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A Study of Voting Technology and Ballot Design

The events surrounding the 2000 presidential election called attention to a variety of seldom-discussed facts: that voting technology and ballot design can influence election outcomes; that most polling places in the United States employ outdated technology; that training in election administration is inadequate; that minorities and the poor are more likely to cast their ballots on outdated systems; and that voting procedures affect how voters feel about their ability to exercise their right to vote and their willingness to accept the results of an election as legitimate.

Since 2000, states have commissioned studies, revamped election administration, redesigned ballots, and begun to invest in new voting equipment. More research, particularly on the interface between voters and various voting machines and ballots, is needed to provide a basis for the massive voting reform that is being undertaken.

This project brings together social and computer scientists from a number of disciplines to study voting technology and ballot design. The project will use a variety of research designs, data collection methodologies, and analysis techniques, including expert review, laboratory experiments, close-up observation, field tests, and "natural experiments" that occur as local jurisdictions change their voting technology and procedures. The project also will subject the team's "zoomable" voting interface design to the same rigorous evaluation applied to existing systems. Finally, we will create a generalized protocol for testing voting technology and ballot formats that will be disseminated for nationwide use.

One part of the study investigates the ability of voters to cast their ballots accurately and efficiently, voter ease in casting complete ballots (if so desired), voter comfort using different voting interfaces, voter confidence that their ballots will be accurately recorded, and the frequency of incomplete ballots and split-ticket voting.

A second part of the study will assess voters' responses to different combinations of voting machines and ballots. Here we will address questions, such as: Do "office bloc" ballots (where all of the candidates for one office are listed in one area) work better with certain DRE or specific optical scan machines? What about "party row" or "party column" ballots (where each parties' candidates are listed across a row or down a column)?

A third part of the study, examines the transition from one type of voting interface to another. The questions asked in this part include: How well do voters who have cast votes on mechanical lever machines using party row ballots adapt to a DRE machine with an office block ballot? Are they more prone to make mistakes or feel uncomfortable than voters who have previously cast ballots on voting machines that also used office block ballots? Is their voting experience as positive as that of voters who cast ballots on DRE machines programmed to use a party row ballot.

In addition to scholarly writings, this project will develop protocols based on how different ballot designs perform on various DRE and optical scan machines. These protocols should prove useful to voting machine manufacturers, software and printing companies that design ballots, and election officials.

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http://www.capc.umd.edu/rpts/VotingTech_par.html.

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