What Determines Voter Turnout?: Lessons from Citizens with Disabilities*

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Objective. Disability affects resources and other factors associated with political participation. This study examines the relative importance of these factors by analyzing voter turnout among people with disabilities. *Methods.* This study uses the Current Population Survey and a survey of people with spinal cord injuries (SCI), with data on 1992 presidential election voter turnout. It compares voting rates and determinants between the general population and people with SCI, and links voter turnout to disability characteristics. *Results.* Voter turnout among people with SCI was 10 percentage points lower than among otherwise-similar people in the general population. Employed people with SCI were just as likely as other employed people to vote, while turnout was strongly depressed among the two-thirds of people with SCI who were not employed. Within the SCI sample, turnout was higher among people who are able to drive and who attend religious services, and was not affected by severity of injury. *Conclusions.* The results highlight the importance of employment and general mobility for voter turnout. Further research on the low turnout of nonemployed people with disabilities is warranted. Future turnout levels will probably be affected by the success of the ADA and other policies in increasing employment of the one in five Americans with disabilities.

Voter turnout has generally declined in the United States over the past few decades (Conway, 1991; Miller and Shanks, 1996), as have a number of other forms of political and civic participation (Rosenstone and Hansen, 1993; Putnam, 1995). During the same period, however, the disability rights movement has grown strong, becoming the major force behind the passage of the Americans with Disabilities Act (ADA) in 1990 (Shapiro, 1993).

Disability and political participation may provide insights into the determinants of political participation in general, since disabilities often directly affect the factors that influence participation. Many disabilities diminish personal resources (such as physical mobility or financial resources) and reduce opportunities for political recruitment (due to lower employment levels or less social contact in general). People with disabilities face stigma and discrimination, which may cause some to withdraw from social interactions and political involvement, but can motivate others to become politically active in fighting for fair treatment. In addition to providing general insights, political participation among people with disabilities is an important topic in itself, as is clear from the growth of the disability rights movement and the efforts of Clinton and Dole in the 1996 election to appeal to the estimated 54 million people with disabilities.

This study analyzes the effect of disability on the most common form of political participation—voter turnout. It focuses on one disability, spinal cord injury (SCI), which affects about 200,000 Americans and accounts for over one-third of the 529,000 wheelchair users under the age of 65 (U.S. Bureau of the Census, 1993). SCI is a traumatic disability, occurring when the spinal cord is crushed or severed (usually from a vehicular accident, sports accident, or fall), causing partial or total paralysis below the level of injury. One research advantage of focusing on SCI is that the extent of physical impairment can be fairly easily determined by the level and completeness of the injury, and is more reliable than broad-based measures based on subjective self-assessments (which can confound the disability measure and the outcome being studied). An additional research advantage is that most people with SCI were raised as able-bodied individuals, so that education and early experiences are similar to those of the general population. While SCI presents these research advantages, it will be seen that voter turnout among people with SCIs appears to be representative of voter turnout among all people with disabilities. Therefore, in addition to providing lessons on voter turnout in general, this study may shed light on political participation among the one in five Americans with disabilities, which has received almost no attention from empirical researchers.

Theory and Research on Disability and Political Participation

In the influential model of Verba, Schlozman, and Brady (1995), the factors affecting political and civic participation are divided into three categories: resources ("Are you able to participate?"), psychology ("Do you want to participate?"), and recruitment ("Did anyone ask you to participate?"). Resources include time, money, and civic skills; psychological factors include political interest, sense of political efficacy, civic values, and commitment to specific groups or policies; and recruitment occurs through formal or informal social and organizational networks.

Disability can affect all three categories. Most fundamentally, a disability such as SCI decreases a person's physical resources. People with SCI either cannot walk or can walk only with difficulty, while quadriplegics also lack some or all use of their arms. Compensating for these limitations requires extra time, effort, and money, particularly in the early years after an injury. As such, an SCI represents a major life transition that Stoker and Jennings (1995) note can discourage political participation by directing attention to personal matters, including basic activities of daily living. Securing adequate transportation can be difficult and expensive, while architectural barriers can make it harder for people with mobility impairments to participate in public life. In addition, SCI is often accompanied by a variety of medical problems that diminish time, energy, and financial resources. An SCI can have a major impact on a person's financial resources not only from extra medical expenses, but also from the cost of necessary adaptive devices and renovations. Financial resources are often further reduced by a loss of employment: fewer than one-third of people with SCIs are employed, and people with SCIs are more likely than members of the general population to live in low-income households (Kruse, Krueger, and Drastal, 1995). In these respects they reflect people with disabilities in general, who have low employment and income levels relative to the general population (U.S. Bureau of the Census, 1993:11–12).

