

**ON THE SEEMINGLY RELENTLESS PROGRESS
IN AMERICANS' SUPPORT FOR FREE EXPRESSION
1972-2006**

Five Stouffer tolerance items (atheist, communist, homosexual, militarist, and racist) are tracked from 1972 to 2006 in the NORC General Social Survey). All show a steady, significant increase in tolerance. Nevertheless, (1) Rates of change differ significantly in subgroups such that the initially less tolerant increased more rapidly and the scales became “de-polarized” and (2) Period and Cohort effects have opposite signs and are clearly non-linear.

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This research was supported by the General Social Survey project, funded in part by NSF grant SBR-9617727. Data for the 1954 Stouffer survey were provided by the Inter-university Consortium for Political and Social Research.

Count: 5,055 words

Introduction

Freedom of expression (“Free Speech”) is considered one of the bedrock American values, enshrined in the Constitution and endorsed in generations of speeches and writings, although not always embodied in practice. Change and stability in such fundamental cultural norms merit social science monitoring, especially since the standard measures are not without problems. Actual data on free speech attitudes in the mass public reveal that they are a good deal less straightforward than Fourth of July speeches imply. Consider Table 1.

TABLE 1. Selected Free Speech Items in the 1994 General Social Survey

Q512A

“Under the first amendment guaranteeing free speech, people should be allowed to express their own opinions even if they are harmful or offensive to other religious or racial groups.”

Strongly agree	22	%
Agree	43	
	<hr/>	65
Neither	12	
Disagree	19	
Strongly disagree	5	
	<hr/>	24 (Raw N=709)

Q521B

“People should not be allowed to express opinions that are harmful or offensive to other religions or racial groups.”

Strongly agree	11	%
Agree	32	
	<hr/>	43
Neither	13	
Disagree	36	
Strongly disagree	9	
	<hr/>	45 (Raw N=660)

The data are from the NORC General Social Survey (GSS) in 1994¹. Each question was asked of a different random sub-sample. Item 521A is what one might call the “official” version of the principle. It receives majority endorsement (65 percent agree). In an election this would be a landslide but, in survey terms, I would call it mild approval. By comparison, 90 percent in the complete file say extramarital sex is “always or almost always wrong,” 96 percent said that voting is a “very important” or “somewhat important” obligation of citizens.

Question 521B, in effect, pits the First Amendment against current norms of cultural diversity. The numbers split almost exactly in half, at face value a contradiction of the First Amendment.

The GSS provides a unique opportunity to track free speech attitudes over a generation, explore their validity in the light of Table 1, and examine the mechanisms of change. I will first, sketch the broad picture; second, scrutinize the measurement properties of the items; and third, look beneath the overall changes for the processes at work.

¹ Unless otherwise stated, all data in this report are from the NORC General Social Survey, an annual/biennial personal interview, area probability, sampling of U.S. householders 18 and older. Data reported here have been weighted to convert from household design to representative sample of individuals and to correct for deliberate over-samples of African Americans in 1982 and 1987. In 2004, GSS began interviewing in Spanish eligibles whom the interviewer judged un-interviewable in English. In 2004 and 2006, there were 236 such cases. Since, however, their positions on the free speech items do not differ much from Spanish speakers interviewed in English, I did not exclude them. The 1972-1976 weighted file contains 50,710 cases. The 26 surveys in this file have completion rates generally close to 75 percent. As in all such surveys the GSS sample is clustered and its sampling errors are underestimated by simple random sample formulas. While each variable has its own correction analysts generally assume the sampling variances are about 1.5 times the simple random sample values. As a rule of thumb here I have only taken seriously t values of 3 or more rather than the standard 2 or more. (A DEFF of 1.5 would give a 2 sigma cutting point of $t=2.4$.)

The Broad Picture: Tolerance Increased

We have a baseline for the analyses in Samuel A. Stouffer's Communism, Conformity and Civil Liberties.² (Stouffer, 1955), whose item wordings have become standard. They have the form "Would you allow a (person with an unpalatable idea) to (form of public expression)?" Calling the former "targets" and the latter "venues" Table 1 displays results for two target-venue items in both Stouffer and the GSS.

"Atheist" = "somebody who is against all churches and religion"

"Communist" = "a man who admits he is a communist" and three venues;

"Speech" = "Suppose (target) wants to make a speech in your community. Should he be allowed to speak or not?"

