

CONSERVATIVE WEATHER IN A LIBERALIZING CLIMATE: CHANGE IN  
SELECTED NORC GENERAL SOCIAL SURVEY ITEMS, 1972-1978\*

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(60)

## ABSTRACT

This paper traces the changes in twelve especially volatile items in the NORC General Social Survey 1972-1978 (eleven national priority questions and reports of changes in one's finances) and an abortion item that showed an unexpected plateau pattern. Despite sociological predictions of a trend toward liberalism stemming from demographic changes (the Stouffer hypothesis) the set, as a whole, showed a "conservative" direction consistent with the claims of recent pop sociology. The "paradox" is resolved by a multivariate causal model that shows both patterns of change to be operating. The metaphor of a slow, long-term trend toward liberalism in the opinion climate plus a sharp, short-term shift toward conservatism in the opinion weather is introduced to interpret the results. The striking absence of interactions in the data casts doubt on the hypothesis that the young or the better educated tend to lead other groups when opinions shift.

## Introduction

In the months of February and March of 1972 through 1978, the National Opinion Research Center (NORC), with heroic inhibition of its urge to improve question wordings, asked identical questions of national samples of adult Americans in its General Social Survey (GSS). (For details, see Appendix.) This rigidity was, oddly enough, in the service of studying change. Because the questions are repeated, one may use the cumulative file (N = 10,652) to track trends for some 200 items, over six years, within a variety of social groups, using repeated samples from the same statistical universe.

The dates span President Nixon's trip to Peking (February 1972) to the middle of Jimmy Carter's initial term in office. While, six years may be too short to catch the movements of deep currents, enough froth has swirled around on the surface to justify some attempt at summary. In particular, these are the years of "Watergate" (the break-in was June 17, 1972 and President Nixon was pardoned on September 8, 1974), the end of the Vietnam adventure (South Vietnam surrendered on April 30, 1975), and the first years since 1958 when the real-money-GNP-per-capita declined (1974, 1975).

A year ago, I ventured a review of the changes from 1972-1977 (Davis, 1978). Operating in the wholesale mode, I drew these conclusions:

Of 160 items that appeared with identical wordings in four or more General Social Surveys, 1972-77:

About a one-fourth are clearly non-constant. Of these, almost two-thirds show a significant trend or direction and almost one-half (44 percent) can be described neatly by fitting a straight line.

About a quarter may be changing, but sampling variations can not be ruled out as an alternative explanation.

About one-half are either constant or changing so little that repeated surveys of size 1,500 can not detect the fluctuations.

These figures are not without some use as a benchmark for assessing the rate of change in contemporary America. Assuming the GSS is a reasonable sample of the variables sociologists think to be important--and it should be since it was designed by panels of sociologists for that purpose--the 25-25-50 figures suggest: the rate of change in most sociological variables is a bit less than the talk-show authors and pop sociologists would imply, but a good deal larger than the frozen-in-amber formulations in sociology texts.

A year later I am in no mood to redo hundreds of calculations in last year's report. My impression (and that of the GSS staff in Chicago) is this: with the exception of the attitudes toward abortion discussed below, 1978 was "more of the same."

Instead, I wish to move from wholesale to retail, from counts of items to particular topics. I have chosen thirteen questions, twelve of them (eleven national priority ratings and one measure of financial changes) because of their high rate of change during 1972-1977 and one (attitude toward abortion on demand) because of an unexpected shift in 1978.

While the main criterion was "action," the questions discussed here also shed some light on an apparent "paradox." It is commonly believed that we are in a period of reaction to social and political attitudes. In today's New York Times, for example, Peter Ross Range (1979, p. 74) writes, "In 1972, the country was on the cusp of what has now been recognized as the conservative turn of the 1970's."

Quite possibly, as we shall see. At the same time, however, sociological research (e.g., Stouffer 1955, Davis 1975b, Taylor et al. 1978) suggests a long-term movement toward "liberalism." Since study after study shows better-educated and younger Americans to be more liberal, and since older Americans are inexorably replaced by better-educated, more-recently-born cohorts, there is every reason to expect a long-term trend toward liberalism.

The assertions are not logically contradictory. Technically, they specify a model where the cohort effect and the aging-period effect have opposite signs. Nevertheless, it may be useful to sort out the two possible effects and estimate their sizes.

Thus, the aims of this paper: to track thirteen relatively volatile items in the GSS 1972-78 and to sort their changes into two portions--that produced by the changing of the generational guard and that produced by the tides and eddies of the period 1972-1978.

### The Trends

Table 1 gives the wording and marginal results for an eleven-part item on national priorities (asked annually beginning in 1973) and a question on financial progress.

The national priorities question allows us to track the popularity of "liberal" programs such as "solving the problems of the big cities" or "improving the conditions of blacks" along with such "conservative" favorites as "halting the rising (sic) crime rate" and "the military, armaments, and defense." Since all eleven imply cash outlays (the question refers to "many problems . . . none of which can be solved easily or inexpensively") we can watch the complete

TABLE 1

MARGINAL TRENDS FOR SELECTED GSS ITEMS<sup>a</sup>

Item	Year						
	1972	1973	1974	1975	1976	1977	1978
"We are faced with many problems in this country, none of which can be solved easily or inexpensively. I'm going to name some of these problems, and for each one I'd like you to tell me whether you think we're spending too much money on it, too little money, or about the right amount."							
Space Exploration Program (NATSPAC) <sup>b</sup>							
Too little	.074	.077	.076	.094	.102	.117	
About right	.343	.310	.340	.304	.407	.416	
Too much	.583	.612	.583	.602	.490	.466	
Little - Much	-.509	-.535	-.507	-.508	-.388	-.349	
Improving and protecting the environment (NATENVIR) <sup>b</sup>							
Too little	.610	.587	.520	.532	.457	.497	
About right	.315	.335	.380	.371	.425	.398	
Too much	.075	.078	.100	.097	.119	.105	
Little - Much	+.535	+.509	+.420	+.435	+.338	+.329	
Improving and protecting the nation's health (NATHEAL) <sup>b</sup>							
Too little	.611	.640	.627	.603	.565	.557	
About right	.342	.313	.321	.346	.366	.368	
Too much	.047	.047	.052	.051	.069	.074	
Little - Much	+.564	+.593	+.575	+.552	+.496	+.483	
Solving the problems of the big cities (NATCITY) <sup>b</sup>							
Too little	.483	.495	.457	.415	.391	.369	
About right	.393	.393	.419	.385	.405	.432	
Too much	.124	.112	.124	.200	.203	.199	
Little - Much	+.359	+.383	+.333	+.215	+.188	+.170	
Halting the rising crime rate (NATCRIME) <sup>b</sup>							
Too little	.645	.670	.652	.658	.658	.645	
About right	.308	.281	.291	.263	.278	.292	
Too much	.047	.049	.057	.079	.064	.063	
Little - Much	+.598	+.551	+.595	+.579	+.594	+.582	
Dealing with drug addiction (NATDRUG) <sup>b</sup>							
Too little	.658	.606	.547	.587	.556	.550	
About right	.281	.328	.365	.337	.354	.361	
Too much	.060	.065	.088	.075	.090	.089	
Little - Much	+.598	+.546	+.459	+.512	+.470	+.461	

