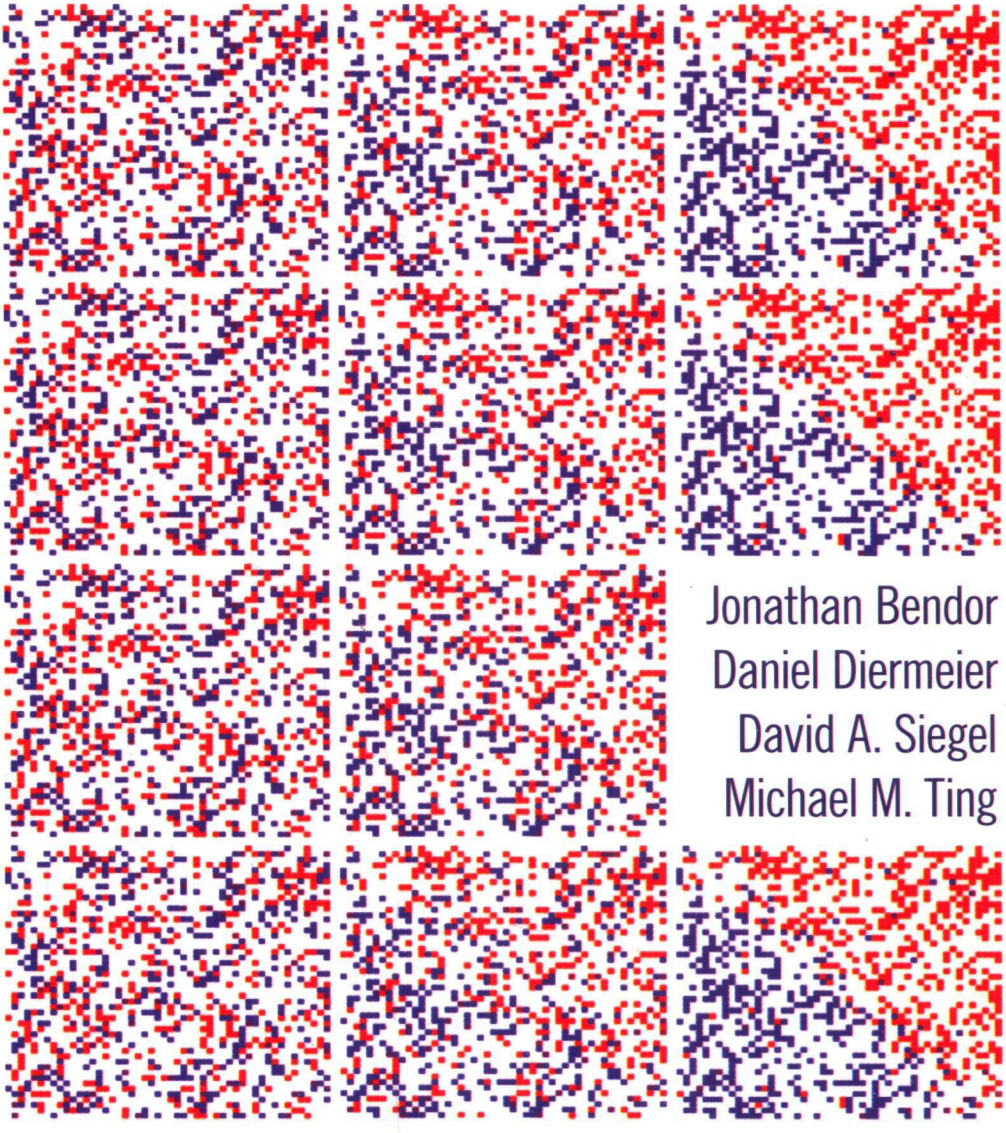
A BEHAVIORAL THEORY OF ELECTIONS



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PRINCETON UNIVERSITY PRESS
PRINCETON AND OXFORD

Published by Princeton University Press,
41 William Street, Princeton, New Jersey 08540

In the United Kingdom: Princeton University Press,
6 Oxford Street, Woodstock, Oxfordshire OX20 1TW

press.princeton.edu

Library of Congress Cataloging-in-Publication Data

A behavioral theory of elections / Jonathan Bendor ... [et al.].
p. cm.
Includes bibliographical references and index.
ISBN 978-0-691-13506-9 (hardcover: alk. paper)
ISBN 978-0-691-13507-6 (pbk.: alk. paper)
1. Elections. 2. Voting–Psychological aspects.
3. Behaviorism (Political science). I. Bendor, Jonathan B.

