

Voting: A Behavioral Analysis

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ABSTRACT: The behavior of voting for a party in an election has important social implications, yet, due to strong mentalistic influences in electoral research, it has rarely been studied from the behavior analytical perspective. In this article a behavioral analysis of voting is presented and a derived behavioral model is empirically tested on data from a Dutch election survey. It is concluded that such an analysis is both theoretically fruitful and empirically relevant.

Introduction

Of all possible behaviors a person emits in the course of his life, few may have as many implications as the behavior of voting for a party in an election. By casting a vote, the individual person, directly or indirectly, lays down a course of action for parliaments and governments, and, thus, for the sociopolitical and physical organization of the country he or she inhabits. Through elections, leaders have risen to power who dramatically changed the course of world politics and instigated policies affecting the daily lives of millions.

While socially relevant, voting behavior seldom has been researched from a behavior analytical perspective (an exception is Lamal & Greenspoon, 1992). For a long time the study of voting has been dominated by normative considerations, ascribing to the average voter a strong sense of rationality with regard to political matters. The first psychological investigations of electoral behavior quickly shattered this optimistic vision, but they replaced it by a form of semi-rationality, according to which the voter's choices at the voting booths are determined by more or less stable set of mental constructs (political beliefs, attitudes, values, etc.) (Visser, 1994a). Although political psychologists heartily disagree on the exact nature and number of these mental dispositions, semi-rational models have persisted until the present day (Visser, 1994b).

In this article, a behavior analytic approach to voting actions will be developed. On the basis of B.F. Skinner's seminal work on human social behavior (Skinner, 1953; 1957), voting behavior is considered subject to the same contingencies of reinforcement as other behaviors. In particular, this paper examines whether or not

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principles of operant conditioning apply to voting (that is, whether the consequences of a voting response influence the probability of its reoccurrence). To answer this question the article discusses existing psychological approaches to voting and then offers a behavior analysis of voting behavior. On the basis of this analysis a behavioral model is constructed, which is then tested on data from a Dutch election survey. Finally, the results of this test are discussed and conclusions drawn.

Psychology and Voting Behavior

In the same years that behaviorism (of various forms) came to dominate the mainstream of American psychology, the psychological study of voting behavior remained almost totally immune to behavioral influence. This happened because the first voting studies received a strong impetus from social psychology, which, due to the impact of European psychologists (e.g., Paul Lazarsfeld and Kurt Lewin), remained a stronghold of mentalist conceptions. For a long time, most behaviorists confined themselves to laboratory experiments with infrahuman subjects, from which no cues regarding voting behavior were derived.

Three major schools in social psychological voting research were prominent (Visser 1994a). The first was a group of researchers assembled at Columbia University under the central direction of Paul Lazarsfeld; their joint activities extended over a period roughly between the early 1940s and the late 1950s. Basically, their research constituted an extension of Lazarsfeld's earlier empirical analyses of consumer actions and occupational choices to the field of voting behavior (Lazarsfeld, Berelson & Gaudet, 1948; Berelson, Lazarsfeld & McPhee, 1954; Lipset, Lazarsfeld, Barton & Linz, 1954). The second school, located at the University of Michigan, started in 1948 and continues to the present. Senior researchers there included Angus Campbell, Philip Converse, Warren Miller, and Donald Stokes. This school was much influenced by Kurt Lewin's field theory, while Rensis Likert's early work in attitude measurement also had some impact (Campbell, Converse, Miller & Stokes, 1954; Converse, 1964). The third school, the cognitive, is a loose collection of scholars who, often coming from the Michigan tradition, have incorporated insights from cognitive psychology in their voting research (Kuklinski, Lusk & Bolland, 1991; Lau & Sears; Sniderman, Brody & Tetlock, 1991).

