EDUCATION AND POLITICAL TOLERANCE

TESTING THE EFFECTS OF COGNITIVE SOPHISTICATION AND TARGET GROUP AFFECT

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Abstract This paper examines the effects of education and cognitive sophistication on willingness to extend civil liberties to nonconformist groups. We conducted secondary analysis of the 1984 General Society Survey data. The results show that there is a strong tolerance dimension that cuts across groups and types of actions. We found strong positive effects of education on a multiple target group tolerance scale that included both left-wing and right-wing groups. A substantial fraction of the education effect on tolerance is mediated by cognitive sophistication. The effects of education on tolerance are strong even when a person has negative feelings toward the target group. This paper helps identify why and when (e.g., cognitive sophistication and dislike of a target group) education enhances political tolerance. We discuss the implications of the research for debates on the education–tolerance relationship.

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The effect of education on levels of support for civil liberties is a central concern of students of political tolerance. Stouffer's (1955) pioneering work established widely used measures of tolerance, provided baseline data on the U.S. population, and documented an important dependence of expressed levels of tolerance on education. Later studies also found that education was a key determinant of tolerance (Nunn, Crockett, and Williams, 1978). Yet, recent work on political tolerance (Sullivan, Piereson, and Marcus, 1982) and on intergroup attitudes and beliefs (Jackman, 1978; Jackman and Muha, 1984) has questioned whether education encourages more enlightened and tolerant views. We are interested in better understanding when and why increasing years of education may lead to a greater commitment to democratic norms of tolerance.

Our first objective is to identify more precisely the underlying traits that higher levels of education are frequently assumed to impart. One of the most prominent explanations for the positive relationship between education and tolerance is the greater cognitive sophistication produced by more years of schooling. Few investigations have employed direct measures of cognitive sophistication as predictors of tolerance. We test for such effects in the analysis reported below.

Our second objective is to perform a stringent test of the education–tolerance relationship that takes into account feelings of approval or disapproval of the target group whose rights are in question. Recent research on the appropriate definition and measurement of tolerance suggests that merely eliciting support for a civil liberty may not reflect tolerance, since the group in question may be nonthreatening or even liked. Thus, we also examine the effect of education on tolerance when the group in question is opposed by the respondent.

Excellent data for conducting this research are available. The 1984 General Social Survey included 15 questions on support for civil liberties (three parallel items on each of five nonconformist groups). Importantly, this set of items compensates for weaknesses of some earlier studies of tolerance by including questions on groups from the left and right ends of the political spectrum. A multiple-item measure of cognitive sophistication is also available. In addition, for four of the five nonconformist groups there are indicators of respondents' approval or disapproval of the target nonconformist group.

Below we review the claims that have been made for and against education as a source of greater tolerance, emphasizing the importance of cognitive sophistication. We next place the concern with the effects of education in the context of appropriate definition and measurement of tolerance. These discussions formulate two hypotheses concerning education and tolerance which we then test empirically.

Education and Political Tolerance

THE CASE FOR EDUCATION

Stouffer's work established that tolerance was higher among those living outside the South, those living in urban as opposed to rural areas, those perceiving little threat from the target group, the nonreligious, men as opposed to women, elites more than the mass public, and the highly educated more than those with less education. He expressed optimism that the overall level of tolerance would increase over time, in part because of the increasing years of education younger cohorts were receiving. Nunn, Crockett, and William's (1978) replication study reported slightly stronger effects of education on tolerance in 1973 than Stouffer had found in 1954. Nunn and colleagues stressed that increasing years of education were part of a learning process that enhanced cognitive skills, cultural knowledge, and cognitive flexibility. In a similar vein, McClosky (1964) maintained that democratic values are complex ideas requiring considerable education and social learning before they will be applied. Davis's (1975) analysis of change noted education effects within each of the cohorts used in his analysis and a contribution by increasing levels of education of 4% to the overall change of 22% in tolerance between 1954 and 1971.

Others have argued that education also increases the consistency of application of general democratic principles in concrete or more applied situations. For example, Prothro and Grigg (1960) found that support for abstract democratic norms was very high and unaffected by education. But support for concrete applications of those principles was much lower, with the highly educated exhibiting more consistency than the less well educated. They interpreted these patterns as demonstrating that education provides "greater acquaintance with the logical implications of the broad democratic principles" (Prothro and Grigg, 1960:291). McClosky (1964) argued that education played a large part in the finding that his sample of "political influentials" was more supportive of democratic ideology than the "mass electorate." More recently, Lawrence (1976) found that the highly educated were more likely to apply general norms of tolerance to groups they disliked.

In general, it is widely accepted that education increases levels of information. Hyman, Wright, and Reed (1978) examined the effects of education on measures of knowledge and receptivity to new information using measures contained in 54 national sample surveys conducted between the years 1949 and 1971. They found large and consistent effects of education on knowledge and openness to new information. Furthermore, in an equally copious secondary analysis, Hyman and

Wright (1979) extended their examination of education effects to indicators of values and attitudes. Their major conclusion was that education produced "large, lasting and diverse good effects on values" (Hyman and Wright, 1979:61).

THE CASE AGAINST EDUCATION

Several criticisms of the education–tolerance hypothesis have been advanced. First, Jackman (1973) suggested that methodological problems, such as acquiescent response bias, resulted in artifactual evidence of an education–tolerance relationship. She found that poorly educated respondents were more likely than the highly educated to agree with simple, strongly worded questions that posed only one side of an issue. Questions presenting both sides of an issue and eschewing agree–disagree response formats were less likely to show education effects.