Disability is often accompanied by increased isolation. Verba, Schlozman, and Brady (1995) note that people who are isolated are unlikely to learn the skills necessary for effective political participation, to develop a sense of membership in a group with a common political purpose, or to be recruited by political activists. Persons with disabilities are less likely than individuals without disabilities to be involved in community life and social activities (Louis Harris and Associates, 1998). The low employment rates and limits on financial resources noted above also contribute to increased isolation and fewer opportunities for political recruitment.

Finally, disability can have psychological effects that influence participation. Many people with disabilities encounter stigma and discrimination (U.S. Commission on Civil Rights, 1983; Yuker, 1988), which contributes to the lower employment and earnings of people with disabilities (Johnson and Baldwin, 1993). Stigma and discrimination may combine with isolation and diminished resources to decrease feelings of personal efficacy and control, which may in turn depress political participation. While the stigma of disability often inhibits politicization (Hahn, 1987), it can also motivate political action, as shown by the disability rights movement. Anspach's model of "stratagems for stigma management" identifies political activism as one response to disability, occurring when a person maintains a positive self-image while rejecting society's devaluation of people with disabilities (Anspach, 1979:769). Other possible responses identified by Anspach are "normalization"—where people minimize the

stigma attached to disability and emphasize their similarities to people without disabilities—and "disassociation" or "retreatism" where individuals have negative self-concepts and withdraw from society out of anger or fear. These concepts have been found to apply to the experiences of people with traumatic disabilities (Schur, 1998).

In sum, disability produces constraints on resources and increased isolation, which can depress political participation, while psychological factors may increase participation (the "activist" response), leave it unchanged (the "normalization" response), or decrease participation (through a reduced sense of efficacy, or "disassociation" or "retreatism"). This study focuses on voting, which is one of the easiest and lowest-cost forms of political participation. Voting has been found to be strongly and positively related to the resources of education and income, as well as to employment and union membership, which can reflect important recruitment and mobilization networks (Teixera, 1987; Leighley and Nagler, 1992; Miller and Shanks, 1996). Psychological factors are also clearly important; in particular, declines in feelings of political efficacy and partisan identification are linked to the decline in voter turnout (Teixera, 1987).

Two prior studies comparing voter turnout by disability status look at unemployed persons who volunteered to interviewers that disability is the reason for their unemployment (Shields, Schriner, and Schriner, 1998; LoBianca, 1998). The measure is limited by the volunteered nature of the information, the measure's definition of disability as an inability to work, the lack of a disability question asked of everyone, and the lack of any information on the type and severity of disability. The results are nonetheless noteworthy: LoBianca (1998) found that turnout across 1992–96 was 14 percentage points lower, and Shields, Schriner, and Schriner (1998) found that turnout in 1994 was 20 points lower, among this group than among other nonemployed persons. Using a broader disability definition, a 1996 election poll found that people with disabilities were 16 percentage points less likely than those without disabilities to vote.[1] Preliminary results from a 1998 survey show similar results: voter turnout was 13 percentage points lower among nonemployed working-age people with disabilities, although it was similar between employed working-age people with and without disabilities (Schur et al., 1999).

This study concerns 1992 voter turnout, when there were no major debates over disability issues in electoral races. The major presidential candidates all supported the ADA. Given that there were no contentious disability issues to spur people with disabilities to vote in 1992, our hy-

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[1] A Harris poll during election week found 49% turnout among the general population and only 33% among people with disabilities (from press release of National Organization of Disability, December 1996). This data set, however, lacks sufficient information to analyze voting determinants.

pothesis is that voter turnout was lower among people with SCI than among otherwise-comparable people in the general population. Voter turnout is hypothesized to be particularly low among people who were not employed (due to lower financial resources and increased isolation), quadriplegics (due to more extensive physical impairments that limit mobility and daily activities), those who were injured more recently (due to decreased time, energy, and attention to politics as one learns to cope with disability), and those who could not drive and did not engage in social activities (due to isolation that decreases recruitment opportunities and social pressure to vote).

