

**Voter Satisfaction and the Need for Help:
Results from a Field Study
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Study Design

- Expert review (10 experts)
- Lab Study (42 participants)
- Focus now □ • **Field Study (1,540 participants in 3 states)**
 - Voter satisfaction and need for help
- Natural experiment

Research design: field exp's

- Six voting systems (as noted)
- Field tests with 1540 individuals
 - In/near Baltimore/DC, Rochester, Ann Arbor
 - Shopping malls, senior citizen complexes, community centers, university locations
 - Wide variations in age, computer experience, voting history; some focus on inexperienced and older individuals.

Experimental procedures

- Participants voted on each machine—in random order.
- Participants
 - Voted for some specific candidates.
 - Voted “freely” for some specific offices.
 - Voted, then changed their vote.
 - Wrote in a candidate.

Experimental procedures (cont.)

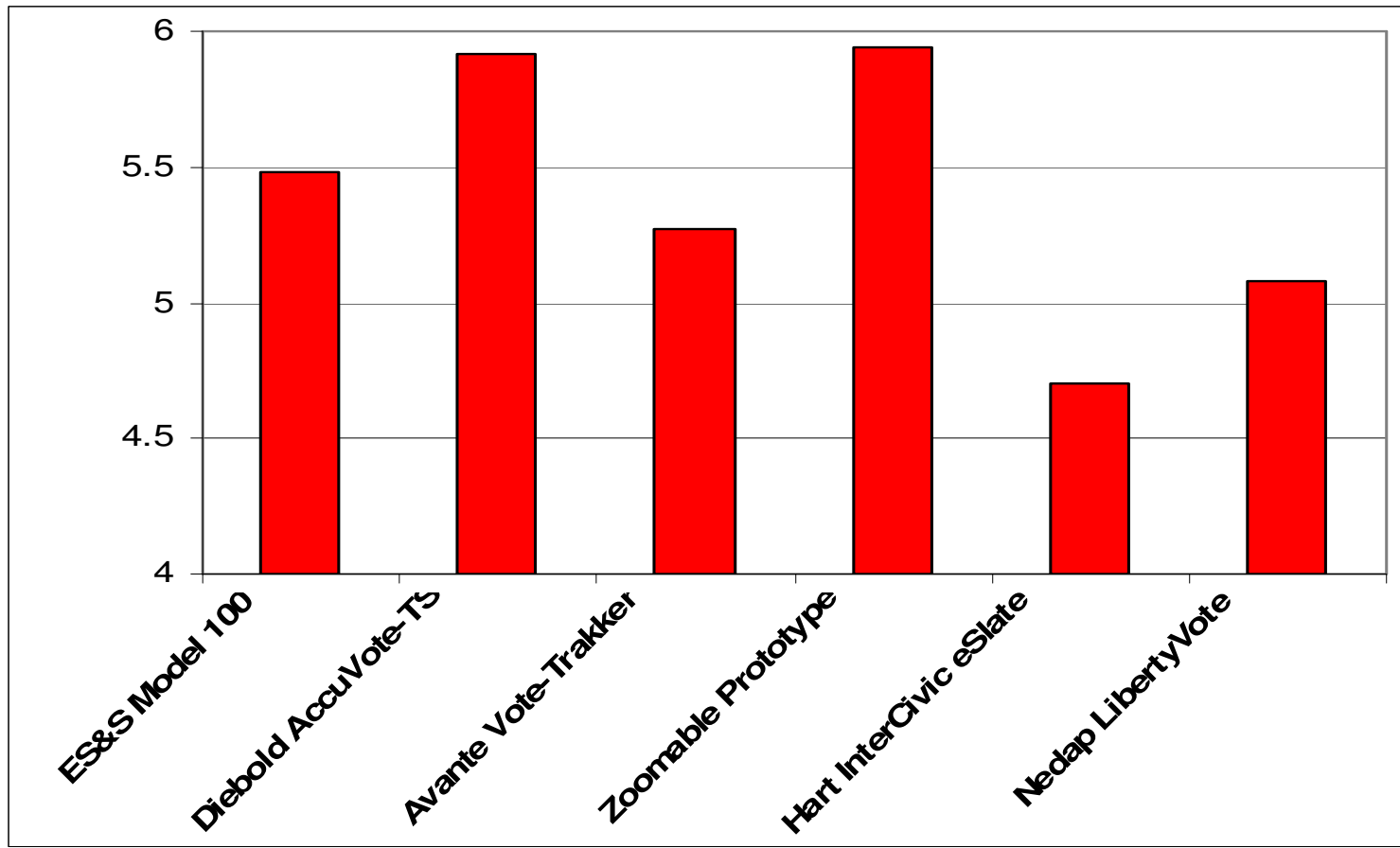
- Participants
 - Completed a questionnaire after voting on each machine.
 - Completed a background questionnaire at the end.
- Ballot was realistic
 - Partisan and nonpartisan offices.
 - Uncontested races.
 - Voting for multiple candidates.
 - Ballot questions.