TABLE 1--Continued

Item	Year						
	1972	1973	1974	1975	1976	1977	1978
Improving the nation's education system (NATEDUC) <sup>b</sup>							
Too little		.491	.506	.486	.495	.469	.516
About right		.418	.407	.396	.405	.428	.368
Too much		.090	.087	.118	.110	.103	.116
Little - Much		+ .401	+ .419	+ .368	+ .377	+ .366	+ .400
Improving the conditions of Blacks (NATRACE) <sup>b</sup>							
Too little		.326	.308	.262	.266	.244	.229
About right		.457	.482	.493	.473	.505	.507
Too much		.217	.210	.245	.261	.252	.264
Little - Much		+ .109	+ .098	+ .017	+ .005	- .008	- .035
The military armaments and defense (NATARMS) <sup>b</sup>							
Too little		.111	.170	.168	.246	.241	.281
About right		.508	.520	.523	.491	.535	.508
Too much		.380	.311	.309	.263	.224	.211
Little - Much		- .269	- .141	- .141	- .017	+ .017	+ .070
Foreign aid (NATAID) <sup>b</sup>							
Too little		.042	.029	.051	.026	.031	.034
About right		.253	.207	.204	.204	.298	.284
Too much		.706	.764	.744	.771	.671	.682
Little - Much		- .664	- .735	- .693	- .745	- .640	- .648
Welfare (NATFARE) <sup>b</sup>							
Too little		.199	.221	.235	.125	.118	.113
About right		.285	.355	.332	.260	.274	.291
Too much		.516	.425	.433	.614	.608	.596
Little - Much		- .317	- .204	- .198	- .489	- .490	- .448
"During the last few years, has your financial situation been getting better, getting worse, or has it stayed the same?" (FINALTER) <sup>b</sup>							
Better		.433	.424	.391	.355	.359	.383
Same		.387	.411	.390	.364	.413	.395
Worse		.180	.164	.219	.281	.228	.222
Better - Worse		+ .253	+ .260	+ .172	+ .074	+ .131	+ .161

<sup>a</sup>Each proportion is based on between 1,350 and 1,500 cases. Youngest respondents in later years are excluded as explained in Table 4.

<sup>b</sup>Standard GSS mnemonic for this item.

data set, looking for a simultaneous downturn that might signal the highly publicized "taxpayers' revolt."

To boil things down a bit, I will summarize the trichotomous answers by an index, the proportion "Too little" minus the proportion "Too much." A value of 1.00 would mean that everyone answered "Too little," a value of .000 would indicate equal proportions saying "Too little" and "Too much," and a score of -1.000 would mean unanimity for "Too much." Scores in Table 1 range from =.598 (for Crime and Drugs in 1973) to -.735 (Foreign Aid in 1974).

The financial item, "During the last few years, has your financial situation been getting better, getting worse, or has it stayed the same?" is a standard Michigan Survey Research Center (SRC) question. Using a familiar trichotomous index (Better minus Worse), it shows a range from +.260 in 1973 to +.074 in 1975. Despite the economic vicissitudes of the period, "Bettors" outnumbered "Worsers" each year.

While the twelve questions in Table 1 were chosen for closer scrutiny because they were among the most volatile measures 1972-77 (Davis 1978a), the abortion questions in Table 2 were chosen because of an unexpected shift from 1977 to 1978.

Respondents were asked whether abortions should be legal under six conditions--mother's health endangered, pregnancy because of rape, strong chance of a serious defect in the baby, low family income, mother is single and doesn't wish to marry, mother is married and doesn't want any more. Marginal frequencies for the first three differ substantially from those for the second group. For the former, sometimes called "hard reasons," endorsement is high (79 percent for each item



TABLE 2  
MARGINAL TRENDS IN ABORTION ATTITUDES  
(Proportion "Yes")

Item	Year						
	1972	1973	1974	1975	1976	1977	1978
"Please tell me whether or not you think it should be possible for a pregnant woman to obtain a <u>legal</u> abortion if ...							
...the woman's health is seriously endangered by the pregnancy?	.869	.923	.924	.907	.908	.905	.906
...she became pregnant as a result of rape?	.791	.835	.865	.837	.837	.838	.832
...there is a strong chance of serious defect in the baby?	.786	.845	.851	.832	.839	.855	.820
...the family has a very low income and cannot afford any more children?	.488	.534	.548	.532	.531	.534	.474
...she is not married and does not want to marry the man?	.435	.491	.500	.482	.503	.498	.411
...she is married and does not want any more children?	.397	.477	.466	.457	.462	.465	.403
<u>Year-to-Year Changes</u>							
Health endangered		+.054	+.001	-.017	+.001	-.003	+.001
Result of rape		+.044	+.030	-.028	.000	+.001	-.006
Serious defect		+.059	+.006	-.019	+.007	+.016	-.035
Low income		+.046	+.014	-.016	-.001	+.003	-.060
Not married		+.056	+.009	-.018	+.021	-.005	-.087
Doesn't want any more		+.080	-.011	-.009	+.005	+.003	-.062
Mean =		+.056	+.010	-.018	+.007	+.002	-.042

NOTE: N's are based on all cases and range from 1,414 to 1,539.

in any year), while for the latter, "soft reasons," "Yes" answers are concentrated in the 40-50 percent range. Thus, throughout the period--right-to-lifers to the contrary notwithstanding--there was virtually unanimous support for abortion when motivated by hard reasons, and throughout the period--feminists to the contrary notwithstanding--American adults split down the middle for soft reasons.

The pattern of change for the abortion items is shown in the bottom panel of Table 2. Between 1972 and 1973, all six items showed statistically significant increases in favorability--possibly because of the January 22, 1973 Supreme Court decision favorable to abortions (though an analogous Supreme Court decision on capital punishment the year before did not produce a change in the GSS death penalty item). From 1974 to 1977, all six items remained virtually constant but the next year there was a downturn in favorability. In 1978, the six items showed an average drop of  $-.042$  in endorsement, the three "soft" items averaging  $-.070$ , the three "hard" items a trivial  $-.013$ .