Data Sets

To analyze voter turnout in the 1992 election, this study uses the Current Population Survey Voting Supplement (CPS) for November 1992 and a special survey of people with SCI. An additional comparison group was drawn from the American National Election Study of 1992 (ANES); because the ANES results were similar to those of the CPS, only the latter are presented here. Following national elections, the monthly CPS survey of approximately 60,000 U.S. households includes a supplement asking which household members voted. The November 1992 data set contains data on the voter turnout of 93,992 citizens of voting age.

The primary purpose of the SCI survey was to assess the labor market effects of SCI through a comparison of employment and earnings before and after the onset of SCI (Kruse, Krueger, and Drastal, 1995). The sample frame was every person in the state of New Jersey who received an SCI within the past ten years, with names collected from all New Jersey rehabilitation institutes and the New Jersey Division of Vocational Rehabilitation Services. The survey, conducted in August and September 1994 through the Princeton Survey Research Center, had a response rate of 85% among those contacted, and a comparison of hospital records revealed few differences between respondents and nonrespondents. Using the wording of the CPS question, the interviewers asked respondents whether they had voted in the November 1992 election. The final sample contains 312 people with SCI who were eligible to vote in November 1992. The characteristics of the SCI sample were found to be very representative of the national population of people with SCI (Kruse, Krueger, and Drastal, 1995:17). A legitimate concern is whether any bias is introduced by the fact that the voting question was asked twenty-one to twenty-two months after the November 1992 election. A sample of former co-workers of people with SCI who were surveyed at the same time, however, had reported voting rates almost identical to those found in the 1992 CPS, indicating that the timing of the question does

not appear to bias the results.[2] Because the SCI sample is concentrated in New Jersey, comparisons are made to the New Jersey CPS sample as well as to the national sample.[3]

The SCI data set contains basic demographic and job information, including a measure of weekly earnings, with questions modeled on the CPS. It also includes information on severity of injury, time since injury, ability of respondent to drive, pre-injury employment, disability income, and social activities that can be useful in sorting out which activities and disability-related characteristics seem to affect voting.

Comparisons of Voting Rates and Determinants between the Samples

What were the voting rates of people with SCI compared to those of the general population? As shown in Table 1, 56% of the SCI sample and 70% of the CPS sample reported voting.[4] The 14-point gap is similar to that found in surveys reviewed earlier, including two with broader disability definitions. People with SCIs were four times as likely to vote by absentee ballot (19.6% doing so compared to 5.0% of the general population), suggesting that transportation difficulties and/or polling place inaccessibility play an important role for the SCI population.

The overall 14-point turnout gap could be due to differences in demographic and other characteristics. Table 1 breaks down voting rates by selected characteristics, finding lower voting rates for every category of gender, race, marital status, age, and education, indicating that the overall difference is linked to the SCI and not to other characteristics of the SCI population. The size and statistical significance of these voting rate differences, however, vary substantially among several categories. The voting gaps between the SCI and general population samples are much larger among men than among women, and among blacks than among non-

[2] Respondents with SCI who were employed pre-injury were asked to nominate a former co-worker and provide contact information. About two-fifths (39%) did so, but only half of the co-workers could be reached due to outdated contact information. Among those contacted, 76% agreed to be interviewed, producing a final co-worker sample of 68. Due to the small co-worker sample, these data are used mainly for assessing the reliability of the voting question.

[3] The turnout levels and determinants were very similar between the New Jersey and the national CPS samples. The national numbers are presented due to the larger sample size that allows stronger statistical tests, but the New Jersey results are available.

[4] This is higher than the figure based upon ballots cast that 55% of the voting-age population voted in the 1992 election (U.S. Department of Commerce, 1994:289). Part of the difference is due to the inclusion of ineligible people (noncitizens and certain institutionalized persons) in the denominator of the latter figure, which leads to a downward bias. The difference also reflects overreporting by survey respondents or undersampling of certain groups (Silver, Anderson, and Abramson, 1986; Leighley and Nagler, 1992; Rosenstone and Hansen, 1993:58–59). While both the CPS and SCI samples are likely to contain overreporting, past research gives no reason to think that this would systematically differ between the samples, and it is unlikely to taint the SCI-CPS differences calculated here.