JF1001.B414 2011
324.9001'9–dc22 2010048445

British Library Cataloging-in-Publication Data is available

This book has been composed in LucidaBright using TEX
Typeset by T&T Productions Ltd, London

Printed on acid-free paper. ∞

Printed in the United States of America

10 9 8 7 6 5 4 3 2 1

A Behavioral Theory of Elections

To Josh and Ben: boys when this project began; fine young men when it ended—JB

To Matan and Oran who hadn't been born when this project started—DD

To Mom, Dad, and Charlotte, for their constant support—DS

To Ella—MT

Acknowledgments

Our greatest thanks go to Dilip Mookherjee, Debraj Ray, and Sunil Kumar, who coauthored the work underlying chapters 3 and 5. We also owe a tremendous debt to our research assistants, Alex Hirsch, Carlo Prato, and Costel Andonie, for their patient and dedicated work.

Many colleagues and students have contributed to our discussions about the book. A partial list includes John Bullock, Alan Gerber, Bob Jackson, Sunil Kumar, David Laitin, Bob Luskin, Adam Meirowitz, Elijah Millgram, Neil Malhotra, Scott Page, Paul Pfleiderer, Ken Shotts, and Joel Sobel.

Over the years various parts of this project have benefited from conference presentations at the annual meetings of the Midwest Political Science Association and the American Political Science Association, the Agent2000 Workshop, the Stanford-Caltech Workshop, and the 7th Annual Wallis Conference. We have also received helpful feedback from seminars at UC Berkeley, Stanford, UC Irvine, UCLA, UNC Chapel Hill, MIT, Carnegie Mellon, the University of Chicago, and the Center for Advanced Study in the Behavioral Sciences.

A Behavioral Theory of Elections

Contents

CHAPTER ONE

Bounded Rationality and Elections

> *The capacity of the human mind for formulating and solving complex problems is very small compared with the size of the problems whose solution is required for objectively rational behavior in the real world—or even for a reasonable approximation to such objective rationality.*
>
> —Herbert Simon (1957, p. 198; original emphasis)

> One may speak of grand campaign strategy, rationally formulated and executed with precision, but a great deal of campaign management rests on the hunches that guide day-to-day decisions. The lore of politics includes rules of thumb that are supposed to embody the wisdom of political experience as guides to action.
>
> —V. O. Key (1964, p. 468)

AN INTELLECTUAL REVOLUTION has occurred in political science: the diffusion of rational choice theories. The study of elections has been one of the most receptive subfields. All of its major components—party competition (Downs 1957), turnout (e.g., Riker and Ordeshook 1968), and voters' choices (Downs's spatial-proximity theory; see Merrill and Grofman 1999)—have been strongly influenced by rational choice models.

We think this has been a salutary development for both the discipline in general and the study of elections in particular. The rational choice program has given political science a much-needed degree of intellectual coherence. This new-found coherence connects subfields both by causal claims—we can now more easily see the connections between foreign and domestic politics via, e.g., models of interest groups on trade policy (Grossman and Helpmann 1994)—and by giving us ideas that unify previously disconnected subfields—e.g., problems of credible commitment in governmental borrowing (North and Weingast 1989) and in fights over succession (Powell 2004). Rational choice theories have generated some predictions that have stood up rather well to empirical tests: delegation to congressional committees (Krehbiel 1991), macroeconomic effects of partisan elections (Alesina and Rosenthal 1995), bureaucratic independence (Huber and Shipan 2002), fiscal effects of constitutions (Persson and Tabellini 2003), and cabinet formation and stability

in parliamentary democracies (Diermeier, Eraslan, and Merlo 2003; Ansolabehere et al. 2005). Some rational choice predictions, however, have been spectacularly falsified—famously so regarding turnout. Nevertheless, these theories have been wrong in interesting ways and so have stimulated much research.

Further, rational choice theorizing is now flourishing in subfields which once had been terra incognita to rigorous theories of decision making: e.g., the study of democratization (Acemoglu and Robinson 2006) and politics in violence-prone systems (Dal Bó, Dal Bó, and Di Tella 2006). All in all, no research program in political science has been more productive.