Since the three "hard" reasons did not show the unanticipated turn in 1978 and since the three "soft" reasons appear to behave in much the same way, I will use just one of six for further analysis--"married and doesn't want any more children."

I now turn to Figure 1 to examine the directions and patterns of change.

In Figure 1, the proportions and trichotomous indices are re-scaled to equal zero in their first reading and sorted into three groups, Figures 1a, 1b, and 1c.

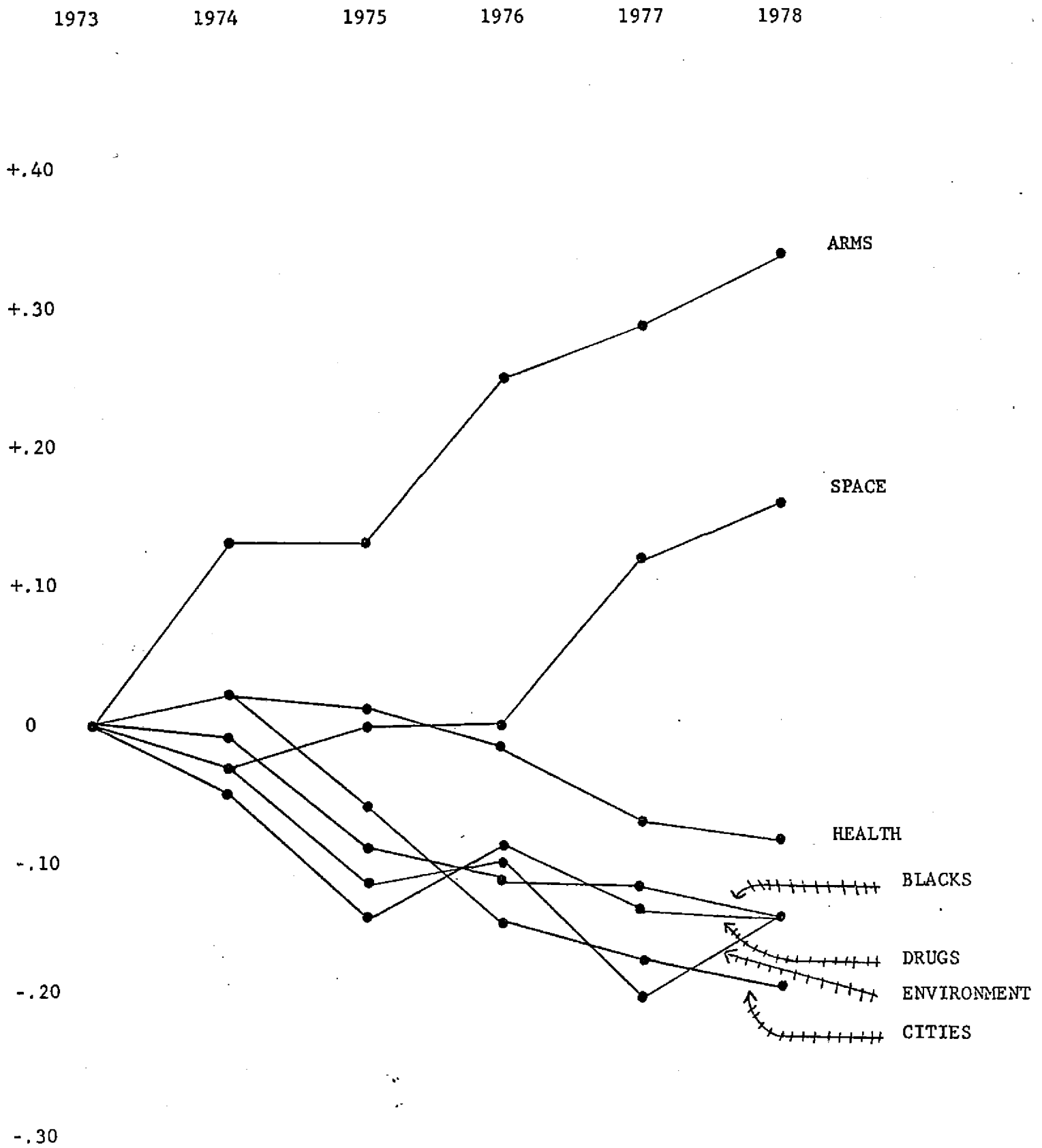


Fig. 1a.--Items showing definite trends in favorability  
More - Less (1973 set to .000)