The prevalence of mentalist conceptions in voting studies has not stilled dissenting voices that occasionally have been raised. Mentalist explanations of voting actions tended to lead to somewhat trivial, if not tautological statements like, "voters who strongly identify with the Republican party show a strong tendency to vote for that party" (Rossi, 1959, p. 41). Wahlke (1979) extended this argument by questioning, in general, the exclusive attention of political science to mental variables, whether dependent or independent. In those psychological experiments in which the overt behavior could be observed apart from attitudes which supposedly caused that behavior, correlations between the two were practically zero, a fact most cogently illustrated in the "obedience to authority" studies (Milgram, 1974). Political scientists were mistaken, Wahlke argued, in assuming that every politically relevant action was a result of a self-conscious, intellectual process on the part of the individual political actor. Other processes may be much more influential in

determining political behavior. Wahlke recommended incorporating aspects of ethology, psychophysiology, and psychophysics into political science.

While these critiques of mentalism did not change the course of political science and voting behavior research, in a few instances social learning principles have been related to political behavior, most notably in political culture theory (Eckstein, 1988), in computer simulations of the electoral process (McPhee, 1963; MCPhee & Smith, 1962), and in recent contextual voting analyses (Huckfeldt & Sprague, 1982). Nowhere, however, did the critics of mentalist models offer a Skinnerian view. In the next section such an alternative view will be developed. First, a behavior analysis of voting will be offered, which will be translated into a more parsimonious and empirically testable behavioral model.

A Behavior Analysis of Voting

A (radical) behavioral analysis of voting behavior starts with the observation that voting for a certain party is an operant response: It is not a reflexive response to an eliciting stimulus, but rather emitted from time to time (under specified stimulus conditions) by the voting person. As such, voting behavior is under the influence of the contingencies of reinforcement, defined as the interrelationships between the occasion upon which a response occurs, the response itself, and the reinforcing consequences.

First, the formal organization of elections sets the occasion for overt voting behavior. The election situation provides an array of discriminative stimuli to the voters, signalling that the specific behavior of casting a vote may be performed. Such an array of antecedent variables may include mediated stimuli presented to the voter via mass media (e.g., campaign news, policy debates, political interviews, opinion polls, background information on candidates and parties, etc.), as well as more proximal stimuli (e.g., political discussions with others, neighborhood campaign activities, political signs for specific candidates, etc.).

The consequences of voting behavior are applied by the voter's verbal community, i.e., by those social others proximal enough to reinforce or punish voting behavior without substantial delay (e.g., family, friends, peers, co-workers, campaign workers, neighbors, etc.). In addition to proximal influences, reinforcing contingencies may arise from more distal social sources. One may think of dominant "climates" or fashions of public opinion, made relevant for the individual voter through the mass media. These climates specify probabilities of social reinforcement or disapproval among (certain identifiable segments of) the mass public (Noelle-Neumann, 1984).

As a final aspect of the contingencies, the vote itself may be regarded as a differential response to politically relevant contextual stimuli, controlled by its consequences. If voting for party X is uniformly reinforced by the voter's verbal community, then the voter is very likely to vote for party X again in a following election. If, however, voting for party X is partially reinforced and partially punished by proximal others, and voting for party Y instead would be reinforced, then the probability of the voter choosing party X will decrease and the likelihood of voting party Y increases accordingly. In this way, the direction as well as the consistency

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of the voter's voting behavior is determined by social reinforcers and punishers.

This general analysis of voting actions can be made more specific and parsimonious by transforming it into a behavioral model of voting behavior amenable to empirical analysis. This model will simplify the previous analysis in two respects.

First, the set of discriminative stimuli surrounding the election event are not considered. The model assumes that the voters need not necessarily be informed on campaign events, the political issues, or the various candidates of the parties. It is sufficient for them to know when and where the elections will take place and which parties are on the ballot list. Second, it is assumed that voting behavior is acquired behavior. It is first developed in the voter's family (represented in the model by the voter's parents), while it is later maintained by significant others (the voter's partner in the model).

From their parents the prospective voters acquire a repertoire of behaviors with regard to political stimuli, in a process of political conditioning, conceived of as follows in the model. Voting behavior is modeled by the parents: They engage in verbal and nonverbal behaviors related to voting and elections; they arrange contingencies under which those responses of their off-spring having properties similar to the parental modeled behavior will be reinforced. Consequently, when the younger voter verbalizes some party preference which equals that of the parents, such vocalizations will be reinforced, thus increasing the probability of their reoccurrence. If a party preference which contradicts that of the parents is presented, the latter may disapprove of and discourage this verbal behavior, making its reoccurrence less probable. Depending upon the intensity and consistency of parental modeling and reinforcement, the voter will (by the time of his or her first electoral participation) have developed a verbalized voting response of differential strength.