Findings

- All systems were rated relatively favorably.
- But,
 - Some viewed more/less favorably.
 - Some usability criteria viewed more/less favorably.

Overall Voter Satisfaction

Average Satisfaction with each Voting System



Positive/negative overall

- Positive: voters were confident their votes would be recorded accurately.
 - All three touch screen systems were highly rated on this characteristic.
- Negative: it was hard for voters to change votes or simply correct mistakes
 - Need to de-select before re-selecting was confusing.

Paper ballot/optical scan

- Might expect it to be the standard by which all others are judged.
- But not rated so well on confidence.
- Dissatisfaction when changing vote
- Criticized for lack of meaningful feedback.

Touch screens

- All three rated highly on confidence.
- Diebold and Zoomable rated most highly.
- Mixed results on the matter of a paper trail.
- Avante rated lower, perhaps due to automatic advance and its reviewing mechanism.

Wheels and buttons

- Found it difficult for navigating across ballot.
- Changing votes, write-ins especially cumbersome.



To finish voting,
press
CAST BALLOT



until you see the
waving American flag.



Voter Instructions

1. Enter Access Code

2248

- Turn the **SELECT** wheel to highlight the first number of your Access Code.
- Press **ENTER**.
- Repeat for all numbers.

2. Make Choices

- Turn the **SELECT** wheel to highlight your choice.
- Press **ENTER**.
- The box to the left of the choice changes to tall.
- To change your choice, turn the **SELECT** wheel to your new choice and press **ENTER**.