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

"College" = "Suppose he is teaching in a college. Should he be fired or not"?

In 1973 the GSS added a third target:

"Homosexual" = "a man who admits he is a homosexual"³

To balance the "liberal" cast of the targets, in 1976 the GSS added two more targets:

"Militarist" = "a person who advocates doing away with elections and letting the military run the country"

"Racist" = "a person who believes Blacks are genetically inferior"

² Incidentally, as best I can tell, Stouffer's study was the first national, area probability attitude survey.

³ For the venue "library" the wording is "a book he wrote in favor of homosexuality." The intention was to imply the book is not "pornography."

TABLE 2. PERCENT CHOOSING THE MORE TOLERANT OF TWO RESPONSES ON FREE SPEECH ITEMS, 1954 (STOUFFER) AND 1974-2006 (GSS)

Item	1954	1964	1974	1984	1994	2004	2006
“Atheist”							
Speech	38		63	69	74	78	78
Library book	37		61	65	71	75	74
College teacher	12		43	47	54	65	62
“Communist”							
Speech	28		60	61	68	71	68
Library book	29		44	48	58	66	63
College teacher	6		44	48	58	66	63
“Homosexual”							
Speech			65	71	81	84	83
Library book			57	61	71	74	75
College teacher			53	61	73	80	79
“Militarist”							
Speech				58	65	68	67
Library book				60	66	70	70
College teacher				42	47	55	54
“Racist”							
Speech				59	63	63	63
Library book				65	68	67	66
College teacher				42	44	48	48
Unweighted N							
Maximum	4,806		1,462	1,461	1,971	890	1,991
Minimum	4,566		1,389	1,388	1,876	866	1,903

The pattern in Table 2 is of steady increase in tolerance with time, with a whopping difference between 1954 and 1974. (Alas, there seem to have been no studies between 1954 and 1974.) In 1954, only a small minority gave the tolerant response; by 2006 from about one-half (Racist/College) to three-quarters did. Reading up and down the columns there isn’t much consistent pattern by target (we will return to this) although the venue “College” runs consistently lower. A possible exception is 2006 v. 2004, where there is no increase, although the two-year interval is less than the others in the table. (We will return to this also.)

For a more formal analysis, I constructed five scales (SUMATH, SUMCOM, SUMHOMO, SUMMIL, SUMRAC, and SUMALL⁴). Each is the mean over the three venues of a particular target. And SUMALL is the mean over all 15 items, with items recoded 0-1. Table 2 gives the basic information on the scales and the Ordinary Least S estimates of their trends (correlation with YEAR)⁵.

TABLE 3. REGRESSION (OLS) ANALYSIS OF SIX GSS TOLERANCE TRENDS AND YEAR

	SUMATH	SUMCOM	SUMHOM	SUMMIL	SUMRACE	SUMALL
	O					
Span	72-06	72-06	73-06	76-06	76-06	72-06
N	32,354	32,095	30,261	26,935	27,028	32,449
Data points	22	22	21	19	19	22
N Max	1,944	1,926	1,929	1,930	1,938	1,945
N Min.	852	856	851	847	850	852
Std. Dev.	3.8	4.1	4.0	4.1	3.9	3.3
t	23.7	24.8	35.5	19.8	5.1	26.5
a	-.783.3	-.882.1	-.1318.3	-.763.5	-.71.5	-.740.2
b	+.476	+.524	+.747	+.463	+.115	+.453
Beta	+.130	+.137	+.200	+.120	+.031	+.145
	Regression Predictions (% More Tolerant)					
2006	72	69	80	65	59	69
1972	55	51	55	50	55	53
Gain	+.17	+.18	+.25	+.15	+.04	+.16

⁴ Because the targets start in different years, SUMALL has a disproportionate number of responses from the original Stouffer items. However, Table 1 and the argument below suggest the tolerance items are not terribly sensitive to choice of target.

⁵ Since the original items are 0-1 dummies, it has been suggested that logit or probit analyses are in order. Although there are ways to do this with four-step scales, the output is extremely difficult to interpret. More to the point, the advantage of logistic approaches is in more precise estimates of confidence intervals, not in biased estimates. Working with 10,000 to 40,000 cases here, Type I errors are far from a serious threat.