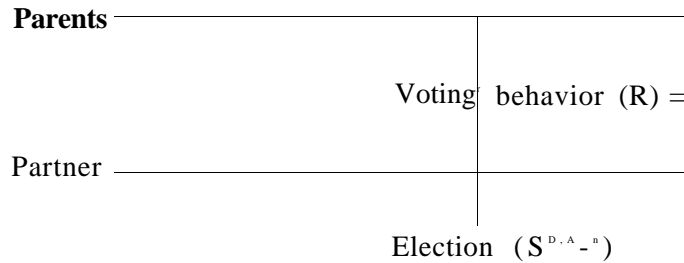
In adulthood, a second modeling and reinforcing role, in addition to that of the parents, is taken up by the partner of the voter (partner being the person with whom the voter shares intimate aspects of life). When the voter displays voting behavior similar to that of the partner, the partner will positively reinforce the behavior. On the other hand, when the voter deviates from the partner in this respect, the partner will disapprove of the voter's choice. Both reinforcers and punishers affect the voter's voting behavior (increasing or decreasing the likelihood of its reoccurrence).

Within the assumptions of the model, the direction of the voter's action is considered explained when it conforms to the voting choice of parents or partner; when it does not equal these proximal social preferences, the voter's choice must be explained by other factors, exogenous to this model (but not to a more general behavioral analysis of voting). The term consistency here refers to the number of times the voter selects the same party in consecutive elections. In similar vein as in the Skinner box positively reinforcing certain responses increases the rates of those responses. Likewise, the conditions described in the model that lead to positive reinforcement of the voter's behavior, should also result in a higher response rate, in this case a more consistent voting behavior. Since in the model positive reinforcement occurs when the voters' party preferences coincide with those of their parents or partners, it follows that the voters' choices which agree with those of the parents or partner should be more consistent than the votes which deviate from the preferences of proximal others.

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The whole process of occasion, voting responses and consequences is schematized in Figure 1. Starting from the right, the voting behavior occurs as a

Figure 1. Dynamic model of voting behavior



response R at the onset of discriminative stimuli SD surrounding the election event. They set the occasion for consequences C by parents and/or partner, consisting of either social reinforcement or punishment, which in turn influence the voter's voting behavior in the next election; thereafter, the cycle repeats its course.

The principles of operant conditioning appear in the model as the cumulative effect of successive elections. Recurring instances of positive reinforcement of the voters' choice by parents or partners strengthen partisan behavior in the direction of the rewarded party choice, thus leading to consistent voting behavior in the long run. The opposite effect of social disapproval of the voter's party preference, however, decreases the likelihood of its repeat, which after one or more elections may lead to a change in voting behavior. Such change may also be expected to occur when parents attach differential consequences to their offspring's voting behavior (i.e., when parents vote for different parties), or when partner and parents reinforce the voter's behavior differently (i.e., when parents and partner choose different parties). In such cases, the voter is subject to contrary environmental consequences, which prevent the development of the voting response in the direction of one party and, consequently, may bring about inconsistent voting behavior.

For the static representation of the dynamic cycle of Figure 1 in the case of a single election we use a tree diagram in which all voters are classified according to their history of reinforcement, as indicated by the presence of reinforcing actors, parents and partner. The diagram is shown in Figure 2.

Cell [A] consists of all voters in a given sample, all of which will ultimately be assigned to a place in the eight endcells [1.1.1A], [1.1.1B], [1.1.2], [1.2.1], [1.2.2], [2.1.1], [2.1.2] and [2.2], through intermediate classification in cells [1], [2], [1.1], [1.2], [2.1], or [1.1.1]. Cell [1] contains all respondents whose parents vote for the same party, while in cell [2] respondents are placed whose parents vote for different parties, of whom one or both parents do not vote, or of whom the voting behavior of one or two parents is unknown.