Second, effects of education that vary as questions move from abstract principle to concrete issues have been read as showing that education imparts only a superficial degree of commitment to democratic values. Jackman's (1978) analysis of National Election Study data found that education influenced support for the general principle of racial integration but had no impact on support for specific policies aimed at integration or equal treatment of blacks. And contrary to Prothro and Grigg, Jackman found that because education had no effect at all on the concrete policy questions, the highly educated were no more likely to apply the general principle than those with less education.

Jackman and Muha (1984) investigated the influence of education on the intergroup attitudes of three dominant groups—whites, men, and the nonpoor—toward their respective subordinate groups—blacks, women, and the poor. Education had significant effects on only 3 of 43 items pertaining variously to beliefs, feelings, and general and concrete policy orientations in the race, gender, and class contexts. The items most responsive to education were general policy orientation items that invoked a sense of equal treatment of individuals (i.e., individual rights) rather than equality among groups. Jackman's interpretation of these patterns stressed that education does not increase tolerance so much as it enhances the ability of members of privileged groups to develop sophisticated defenses of their advantaged social status. From this perspective, the greater support for democratic values observed among the highly educated is a superficial advocacy of individual rights that provides a principled basis for rejecting group-based claims on society.

Third, Sullivan, Piereson, and Marcus (1979) maintained that the relationship between education and tolerance is largely artifactual. According to this critique, Stouffer (1955) and later analysts relying upon the questions he formulated (Nunn, Crockett, and Williams, 1978; Davis, 1975) were effectively measuring tolerance of leftist groups such as communists. The highly educated were more favorably disposed toward left-leaning groups than the poorly educated. Rather than measuring a general commitment to democratic norms, the Stouffer items tapped approval of particular groups. This criticism also called into question evidence of increases over time in the level of tolerance. Accordingly, as the salience of these left-wing groups declined, researchers observed an artifactual increase in levels of tolerance (Sullivan, Piereson, and Marcus, 1982).

Fourth, according to some, the schools and the educational process, at least to the point of high school completion, are ineffective at passing on democratic values (Bowles and Gintis, 1976). Zellman and Sears (1971) concluded that political socialization of attitudes toward the specific civil liberty of free speech does occur during late childhood but that school children are taught the abstract principle only in slogan form. An even stronger criticism was offered by Merelman (1980). He concluded that schools do little to teach or encourage the learning of democratic values and cannot teach democratic values because the school itself is not a democratic place. According to Merelman, the need for order in the schools leads to the creation of an environment that fosters the learning of constraint, hierarchy, and inequality rather than values of freedom, equality, and tolerance.

COGNITIVE SOPHISTICATION AS THE MEDIATING LINK

One way to begin to resolve these competing claims is to focus on the qualities (e.g., reasoning processes, value commitments, etc.) that education is assumed to impart (Sniderman, Brody, and Kuklinski, 1984). Students of political tolerance have not devoted much attention to examining the process through which education is held to relate to tolerance. Only a few studies have set out to directly measure the intervening characteristics and processes that higher levels of education are purported to set into operation. Zellman and Sears (1971) found that tolerance for free speech among a large sample of California schoolchildren age 9 to 14 was positively related to a measure of divergent self-esteem. Divergent self-esteem was defined as an ability to entertain novel and unusual thoughts. Glock et al. (1975) found that cognitive sophistication, as measured by intellectual interests, openness to new ideas, and willingness to risk uncertainty and ambiguity,

reduced anti-Semitism. McClosky and Brill (1983) reported that measures of political knowledge and of general intellectuality were related to an omnibus civil liberties scale.

But this research has either relied upon unusual samples, was unconcerned with assessing whether cognitive sophistication mediates education effects, or failed to consider cognitive sophistication in the context of other factors known to influence tolerance. The reasons why education is related to tolerance need to be pursued more directly. We suspect that the conceptual complexity and sophistication of the reasoning process itself is important, not years of education per se. Our first hypothesis, then, is that cognitive sophistication largely mediates the relationship between education and tolerance. In addition, we expect cognitive sophistication to exert effects on tolerance above and beyond other influences such as those of gender, race, region, age, urbanicity, ideology, and religion.

Conceptualizing and Measuring Tolerance

To this point we have treated tolerance as a concept that enjoys a widely understood, perhaps even straightforward meaning. There are several usages now available in the literature, two of particular importance. Much of the political tolerance research treats any expression of support for concrete use of a civil liberty as an expression of tolerance (Lawrence, 1976; McClosky and Brill, 1983). This assumption seems reasonable insofar as researchers have been careful to select groups well outside the social and political mainstream. Sullivan and colleagues challenged this view, however, arguing that tolerance presupposes explicit disapproval of the group or activity in question (see also Jackman, 1978). This claim has two immediate implications for measurement strategies and tests of theoretical ideas: first, and minimally, tolerance measures should ask about groups from both ends of the political spectrum; and second, it is essential to assess whether the person approves or disapproves of the target group.

Conclusions about the effects of education on tolerance may vary substantially by which definition of tolerance underlies the research. For example, contrary to previous literature, Sullivan and colleagues found no direct effect of education on their "content-controlled" measure of tolerance. This measure asked respondents to identify their least-liked group rather than eliciting reactions to a group preselected by the researcher. Although education tended to be related to the political ideology of the least-liked groups, with the highly educated tending to select right-wing groups, its effect on tolerance was small and mediated by political ideology and personality measures. Thus, education

did have some of the traditionally anticipated psychological consequences—more secure and flexible orientations—but no strong effect, direct or indirect, on levels of tolerance.