TABLE 1

Voting Rates by Selected Characteristics

		People with SCIs			Current Population Survey		
		Proportion of Sample (1)	Voting Rate (2) (%)	(95% C.I.)	Proportion of Sample (3)	Voting Rate (4) (%)	Difference from SCI (5) (%)
Overall	Voted in any way	1.000	55.9	(+/−5.6)	1.000	69.6	13.7**
	Voted by absentee ballot	1.000	19.6	(+/−4.5)	1.000	5.0	−14.6**
Gender	Female	0.314	60.2	(+/−9.9)	0.527	70.1	9.9*
	Male	0.686	53.9	(+/−6.8)	0.473	68.9	15.0**
Race	White	0.716	61.5	(+/−6.5)	0.866	70.9	9.4**
	Black	0.200	38.7	(+/−12.3)	0.111	62.5	23.8**
Marital status	Married, spouse present	0.350	62.7	(+/−9.2)	0.691	75.4	12.7**
	Separated/divorced	0.176	55.4	(+/−13.4)	0.116	62.5	7.1
	Never married	0.438	50.0	(+/−8.5)	0.210	58.6	8.6*
Age	18–24	0.150	51.1	(+/−14.6)	0.125	51.3	0.2
	25–34	0.307	52.1	(+/−10.2)	0.220	61.5	9.4
	35–44	0.262	52.4	(+/−11.0)	0.213	72.5	20.1**
	45–54	0.163	64.7	(+/−13.4)	0.154	76.6	11.9*
	55–64	0.102	65.6	(+/−16.8)	0.117	79.1	13.5
Education	No H.S. degree	0.157	38.8	(+/−13.9)	0.164	47.8	9.0
	H.S. grad.	0.247	49.4	(+/−11.4)	0.358	64.1	14.7**
	Some college	0.314	57.0	(+/−10.0)	0.258	76.0	19.0**
	College grad.	0.205	68.8	(+/−11.6)	0.139	87.7	18.9**
Employment	Not employed	0.648	47.5	(+/−7.0)	0.368	66.0	18.5**
	Employed	0.352	71.7	(+/−8.6)	0.632	71.6	−0.1
	White-collar	0.291	73.1	(+/−5.5)	0.370	79.6	6.5
	Blue-collar	0.061	65.0	(+/−13.0)	0.262	59.4	−5.6
Sample size		312			93,992		

NOTES: Breakdowns not shown where the SCI segments have fewer than 30 observations (race neither white nor black, widowed, age 65+, and holders of graduate degrees).

* Significant difference from SCI value at $p < .05$; ** $p < .01$.

blacks. While voting rates increase with age in the general population, the increase is much more modest in the SCI population, so that the voting rate gaps between the SCI and general population samples are concentrated among those who are older (consistent with Shields, Schriner, and Schriner, 1998). This suggests that SCI acts partly to "rob" age of its positive effect on voter turnout. For education and marital status, however, the voting rate gaps are fairly similar across categories.

Among employed respondents, voting rates are almost identical between the SCI and CPS samples, while among the nonemployed, less than half (47.5%) voted in the SCI sample, which is significantly lower than in the CPS sample (66.0%). This presents two related questions: (1) Why is employment linked to such a large increase in voting rates for people with SCI? and (2) Why is the voting rate so depressed among nonemployed people with SCI?

Table 2 presents the results of probit regressions to examine the independent role of different factors in predicting the likelihood of voting. Identical specifications were run for each data set, providing a comparison of voting determinants as well as a way to predict turnout of the SCI sample if the determinants of voting were the same for them as for the general population.[5]

Estimates for the SCI sample show significant positive effects of education and employment, but a significant negative effect of being black, on the probability of voting. The implied effect of employment on the change in the probability of voting is .233, or 23.3 percentage points. In the CPS sample, voting rates in the general population are estimated to be higher for women and those who are older, white, more highly educated, and married with a spouse present.[6] Consistent with Table 1, the positive effect of age on voting probability is greater, and the positive effect of employment is much lower, than in the SCI sample.

What voting rates would be predicted for the SCI sample in the absence of the SCI? As seen at the bottom of Table 2, putting SCI characteristics into the CPS equation produces a predicted voting rate of 66.5%, or 10 percentage points higher than the actual rate.

Why does employment have such a large effect on the voting rate of people with SCI? Columns 3 and 8 of Table 2 explore this with specifications in which the employment variable has been replaced with variables representing white-collar and blue-collar jobs, and three characteristics of employment have been added: hours worked per week, weekly pay, and

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[5] The CPS specification accounts for any differential turnout in New Jersey using a New Jersey dummy variable. When the CPS sample is restricted to New Jersey residents, the pattern of results (available upon request) is very similar.

[6] In comparing the equations, the equality of SCI coefficients with CPS coefficients is rejected at $p < .05$ for the overall equations and for the race, education, and employment variables. Constraining age coefficients to be equal across the SCI and CPS samples is rejected at $p = .13$.