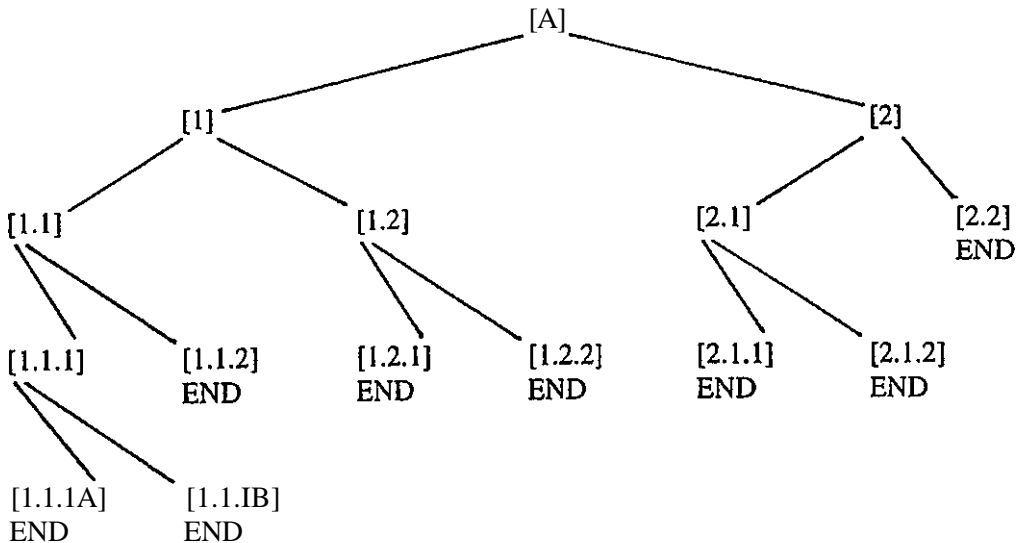
The second subclassification pertains to the respondents who have a partner who votes and whose party preference is known (cells [1.1] and [2.1]), and to the respondents who have no partner, whose partner does not vote or of whose partner

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the voting choice is unknown (cells [1.2] and [2.2]).

The next row of cells reports on the degree of successful conditioning by partner and parents: When a partner with an identifiable party preference is present, respondents are classified as voting in agreement with their partner (cells [1.1.1] and [2.1.1]) or voting differently from their partners (cells [1.1.2] and [2.1.2]). When no partner with identifiable party preference is present, respondents are categorized as confirming to their parents' vote (cell [1.2.1]) or deviating from that vote (cell [1.2.2]). Respondents without a clearly reinforcing proximal environment end up in cell [2.2].

Figure 2. Static model of voting behavior



Finally, endcells [1.1.1 A] and [1.1.1B] provide direct evidence on histories of reinforcement, cell [1.1.1 A] containing respondents exposed to unidirectional conditioning (i.e., parents and partner vote identically) and cell [1.1.1B] carrying respondents with a history of conflicting reinforcements (that is, parents and partner vote for different parties).

Following our earlier formulation, the direction of voting behavior is considered explained when it falls in endcells [1.1.1A], [1.1.1B], [1.2.1], and [2.1.1], while behavior in cells [1.1.2], [1.2.2], [2.1.2], and [2.2] is not accounted for by the model. With regard to the operant conditioning principles, we expect the consistency of voting behavior of respondents in endcells [1.1.1A], [1.2.1], and [2.1.1] to be significantly higher than that of respondents in endcells [1.1.1B], [1.1.2], [1.2.2], and [2.1.2]; the nonreinforcement group [2.2] serves as a control group.

Methods

In this section the model will be operationalized using Dutch election data.

These data originate from the Dutch National Election Studies (DNES), a series of large nation-wide surveys which, under the direction of an inter-university workgroup, have been held at every parliamentary election since 1971. From this series, the DNES of 1986 has been selected because it is the only study which includes measurements of proximal others' votes. It consisted of two waves of interviews: The pre-election wave in March-April 1986, and the post-election wave immediately after the 1986 election.