The large number of previous studies that found education to have effects on tolerance stand in sharp contrast to the results of Sullivan and colleagues. We propose to test some of these ideas; in particular, we undertake a stringent test of the education–tolerance hypothesis. Our second major hypothesis is that education enhances tolerance even when the target group is disapproved or disliked. That is, higher levels of education are indeed the source of "sober second thought" about restricting the rights of those one opposes. Our first and second hypotheses are linked in that we expect cognitive sophistication to mediate the effect of education on tolerance even once feelings toward the target have been controlled. A principal reason why increasing years of education leads to respect for the rights of those one opposes is the greater cognitive sophistication more education imparts. In short, education changes cognitive style in ways that increase the likelihood of recognizing the importance of extending civil liberties to those we dislike.

The analysis proceeds in three parts. First, we develop a scale of political tolerance. Close attention to the dependent variable is in order since some recent analysts have questioned whether tolerance is a single dimension (Sullivan, Piereson, and Marcus, 1979; McCutcheon, 1985). Second, we test the cognitive sophistication hypothesis in a multiple regression framework, using a Civil Liberties scale that involves five separate groups spanning the political spectrum. Third, we test for education and cognitive sophistication effects on tolerance of four separate target groups among those respondents holding explicitly negative attitudes toward the target group.

Data and Measures

We conducted secondary analysis of data from the 1984 General Social Survey (Davis and Smith, 1987). The GSS is a multistage probability sample of English-speaking adults living in noninstitutionalized settings in the continental United States. The number of completed cases was 1,473, which constitutes a response rate of .786. As a result of missing data and subgroup analyses our results are usually based on fewer cases.

Control variables. We are interested in the effects of education and cognitive sophistication on political tolerance above and beyond the contribution of other determinants of tolerance. Previous research indicates that we need to control for family income, age, gender, race,

religious denomination,[1] region of the country, urbanicity, psychological insecurity,[2] and political ideology.[3]

Cognitive sophistication measure. Our purpose is to move beyond measures of years of formal schooling to measures that will tap the degree of complexity and sophistication characteristic of the reasoning processes of the individual. Our indicator of cognitive sophistication is the number of correct answers to a ten-word vocabulary test. Vocabulary is generally considered to be the best single measure of intelligence and is included in most assessments of intellectual functioning (Thorndike and Gallup, 1944; Zimmerman and Woo Sam, 1973). A rich vocabulary often indicates a sensitivity to new information and an ability to reorganize ideas in more complex ways and as differing situations demand. Others have also employed the vocabulary item as an indicator of cognitive sophistication (Krosnick and Alwin, 1987).[4]

Analysis and Results

TOLERANCE AS A SINGLE DIMENSION

The GSS asks respondents 15 questions that are versions of some of the questions Stouffer originally included in the Willingness to Tolerate Nonconformists Scale. These questions address three fundamental civil liberties issues related to freedom of expression: making a public speech, teaching at a college or university, and having a book at a public library. Respondents were asked each of the three questions in reference to members of five nonconformist groups: communists, atheists, homosexual men, persons believing that blacks are genetically inferior (racists), and persons who advocate doing away with

1. We treat religious denomination as three dummy variables, with the nonreligious as the omitted category and Jews, Catholics, and Protestants each identified in separate dummy variables.
2. Psychological insecurity is measured with a three-item scale concerned with level of faith or trust in people (average interitem correlation = .38, alpha = .65).
3. Political ideology is measured by respondent's self-placement on a seven-point scale running from extremely liberal at one end, through middle of the road, to extremely conservative at the opposite end.
4. Cognitive sophistication is a somewhat imprecise term, but we lack straightforward improvements and it is now the commonly used term. Two alternative conceptualizations of the vocabulary measure suggested by reviewers are worth noting since they help clarify our meaning. One reviewer thought the term "intelligence" should be preferred. This is a much broader term and even if further narrowed to "verbal intelligence" would raise other types of problems. A second suggestion, closer to our intended meaning, views the vocabulary measure as tapping ability at conceptual thinking. This approach increases our leverage on interpreting the relationship between vocabulary and political tolerance. This reviewer suggested that "vocabulary measures the ability at abstract conceptual thinking and that civil liberties is really an abstract concept. Hence the relation."

Table 1. Descriptive Statistics for Tolerance Questions

Tolerance Question	Item Mean	Standard Deviation	*N*
Atheist speak	.69	.40	1,410
Atheist teach	.48	.50	1,373
Atheist book	.66	.48	1,383
Communist speak	.61	.49	1,382
Communist teach	.49	.50	1,340
Communist book	.62	.49	1,370
Racist speak	.59	.49	1,388
Racist teach	.42	.49	1,368
Racist book	.65	.48	1,375
Militarist speak	.58	.49	1,396
Militarist teach	.43	.49	1,375
Militarist book	.61	.49	1,390
Homosexual speak	.71	.45	1,367
Homosexual teach	.62	.49	1,363
Homosexual book	.61	.49	1,377

elections and letting the military run the country (militarists). The responses are dichotomous ("favor" or "not favor," "allow" or "not allow," and "fired" or "not fired") and are coded 0 for intolerant responses and 1 for tolerant responses (see Appendix for question wording).