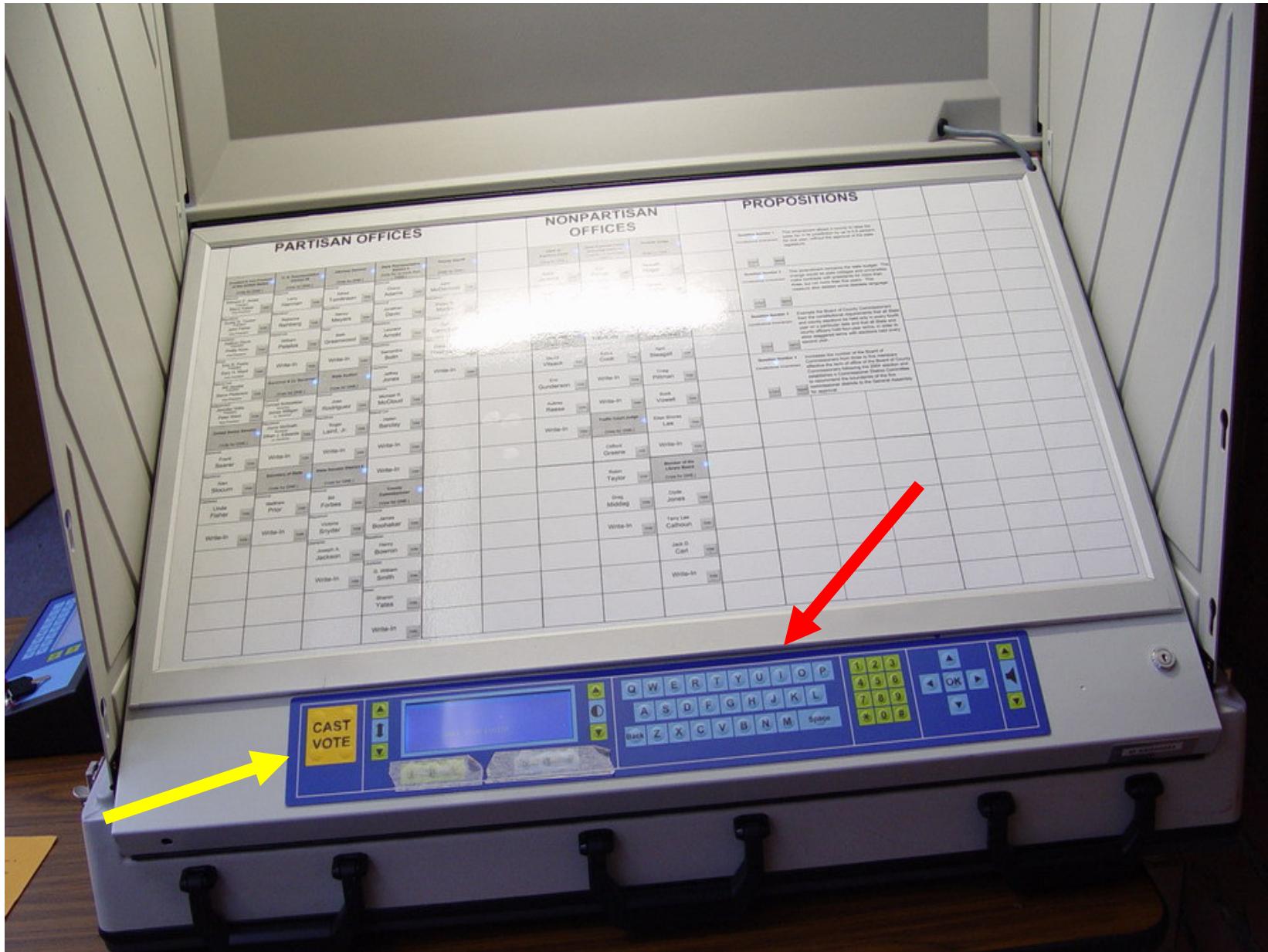
3. Cast Ballot

- Read the Ballot Summary Page.
- To change a choice from the Ballot Summary Page, turn the **SELECT** wheel to highlight the line you wish to change, and press **ENTER**.
- Cast your voted ballot by turning the **CAST BALLOT** wheel.
- Unmarked voters when you see the waving American flag. Exit the booth.
- Use **NEXT** and **PREV** to move through the ballot pages.
- To get help, press **HELP**.
- To vote for a write-in, turn the **SELECT** wheel to the write-in choice and press **ENTER**. Turn the **SELECT** wheel and press **ENTER** to spell out the name of the candidate you wish to write in. Turn the **SELECT** wheel to highlight **ACCEPT**, and press **ENTER**.

Other Features

Full screen

- Membrane buttons judged hard to use
- Write-in keyboard and screen were small
- Casting the vote was difficult (button problem again).
- Presence of full screen overshadowed by other problems.