Table 3 tells us:

- 1) All five scales have significant positive linear trends.
- 2) The raw slopes are in the neighborhood of half a percentage point per year, save for Racist, which although significant, has a very small slope of about a tenth of a point per year.
- 3) The regressions estimate roughly 15 point increases over the GSS years save for SUMRAC, which only gained 4 points.

Reliability/Validity and Palatability

The Stouffer approach assumes negative attitudes toward the target (One would not ask “Would you allow your best friend to give a speech...?”) From this come two issues:

(1) Do changes in the items merely reflect changes in target palatability? The series in Table 2 begins at the peak of the cold war and ends after the evaporation of Russian communism. It is no wonder that Americans in 2006 are less upset by communist library books.

(2) Because the targets are not a representative sample of any content universe, they can (unconsciously) be chosen to bias the conclusions. Specifically, critics have argued that the original Stouffer targets--atheists, communists, and socialists--are more palatable to “liberals.”

Take to an extreme position, these considerations suggest the Stouffer approach is severely flawed. He argued that his own measure showed little change from 1954 to the 1970s, quite unlike Table 2. This interpretation has met with considerable acceptance. Bishop (2005, p. 89), for example, states flatly:

Sullivan, Pierson, and Marcus demonstrated that a seemingly dramatic increase in American tolerance of groups such as Communists, Socialists and Atheists over a twenty to twenty-five year period was mostly an illusion.

With these issues in mind, the GSS dropped “socialist” (no longer salient) beginning in 1975. In 1973 it added HOMOSEXUAL because of its topicality and in 1976 added the “right wing” targets MILITARIST and RACIST.

I explored this palatability problem two ways--through reliability analysis and through correlations between attitude to the target and tolerance of it.

From a reliability point of view, if the items are merely functions of target palatability and if the targets are ideologically heterogenous, they should act as if they are measuring different constructs, not the same one. Conversely, if they are tapping a generalized tolerance, they should hang together statistically. The standard test is Cronbach’s “alpha”, which gives values of:

+ .918 for all 15 items
 + .726 to + .819 for three-item indexes for each target
 + .808 to + .875 for: five-item indexes for each venue.

In addition, the 15 items show item-to-total correlations of +.522 to +.699, in none of the 15 cases would dropping the item improve alpha, and all the bivariate item inter-correlations are positive. Since the items are essentially inter-changeable psychometrically, the extreme claim they are mere functions of target choice does not hold up.

These results are reassuring, but common sense says tolerance items can not be totally insensitive to target palatability, hence a second test. *To the extent that Stoufferian tolerance is a function of target palatability a specific target’s palatability should be strongly correlated with its tolerance and poorly correlated with tolerance of other targets.*

To proceed, I looked for GSS items, which seem likely to be endorsed by those who judge the target favorably. Thus, one would expect that non-religious people would be more

tolerant of “atheists.” Where necessary, I reversed polarities so a positive score indicates sympathy for the target. Here are the items I chose: (GSS mnemonics are in CAPS.)

Atheist

ATTEND frequency of attendance at religious services (Low)
BIBLE Biblical literalism (Low)
FUND Fundamentalism of respondent’s religion (Low)
RELITEN Intensity of religiosity (Low)

Communist

COMMUN Attitude to Communism (Favorable)
EQWLTH Should the government reduce income difference (Yes)
“Nats” Sum on Favor or oppose spending on big cities (NATCITY), Education (NATEDUC), Welfare (NATFARE), and Health (NATHEAL) (Favor)

Homosexual

HOMOSEX Attitude to homosexuality (Favorable)
PREMARSX Attitude to pre-marital sex (Favorable)

Militarist

NATARMS. Favor or oppose spending on military (Favor)
CONARMY. Confidence in military leaders (High)
THINKSLF/OBEY. Relative ranks of obedience and “think for him/her self” as desirable child characteristics (OBEY higher)

Racist

RACDIF2. Race differences due to Blacks= inborn disability (Agree)
RACDIF4. Race differences due to Blacks= lack of will power (Agree)
RACMAR. Should racial intermarriage be illegal (Yes)
RACPUSH. (Negroes/Blacks/African Americans) shouldn’t push themselves where they are not wanted (Agree)

Table 4 displays the bivariate correlations between palatabilities and tolerances with multiple correlations for each palatability group.