Before turning to empirical data, however, a short comment is in order regarding the transplantation of a basically experimental approach to the non-experimental, survey-based field of voting research. In democratic elections official votes are always cast in secret, and, therefore, the real "voting behavior" cannot be inspected by the researcher. Instead, electoral analysts rely on the verbal reports of survey respondents regarding their voting behavior and the environmental factors reinforcing (or extinguishing) it. Such reports may be under the control of different environmental contingencies than the voting behavior they supposedly reflect, in particular of contingencies inherent in the interview situation in which empirical survey data are usually collected. Survey interviews, though, are trained to be as unobtrusive as possible with regard to respondents' verbal reports. This implies that, although verbal responses of survey respondents are under the discriminative control of the interviewer, these responses are not specifically reinforced in one direction or another, nor is participation in the survey itself rewarded (e.g., by financial compensation). Under these conditions it may be assumed that respondents' verbal reports accurately reflect their overt voting behavior and the various controlling environmental factors (Skinner, 1957; Bem, 1967; 1972).

Under the aforementioned conditions, the following DNES-variables have been employed:

Vote of Respondent

The Dutch parliamentary elections involve a vote for one chamber of parliament only with no other concomitant elections. The election of 1986 offered the voters a choice between 12 party lists, one of which was to be crossed on the ballot paper. For the purpose of this paper, the votes have been categorized according to Table 1 (see next page), in which 8 minor parties are combined into one category, "Others." This operation will tend to inflate the explained variance of the model by approximately 2% since a certain amount of artificial voting consensus is created which would not exist if the 8 small parties were counted separately.

Vote of Parents

The respondent is asked to indicate the voting preference of his father and mother during his adolescence (i.e., between 10-16 years old). To facilitate comparison of the votes over the generations, party choices of parents, respondents, and their partners are grouped in five categories, shown in Table 1. Parents are assumed to have an identical vote if they both choose a party from the same category; they have different preferences if their favorite parties come from different

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categories.

Table 1. Categorization of party preferences

Vote parents	Vote respondents & partners
RSKP, KVP, ARP, CHU, CDA SDAP, PvdA PvdV, VB, LSP, VD, VVD D66 Others	CDA (Christian Democrats) PvdA (Labor) VVD (Liberals) D66 (Democrats) Others

Vote of Partner

The respondent is asked to state the party choice of his or her spouse or partner in the 1986 election. The categorization of Table 1 also applies here.

Voting Consistency

An estimate of voting response strength is found in the question on the respondent's previous voting behavior, with three categories: "Always [voted] this party," "sometimes [voted] other party," and a rest category, combining "not entitled to vote," "don't know," "not ascertained," and "no vote in 1986." The higher the percentages of answers in the first category, the more consistent voting behavior is considered to be.

Table 2 shows the variables and their numbers in the DNES 1986 codebooks (Van der Eijk, Irwin & Niemoller, 1988).

Table 2. Variables DNES 1986

Variable	Wave 1	Wave 2
Party vote father Party vote mother Party vote respondent Previous voting behavior Party vote partner	V151 V153	V181 V188 V202