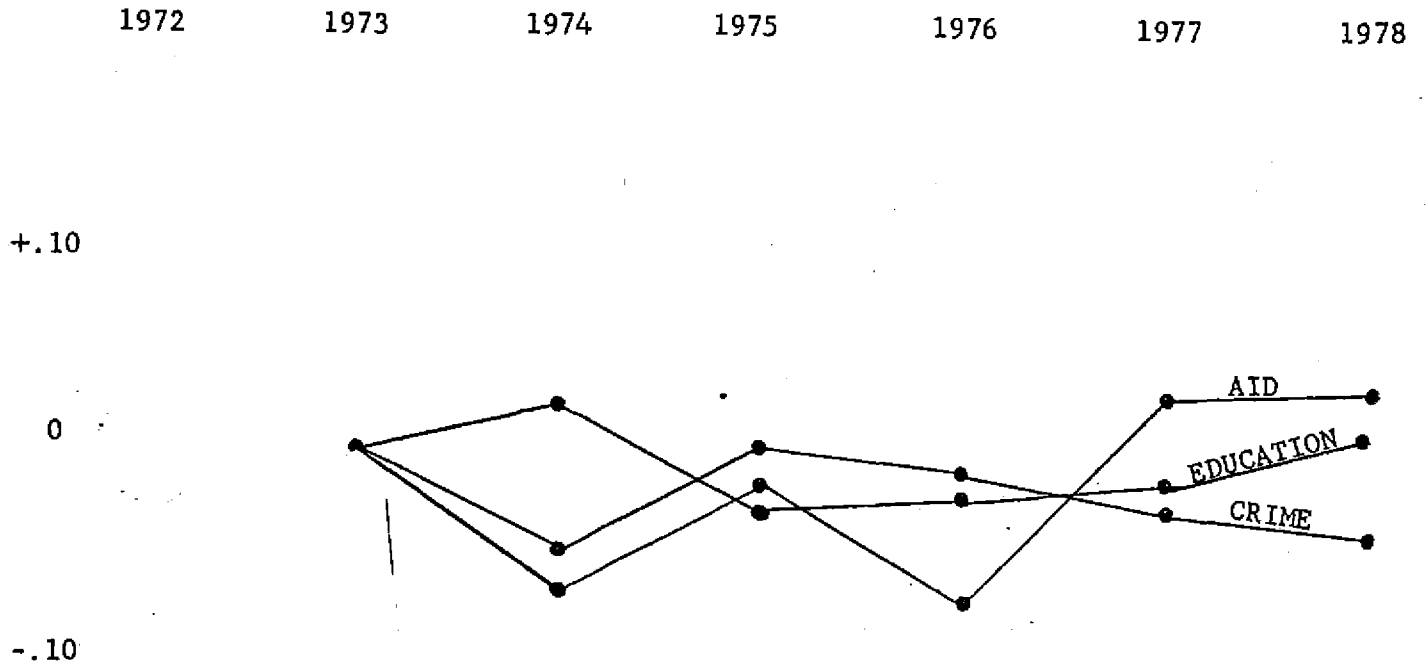
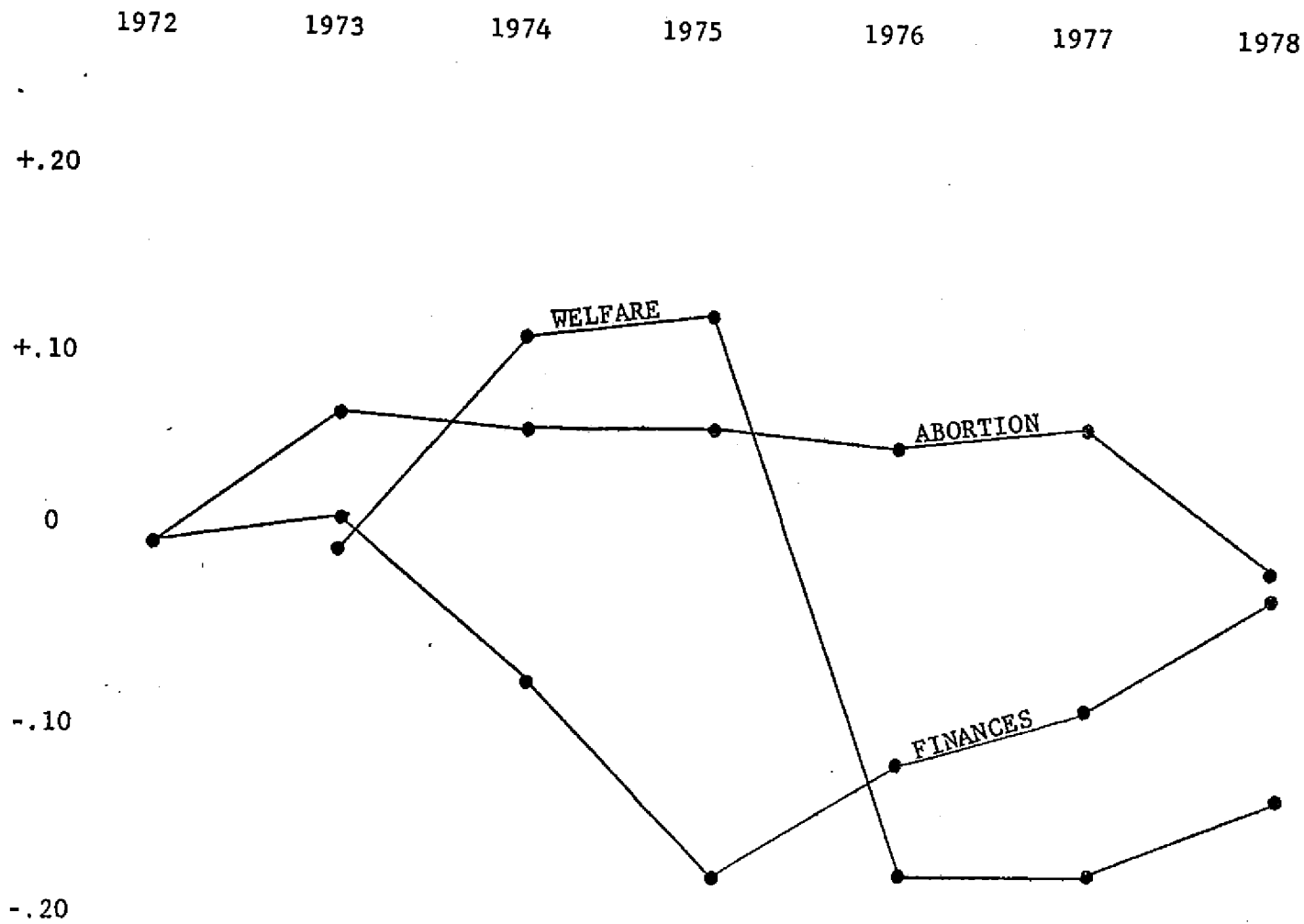


Fig. 1b.--Items showing no clear-cut changes



For finances, score = Better - Worse  
For abortion, score = Proportion "Yes"

Fig. 1c.--Items showing "curvilinear" changes

Figure 1a plots seven items with ambiguous trends up or down:

- 1) Spending Priority for Defense<sup>1</sup> showed a steady increase from 1973 to 1978. In 1973 it had a negative score of  $-.269$ , while by 1978 it was a slightly positive  $+.070$ .
- 2) Spending Priority for Space increased considerably in 1977 and 1978 after a virtually constant value from 1973 through 1976.
- 3) Spending Priorities for Blacks, Solving Drug Addiction, Environment, and Cities showed parallel downward trends.

Figure 1b shows three priorities that remained constant<sup>2</sup> throughout the period--Foreign Aid, Education, and Crime. Constancy is not as colorful as change, but these results are of some technical interest since they argue against year-to-year changes in sampling, interviewing, question order, and the like as explanations for changes in the other items. The ability of GSS to come up with constancy in many items adds to its credibility when it does appear to spot changes.

Three items, shown in Figure 1c, showed irregular changes--statistically significant departures from homogeneity which can not be comfortably fitted by straight lines.

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<sup>1</sup>A series of very similar, but not identical, Gallup and Harris items on defense spending for 1960, 1969, 1971, 1973, 1974, 1976, 1977, and 1978 suggests that the long-term trend is more complicated. The series shows a sharp drop in military spending priority between 1960 and 1969 (the Vietnam period) followed by a steady rise since. In 1977, "Too Little-Too Much" for the Gallup-Harris series was back to its 1960 level ( $+.04$  for 1977,  $+.03$  for 1960) and in 1978, the index ( $+.16$ ) was more favorable than at any time since the beginning of the Kennedy administration (see Public Opinion, Vol. 2, No. 2, March/May, 1979, p. 25).

<sup>2</sup>Strictly speaking: 1972-77 analysis did not reject the null hypothesis that the years could be samples from a common pooled value for both responses (Too Little, Too Much) for Crime and Education, and "Too Little" for Foreign Aid. "Too Much" did show significant variation for Foreign Aid, but there was no apparent trend. Since 1978, results looked essentially similar; no significance test was made for them.