TABLE 4. RELATIONS* BETWEEN “PALATABILITY” ITEMS AND TOLERANCE INDICES (GSS 1972-2006)*

Palatability	SUMATH	SUMCOM	SUMHOM O	SUM MIL	SUMRAC	SUMALL
ATTEND	-.041	-.042	-.028	-.027	-.025	-.046
BIBLE	+.262	+.255	+.241	+.226	+.189	+.291
FUND	+.090	+.085	+.115	+.074	+.058	+.102
RELITEN	<u>+.097</u>	<u>+.073</u>	<u>+.071</u>	<u>+.069</u>	<u>+.080</u>	<u>+.096</u>
R	.356	.331	.338	.297	.259	.390
COMMUN	+.226	+.308	+.192	+.223	+.159	+.277
EQWLTH	-.153	-.164	-.128	-.117	-.113	-.170
NATS	<u>+.100</u>	<u>+.099</u>	<u>+.147</u>	<u>+.050</u>	<u>.000</u>	<u>+.110</u>
R	.283	.357	.264	.254	.193	.335
HOMOSEX	+.271	+.270	+.326	+.276	+.188	+.327
PREMARX	<u>+.194</u>	<u>+.172</u>	<u>+.208</u>	<u>+.123</u>	<u>+.121</u>	<u>+.206</u>
R	.393	.376	.453	.346	.262	.453
CONARMY	-.088	-.087	-.058	-.038	-.072	-.092
NATARMS	-.102	-.121	-.103	-.077	-.023	-.110.
OBEY/THNK	<u>-.284</u>	<u>-.270</u>	<u>-.309</u>	<u>-.259</u>	<u>-.180</u>	<u>-.323</u>
R	.340	.336	.352	.288	.207	.381
RACDIF2	-.091	-.088	-.075	-.095	-.037	-.091
RACDIF4	-.055	-.060	-.040	-.072	-.044	-.064
RACMAR	-.279	-.277	-.318	-.201	-.126	-.308
RACPUSH	<u>-.171</u>	<u>-.170</u>	<u>-.196</u>	<u>-.151</u>	<u>-.076</u>	<u>-.186</u>
R	.444	.442	.481	.373	.205	.484

Cell entries are the bivariate correlations, r , between the palatability item and the tolerance index, The “totals” are the multiple correlations, R , between the group and the tolerance index. N: minimum = 9007, maximum =32,069.

The table is awash with correlations although none are huge. (The largest R is .484.) In this sense, tolerance is not independent of attitude toward the target. To be more precise, if the hypothesis is correct the **bold face** R should be the strongest in each row and column. This simply isn't true:

- Racial and sexual attitudes predict tolerance of atheists better than religious items.
- Racial and sexual attitudes predict tolerance of communists than political items, better even than attitudes to communism.
- Religious, sexual, and race attitudes predict tolerance of militarists better than attitudes toward the military and obedience.
- Religious, sexual, and militarism items predict tolerance of racism better than racial items.

More telling, in two of the five analyses, the signs are **wrong**. Pro-militarists are less tolerant of militarists, those with racist attitudes are less tolerant of racists. In fact pro-militarists and racists are less tolerant on any of the indices. Turning it around:

Liberals on social issues are more tolerant of free expression whatever the target.

For a more concise summary, I ran a collection of eight palatability items⁶ against the tolerance indices, obtaining a multiple correlation of .572 with SUMALL and Rs ranging from .300 (SUMRAC) to .565 (SUMHOMO) for sub-indices. Thus:

A heterogeneous collection of liberal positions is as good or better a predictor of tolerance as items specific to the target.

The belief that Stouffer tolerance items are merely reflections of specific palatabilities is not supported by the 1972-2006 GSS. Conversely, these results support the notion that there is a general tolerance/intolerance phenomenon that cuts across target areas.

But there is a less technical issue to address--how seriously should we take these answers? Saying "do not remove" does not imply the respondent is prepared to lay down his or her life to defend libraries. Taken to an extreme, one may ask whether we are just tapping "social

⁶ HOMOSEX, PREMARSX, ATTEND, RELITEN, NATARMS, CONARMY, RACMAR, RAQCPUSH--each scored so the liberal answer is +.

desirability.” I don’t believe it is possible to answer the question with GSS data, but I will say that measuring long-term changes in social desirability is a worthy task. The same issue arises in studies of racial attitudes. Fischer and Hout (2006, p. 47) deal with it as follows:

Social scientists argue over whether answers to surveys can accurately portray prejudice; the answers may not reflect what people really feel, much less what they actually do. Some suggest that the only thing public opinion surveys can measure is what is socially acceptable to say. Still, the trends in these public expressions of prejudice, as revealed by polls taken over a span of time, are substantial, valid and profound.