Results and Discussions

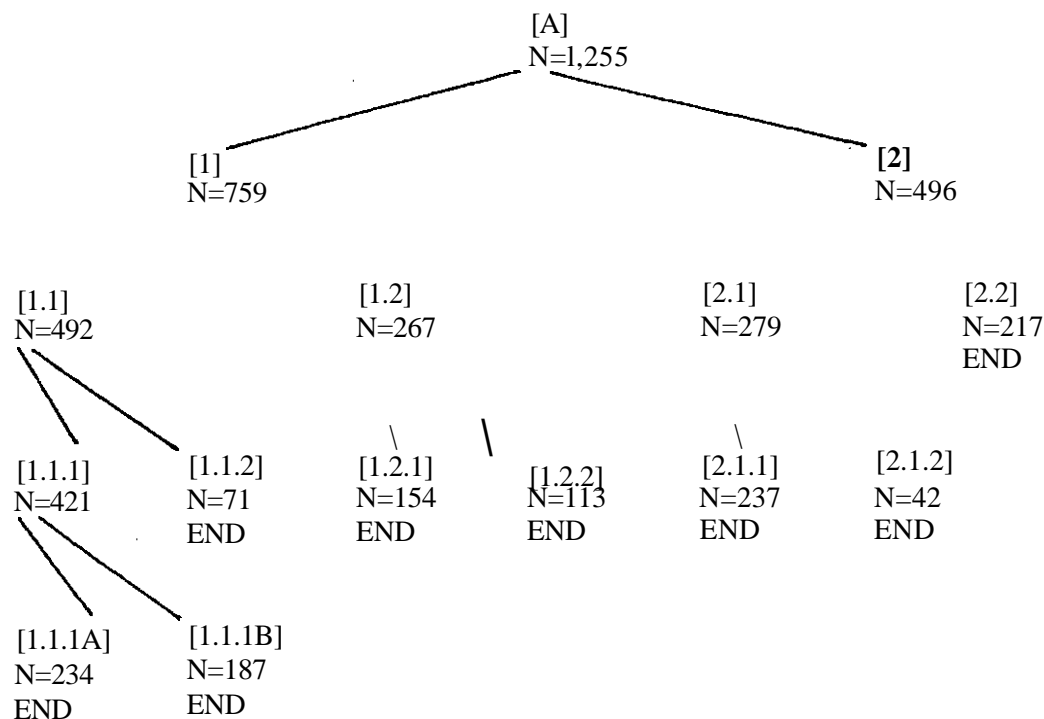
With the data of the DNES 1986 the tree diagram is filled in as pictured in Figure 3.

With regard to its direction, the voting behavior of respondents is considered explained by the model when conforming to either the vote of the partner (cells [1.1.1A], [1.1.1B], and [2.1.1]), or the vote of the parents (cell [1.2.1]), while voting choices classified in endcells [1.1.2], [1.2.2], [2.1.2], and [2.2] are not

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considered as such. The addition of the voting figures in endcells [1.1.1 A], [1.1.1B], [2.1.1], and [1.2.1] results in a total of 812 votes (or 65%), which are explained by the model; the addition of the votes in the remaining four endcells leave 443 votes (or 35%) unaccounted for. A priori it can be seen that the random assignment of respondents to the endcells of the tree diagram would lead to an explained variance of 41% on the basis of (Bayesian) chance alone, which percentage therefore constitutes a criterion for the empirical validity of the model. Clearly, the figure of

Figure 3. Tree diagram, 1986



Note: [A] All voting respondents; [1] Parents identical vote; [2] Parents different vote, no vote, DK, NA; [1.1], [2.1] Partner votes; [1.2], [2.2] No partner, partner no vote, DK, NA; [1.1.1], [2.1.1.] Respondent and partner identical vote; [1.1.2], [2.1.2] Respondent and partner different vote; [1.2.1] Respondent and parents identical vote; [1.2.2] Respondent and parents different vote; [1.1.1 A] Parents and partner identical vote; [1.1.1B] Parents and partner different vote.

65% significantly and substantially improves on this chance predication. Therefore, under this first empirical test the behavioral model is not rejected.

On the basis of operant conditioning principles, we may suppose that voting behavior with an unbroken history of positive reinforcement should be more consistent than voting choices that have been socially punished. In concrete terms,

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this means that respondents in endcells [1.1.1 A], [1.2.1] and [2.1.1] should display a more consistent voting pattern than respondents in endcells [1.1.1B], [1.1.2], [1.2.2], and [2.1.2]. As Table 3 shows, this is indeed the case.

Table 3. Voting consistency in 8 endcells, 1986

	1.1 1A	1.1.1 1B	1.1.2	1.2.1	1.2.2	2.1.1	2.1.2	2.2
ATP.	68%*	32%'	30%	67%'	36%*	53%''	29%*	47%
SOP.	31%	67%	70%	29%	58%	45%	71%	48%
NE.	1%	2%	0%	4%	6%	2%	0%	5%
Total (N)	100% (234)	101% (187)	100% (71)	100% (154)	100% (113)	100% (237)	100% (42)	100 (217)

Note: * Differences between percentages across adjacent pairs of rows are statistically significant at $p < 0.05$. Abbreviations: ATP: Always this party; SOP: Sometimes other party; NE: Not entitled to vote, don't know, not ascertained.