TABLE 2
Predicting Voting in SCI and General Population Samples

Independent Variables	People with SCIs				Current Population Survey			
	Coeff. (T) (1)	Change in prob. (2)	Coeff. (T) (3)	Change in prob. (4)	Coeff. (T) (5)	Change in prob. (7)	Coeff. (T) (8)	Change in prob. (10)
Female	0.130 (0.76)	0.051	0.146 (0.83)	0.057	0.082 (8.63)**	0.029	0.036 (1.68)	0.013
Black	-0.447 (2.19)*	-0.177	-0.496 (2.37)*	-0.196	0.019 (1.20)	0.007	0.041 (1.29)	0.015
Other race	-0.278 (1.15)	-0.110	-0.276 (1.05)	-0.110	-0.426 (17.36)**	-0.160	-0.388 (7.68)**	-0.148
Married, spouse present	0.403 (1.37)	0.155	0.216 (0.69)	0.084	0.165 (11.85)**	0.057	0.182 (6.30)**	0.065
Separated/divorced	0.162 (0.66)	0.063	0.085 (0.33)	0.033	-0.192 (10.75)**	-0.069	-0.188 (5.03)**	-0.070
Age	-0.043 (0.98)	-0.017	-0.043 (0.95)	-0.017	0.046 (28.52)**	0.016	0.045 (13.33)**	0.016
Age squared	0.001 (1.41)	0.0003	0.001 (1.40)	0.0003	0.000 (16.79)**	-0.0001	0.000 (8.31)**	-0.0001
H.S. grad.	0.367 (1.47)	0.140	0.431 (1.69)	0.165	0.507 (38.90)**	0.165	0.509 (18.57)**	0.172
Some college	0.578 (2.33)*	0.218	0.584 (2.30)*	0.222	0.977 (66.61)**	0.302	0.923 (29.51)**	0.300
College grad.	0.622 (2.17)*	0.228	0.495 (1.64)	0.186	1.338 (71.70)**	0.350	1.268 (30.81)**	0.356
Grad. degree	0.582 (1.66)	0.209	0.438 (1.14)	0.163	1.498 (56.31)**	0.320	1.340 (22.82)**	0.324
Employed	0.614 (3.44)*	0.233			0.133 (11.73)**	0.046		
White-collar job			0.475 (0.98)	0.181			0.494 (9.30)**	0.170
Blue-collar job			0.531 (0.94)	0.194			0.243 (4.63)**	0.084
Hours worked/week			-0.009 (0.61)	-0.003			-0.010 (7.41)**	-0.004
Union member			0.052 (0.09)	0.020			0.222 (5.99)**	0.077
Weekly pay (hundreds of dollars)			0.082 (1.74)	0.032			0.017 (3.07)**	0.006
Spouse employed	-0.310 (1.08)	-0.123	-0.293 (0.98)	-0.116	0.050 (3.69)**	0.017	0.007 (0.24)	0.002
New Jersey resident					0.020 (0.87)	0.007	-0.121 (2.64)**	-0.042
Constant	-0.002 (0.00)		0.061 (0.07)		-1.754 (50.33)**		-1.606 (21.83)**	
n	308		285		93.992		21.648	
Log-likelihood	-187.0		-173.5		-49512		-11346	
SCI rate: Actual					56.5%		55.1%	
Predicted					66.5%		63.8%	
Difference					-10.0%**		-8.7%**	

Notes: Results based on probits predicting likelihood of having voted in 1992.

`Predicted change in probability of voting from one-unit change in independent variable. starting at SCI means of variables.

*Significant at $p < .05$; ** $p < .01$.

union membership.[7] Weekly pay is a positive predictor in both samples but has a larger effect in the SCI sample, where the probability of voting increases about 3.2 percentage points for each $100 increase in weekly pay. This controls for weekly hours worked, which has a negative coefficient in both samples, so that working more hours in a week appears to have two opposite effects: a negative direct effect from the increased hours and a positive indirect effect from the increased weekly pay. This probably illustrates competition between two resources in affecting political participation: higher pay increases financial resources, while working more hours puts greater constraints on one's time. The effect on voting of simply being employed (apart from the income earned) in the SCI and CPS samples appears to be positive for part-time workers but becomes negative as more hours are worked, as shown by the positive coefficients on white-collar and blue-collar employment combined with the negative coefficient on hours worked.[8]

When predictions of turnout are made for employed and nonemployed people (based either on the results in Table 2 or on specifications done separately by employment status), the pattern reported in Table 1 is confirmed: the actual turnout for the employed people with SCI is very close to what is predicted based on the general population equation, but is 14 percentage points lower than predicted for nonemployed people with SCI.