To fill out the broad picture. The GSS data support the claim:

There is a generalized tolerance/intolerance dimension that cuts across targets and which moved in the tolerant direction throughout the GSS years 1972-2006.

Finer Grain Results: Subgroup Differences

The overall trends reported above conceal more complex, often contradictory processes underneath. To begin, the rates of change need not be identical in every part of the social structure. Table 5 displays slope differences (interactions) for Education, Size of Place, Race, Cohort, Region, Religion at age 16, and Gender.

TABLE 5. SUBGROUP DIFFERENCES IN TOLERANCE CHANGE (BIVARIATE SLOPES--RAW REGRESSIONS IN PERCENTAGE POINTS PER YEAR)

Variable		SUMAT H	SUMCO M	SUMHO MO	SUMMI L	SUMRA C	SUMAL L
Education	Less College Grad	.438	.460	.740	.433	.093	.416
	Diff/z	<u>.017</u>	<u>.119</u>	<u>.260</u>	<u>.043</u>	<u>-.206</u>	<u>.002</u>
		.421/10	.341/8	.480/12	.390/8	.299/6	.414/12
Size of Place*	Smaller	.570	.617	.829	.528	.167	.546
	Larger	<u>.206</u>	<u>.280</u>	<u>.480</u>	<u>.269</u>	<u>-.051</u>	<u>.179</u>
	Diff/z	.364/7	.337/6	.349/7	.259/4	.218/4	.367/9
Race	Other	.498	.590	.775	.503	.134	.492
	Black	<u>.344</u>	<u>.016</u>	<u>.571</u>	<u>.244</u>	<u>.085</u>	<u>.194</u>
	Diff/z	154/2	.529/8	204/3	.259/4	.298/1	.298/6
Cohort (birth year)	1883-1945	.280	.324	.583	.285	.132	.284
	1946-1988	<u>-.015</u>	<u>.106</u>	<u>.386</u>	<u>.120</u>	<u>-.105</u>	<u>.033</u>
	Diff/z	.295/7	.218/5	.197/3	.165/3	.237/5	.251/7
Region	South	.673	.675	.911	.567	.258	.638
	Other	<u>.408</u>	<u>.478</u>	<u>.694</u>	<u>.429</u>	<u>.056</u>	<u>.388</u>
	Diff/z	.265/6	.197/4	.217/2	.138/3	.202/4	.250/7
Religion Age 16	Fundamentalist	.674	.631	.921	.599	.219	.603
	Other, None	<u>.471</u>	<u>.472</u>	<u>.672</u>	<u>.454</u>	<u>.091</u>	<u>.423</u>
	Diff/z	.203/4	.159/3	.159/3	.145/3	.128/2	.180/4
Gender	Male	.474	.553	.722	.528	.120	.463
	Female	<u>.483</u>	<u>.504</u>	<u>.770</u>	<u>.404</u>	<u>.106</u>	<u>.448</u>
	Diff/z	-.009/0	.049/1	-.048/1	.124/3	.014/0	.015/0

*GSS mnemonic SRCBELT, Larger = 13 largest metropolitan areas, Smaller = other
 Minimum N= 6,130 (Blacks); maximum = 4,4863 (Other races)
 z = diff/ square root of summed squared standard errors.

The table may be read as follows, using the upper left corner as an example.

1) Non-college grades had a slope of .438 for tolerance of atheists (a little less than half a percentage point per year increase) 2) The slope for college graduates is a trivial .017.3) The

difference between them is .421 percentage points. 3) The difference is highly reliable with a z of 10.

The 84 slopes in Table 5 yield a fairly straightforward conclusion. The rate of increase for tolerance was:

greater for the less educated, those in smaller communities, non-Blacks, older cohorts, Southerners, and those raised as Fundamentalist Protestants less for college graduates, those in larger communities, Blacks, newer cohorts, non-Southerners, those not raised as Fundamentalist Protestants and essentially the same for men and women.

Save for race there is a consistent theme:

The rate of increase was consistently stronger and in some cases limited to groups which began the GSS years as less tolerant.