The results may be discussed along two lines. First, a comparison of cells [1.1.1A], [1.2.1], and [2.1.1] shows the impact of different histories of reinforcement and modeling effects on the consistency of voting choices. Voters with an unbroken chain of positive reinforcement of their voting behavior, either by parents and partner ([1.1.1 A]) or by parents ([1.2.1]), show high consistency rates, displaying the conditioned voting response in two out of three cases. In comparison to these figures, the unidirectional reinforcement by the partner ([2.1.1]) seems less influential, the percentage consistent votes approaching that of the nonreinforcement group (cell[2.2]). This lower figure is probably due to earlier differential conditioning by the parents (cell [2]), following which a stable vote has been developed only later in life, with the advent of the reinforcing influence of the partner.

Second, the pairwise comparison of cell [1.1.1A] to [1.1.2], [1.2.1] to [1.2.2] and [2.1.1] to [2.1.2] indicates that voting choices modeled or positively reinforced by parents or partner are much more consistent than votes disapproved of by significant others; the differences are generally large and significant. Cell [1.1. 1B] forms an important exception, though: Although the voters cast the same votes as their partners, their percentage consistent votes is far less than that of the voters in cell [1.1.1 A]. This exception underlines the eminent importance of the history of reinforcement in the determination of voting consistency. All in all, it may be concluded from this empirical test that the principles of operant conditioning have an important bearing on voting behavior.

Conclusions

In this article, a behavior analysis of voting action has been developed as an alternative to the dominant mentalist approach in more traditional electoral research.

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From this analysis, a more parsimonious behavioral model of voting action was derived, of which the empirical plausibility has been assessed with the aid of Dutch survey data. Two conclusions may be drawn from this assessment: One specific (with two caveats) and one general.

The specific conclusion of this paper is that in a concise model of voting behavior, containing the voter's parents and partner as its principal elements, solid evidence has been found for the operation of operant conditioning principles. Consistency of voting behavior appears to be rather strongly determined by the reinforcers, punishers and modeling provided by proximal others, while the direction of voting behavior also depends quite heavily on the voting choices of the proximal persons surrounding the voter.

However, two caveats are in order with regard to this conclusion. First, survey research lacks the controlled nature of experimental investigations, which implies that statements on causal relationships between variables must be handled with caution. Although the relatively simple behavioral model employed in this paper could account for two out of three votes, future refinements should improve on this figure by drawing more aspects into the behavior analysis, such as the influence of other persons who are proximal to the voter (family, daily, co-workers, neighbors, peers, friends, and others), and by incorporating the role of campaigns, media, and election specific issues. By charting the voting behavior of the whole reinforcing verbal community and pertinent antecedent variables it may ultimately be possible to explain almost all of the variance in voting choices.

A second caveat concerns the level of measurement employed in this paper. Voting choices are primarily analyzed from the point of view of the individual voter, and environmental conditions play a role only insofar as they appear in voters verbal reports. Such an analysis may easily miss the potential impact of macro-level social developments on individual behavior, such as economic crisis, war, revolution, and others. Ideally, the analysis of voting behavior should approach the voter on both levels, charting both micro-and macrocontingencies and studying the functionally related behaviors. While earlier investigations have shed some light on the metacontingencies (Lamal & Greenspoon, 1992), this article takes the first step at the micro-level.

More generally, it may be concluded that voting behavior is subject to the same contingencies as others important classes of behavior. Therefore, from a behavior analytic perspective, there are no valid reasons to accord voting behavior a privileged position among human actions, contrary to the views expressed by certain normative political scientists. In electoral as well other social situations, important deeds may have small causes. The researcher of such situations is therefore well advised to follow the literary exhortation of the British novelist Virginia Wolfe: "Let us not take it for granted that life exists more fully in what is commonly thought big than in what is commonly thought small."

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