Before directly examining the effects of education and cognitive sophistication on tolerance we must determine if the tolerance items form a reliable and conceptually valid dependent variable. Previous research has raised the possibility that specific acts may elicit greater support than others (Lawrence, 1976), that groups vary in the level of salience and threat they carry (Sullivan, Piereson, and Marcus, 1979; Gibson and Bingham, 1982), and, in particular, that education and political ideology affect the choice of disliked groups (Sullivan, Piereson, and Marcus, 1979; McCutcheon, 1985). Is tolerance a unidimensional construct that includes groups of left- and right-wing ideology and several types of acts or forms of expression?

We addressed this question in four ways, each of which suggests that there is a strong general tolerance dimension. First, we examined means for each of the tolerance items in order to determine if the five groups or the three types of acts differed markedly in the level of expressed tolerance. The item means shown in Table 1, which can be read as proportions given the 0–1 scoring of the items, shows modest indications that the group or type of behavior influences tolerance.

Table 2. Reliabilities for Group Subscales and Full Civil Liberties Scale

	Cronbach's Alpha	Mean	Standard Deviation	*N*
Subscale				
Atheist	.76	1.82	1.17	1,346
Communist	.79	1.71	1.24	1,318
Racist	.73	1.66	1.18	1,331
Militarist	.79	1.62	1.24	1,361
Homosexual	.83	1.96	1.22	1,320
Full Civil Liberties Scale	.89	9.06	5.01	1,176

Tolerance of the rights of gay men is usually a bit higher than that for other groups, but not markedly so. The right to teach in a college tends to elicit less support across groups than do the rights of free speech and having books in a library.

Second, we examined the internal consistency (Cronbach's alpha) of group-specific tolerance scales and of the overall Civil Liberties scale. As Table 2 shows, each of the five group-specific tolerance scales has a reliability coefficient in excess of .7. The full Civil Liberties scale is highly reliable (alpha = .89). Third, as a check of external consistency we examined three sets of cross-tabulations for each of the 15 tolerance items using the theoretically important variables of education, age, and political ideology. Table 3 presents gamma coefficients for the relation of education, age, and political ideology to each tolerance question. In general, the component items of the Civil Liberties scale relate in a similar manner to these variables. There is some variation in the magnitude of the association between the tolerance items and age (gammas ranging from $-.10$ to $-.44$), education (gammas ranging from .35 to .53), and political conservatism (gammas ranging from $-.05$ to $-.25$). But none of these differences provides consistent evidence that expressed tolerance varies substantially by group or type of activity. For example, we do not find that the highly educated are tolerant of left-wing groups (e.g., communists) but intolerant of right-wing groups (e.g., militarists). Nor do we find that political liberals are tolerant only of left-wing groups but not right-wing groups.[5] There is a tendency, however, for the three racist items to have weaker relationships to education, age, and ideology relative to that found for the other four

5. Another indication that the expectation that education biases the targets of intolerance is overdrawn is the weak relationship between political ideology and education. The correlation between political ideology and level of education is quite small ($-.04$, n.s.).

Table 3. Relation of Tolerance Items to Education, Age, and Political Conservatism

Tolerance Question[a]	Education[b]	Age[c]	Conservatism[d]
Atheist speak	.51	−.32	−.14
Atheist teach	.48	−.44	−.22
Atheist book	.52	−.39	−.19
Communist speak	.53	−.23	−.14
Communist teach	.47	−.37	−.20
Communist book	.53	−.37	−.23
Racist speak	.35	−.14	−.05 n.s.
Racist teach	.29	−.16	−.08
Racist book	.38	−.10	−.11
Militarist speak	.46	−.31	−.14
Militarist teach	.47	−.44	−.16
Militarist book	.50	−.33	−.19
Homosexual speak	.52	−.31	−.16
Homosexual teach	.52	−.39	−.23
Homosexual book	.50	−.37	−.25

[a]All questions were scored so that high scores indicate higher tolerance and all cell entries are gammas. Unless indicated otherwise, all gammas are significant at or below the .05 level.

[b]Education was coded in four categories: 0–11 years, 12 years, 13–15 years, and 16 or more years.

[c]Age was coded in four categories: 18–29 years, 30–39 years, 40–59 years, and 60 or more years.

[d]Political conservatism was coded in five categories: liberal or extremely liberal, slightly liberal, middle of the road, slightly conservative, and conservative or extremely conservative.

groups; and within each of the five groups, the item pertaining to teaching at a college is more strongly related to these selected variables than the free speech and library book items.

Fourth, we conducted an exploratory factor analysis of the tolerance items using a principal components extraction and oblique rotation (it is clear that the items are intercorrelated). Three factors have eigenvalues that exceed Kaiser's criterion (1.0) (Table 4). The first factor is a very strong general tolerance dimension on which 10 of the 15 items load approximately .5 or higher and which accounts for 48.2% of the variance in the underlying correlations. The second factor captures something we have noted before, a modestly distinctive response to the prospect of members of a nonconformist group teaching at a college (8.2% of the variance). The third factor also captures a pattern already noted, the less tolerant response to racists, especially as contrasted to

Table 4. Oblique Factor Analysis of Political Tolerance Questions

Tolerance Question	Pattern Matrix Loading		
	1	2	3
Communist book	.86	−.07	−.02
Atheist book	.84	−.04	.08
Militarist book	.74	.08	.15
Communist speak	.72	.02	−.21
Atheist speak	.71	.02	−.12
Homosexual book	.71	.05	−.19
Racist book	.69	.06	.45
Militarist speak	.61	.13	.05
Homosexual speak	.59	.08	−.47
Racist speak	.48	.26	.39
Racist teach	−.11	.91	.27
Militarist teach	.02	.79	−.03
Atheist teach	.05	.77	−.16
Communist teach	.19	.53	−.25
Homosexual teach	.25	.45	−.52
Eigenvalue	7.23	1.22	1.11
Variance explained	48.2%	8.2%	7.4%

more tolerant responses to homosexuals (7.4% of the variance). The first and second factors are highly correlated ($r = .59$), with the third factor having weak negative relationships to the first ($r = -.10$) and second ($r = -.04$) factors.