What if the nonemployed people with SCI had maintained their old jobs? The survey collected pre-injury job information, which can be used to look at the role of income versus the other elements of employment. Giving the nonemployed their old job characteristics (with pay adjusted for general wage growth) raises their estimated voting rate by 17.4 percentage points, with close to three-fourths of the rise accounted for by the increased weekly pay.

Injury Characteristics, Activities, and Voting in the SCI Sample

Why are nonemployed people with SCI so much less likely to vote than other nonemployed people? This question can be addressed with additional information from the SCI data set on injury characteristics and activity levels, which is used in probit regressions for both the full and nonemployed samples.

Quadriplegics (who have neck injuries and limited use of their arms) generally have less physical ability and face higher financial costs than do

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[7] Because only one-fourth of households (the outgoing rotation groups) in the CPS are asked about pay and union membership, this decreases the CPS sample to 21,648.

[8] Full-time workers do, of course, receive higher average weekly pay, but even taking this into account, they are less likely on average to vote than are part-time workers (as shown by CPS estimates excluding weekly pay). The negative effect of hours worked is confirmed by splitting workers into part-time versus full-time, and by using a range of dummy variables.

paraplegics (who have injuries in the back). As seen in Table 3, quadripleg-ics with complete and incomplete injuries have lower voting rates, but the differences are not significantly different from zero (which rules out large but not small differences, with power limited by the sample size). The vot-ing rate is 17–19 percentage points higher among those injured more than five years ago than among those injured in the past two years, probably re-flecting demands upon time and energy in the first few post-injury years.

Mobility appears to be important, since being able to drive is a signifi-cant predictor of voting, raising the predicted probability by 20 percentage points. In addition, being a union member in one's pre-injury job, and re-ceiving Social Security Disability Income (SSDI, which is income based on pre-disability earnings), are positively related to the likelihood of voting. The union result echoes the positive effect of unionism found in the gen-eral population, indicating enduring effects of union mobilization. While the SSDI result could reflect the lingering effects of employment on voting (through contacts with former co-workers or habits inculcated at work), the regression controls for having a job at the time of one's injury, and the results are unchanged by adding pre-injury job tenure. The SSDI result could be due to the income itself, although estimated SSDI dollar benefits based on pre-injury earnings were never a significant predictor. Another possibility is that receiving government income naturally increases one's interest in government affairs, which may partly explain the strong coeffi-cient on SSDI but does not explain the lack of a significant effect from Supplemental Security Income (the means-tested government disability in-come program, available only to those with low family incomes).

The SCI survey also included several questions measuring different types of activities. While not designed to measure exposure to potential recruit-ment networks, these shed some light on different kinds of social contact or "social connectedness" that may affect opportunities or "social incen-tives" for participation (Teixera, 1987; Miller and Shanks, 1996:100–106). The following questions were asked: "Last week, did you spend most of your free time (a) by yourself, (b) with family or friends, or (c) in some other way?" and "Last week did you (a) get together with one or more friends? (b) attend a religious service? (c) exercise (other than physical therapy)? (d) take any kind of class? (e) attend a recreational event outside your home, like a movie, a picnic, or a sporting event? (f) watch TV for six or more hours on most days?" TV watching has been blamed by Putnam (1995) as the primary culprit in the decline of civic and political participa-tion over the past three decades.

Among activities, attendance at a religious service is a significant positive predictor of voting in the full sample, which is consistent with results from the general population (Rosenstone and Hansen, 1993). The only other predictors that are close to significant are not consistent with the recruit-ment model: attending a class is a negative predictor, while spending most