If this interpretation is correct, the correlations between the demographic variables in Table 5 and tolerance should be declining with time. Table 6 shows this to be true.

TABLE 6. MULTIPLE REGRESSIONS--BACKGROUND VARIABLES* AND TOLERANCE--BY DECADE

Decade	SUMATH	SUMCOM	SUMHOM O	SUMMIL	SUMRAC	SUM ALL
1972-1979	.332	.313	.316	.270	.243	.363.
1980-1989	.336	.343	.337	.309	.250	.383
1990-1999	.288	.296	.277	.262	.219	.329
2000-2006	.267	.278	.290	.244	.186	.311.

N: minimum = 3,116, maximum=9,915

* Education, Size of Place, Region, and Religion at age 16, as defined for Table 5.

The table shows the multiple correlations for Education, Size of Place, Region, and Religion at age 16 (as per Table 5) and the tolerance measures for the four decades, 70s, 80s, 90s and 2000+. Between the 70s and 80s there is no consistent difference, but after that the values

decline from the 80s to the 90s to the 2000+. Although the demographics maintain a non-trivial; effect in the early 21st century, their impact has shrunk appreciably.

If all this is true tolerance distributions should be de-polarizing (DiMaggio et. al 1996, Evans 2003, Kriner 2006, Fiorina et al. 2006). That is, the spreads around the means should be shrinking. Table 7 plots the simplest measure, the standard deviation by decade and tolerance measure.

TABLE 7. STANDARD DEVIATIONS OF TOLERANCE MEASURES BY DECADE*

Decade	SUMATH	SUMCOM	SUMHOM O	SUMMIL	SUMRAC	SUM ALL
1972-1979	40.1	41.2	42.4	41.6	39.5	35.3
1980-1989	39.4	41.3	41.4	41.6	39.6	33.4
1990-1999	37.3	38.9	36.3	40.4	39.0	31.0
2000-2006	36.2	38.8	34.1	39.7	39.1	30.2

N: minimum = 3,163, maximum = 10,203

* in percentage points

The pattern in Table 7 is the same as Table 6 (save perhaps for SUMRAC) no change from the 70s to 80s but declines after that.

To sum up:

Demographic subgroups differed significantly in their rates of change, with faster increases among the initially less tolerant groups. Consequently, the distributions of tolerance measures tended to de-polarize during the GSS years.

Finer Grain Results: Period and Cohort

The data may be sliced in a second way, according to the process of change--that is, whether individuals within cohorts become more tolerant (period effects) or whether older, less tolerant Americans have been replaced by newer, more tolerant respondents (cohort replacement).

This, of course, is two-thirds of the classic Age/Period/Cohort triad. I am ignoring age here for the following reason: There is a big difference between changes in the mean tolerance and changes with age in individual tolerance.⁷ Thus, the bivariate correlation between AGE and PERIOD in the GSS 1972-2006 is .034, while the bivariate for COHORT and PERIOD is a healthy .510, the latter is large enough to drive changes (if COHORT is related to the dependent variable) while the former is not.⁸

Looking at COHORT and PERIOD, it is necessary to allow for Education (EDUC =years of schooling, 0 to 20), both of respondents and their parents (PARED = mean of mother's and father's years of schooling). It is well established that education is the strongest predictor of tolerance (Stouffer 1954; Hyman and Wright 1979; Nie, Junn and Stehlik-Berry, 1996; Nunn, Crocket and Williams, 1978). It is also changed considerably during the GSS years, as shown in Table 8.

TABLE 8. BIVARIATE CORRELATIONS (r) AMONG PREDICTORS OF TOLERANCE (GSS 1972-2006)

	YEAR	COHORT	SumAll
Pared	.219	.425	.363
EDUC	.206	.510	.428

N: minimum = 29,060, maximum = 50,851.

Table 9 shows the raw regression coefficients for PERIOD and tolerance and COHORT and tolerance. The top row in each group is the bivariate, the second is net of PARED and

⁷ If a person born in 1950 and interviewed in 1990 at age 50 ages one year he/she is replaced by someone who became 50, but replacement will be from cohort 1951, not 1950. Thus, if the birth rate were constant the mean age would never change but the mean cohort would advance at the rate of about one year per year.