Given broad similarity in levels of tolerance, high internal and external consistency of the items, and the factor analysis results, we conclude that there is a strong general tolerance dimension that includes groups from the left and right ends of the political spectrum. In addition, some attention must be paid to two possible complicating factors: college teaching is viewed somewhat differently than mere freedom of expression, and racists and homosexuals elicit somewhat different levels of tolerance.

EDUCATION, COGNITIVE SOPHISTICATION, AND TOLERANCE

We wish to know if education predicts tolerance and if part of the reason for greater tolerance among the highly educated is found in their more complex reasoning. Table 5 reports results for two multiple regression models predicting the responses to the full Civil Liberties

Table 5. Multiple Regression Models for the Civil Liberties Scale and Behavior-Specific Subscales

Variable	Civil Liberties Scale		College Teaching Subscale	Speaking and Library Book Subscale
	1	2		
Constant	9.19***	8.11***	2.24***	5.86***
Education	.51 (.30)***	.34 (.20)***	.14 (.22)***	.19 (.16)***
Vocabulary	—	.53 (.22)***	.13 (.15)***	.38 (.23)***
Psychological factors				
Political conservatism	−.35 (−.09)**	−.32 (−.08)**	−.11 (−.07)**	−.24 (−.09)***
Psychological insecurity	−.22 (−.10)***	−.16 (−.07)*	−.02 (−.02)	−.13 (−.09)**
Social background				
Age	−.07 (−.22)***	−.08 (−.25)***	−.03 (−.26)***	−.04 (−.22)***
Race (black = 1)	−.68 (−.04)	−.43 (−.03)	−.14 (−.02)	−.23 (−.02)
Sex (female = 1)	−.56 (−.05)*	−.70 (−.07)	−.14 (−.03)	−.52 (−.07)***
Region (South = 1)	−1.03 (−.10)***	−.83 (−.08)**	−.14 (−.03)	−.65 (−.09)***
Family income	.09 (.05)	.05 (.03)	.01 (.01)	.04 (.04)
Urbanicity	.08 (.05)	.10 (.06)*	.01 (.02)	.11 (.09)***
Jewish	−1.19 (−.03)	−.89 (−.02)	−.32 (−.02)	−.99 (−.03)
Catholic	−1.36 (−.12)*	−.95 (−.08)	−.22 (−.05)	−.68 (−.08)
Protestant	−1.92 (−.18)***	−1.59 (−.15)**	−.61 (−.15)**	−.94 (−.13)**
Adjusted R^2	.28	.31	.24	.29
N	1,025	1,025	1,086	1,088

NOTE: Figures in parentheses are standardized coefficients.
*$p < .05$. **$p < .01$. ***$p < .001$.

scale. Model 1 shows that education makes a highly significant positive contribution to tolerance above and beyond the effects of age, gender, race, region, family income, religion, political conservatism, and psychological insecurity. Education is the single most important variable in the equation (partial beta = .30, $p < .001$).

Model 2 shows the effects of adding the cognitive sophistication measure. Vocabulary has a significant positive effect on tolerance (partial beta = .22, $p < .001$). It adds about 3% to the total variance explained. Importantly, the cognitive sophistication measure accounts for a large share (approximately 33%) of the effect of education on tolerance, reducing the raw regression coefficient for education from .51 to .34. To the extent having a richer vocabulary taps cognitive sophistication, these results show that differences in the complexity of the reasoning process account for a portion of the effect of education on tolerance.[6]

In order to determine if the type of behavior at issue influences tolerance, the last two columns of Table 5 report results using only the tolerance questions referring, respectively, to the College Teaching subscale as the dependent variable and to the Speaking and Library Book subscale as the dependent variable. Although there are some differences in the variables found to have significant effects, the strongest determinants of tolerance for the College Teaching and for the Speaking and Library Book subscales are largely the same. The highly educated and the cognitively sophisticated are more likely to support the right of nonconformist groups to hold college teaching positions or to engage in public speaking and have their publications generally available. Part of the effect of education on tolerance for both subscales is mediated by cognitive sophistication. Adding the vocabulary measure to the model reduced the size of the education coefficient by 22% for the College Teaching subscale and by 37% for the Speaking and Library Book subscale. Older and politically conservative respondents score as less tolerant on both subscales than their respective younger or liberal counterparts. Protestants score as least tolerant among the religious groups and as significantly less tolerant than the nonreligious.