- 1) Financial progress shows a u-shaped pattern that makes sense in the light of the economic trends of the period. Reports of progress dropped in 1974, bottomed out in 1975 (even then "getting better" outnumbered "getting worse" by 36 percent to 28 percent), and have been improving since. By 1978 the absolute index, +.222, had almost recovered its 1972 level of +.253.
- 2) Welfare priority shows a reversed u which is presumably related to economic trends. Welfare priority dipped to a fairly constant value in 1976 through 1978, a value which was well below the 1973 level. One feels--but can not document--that the American public regretted its temporary soft heartedness toward the poor and unfortunate.
- 3) Abortion, as explained above, shows a reversed u or perhaps better, a "mesa" pattern, up in 1972 and then down again in 1978.

Does all of this amount to a conservative tide? It depends on what you mean by conservative and what you mean by tide. In terms of the political vocabulary of university people, it looks that way. Increased backing for Arms and Space, decreased priorities for Health, Blacks, Drugs, Environment, and Cities, and a stalemate on Abortion are not likely to generate much applause from the left--new, old, or middle aged. But conservatism is a notoriously slippery word and it may not mean the same thing to a national cross-section. Table 3 treats respondents' self-report on Liberalism-Conservatism.

The top panel in Table 3 perhaps suggests a conservative trend in self-descriptions. Indeed, one can fit the data nicely with a linear trend of  $-.0058$  per year for Liberal and  $+.0105$  for Conservative. Unfortunately the differences are so far from statistical significance ( $P = .868$  for Liberal,  $.556$  for Conservative) we suffer no compulsion to treat the lines seriously.

Nevertheless, indirect support for a conservative trend appears in the bottom panel of Table 3. There we see eight of the priority

TABLE 3

ATTITUDES AND SELF-REPORTED LIBERALISM AND CONSERVATISM

(a) Trends in Self-Report

Category	1974	1975	1976	1977	1978
Extremely liberal, liberal, slightly liberal	.305	.301	.288	.289	.282
Moderate, middle of the road	.400	.400	.399	.388	.383
Extremely conservative, conservative, slightly conservative	.295	.298	.313	.323	.335
Total	1.000	.999	1.000	1.000	1.000
N	1,410	1,397	1,401	1,453	1,435

(b) Self-Report and Attitude (1972-77 pooled)

Item	+ Category	Proportion plus Among...			Trend in Figure 1
		"Liberals"	"Conser- vatives"	Differ- ence	
Big cities (NATCITY)	Too little	.628	.438	+.190	Down
Environment (NATENVIR)	Too little	.678	.492	+.186	Down
Blacks (NATRACE)	Too little	.404	.224	+.180	Down
Health (NATHEAL)	Too litttle	.706	.557	+.149	Down
Abortion (ABNOMORE)	Yes	.560	.422	+.138	"Mesa"
Welfare (NATFARE)	Too little	.265	.125	+.140	Inverted u
Education (NATEDUC)	Too little	.591	.458	+.133	No change
Military (NATARMS)	Too little, about right	.161	.272	-.111	Up
Foreign aid (NATAID)	Too little	.058	.032	+.026	No change
Crime (NATCRIME)	Too little, about right	.942	.924	+.018	Constant
Space (NATSPAC)	Too little, about right	.103	.104	-.001	Up
Drugs (NATDRUG)	Too little	.594	.594	.000	Down



items are associated with self-description and, among them, the four "liberal" priorities (Cities, Environment, Blacks, and Health) moved down and the one "conservative" priority, Military, moved up.

But Figure 2 puts these changes in still another perspective.

In spite of definitive conservative trends, the rank order of national priority scores in 1978 was much the same as in 1973 (Spearman rank correlation = +.900). Despite the many changes, only two pairs reverse their positions. Military matters no longer take second place to helping Blacks, and Space now outranks Welfare. Save for fighting crime and drug addiction, the "liberal" goals of Environment, Cities, Health, and Environment remained top in priority throughout the early 1970s.

In sum, if I had to choose a word to summarize the net shifts in Figure 1, it would hardly be "Liberal," and its converse, "Conservative," would not be unjustified; but before one begins to drown in the images of rip tides of reaction or compelling currents of conservatism, one should also bear in mind (a) three ideological items, Education, Welfare, and Abortion, didn't show any directional shift in 1972 through 1978, (b) self-identification as Liberal or Conservative did not show any statistically significant change, (c) analyses not reported here suggest that civil liberties items for Blacks (as opposed to spending for Blacks) were definitely not moving down and were perhaps moving up (see Taylor et al. 1978), and (d) the essentially liberal rank order of the items remained much the same from 1973 to 1978.