PARTISAN OFFICES

NONPARTISAN OFFICES

PROPOSITIONS

CAST VOTE

Q W E R T Y U I O P
A S D F G H J K L
BACK Z X C V B N M Space

1 2 3
4 5 6
7 8 9
0 *

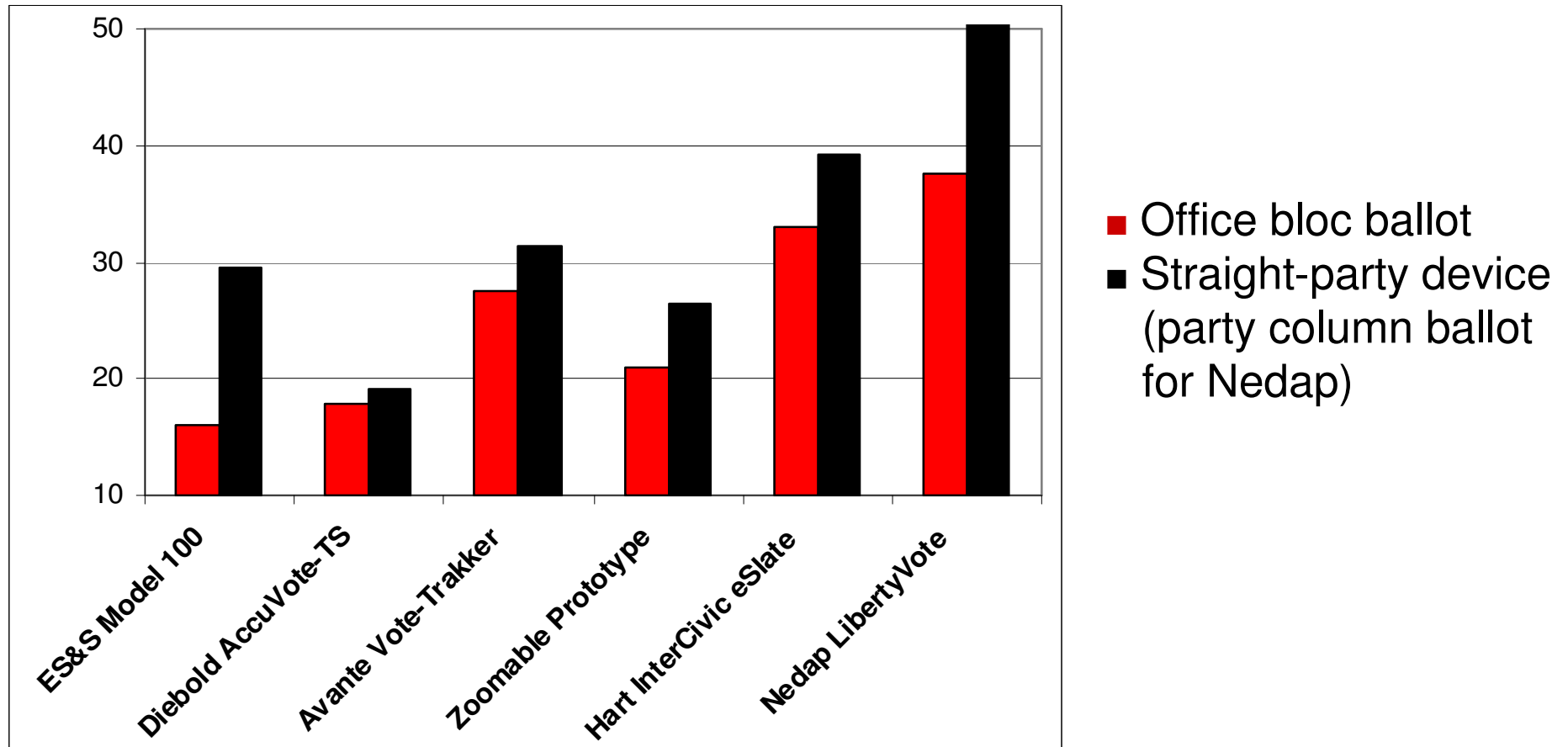
OK
Y

Digital divide?

- Multivariate analysis
 - Few variables consistently influence voter satisfaction.
 - Only modest evidence of digital divide.
 - Frequent computer users preferred touch screens.
 - Elderly disliked mechanical and zoomable interfaces.

Need for help

Did you feel the need to get help when using the machine? % Yes



Need for help: digital divide

- Multivariate analysis
 - More evidence of digital divide.
 - Computer exp., educ., age, native language, sex.

Conclusions

- Positive
 - All voting systems performed reasonably well.
- Negative
 - Some features were annoying, perplexing, disconcerting.
 - Varying levels of confidence that votes would be accurately reported.
 - Voters often felt they needed help.

Conclusions (cont.)

- Especially interesting
 - Voters had more confidence in paperless touch screens to accurately record their vote than other systems, including the paper ballot.
- Least anticipated
 - The considerable difference in ease, etc. between office-bloc and straight-party ballot.

For more information

www.capc.umd.edu/

An Assessment of Voting Technology and Ballot Design

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Thank you!