But nobody is perfect. Not even a research program.[1] The major weakness of the rational choice program is well known: virtually all models in this program assume that human beings are fully rational, and of course we are not. Some of our cognitive constraints are obvious. For example, our attention is sharply limited: we can consciously think about only one topic at a time. Some are more subtle: e.g., we are sometimes sensitive to small differences in how problems are described (framing effects). But their existence is indisputable.[2] And there is also considerable evidence (e.g., Rabin 1998; Gilovich, Griffin, and Kahneman 2002) that these constraints can significantly affect judgment and choice.

Rational choice theorists have tried a variety of responses to these criticisms of bounded rationality. For a long time they tended to be dismissive (famously, Friedman 1953), but as experimental evidence about cognitive constraints accumulated, a certain unease set in.[3] Most scholars working in the rational choice program know about the obvious cognitive constraints, and many have read the critiques of Simon and of Tversky and Kahneman and their coauthors. Indeed, today enough scholars in the home disciplines of the rational choice program, economics and game theory, take bounded

[1] We are using the term "research program" in Lakatos's sense (1970): roughly speaking, it is a sequence of theories united by a few core premises, e.g., about the rationality of decision makers. Thus, in Lakatos's view there is a hierarchy of symbolic formulations: a single research program contains multiple theories, and a single (often verbal) theory can generate multiple (often formal) models. Hence, competition between a specific rational choice and a specific bounded rationality model and competition between their parent research programs are not equivalent, though they are related.

[2] Psychologists even have accurate quantitative estimates of certain cognitive constraints: e.g., ordinary untrained working memory can only handle four to seven bits of information before getting overloaded (Miller 1956; Cowan 2000).

[3] See also Green and Shapiro (1994) for a critique of rational choice theories that is not confined to the cognitive foundations of the research program, and see Friedman (1996) for rebuttals.

rationality sufficiently seriously so that new subfields—behavioral economics (Camerer, Loewenstein, and Rabin 2004), behavioral game theory (Camerer 2003), and behavioral finance (Barberis and Thaler 2003)—are now flourishing.[4] (As evidence for this claim, one needs only to sample a few mainstream journals in economics and game theory and count the number of papers presenting behavioral models.) Things have heated up quite a bit in the home disciplines of rational choice theory—more so, it seems, than in political science. This is ironic, given that two of the most important behavioral theorists, Herbert Simon and James March, were trained in political science and, as indicated by the many disciplinary awards they have won, we still claim them as ours. As it is said, colonials can be more royalist than the king.

A change is overdue. The issues raised by the bounded rationality program—the impact of cognitive constraints on behavior—are as pertinent to politics as they are to markets, perhaps even more so. This is evident in the subfield of elections. Indeed, it is in this domain that the rational choice program has encountered one of its most spectacular anomalies: turnout. The problem is well known: as Fiorina put it, "Is turnout the paradox that ate rational choice theory?" (1990, p. 334). Canonical rational choice models of turnout, whether decision-theoretic or game-theoretic, predict very low turnout in equilibrium: if participation were intense, then the chance of being pivotal would be very small, so voting would be suboptimal for most people. Yet, of course, many citizens *do* vote: even in the largest electorates, participation rates are at least 50 percent in national elections. The difference between prediction and observation passes the ocular test: one needs only to eyeball the data to see the anomaly. Of course, as is often the case with anomalies, eminent scholars have tried to solve the problem. The best-known attempts

[4] Although it would be interesting to explore the relation between behavioral economics and bounded rationality, we have a tighter focus in this book: to develop a behavioral theory of elections. Thus, two short points must suffice. First, behavioral economics and bounded rationality are similar in significant ways. Both emphasize the cognitive foundations of social science theories; both rely on evidence and theories drawn from psychology. Second, they exhibit some subtle differences. Behavioral economics—especially work based on the heuristics-and-biases approach (Gilovich, Griffin, and Kahneman 2002)—often focuses on how decision makers make mistakes even in simple task environments. (See, however, Gilovich and Griffin (2002) and Griffin and Kahneman (2003) for a different perspective.) In contrast, work in the bounded rationality program is more likely to emphasize the adaptive qualities of human judgment and choice. This is especially true of the fast-and-frugal approach to the study of heuristics; see Gigerenzer and Goldstein (1996) and Gigerenzer (2004). For detailed discussions of these issues, see Samuels, Stich, and Bishop (2002), Samuels, Stich, and Faucher (2004), and Bendor (forthcoming).