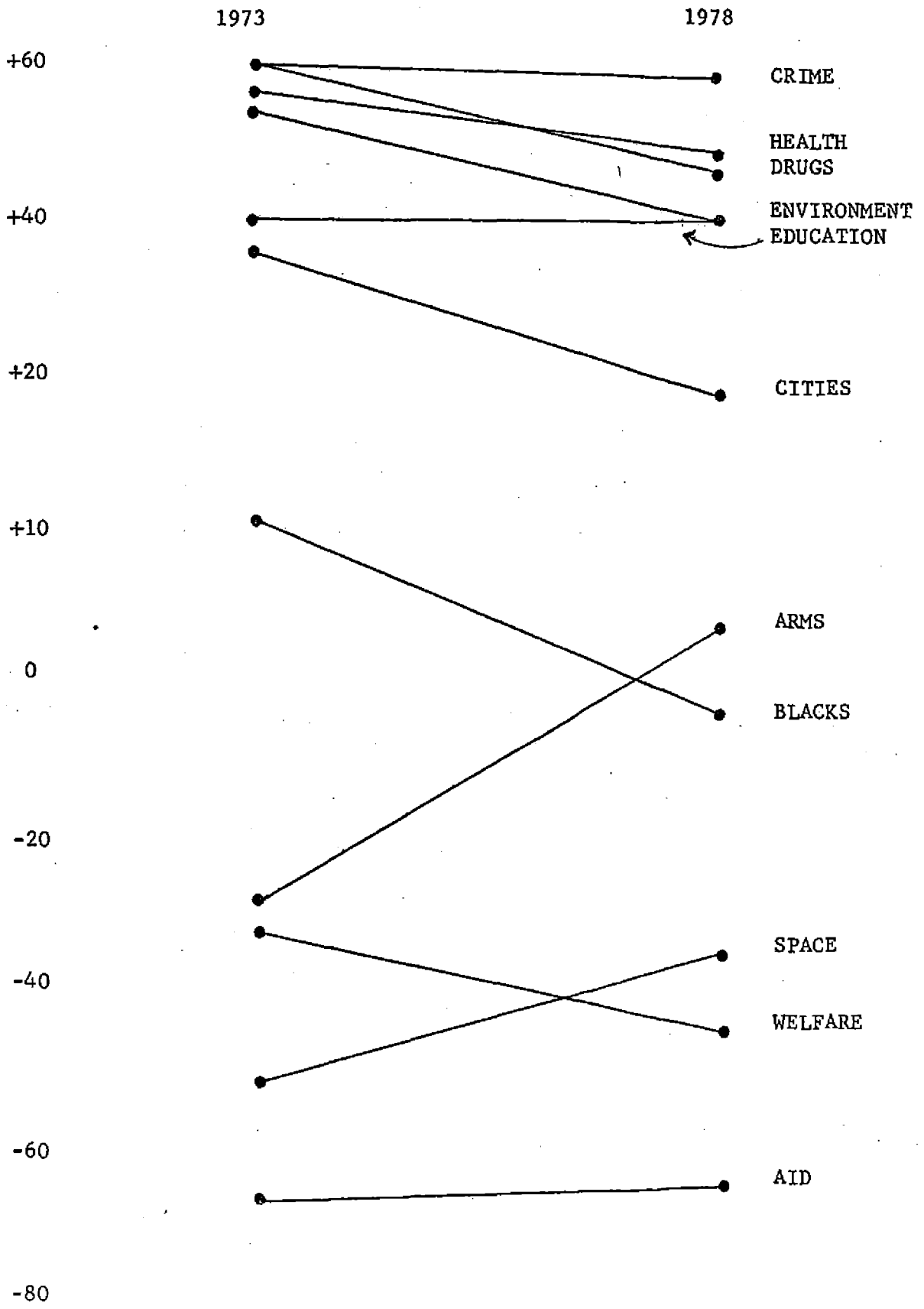


Fig. 2.--Initial and final scores (little-much) for national priority items

An Undercurrent of Liberalism?

Qualifications and complexities aside, the 1972 to 1978 trends in marginals don't appear to give much support to the Stouffer demographic hypothesis (Stouffer 1954)--that morticians and school teachers would give us a progressively more progressive climate of opinion.

The hypothesis goes like this:

- 1) Newer generations (more recent birth cohorts) tend to be better educated.
- 2) Better-educated people tend to be more "liberal," regardless of age.
- 3) Newer generations tend to be more liberal, regardless of education.
- 4) Consequently, as newer, better-educated generations replace older generations, the liberal proportion of the population will rise.

The hypothesis was shown to account for about half of the increase in liberalism on civil liberties from 1954 to the early 1970s, the remaining half being a shift toward liberalism within all cohort and education categories (Davis 1975b).

To test these ideas for the items in Tables 1 and 2, I divided the cases into three cohorts, those born in 1918 or before, those born from 1919 to 1938, and those born from 1939 to 1954, arbitrarily splitting the years to give roughly equal groups for the 1972-1978 pooled data. As shown in the top panel of Table 4, the Older cohort was in its middle fifties or older during the study period, the Middle cohort was "fortyish," and the Young cohort was in its twenties and thirties. (For simplicity, respondents born after 1954 were excluded even when they began to turn up in the later years.) Inevitably,

TABLE 4  
DEFINITION OF COHORT GROUPS

Category	Group		
	Young	Middle	Older
Born in . . .	1939-1954	1919-1938	1918 or before
Age in . . .			
1972	18-33	34-53	54+
1973	19-34	35-54	55+
1974	20-35	36-55	56+
1975	21-36	37-56	57+
1976	22-37	38-57	58+
1977	23-38	39-58	59+
1978	24-39	40-59	60+
Proportion of cases in <sup>a</sup> . . .			
1972	.327	.352	.321 1.000
1973	.343	.358	.299 1.000
1974	.363	.341	.296 1.000
1975	.372	.338	.290 1.000
1976	.383	.307	.310 1.000
1977	.372	.374	.255 1.000
1978	.425	.327	.248 1.000

<sup>a</sup>Younger cohorts excluded.

cohort composition of the samples changed year-to-year, as shown in the bottom panel of Table 4. The Young cohort comprised .327 of the total in 1972 and .425 in 1978; the Older cohort dropped from .321 to .248.

Hypothesis (1), naturally, was well-supported: the proportions with 13 or more years of schooling running .197, .292, and .422 as one moves from Older to Middle to Young, the proportions with zero to eleven years of schooling running .582, .350, and .189.

As a consequence of cohort change and the cohort-education correlation, the GSS samples improved their levels of education during

the six-year period as shown in Table 5. In 1972 respondents with zero to eleven years of schooling outnumbered those with thirteen or more by more than ten points (.398 versus .283); in 1978 the categories were just about equal (.323 versus .338). The 1980 GSS will no doubt show the United States to be across an important social watershed-- having become a nation where more adults (age eighteen and over) have some college than those who have no high school diploma.

TABLE 5  
EDUCATIONAL COMPOSITION OF SAMPLES OVER TIME<sup>a</sup>

Year	Years of School Completed			Difference 13+ v. 0-11
	0-11	12	13+	
1972	.398	.319	.283	-.115
1973	.362	.329	.309	-.053
1974	.344	.330	.325	-.019
1975	.358	.334	.308	-.050
1976	.362	.331	.308	-.054
1977	.376	.321	.303	-.073
1978	.323	.339	.338	+.015

<sup>a</sup>See Table 4 for explanation of excluded cases.

So far, we have seen that surveys over as short a period as six years show definite demographic changes of the sort required by the Stouffer hypothesis.

What about hypotheses (2) and (3)? To test them, I:

- a) Cross-tabulated education (0-11 versus 12 versus 13+) by cohort (Young versus Middle versus Older) by opinion by year;
- b) Analyzed the results using "d-systems" (Davis 1975a), choosing the following base categories: for cohort, Middle; for education, 12 years. That is, for cohort, the setup

asked whether Young respondents are more liberal (or whatever) than Middles and Middles more Liberal than Older--within each year and educational group; for education, it asked whether 13+s are more liberal than 12s and 12s more liberal than 0-11s--within cohorts and years.

Table 6 gives the detailed results. The table may be read as follows:

Consider, for example, Cohort and Cities (row 7 of Table 6a). The figures  $+0.073^*$ ,  $.036$ , and  $.952$  mean: (a) As a weighted average across Education categories and Years, respondents in the Young cohort are  $+0.073$  higher than Middles on "Too Little"; (b) The estimated two-sigma confidence interval for that difference is  $.036$ ; (c) Since  $.073$  is larger than  $.036$ , the difference is significant, as indicated by the asterisk; and (d) When we fit a model assuming no interactions for the  $d$  of  $+0.073$ , the chance probability for such discrepancies as did turn up is  $.952$ , much higher than  $.05$ --that is, the interactions are not significant.