6. The modest reliability of the psychological insecurity measure may result in an underestimation of its mediating effects on the education–tolerance relationship. However, correcting for the reliability of the psychological insecurity measure is unlikely to alter the results of Table 5 to any significant degree. The uncorrected correlation between psychological insecurity and education is $-.24$; for psychological insecurity and the Civil Liberties scale the figure is $-.16$. Correcting these figures for attenuation using Cronbach's alpha increases the former figure to $-.30$ and the latter figure to $-.20$. These corrected correlations remain well below the uncorrected correlation of education with cognitive sophistication ($r = .49$), of education with the Civil Liberties scale ($r = .44$), and of cognitive sophistication with the Civil Liberties scale ($r = .36$).

There are, however, several differences between the two subscales. The differences suggest that for some respondents tolerance of college teaching, perhaps because it is seen as an authoritative or influential position from which to advocate nonconformist ideas, is taken as a more demanding behavior to tolerate. This is seen in the absence of effects on the College Teaching subscale for psychological insecurity, sex, region, and urbanicity. To be sure, the impact of these variables on the Speaking and Library Book subscale, as judged by the size of the standardized regression coefficients, are not large (i.e., each is below .10) and the direction (sign) of the effects is uniform. On the whole, the results show both the presence of a general tolerance dimension that is heavily influenced by a person's level of education and cognitive sophistication and a degree of difference in tolerance based on the type of action at issue.

AFFECT, EDUCATION, COGNITIVE SOPHISTICATION, AND TOLERANCE

A strong version of the education–tolerance hypothesis would posit that more education increases tolerance even when the target group is disapproved or disliked. That is, more education is the key source of "sober second thought" about restricting the rights of those one finds disagreeable. We tested this idea by examining the education–tolerance relationship for group-specific subscales only among respondents who expressed explicitly negative attitudes toward the respective target group. The GSS contains questions that provided reasonably direct, though not always ideal, measures of attitude toward four of the five target groups. The target groups, affect questions, and responses used as indicating a negative attitude toward the target group are as follows:

Communist: "Thinking about all the different kinds of governments in the world today, which of these statements comes closest to how you feel about Communism as a form of government? It's the worst kind of all? It's bad, but no worse than some others? It's all right for some countries? It's a good form of government?" ("It's the worst kind of all" treated as negative affect)

Homosexual: "What about sexual relations between two adults of the same sex—do you think it is always wrong, almost always wrong, wrong only sometimes, or not wrong at all?" ("Always wrong" treated as negative affect)

Racist: "Do you think there should be laws against marriages between blacks and whites?" ("No" treated as negative affect)

Militarist: "As far as the people running these institutions are concerned, would you say you have a great deal of confidence, only some

confidence, or hardly any confidence at all in them? Military?'' (''Only some'' or ''hardly any'' treated as negative affect)[7]

According to Sullivan and colleagues, one reason previous research found education effects on tolerance is that the highly educated have more positive attitudes toward the left-wing groups used in the original Stouffer scale. Our results partly support this claim. Education is related positively to the affect measures for communists (gamma = .21) and homosexuals (gamma = .43). Education is related negatively to the affect measures for the right-wing groups (gamma = −.53 for racists and −.25 for militarists). This pattern notwithstanding, Table 6 shows that the highly educated are more tolerant than the less well educated even when the analysis is restricted to respondents who are likely to have negative attitudes toward the target group. The group-specific subscale means increase significantly with education for each target group. Importantly, the education–tolerance relationship is upheld for left-wing and right-wing groups and does not vary appreciably in magnitude with group ideology.

The regressions in Table 7 show that, first, education is associated with higher tolerance among those opposed to the target group net of the effects of such factors as age, political conservatism, and psychological insecurity. The size of the unstandardized education coefficient is comparable across the four target groups, ranging from a low of .04 for the racist subscale to a high of .07 for the communist and militarist subscales. The magnitude of these effects is suggested by, for example, the communist subscale, where tolerance scores for those with 11 years of education would, under the model, differ from those of a person with 20 years of education by .63 points, or about 51% of a standard deviation unit.

Second, the impact of education on tolerance when the respondent explicitly opposes a group, though always important, is not as strong as the education effect in the absence of controls for target group affect. For example, tolerance scores under model 2 of Table 5 (i.e., the full Civil Liberties scale) of those with 11 years of education and those with 20 years of education would be separated by 3.06 points, or 61% of a standardized deviation unit. In contrast, this difference by education based on the models in Table 7 ranges from only 30% to 51% of a standard deviation unit. That is, part of the education effect on the full Civil Liberties scale reflects that scale's emphasis on left-wing groups (three of the five), toward whom the highly educated have more positive feelings.

Third, cognitive sophistication, as measured by respondent vocabu-

7. This question was asked of two-thirds of the sample because of a question wording experiment.

Table 6. Education and Tolerance Among Those with Negative Attitudes Toward the Target Group

	Mean Tolerance Score			
	Left-Wing Groups		Right-Wing Groups	
Education Level	Communist	Homosexual	Racist	Militarist
0–11 years	.99 (222)	1.21 (271)	1.36 (175)	1.14 (113)
12 years	1.33 (284)	1.59 (327)	1.69 (290)	1.46 (168)
13–15 years	1.61 (149)	1.89 (159)	1.90 (223)	1.97 (124)
16 or more years	2.13 (107)	2.34 (117)	2.26 (214)	2.41 (130)
F value	29.25***	27.37***	22.69***	30.94***
Eta	.32	.29	.26	.38
N	762	874	902	535

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 7. Multiple Regression Models of Tolerance Among Those with Negative Attitudes Toward the Target Group