TABLE 3

Predicting Voting with Disability Characteristics

Independent Variables	Full Sample			Nonemployed		
	Means (1)	Coeffs. (Z-stats.) (3)	Change in prob.` (4)	Means (5)	Coeffs. (Z-stats.) (7)	Change in prob.` (8)
Female	0.320	0.324 (1.48)	0.123	0.337	0.327 (1.25)	0.130
Black	0.212	−0.690 (2.80)**	−0.270	0.272	−0.677 (2.37)*	−0.260
Other race	0.088	−0.497 (1.48)	−0.196	0.071	0.196 (0.43)	0.078
Married, spouse present	0.360	−0.081 (0.21)	−0.032	0.367	0.006 (0.01)	0.002
Separated/divorced	0.180	−0.058 (0.19)	−0.023	0.201	−0.160 (0.42)	−0.063
Age	40.0	−0.077 (1.35)	−0.030	40.9	−0.059 (0.89)	−0.024
Age squared	1756.9	0.001 (1.80)	0.0004	1848.3	0.001 (1.29)	0.0004
H.S. grad.	0.232	0.244 (0.78)	0.093	0.284	0.234 (0.67)	0.093
Some college	0.328	0.612 (2.07)*	0.227	0.355	0.551 (1.73)	0.217
College grad.	0.204	0.191 (0.53)	0.073	0.107	−0.362 (0.73)	−0.141
Grad. degree	0.084	0.364 (0.83)	0.134	0.047	0.274 (0.45)	0.108
Employed	0.332	0.031 (0.10)	0.012			
Weekly pay (hundreds of dollars)	207.8	0.001 (2.71)**	0.0005			
Union member	0.028	−0.304 (0.51)	−0.120			
Spouse employed	0.236	−0.128 (0.37)	−0.050	0.219	−0.370 (0.89)	−0.145
Complete paraplegic	0.260	0.124 (0.47)	0.048	0.266	0.123 (0.36)	0.049
Incomplete quadriplegic	0.272	−0.153 (0.59)	−0.060	0.296	−0.561 (1.73)	−0.075
Complete quadriplegic	0.208	−0.136 (0.45)	−0.053	0.225	−0.189 (0.50)	−0.218
Time since injury: 2–5 years	0.412	0.243 (1.03)	0.094	0.426	0.300 (1.01)	0.119

Time since injury: 5+ years	0.312	0.462	(1.78)	0.174	0.290	0.482	(1.47)	0.190
Able to drive	0.740	0.498	(2.01)*	0.196	0.639	0.511	(1.78)	0.201
Employed at time of injury	0.844	−0.007	(0.03)	−0.003	0.822	0.095	(0.28)	0.038
Union member in pre-injury job	0.220	0.477	(1.94)	0.176	0.254	0.397	(1.39)	0.157
Supplemental Security Income	0.320	0.115	(0.46)	0.045	0.414	0.250	(0.83)	0.100
Soc. Sec. Disability Income	0.444	0.469	(1.99)*	0.179	0.527	0.872	(2.82)**	0.336
Other disability income	0.216	−0.041	(0.17)	−0.016	0.249	−0.139	(0.49)	−0.055
Free time spent mostly alone	0.264	0.365	(1.61)	0.138	0.254	0.521	(1.83)	0.205
Activities last week								
Attended religious service	0.260	0.479	(2.12)*	0.178	0.260	0.510	(1.80)	0.200
Attended recreational event	0.552	0.249	(1.24)	0.097	0.527	0.289	(1.17)	0.115
Watched TV for 6+ hours most days	0.420	−0.026	(0.13)	−0.010	0.473	−0.095	(0.38)	−0.038
Took any kind of class	0.088	−0.619	(1.77)	−0.243	0.077	−0.867	(1.81)	−0.310
Got together with friends	0.784	−0.032	(0.13)	−0.012	0.757	−0.044	(0.15)	−0.017
Exercised	0.588	0.134	(0.68)	0.052	0.586	0.021	(0.09)	0.008
Constant		−0.414	(0.33)			−0.848	(0.59)	
n	250				169			
Log-likelihood	−135.0**				−91.9**			

NOTES: Probit predictions of likelihood of voting in 1992, for SCI sample.

*Predicted change in probability of voting from one-unit change in independent variable, starting at variable means.

*Significant at < .05; **p < .01.

of one's free time by oneself is a positive predictor, of voting. The first result may be explained by time constraints from taking classes (similar to the negative effect of hours worked). One explanation for the second result is that people with SCI who spend most of their free time by themselves have the financial and physical resources to live independently, and these resources combine with a stronger sense of personal efficacy to increase the likelihood of voting. Collectively, the activities do not make a substantial difference in the likelihood of voting.[9]

Could psychological factors explain the lower voting rates of the non-employed people with SCI? Past research on voting has often used measures of internal and external political efficacy. Since the SCI data set was primarily designed to collect employment and demographic data, it did not include psychological measures. An exploratory analysis containing several standard measures of internal and external political efficacy and locus of control was done on a smaller data set including 50 people with SCI and 68 able-bodied people. Controlling for these measures does not reduce the 10-percentage-point voting gap. Preliminary analysis of the 1998 voting survey also suggests that political-efficacy measures play only a minor role in the voting gap between people with and without disabilities (Schur et al., 1999). These exploratory results suggest that the lower voting rate among people with SCI is not due to lower perceptions of political efficacy or personal control.