(e.g., Riker and Ordeshook 1968) focus on voters' utility functions, positing that the costs of voting are negative either because of an internalized duty to vote or the pleasures of the process. Doubtless there is something to these claims. But as both rational choice modelers and their critics (e.g., Green and Shapiro 1994) have noted, one can "explain" virtually any behavior if one can freely make ad hoc assumptions about agents' utility functions. The victory—the purported solution to the anomaly—then seems hollow. Accordingly, there are craft norms that impose a high burden of proof against such approaches. Hence many scholars, rational choice theorists and others, are dissatisfied by such explanations and believe that a major anomaly persists regarding turnout.

The scientific situation is somewhat different for the two other components of elections. The study of party competition is probably in the best shape, empirically speaking, of the three components. Although the most famous prediction of rational choice models—that in two-party competition the unique equilibrium is for both parties to espouse the median voter's ideal point—has met with empirical difficulties (Levitt 1996; Stokes 1999; Ansolabehere, Snyder, and Stewart 2001), the gap between prediction and evidence is much smaller than it is in turnout. Moreover, the rational choice program has generated quite a few models in which the parties differ in equilibrium (Wittman 1983; Calvert 1985; Roemer 2001). Further, the Downsian tradition has been remarkably fruitful in the study of party competition. Even scholars (e.g., Wittman 1983) who develop models based on different premises[5] acknowledge the impact of Downs's formulation. The study of party competition clearly owes a great deal to *An Electoral Theory of Democracy* and other work in that tradition.

Rational choice models of voters' decision making are in between turnout and party competition. On the one hand, there's no 800-pound gorilla of an anomaly dominating the picture. But there is a sharp tension between the premises of most rational choice models of voting and the empirical findings of political psychologists. The former typically presume that voters have coherent ideologies in their heads and know a lot about politics: e.g., they know where

[5] Calvert-Wittman–type models presume that candidates are not merely seeking office but also have policy preferences, just as ordinary citizens do. Since one of Downs's central ideas is that parties compete in order to win office, this is a nontrivial departure. For a thorough analysis of the differences between models of opportunist versus ideological candidates, see Roemer (2001). See also the literature on citizen candidate models, e.g., Osborne and Slivinski (1996) and Besley and Coate (1997).

candidates stand in the (commonly constructed) ideological space[6] or at least have unbiased estimates of these positions[7]—claims that are vigorously disputed by scholars studying voter behavior (e.g., Delli Carpini and Keeter 1996; Kinder 1998).

Thus, rational choice theories of elections exhibit a mixed scientific picture: a big anomaly regarding turnout, a qualified success regarding party competition, and some serious issues about voters' decision making.

For the most part, political scientists have criticized rational choice electoral models only on empirical grounds. Although verisimilitude is tremendously important, the failure to construct alternative formulations has allowed rational choice scholars to use the defense "you can't beat something with nothing" (e.g., Shepsle 1996, p. 217). This defense has some merit: it describes a sociopsychological tendency of scholars and arguably makes sense as a normative decision rule. Our goal is to facilitate debate about theories by providing such an alternative formulation.

But because bounded rationality is a research program, it contains a set of alternative formulations, not a single theory or model. Indeed, the program now offers quite a few approaches that address a wide array of topics (Conlisk 1996; Rabin 1998; Mullainathan and Thaler 2000; Camerer 2003). To situate our approach in this collective endeavor, we briefly discuss two major topics: framing and heuristics (e.g., satisficing). As we will see, both topics are central to our theory.

1.1 Framing and Representations

A decision maker's *frame* is his or her mental representation of the choice problem he or she faces.[8] Tversky and Kahneman (1986) pioneered the study of framing in behavioral decision theory. In their work, framing has mainly been associated with just one approach:

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[6] For an early pointed criticism of the Downsian assumption that voters in an electorate share the same mental model of campaigns and locate parties in this homogeneous cognitive construction, see Stokes (1963).

[7] And because processing probabilistic information is cognitively more difficult than processing deterministic data, models which assume that voters know party platforms only probabilistically trade greater realism in one respect (what voters know) in exchange for less realism in another (how they process information).

[8] In the cognitive sciences the term "representation" is much more common than the term "frame." This terminological difference may have inhibited theoretical unification—a pity, given the surprisingly weak connections between behavioral decision theory and cognitive psychology (Weber and Johnson 2009).