	Left-Wing Groups		Right-Wing Groups	
Variable	Communist	Homosexual	Racist	Militarist
Constant	.72	1.26**	1.45***	1.14*
Education	.07 (.16)***	.06 (.13)**	.04 (.10)*	.07 (.17)***
Vocabulary	.13 (.22)***	.09 (.14)***	.07 (.13)**	.15 (.26)***
Psychological factors				
Political conservatism	−.08 (−.08)*	−.05 (−.05)	−.04 (−.05)	−.12 (−.13)**
Psychological insecurity	−.01 (−.03)	−.03 (−.05)	−.05 (−.09)*	.01 (.03)
Social background				
Age	−.01 (−.16)***	−.01 (−.23)***	−.01 (−.08)*	−.02 (−.23)***
Race (black = 1)	.07 (.02)	.14 (.04)	−.18 (−.05)	−.37 (−.09)*
Sex (female = 1)	−.26 (−.10)**	.01 (.00)	−.21 (−.09)**	−.17 (−.07)
Region (South = 1)	−.18 (−.07)*	−.16 (−.06)	−.02 (−.01)	−.01 (−.005)
Family income	.02 (.04)	.03 (.07)	.03 (.07)*	.00 (.00)
Urbanicity	.04 (.10)***	.03 (.09)**	.01 (.03)	.02 (.05)
Jewish	.17 (.01)	−.09 (−.01)	−.52 (−.06)	−.26 (−.03)
Catholic	−.08 (−.03)	.13 (.04)	−.15 (−.06)	−.13 (−.04)
Protestant	−.25 (−.09)	−.23 (−.08)	−.20 (−.09)	−.07 (−.03)
Adjusted R^2	.20	.17	.10	.26
N	687	775	830	488

NOTE: Figures in parentheses are standardized coefficients.
*$p < .05$. **$p < .01$. ***$p < .001$.

lary score, is also significantly related to tolerance for each target group. Again, the vocabulary measure mediates a substantial fraction of the effect of education on tolerance. As compared to models excluding only the vocabulary measure (not shown in table), the figures in Table 7 show that adding the vocabulary measure reduces the size of the net education coefficient, at the low end, by 25% for the homosexual subscale and 42% at the high end for the militarist subscale. Falling in between are the racist and communist subscales, where the figures are 33% and 36%, respectively.

Fourth, the results in Table 7 suggest great similarity across groups in the other main determinants of tolerance (e.g., age effects and the direction of conservatism effects), but they also raise some potentially important group-specific differences. Most important among the latter is the finding that urbanicity is associated with higher tolerance for left-wing groups but is unrelated to tolerance of right-wing groups when the analysis is restricted to those with negative attitudes toward the target group.[8]

Discussion and Conclusions

Our research has three principal findings. First, there is a general tolerance dimension that embraces groups from both ends of the political spectrum. Regardless of the group or the type of behavior at issue, we found very high internal and external consistency for the tolerance scale and its component items. There is some evidence of behavior-specific and target group–specific patterns of response. None of these differences is so large or consistent as to call into question the existence of a general tolerance dimension. Second, education is strongly related to tolerance, even for a wide array of groups and even among those respondents explicitly opposed to the target group. Third, cognitive sophistication accounts for a substantial fraction of the effect of education on tolerance. Taken together, these findings provide confirmation of previous claims about the presence and sources (i.e., cognitive sophistication) of education effects on willingness to support the rights of disliked groups.

8. As a check on our findings the models shown in Tables 5 and 7 were estimated using the 1987 General Social Survey data (Davis and Smith, 1987). This analysis confirms our results using the 1984 data. For example, education has a strong net effect on the full Civil Liberties scale ($b = .26, p < .001$), as does the vocabulary measure ($b = .59, p < .001$). Adding the vocabulary measure reduced the net education coefficient by 44%. Similarly, the main findings of the group-specific analyses examining only those with negative attitudes toward the target group are also confirmed. Education had positive net effects for the communist ($b = .05, p < .01$), homosexual ($b = .04, p < .05$), racist ($b = .05, p < .01$), and militarist ($b = .06, p < .001$) subscales. In each case, the vocabulary measure mediated a substantial fraction of the education effect.

Our research has several implications for advocates (Nunn, Crockett, and Williams, 1978; Davis, 1975; Weil, 1985) and detractors (Sullivan, Piereson, and Marcus, 1979; Jackman and Muha, 1984) of the education–tolerance hypothesis. Our findings suggest that previous research that relied on Stouffer-type items has not been seriously compromised by a focus on left-wing target groups (cf. Mueller, 1988). Questions on these groups behave much like those about right-wing groups and responses to both types of groups form an underlying tolerance dimension. By implication then, increases in levels of tolerance among the American mass public documented by Nunn, Crockett, and Williams (1978) and by Davis (1975) are, contrary to some interpretations (Sullivan, Piereson, and Marcus, 1979), probably very real.

The difference between our results and those of Sullivan and colleagues lies in a distinction between tolerance under ordinary conditions and tolerance under extraordinary or extreme conditions. We have not employed the perceived threat, general norms, and personality measures used in the Sullivan model, but the effects of education we found occurred net of political ideology, trust in people (psychological insecurity), and feelings of disapproval of the target group, and without regard to the left- or right-wing proclivities of the target group.[9] This suggests that the key difference between our results and those of Sullivan and colleagues involves the differing dependent measures. We suspect that Sullivan and colleagues found only weak indirect effects of education on tolerance because their measure of tolerance identifies extremely disliked groups. For example, several of the target groups—the Ku Klux Klan, the Black Panthers, and the Symbionese Liberation Army—identified in the Sullivan measure have histories of violence and criminal activity. They are not merely advocates of nonconformist viewpoints. Tolerance of nonconformist but less extreme groups and the connection of education to the latter are probably underestimated by this measurement strategy.