The comparisons are defined so that four pluses indicate a consistent association with "Youth" or Better Education. For example, the four  $+$ s for Environment and Youth say: "Youngs are More Likely than Middles to say Too Little and Less Likely to say Too Much; Middles are More Likely than Olders to say Too Little and Less Likely to say Too Much." In other words, Younger cohorts are consistently more favorable to Environment as a national priority.

To summarize the many details in Table 6, I will call an association "present" when (a) at least two differences are significant and (b) the significant differences all have the same sign. Using these criteria, we can sort the outcomes in Table 6 into the nine cells of Table 7. Table 7 says:

TABLE 6

COHORT, EDUCATION, AND OPINION ITEMS, 1972-1978

Item	Comparison	Too little			Too much—sign reversed			Average Difference/ Number Significant
		Diff.	2 Sigma	Int.	Diff.	2 Sigma	Int.	
(a) Cohort and Opinion, Net of Education and Year								
Space	Young-Middle	-.005	.020	.834	-.026	.036	.940	-.001/1
	Middle-Older	+.028*	.018	.294	-.035	.038	.894	
Environment	Young-Middle	+.142*	.036	.908	+.049*	.018	.907	+.85/4
	Middle-Older	+.108*	.040	.939	+.040*	.026	.984	
Health	Young-Middle	+.029	.038	.896	-.005	.016	.898	+.010/0
	Middle-Older	-.003	.038	.914	+.017	.016	.965	
Cities	Young-Middle	+.073*	.036	.952	+.041*	.024	.962	+.051/3
	Middle-Older	+.065*	.040	.990	+.026	.030	.970	
Crime	Young-Middle	-.020	.036	.916	+.009	.016	.948	.000/0
	Middle-Older	+.008	.038	.863	+.005	.018	.996	
Drugs	Young-Middle	+.017	.036	.944	+.003	.020	.989	+.014/0
	Middle-Older	+.029	.040	.978	+.008	.011	.995	
Education	Young-Middle	+.070*	.036	.068	+.055*	.020	.243	+.076/4
	Middle-Older	+.118*	.040	.701	+.060*	.028	.973	
Race	Young-Middle	+.054*	.034	.999	+.053*	.032	.521	+.045/3
	Middle-Older	+.068*	.034	.904	+.005	.036	.996	
Arms	Young-Middle	-.057*	.028	.952	-.066*	.032	.212	-.032/2
	Middle-Older	-.001	.032	.991	-.004	.032	.920	
Aid	Young-Middle	+.017*	.012	.958	+.040*	.032	.982	+.014/2
	Middle-Older	+.005	.012	.978	-.006	.036	.954	
Welfare	Young-Middle	+.058*	.026	.282	+.071*	.036	.974	+.030/2
	Middle-Older	+.017	.026	.599	-.024	.040	.998	
Finances			<u>Better</u>				<u>Worse (sign reversed)</u>	
	Young-Middle	+.068*	.034	.920	+.017	.028	.974	+.043/2
Middle-Older	+.103	.034	.847	-.015	.030	.429		
Abortion			<u>Yes</u>					
	Young-Middle	+.028	.034	.992				+.026/0
Middle-Older	+.025	.036	.751					

\* Significant at the .05 level (estimated sampling variances doubled to compensate for clustering).

See text for detailed explanation.

TABLE 6--Continued

Item	Comparison	Too little			Too much--sign reversed			Average Difference/ Number Significant
		Diff.	2 Sigma	Int.	Diff.	2 Sigma	Int.	
(b) Education and Opinion, Net of Cohort Year								
Space	13 + v.12	+.073*	.024	.930	+.148*	.038	.974	+.092/4
	12 v.0-11	+.028*	.018	.948	+.119*	.038	.985	
Environment	13 + v.12	+.072*	.036	.997	+.010	.018	.897	+.034/2
	12 v.0-11	+.057*	.038	.956	-.003	.022	.981	
Health	13 + v.12	+.017	.038	.896	-.005	.016	.924	+.006/0
	12 v.0-11	-.003	.038	.902	+.017	.016	.965	
Cities	13 + v.12	+.064*	.038	.995	-.014	.028	.993	+.017/2
	12 v.0-11	+.034	.038	.944	-.015	.026	.829	
Crime	13 + v.12	-.064*	.036	.916	-.009	.016	.998	+.001/3
	12 v.0-11	+.053*	.036	.758	+.025*	.018	.918	
Drugs	13 + v.12	-.059*	.038	.453	-.010	.020	.999	-.017/1
	12 v.0-11	-.011	.038	.993	+.013	.020	1.000	
Education	13 + v.12	+.063*	.038	.318	+.007	.020	.963	+.016/1
	12 v.0-11	-.007	.038	.542	.000	.022	.848	
Race	13 + v.12	+.051*	.034	.612	+.052*	.032	.882	+.015/2
	12 v.0-11	-.033	.034	.919	-.011	.034	.891	
Arms	13 + v.12	-.024	.028	.997	-.166*	.034	.587	-.065/2
	12 v.0-11	-.027	.032	.984	-.042*	.032	.356	
Aid	13 + v.12	+.010	.012	.970	+.063*	.034	.442	-.006/3
	12 v.0-11	-.024*	.012	.998	-.071*	.034	.943	
Welfare	13 + v.12	-.002	.024	.675	+.030	.038	.942	-.049/2
	12 v.0-11	-.085*	.028	.238	-.139*	.038	.868	
Finances			<u>Better</u>			<u>Worse (sign reversed)</u>		
	13 + v.12	+.067*	.034	.734	-.011	.028	.783	+.058/3
12 v.0-11	+.116	.034	.739	+.062*	.030	.813		
Abortion			<u>Yes</u>					
	13 + v.12	+.160*	.036	.883				+.134/2
12 v.0-11	+.111*	.036	.975					

\* Significant at the .05 level (estimating sampling variances doubled to compensate for clustering)

See text for detailed explanation.



- a) Five items are related to both Education and Cohort. Younger and Better-Educated respondents give higher priority to the Environment, Space, and Race, lesser priority to Arms, and report more favorable financial changes.
- b) Two items are related to Cohort but not to Education. Younger respondents give higher priority to Cities and Education.
- c) One item is related to Education but not to Cohort. Better-Educated respondents are more favorable to Abortions.
- d) One item shows a mixed pattern. Younger respondents and the Less-Well Educated gave higher priority to Welfare.
- e) Four items--Health, Drugs, Aid, and Crime--show no consistent association with either demographic variable.