Prospect Theory. But cognitive psychologists use the notion of representation much more widely: "Virtually all theories about cognition are based on hypotheses that posit mental representations as carriers of information" (Markman and Dietrich 2000, p. 138–139; see also Stufflebeam 1999, p. 636–637). Indeed, in standard computational theories of mind, thinking is seen as operations performed on a sequence of representations (Billman 1999; Tversky 2005). In particular, a computational theory—as opposed to an "as if" formulation (Friedman 1953)—of optimal choice posits that a decision maker constructs a mental representation of her choice problem, which includes her feasible alternatives and their payoffs, and executes an operation of value maximization on this representation.[9]

Prospect Theory assumes that decision makers represent choice problems in a way that differs sharply from the representation implied by a computational version of classical decision theory. Whereas the latter assumes that alternatives and their payoffs are compared only to each other, the former posits that agents compare alternatives to a *reference point*—an agent's internal standard. (Most applications of Prospect Theory presume that the reference point is the decision maker's status quo endowment. However, a close reading of Kahneman and Tversky (1979) reveals that this is not part of the theory's axiomatic core; it is an auxiliary hypothesis.) This difference in hypothesized mental representations is fundamental: indeed, Prospect Theory's other two hypotheses about preferences—that people are risk-averse regarding gains and risk seeking regarding losses and that they are loss-averse—would not make sense without the first axiom and its central concept of a reference point.

More generally, one of Tversky and Kahneman's main findings, that people often violate the classical principle of *descriptive invariance*, follows almost immediately from the centrality of mental representations in most theories of information processing in cognitive psychology. It would be astonishing if agents covered by this class of theories satisfied descriptive invariance. These formulations (e.g.,

[9] It is no accident that classical utility theory posits (in effect) that alternatives are represented by a preference ordering. This representation makes the critical operation—select the optimal option—relatively easy. As cognitive psychologists have argued for a few decades, a specific type of representation facilitates certain operations while hindering others (Novick and Bassok 2005). And effects on mental operations can impact behavior. In particular, there is strong experimental evidence that the representation of options—whether "multiple options are presented simultaneously and evaluated comparatively, or ... options are presented in isolation and evaluated separately" (Hsee et al. 1999, p. 576)—significantly influences choice behavior. Because pure retrospective voting involves separate evaluation, whereas classical Downsian voting involves joint evaluations, this finding bears directly on the study of elections.

Simon 1999) usually presume that people solve problems by transforming one representation (e.g., the initial state) into another one (e.g., the goal state) by a sequence of operations. Although there are many computational theories of mind which allow for many different kinds of representations (Markman 1999; Markman and Dietrich 2000), this perspective is not vacuous: in particular, any theory in this class assumes that people perform operations on representations. Hence it follows, for example, that all else equal, the more operations that are required in order to solve a problem, the more time it takes to do the job (Tversky 2005). This point is familiar to us in our capacities as teachers: when we write up exam questions, we know that we can vary a problem's difficulty by describing it in different ways, so that solving it requires different numbers of operations.[10] Thus, such theories imply that for humans the representation of 492×137 is *not* cognitively equivalent to the representation of 67,404, even though the former implies the latter, and both of these are significantly different from the Latin numeral representation $\overline{\text{LXVII}}$CDIV.

In contrast, an agent who is logically omniscient (Stalnaker 1999) would immediately grasp *all* the information implied by a representation. Hence, such an entity would not be subject to framing effects. Of course, positing that any human is logically omniscient directly contradicts the principle of bounded rationality articulated in the Simon quote that began this chapter.

Prospect Theory is usually discussed as an alternative to rational choice modeling, but it is worthwhile pausing for a moment in order to note three ways in which Prospect Theory and classical decision theory overlap. First, both are forward-looking: e.g., in Prospect Theory, it is *anticipated* payoffs that are compared to the agent's reference point. Second, choices based on reference points involve value maximization. By now, however, this should cause no confusion. Maximization is an operation in the context of a representation. As framing experiments (Kahneman and Tversky 2000, passim) have repeatedly shown, if two decision makers use sufficiently different representations, their behavior will differ in some choice contexts even if they are using similar operations, i.e., both are maximizing some kind of objective function. Third, Prospect Theory assumes that the agent is following an *algorithm* that completely specifies

[10] The now-classic experiment by Shepard and Metzler (1971) beautifully demonstrated this property. It showed that the time it takes subjects to figure out whether a pair of three-dimensional objects, depicted by pictures, are equivalent is linear *in the degrees of angular rotation required to make the two pictures look the same.*