Importantly, the sort of "ordinary" dislike/disapproval we have indexed may be a larger component of routine politics than is the extraordinary dislike/disapproval we suspect is accorded "least liked" groups. There are probably many more occasions when we are called upon to tolerate those views we merely dislike than those we find to be

9. Lack of a perceived threat measure is not a liability. First, Sullivan, Piereson, and Marcus did not find a relationship between perceived threat and education. Second, Green and Waxman (1987) found that education still affects how tolerance is expressed among those who feel threatened by a group. Our analysis differs also in that Sullivan, Piereson, and Marcus included in their omnibus personality measure a dogmatism scale. Including a dogmatism measure might further reduce the impact of education on tolerance, but we do not have such a measure available. Importantly, such an effect, though as yet undemonstrated with these data, would be consistent with our cognitive sophistication hypothesis.

extraordinarily objectionable. There are also a number of nonconformist groups whose ideas and actions do not involve violence or lawbreaking but whose views are well outside the mainstream. In addition, other research shows that the positive effects of education on tolerance extend to greater approval among the highly educated for social protest by nonconformist groups (Hall, Rodeghier, and Useem, 1986). Our results suggest that education, partly via its impact on conceptual ability or cognitive sophistication, is important for tolerance of the merely disliked group but is unimportant for tolerance of the extraordinarily disliked group.

Jackman's analysis concerned attitudes toward broad social categories (gender, race, and class), not attitudes toward the expression of particular points of view. We believe our results indicate more than ideological sophistication on the part of the highly educated. In this sense, our results run counter to the interpretation of education effects proposed by Jackman. We suspect that the difference involves a middle ground between support for abstract democratic principles and support for more sweeping policy changes (e.g., affirmative action or mandatory school desegregation) that benefit particular groups. This middle ground involves support for the rights of individual members of nonconformist groups to advocate their ideas in public forums. As Weil (1985:459) recently argued, "the processes and reasons which constrain the better educated to give more liberal responses may not be as admirable as once thought, but something may be better than nothing: one presumes that the recipients of apparently liberal opinions (even if somewhat hypocritical) prefer such constraints to heartfelt illiberal responses." Activities such as political speech, the publication of one's views, and the right to hold prestigious positions (e.g., college teacher) are vital means of drawing attention to problems and persuading others to support policy changes. Viewed in this light, it is meaningful to find that education increases commitment to the extension of free-speech rights to those we dislike.

Sullivan's model and Jackman's research identify boundaries on the education–tolerance relationship. These boundaries constitute particular, and in some ways limited, conditions when education fails to increase tolerance. Our research shows the circumstances when education has large and important effects on tolerance. Of course, education is only one of several factors influencing tolerance and, as cohort analyses show, improvements in average educational attainment are not the main factor producing change over time in levels of tolerance. Future research should not view the education–tolerance relationship as either generally weak or strong. Rather, education is associated with higher levels of tolerance, even among those who oppose a group, so long as the group in question is not extraordinarily threatening or ex-

treme. This relationship exists in part because education is associated with more sophisticated styles of reasoning.

Appendix: GSS Question Wording

Atheist speak. There are always some people whose ideas are considered bad or dangerous by other people. For instance, somebody who is against all churches and religion. If such a person wanted to make a speech in your (city/town/community) against churches and religion, should he be allowed to speak, or not?

Atheist teach. Should such a person be allowed to teach in a college or university, or not?

Atheist book. If some people in your community suggested that a book he wrote against churches and religion should be taken out of your public library, would you favor removing this book, or not?

Communist speak. Now, I should like to ask you some questions about a man who admits he is a communist. Suppose this admitted communist wanted to make a speech in your community. Should he be allowed to speak, or not?

Communist teach. Suppose he is teaching in a college. Should he be fired, or not?

Communist book. Suppose he wrote a book which is in your public library. Somebody in your community suggests that the book should be removed from the library. Would you favor removing it or not?

Racist speak. Or, consider a person who believes that blacks are genetically inferior. If such a person wanted to make a speech in your community claiming that blacks are inferior, should he be allowed to speak, or not?

Racist teach. Should such a person be allowed to teach in a college or university, or not?

Racist book. If some people in your community suggested that a book he wrote which said blacks are inferior should be taken out of your public library, would you favor removing this book, or not?

Militarist speak. Consider a person who advocates doing away with elections and letting the military run the country. If such a person wanted to make a speech in your community, should he be allowed to speak, or not?

Militarist teach. Should such a person be allowed to teach in a college or university, or not?

Militarist book. Suppose he wrote a book advocating doing away with elections and letting the military run the country. Somebody in your community suggests that the book be removed from the public library. Would you favor removing it, or not?

Homosexual speak. And what about a man who admits that he is a homosexual? Suppose this admitted homosexual wanted to make a speech in your community. Should he be allowed to speak, or not?

Homosexual teach. Should such a person be allowed to teach in a college or university, or not?

Homosexual book. If some people in your community suggested that a book he wrote in favor of homosexuality should be taken out of your public library, would you favor removing this book, or not?

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