Summary and Conclusions

The major results can be summarized as follows:

(1) People with SCI were less likely than members of the general population to vote in the 1992 presidential election. The overall gap in voter turnout is 14 percentage points, which decreases to 10 points after controlling for demographic characteristics.

(2) The overall gap is wholly due to nonemployed people with SCI, since the one-third of people with SCI who were employed voted at the same rate as other employed people. The strong effect of employment on turnout of people with SCI appears to be primarily due to the income gained through working.

(3) The voting rate is much lower than expected for older people with SCI. Voting rates rise sharply with age in the general population, but do so much more weakly in the SCI sample, suggesting that SCI acts partly to "rob" age of its positive effects on voting.

[9] Except for TV watching and attending a class, the mean activity levels of former co-workers are higher than for the SCI sample. When the mean activity levels of people with SCI are changed to the mean levels of the surveyed co-workers, however, the predicted voting rate is increased by only 1.3%. Again, the nonsignificant activity coefficients rule out large but not small effects of these variables, with power of the tests limited by the sample size.

(4) Within the SCI sample, those who can drive and were injured at least five years before the election were most likely to vote, but voting was not related to other injury characteristics or most of the social activities measured.

These results are consistent with some of the hypothesized effects of disability but not with others. Overall turnout was lower among people with SCI, as hypothesized. The hypothesized resource effects of disability on turnout are supported by the findings that lack of employment income and having had an injury recently are linked to lower turnout, but not by the findings on injury severity. The hypothesized effect of social isolation on turnout receives some support from the positive effects of ability to drive and attendance at a religious service, but not from the estimates for other social activities.

What lessons can be drawn about political participation more generally? The low levels of employment following SCI give us a stronger indication than provided by general population studies of the importance of employment for voter turnout, particularly underscoring the effect of income. The lower turnout among respondents with recent injuries supports the idea that major life transitions direct attention away from politics (Stoker and Jennings, 1995). The positive effect of driving ability on voter turnout shows that mobility outside the home appears to be an important factor contributing to voter turnout. Since one can vote by absentee ballot without going to a polling place, this suggests that the resource aspects of driving (being able to accomplish more tasks independently) are less important than the social and psychological effects of general community interaction.

Future research would benefit from a closer look at the role of employment in voter turnout both among other marginalized groups and the general population, exploring how the depressing effect found here from the loss of employment is accounted for by financial resources, social contact, and possible psychological factors. Future research should also examine general mobility outside the home, which was found to be more important than several specific social activities. Is this due to information and recruitment opportunities from community contact, or to increased identification with mainstream society and social roles, or both? Mobility raises another research question, which is whether initiatives to promote voting by mail (as in Oregon) or otherwise encourage voting at home may particularly improve the voting rates of people with disabilities. Finally, future research should also explore other forms of political participation, most of which require more time, energy, and resources than voting, which may lead to a larger participation gap between people with and without disabilities. Research on the importance of employment and mobility can be conducted using general population samples, but there are advantages in examining cases where disability or other circumstances provide greater

variation in the variables affecting political participation. These findings indicate in particular the value of new data collection and research on disability, using measures that address the points raised here.

These results also have implications for future turnout levels. To the extent that the ADA and other policies increase employment of people with disabilities, they will thereby increase the voter turnout of this group, and given that approximately one in five Americans has a disability (and the number is growing), this could have a noticeable effect on overall turnout.[10] Our findings here add weight to the argument that increasing employment opportunities for people with disabilities should be an important priority, since along with enhancing economic self-sufficiency and social integration, employment may also help this important segment of the population become more active citizens, participating to a greater extent in politics and public life.

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[10] As a rough estimate, if the 52% employment rate of all people with disabilities aged 21–64 were increased to the 80.5% rate of those with no disabilities (U.S. Bureau of the Census, 1993:62), there would be an additional 7.9 million employees; if employment increases the voter turnout of people with disabilities by 23.3% (Table 3), there would be an additional 1.8 million voters within the 21–64 age group.

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