Franklin (1996), van der Eijk, Franklin and van der Brug (1999).

Some of the analyses are only reported for the five largest parties, owing to the very small numbers of respondents that voted for the four smallest parties. Where possible, all nine parties are included in the analyses. The 5 largest parties in 1994 are the Dutch Labour Party (PvdA), the Christian-Democrats (CDA), the right Liberals (VVD), the left-liberal D66, and the environmental Green/Left party (GL). The remaining parties that are included in the electoral utility question are SGP, GPV, RPF and CD. The first three of these are small orthodox-protestant parties, the CD is an extreme-right wing party with a pronounced anti-immigrant position.

The extent to which our measure of electoral utility is able to accurately predict party choice and other electoral preferences can be assessed in several ways. First, Table 1 reports for all voters, and for the respondents that voted for a particular party, the extent to which actual choice coincides with highest utility. What to count as a 'success' depends on how ties in the utility scores for the various parties are handled. If two or more parties share the highest utility score that a respondent has awarded, and one of these is the party voted for, one may count this as a success (1st column of Table 1). One may object to this on the grounds that such ties make it impossible to establish unambiguously that highest utility coincides with actual choice, in which case respondents are excluded from this analysis when their highest utility score has been given to more than one party. Irrespective of how one chooses to look at ties, the results are virtually the same: in more than 93% of the cases, actual choice (which is the 1st preference in the logic of individual choice theory) coincides with highest utility. Interestingly, very similar percentages were obtained in other election studies in the Netherlands, and in surveys conducted in all member states of the EU (see footnote 20). In Tables 2 and 3 we demonstrate that our measure of electoral utility predicts lower preferences also very accurately. After having reported which party they voted for, respondents were asked whether or not they had "seriously considered" voting for a different party than they eventually supported, and if so, which party this was. In Tables 2 and 3 we restrict the analyses to those who answered affirmatively to this "serious considered" question, and we interpret the party that was mentioned in response to this question as the respondent's second-preference. The match between 2nd preference and 2nd highest utility is somewhat less spectacular than in Table 1, but nevertheless quite respectable.[21] Table 3 further specifies these results and demonstrates that even mismatches are of limited magnitude.

[21] One of the reasons for this lower success rate is that a relatively large proportion of parties mentioned as 2nd preference were not included in the list of parties for which electoral utility was asked. For those cases (10% of this group of respondents) it is in fact impossible to be counted as successes, in a way their information is indeterminate for our purposes.

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Table 1: Percent Correctly Classified Choice [1st preference] from Observed Utilities for all respondents and all parties, DPES'94

	With Ties	*Without Ties*	*Vote Choice, N*
PvdA	93%	93%	348
CDA	96%	94%	272
VVD	94%	98%	307
D66	95%	95%	250
GL	91%	86%	77
SGP	100%	83%	6
GPV	78%	100%	10
RPF	100%	93%	19
CD	62%	33%	13
All Parties	94%	94%	1302

Note. The table reads as follow: 94% of the 348 respondents who report to have voted for PvdA ascribe to the PvdA also the highest utility-score (including ties), etc.
Data Source: Anker and Oppenhuis 1997.

Table 2: Percent Correctly Classified Choice [1st preference] and Alternative Choice [2nd preference] from Observed Electoral Utilities; relevant subgroup of cases only, DPES'94

	Choice [1st pref] with ties	Choice [1st pref] without ties	Alternative [2nd pref] with ties	Alternative [2nd pref] without ties
PvdA	91% (90)	89% (65)	73% (63)	57% (35)
CDA	90% (78)	85% (55)	71% (38)	50% (20)
VVD	88% (57)	85% (41)	95% (58)	90% (29)
D66	90% (79)	84% (49)	91% (129)	87% (70)
GL	87% (23)	81% (16)	77% (39)	67% (24)
Sum	90% (327)	86% (226)	84% (327)	75% (178)

Note. The table reads as follow: 91% of the 90 respondents who report to have voted for PvdA ascribe to the PvdA also the highest utility-score (including ties), etc. The sample size is reduced compared to Table 1 because only those respondents are included in the analysis who report 1st and 2nd party preference (party choice and considered alternative) for the 5 parties analysed.
Data Source: Anker and Oppenhuis 1997.

Table 3: Number of Correctly Classified Choices [1st preference] and Alternative Choices [2nd preference] from Observed Electoral Utilities (for PvdA, CDA, VVD, D66, and GL); relevant subgroup of cases only and only cases without ties on the observed utilities, DPES'94

	Choice [1st pref]	*Alternative [2nd pref]*	*Not considered*	*Sum*
PvdA				
highest utility	58	12	2	72
2nd highest utility	6	20	7	33
3rd, 4th, 5th highest utility	1	4	84	89
Sum	65	36	93	194
CDA				
highest utility	47	4	0	51
2nd highest utility	3	10	2	15
3rd, 4th, 5th highest utility	2	7	114	123
Sum	52	21	116	189
VVD				
highest utility	35	2	1	38
2nd highest utility	2	26	6	34
3rd, 4th, 5th highest utility	1	1	106	108
Sum	38	29	113	180
D66				
highest utility	41	2	1	44
2nd highest utility	7	61	8	76
3rd, 4th, 5th highest utility	1	8	65	74
Sum	49	71	74	194
GL				
highest utility	13	4	2	21
2nd highest utility	2	16	4	20
3rd, 4th, 5th highest utility	1	4	135	140
Sum	16	24	141	181
All				
highest utility	194	24	8	534
2nd highest utility	20	133	25	178
3rd, 4th, 5th highest utility	6	24	504	226
Sum	220	181	534	938

Note. The table reads as follow: 58 of the 65 respondents who report to have voted for PvdA ascribe to the PvdA also the highest utility-score (without ties), etc. See also the second column of Table 2 on these figures. The sample size is reduced compared to Table 1 because only those respondents are included in the analysis who report 1st and 2nd party preference (party choice and considered alternative) for the 5 analyzed parties *and* who do not have ties on the observed utilities.

Data Source: Anker and Oppenhuis 1997.