⁸ The "received wisdom" is that America's population is aging rapidly. Examination of the data shows the GSS samples were "middle aging" not aging, as the baby boomers moved into their middle years. As the baby boomers age beyond their middle years, future GSSes may show age effects on tolerance

EDUC, the third is net of PARED, EDUC, and 26 COHORT or PERIOD dummies.

TABLE 9. PERIOD AND COHORT RELATIONSHIPS WITH TOLERANCE TRENDS*

Predictors	SUMATH	SUMCOM	SUMHOMO	SUMMIL	SUMRAC	SUMALL
Period (Table 5)	.476	.524	.747	.463	.115	.453
Period Net**	-.118/8	-.094/4	+.161/7	-.095/4	-.114/4	-.130/7
Cohort (birth year)	.611/59	.567/51	.626/57	.573/47	.221/18	.540/61
Cohort Net***	.396/31	.321/23	.334/24	.385/25	.080/5	.326/30.

* cells = raw partial regression coefficient/t

** net of Cohort dummies, Parental Education, Education

***net of Period dummies, Parental Education, Education

N: minimum = 24,410, maximum = 29,059

For PERIOD (Year), the effects are reduced considerable when educations are controlled.

When both educations and COHORT are controlled all but one (SUMHOMO) are negative. That is:

When COHORT, EDUC, and PARED are controlled the linear effect of PERIOD on tolerance is mostly negative.

For COHORT the changes are less dramatic. When educations are controlled the coefficients are roughly cut in half, while adding PERIOD raises the net magnitudes a bit (save for SUMHOMO). Taking the two analyses together:

PERIOD AND COHORT have opposite sign net effects on tolerance and consequently act as suppressor variables for each other.

Running such linear coefficients does not in itself prove the relationship is essentially linear. The coefficient may be produced by differences between the earliest and latest values in the series with many twists and turns in between. It is thus worthwhile to examine linearity for

the PERIOD and COHORT effects, especially since the net coefficients are relatively small. For a simple test one may (1) run and save the linear coefficients for $X > Y$. (2) Run and save the same regression predictions with X in dummy variable form. (3) Run the bivariate correlation between the two. Since the dummy variable predictions will be the raw means of Y, the higher the correlation, the closer the linear prediction matches the data and thus the more linear the relationship.

Table 10 shows (a) some illustrative linearity correlations and (b) the linearities for COHORT and PERIOD. My experience has been that with results below .90, inspection of the data plot will reveal interesting departures from a straight line. Inspection, for example of PERIOD and COHORT reveals what appears to be an almost perfect straight line, while the graph for COHORT and EDUCATION shows a steady increase up to 1993 and an essentially flat plateau after that. The results for PERIOD and COHORT are definitely lower from .095 to .634 for PERIOD and from .205 to .772 for COHORT.

TABLE 10. LINEARITIES*, SELECTED RELATIONSHIPS, PERIOD AND TOLERANCE, COHORT AND TOLERANCE

Dummied	Dependent	Linearity	N
(A) Selected Relationships			
YEAR	COHORT	.999	50,847
Pared	EDUC	.986	44,384
Pared	SUMALL	.975	29,060
COHORT	PARED	.968	44,366
YEAR	EDUC	.956	50,851
EDUC	SUMALL	.954	32,361
YEAR	PARED	.951	44,466
COHORT	EDUCATION	.852	50,718
(B) COHORT and tolerance			
COHORT	SUMATH	.715	32,270
COHORT	SUMCOM	.772	32,014
COHORT	SUMHOMO	.729	30,186
COHORT	SUMMIL	.711	26,867
COHORT	SUMRAC	.205	26,956
COHORT	SUMALL	.695	32,365
(C) YEAR and tolerance			
YEAR	SUMATH	.553	32,354
YEAR	SUMCOM	.236	32,095
YEAR	SUMHOMO	.634	30,261
YEAR	SUMMIL	.095	29,935
YEAR	SUMRAC	.289	27,028
YEAR	SUMALL	.380	32,499

*Linearity equals the correlation r , between predictions from the variable and from its dummies.

All six indices show the same pattern. The patterns are surprisingly clear cut. In each case (save SUMRAC which is patternless and flat) the PERIOD plots are V shaped with a minimum around 1985. In each case the plots for COHORT reveal an inverted V with a maximum around 1952-53. It appears that:

Tolerance decreased from 1972 to 1985 and then increased from 1985 to 2006.

Tolerance increased with date of birth from 1883 to 1952-53 and decreased from 1954 to 2006.

Summary and Conclusion

We have reviewed trends in tolerance (support for free expression) using the classic Stouffer items with targets--“Atheists,” Communists, Homosexuals, Militarists, and Racists.

All five showed significant linear increases from the early 1970s to 2006 in the NORC General Social Survey, although the Racist increase was trivial. Methodological analyses did not support the claim that such measures are merely indirect measures of attitude to the target. Finer grain analysis revealed (1) a number of interaction effects suggesting that initially less tolerant groups showed a more rapid increase in tolerance and (2) Probably as a consequence the items “de-polarized” during the GSS years. A second finer grain analysis suggested that, net of education and parental effects, PERIOD and COHORT effects (1) were quite non-linear (2) acted as suppressor variables for each other.

The broad conclusion from all this is that despite the steady across the board increase during the GSS years the future may well show a halt or even reversal of the trends since (1) subgroup analyses suggest a “catch up” process rather than a general movement (2) The long-term increase in schooling may have hit a plateau and (3) Cohort effects seem to have stalled or even reversed after those born in the early 1950s.

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APPENDIX: ON AGING EFFECTS

While I argued above that aging per se could not produce the changes analyzed, this does not mean there are no important aging effects on tolerance. Indeed, that is how Stouffer interpreted his correlations with age, although in a single year Age and Cohort were totally confounded. Since the analysis here used COHORT net of YEAR, it is possible that what I called COHORT was actually age. Thus, it is useful to tip toe into the AGE/PERIOD/COHORT mine field.

Although one can not estimate the linear effects of all three variables simultaneously, (for estimating non-linear effects, see Yang 2008) there is no problem in running any pair of them against a dependent variable. However, when one of them is controlled the other two are perfectly confounded. Table A1 lists the possibilities.

TABLE A1. POSSIBLE EFFECTS WITH TWO APC PREDICTORS

Setup	Control	X	Confounded With	Actual Estimate
1A	Age	Period	Cohort	Period + Cohort
2A	Age	Cohort	Period	Period + Cohort
2B	Cohort	Age	Period	Period + Age
3A	Cohort	Period	Age	Period + Age
1B	Period	Age	Cohort Reversed	Age - Cohort
3B	Period	Cohort	Age Reversed	Cohort - Age

For example, when we run Age and Cohort against a dependent variable the coefficient for Cohort actually estimates the sum of the linear effects (if any) of Cohort and Period.

However, given Table A1 we can use elementary algebra to make two reasoned guesses about what is going on:

I) If the absolute value of $(1A=2A)-(2B=3A)$ using raw coefficients (since the variables have quite different standard deviations) is positive the Cohort effects are stronger than the age effects.

II) If the signed value of (1B=3B) is substantially greater than the difference in I, the Age and Period coefficients have opposite signs.

The information is quite limited as we do not learn the actual signs or magnitudes of the effects, just their relative magnitudes, but it is better to light a candle than curse the darkness.

TABLE A2. ANALYSES IN TABLE A1 APPLIED TO TOLERANCE

Setup	SUMATH	SUMCOM	SUMHOMO	SUMMIL	SUMRAC	SUMALL
1A	+.518	+.567	+.835	+.590	+.154	+.492
2A	+.518	+.567	+.835	+.590	+.154	+.492
2B	-.128	-.003	+.264	-.006	-.095	-.067
3A	-.128	-.003	+.264	-.006	-.094	-.067
1B	-.646	-.570	-.571	-.596	-.249	-.558
3B	+.646	+.570	+.571	+.596	+.249	+.558
Abs(abs1A=2A – abs2B=3A)	+.390	+.564	+.571	+.584	+.059	+.425
Row 6- (Abs1B=abs3B)	+.256	+.006	.000	+.012	+.190	+.133

The bottom two rows of Table A2 tell us first, linear Cohort effects are stronger than linear Age effects, save perhaps for SUMRAC and second, SUMATH and SUMRAC appear to have opposite signs for Age and Cohort, while SUMCOM, SUMHOMO, SUMMIL, and SUMALL appear to have the same signs for both.

I would say the main payoff here is that focusing on Cohort effects rather than Age effects is justifiable when pursuing the dynamics of attitude trends in tolerance.