TABLE 7

SUMMARY OF RESULTS IN TABLE 6

		ASSOCIATION WITH COHORT, YOUNGER COHORTS ARE...		
		Less Favorable	Neither	More Favorable
ASSOCIATION WITH EDUCATION, BETTER EDUCATED ARE...	More Favorable		Abortion (curve)	Environment (down) Finances (curve) Race (down) Space (up)
	Neither		Health (down) Crime (no change) Drugs (down) Aid (no change)	Cities (down) Education (no change)
	Less Favorable	Arms (up)		Welfare (curve)

According to the Stouffer hypothesis then, we should have seen steady increases in:

- . priority for Environment, which went down (Figure 1a)
- . priority for Spending on Blacks, which went down (Figure 1a)
- . priority for Cities, which went down (Figure 1a)
- . priority for Education, which showed no trend (Figure 1b)
- . favorability toward Abortion, which showed no net trend (Figure 1c)
- . perceived financial progress, which, if anything, went down (Figure 1c)
- . priority for Space, which did go up (Figure 1a)
- . . . along with a decreased priority for Arms, which went up (Figure 1a).

Thus, at first glance, seven of eight items seem to flatly refute the Stouffer hypothesis. But, of mathematical necessity, if cohort and/or Education are consistently correlated with a dependent variable, and if cohort composition is changing, then the population must be moving in a "progressive" direction.

The "paradox" is quickly resolved by viewing the data as a causal system whose variables are Year, Birth Cohort, Education, and "Liberalism." Figure 3 gives their flow graph.

The five propositions of the system are represented by these five parameters:

- A = The later the year the greater the proportion from Younger cohorts.
- B = Within each year, the Younger the cohort the higher the Educational attainment.
- C = Within Cohort and Education combinations, the later the year the less proportion Liberal.
- D = Within Year and Education combinations, the younger the cohort, the greater the Liberalism.
- E = Within Year and Cohort combinations, the greater the Education, the greater the Liberalism.

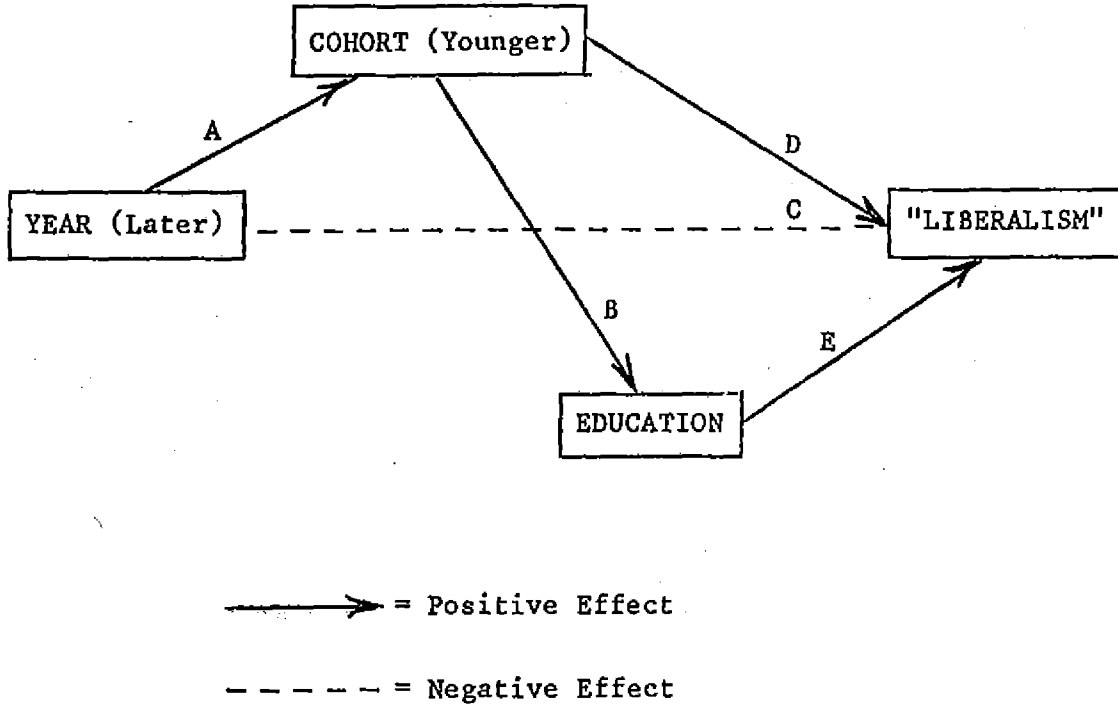


Fig. 3.--Schematic flow graph for year, birth cohort, education, and "liberalism"

For simplicity, I set the coefficient for Year and Education to zero, assuming (as can be documented from other studies) within cohort groups the year-to-year changes in educational level among adults are trivially small.

Ignoring the exact statistic temporarily, we can focus on the association between Year and Liberalism, that is, change in attitude (a ten-point positive association between Year and Liberalism is the same thing as a ten-point increase in liberalism from year<sub>1</sub> to year<sub>2</sub>). Applying flow graph principles:

$$\text{Change in Liberalism} = -C + (A * D) + (A * B * E) \quad (\text{Equation 1})$$

In English, the Change in Liberalism is the sum of:

-C = a negative shift within each Cohort and Education group.

+(A\*D) = increased liberalism because later samples tend to have more respondents from younger cohorts and younger cohorts tend to be more liberal, regardless of their educations.

+(A\*B\*E) = increased liberalism because later samples tend to have more respondents from younger cohorts, younger cohorts tend to be better educated regardless of the year, and better-educated respondents tend to be more liberal regardless of Year and Cohort.

The actual data flow graphs are more complicated since (a) Cohort and Education are trichotomies and (b) except for Abortion, the dependent variable is an index (Too Little minus Too Much, or Better minus Worse). In the first situation, one presents two of the three categories in the graph, dropping the other (called the "base") to avoid redundancy (see Davis 1975a, for details). In the second, one adds the index by running a positive coefficient of +1.000 from Too Little (Better) and a negative coefficient of -1.000 from Too Much (Worse) each running into a composite variable, "Little-Much" (Better-Worse).

Figure 4 shows the actual graph with data for change in priority to the environment, 1973 to 1978. In English:

Between 1973 and 1978,

A1 = the proportion in the Young cohort increased +.082;

A2 = the proportion in the Older cohort decreased -.051.

Within each year . . . compared with respondents in the Middle Cohort:  
. . . the proportion with thirteen or more years of Education is . . .

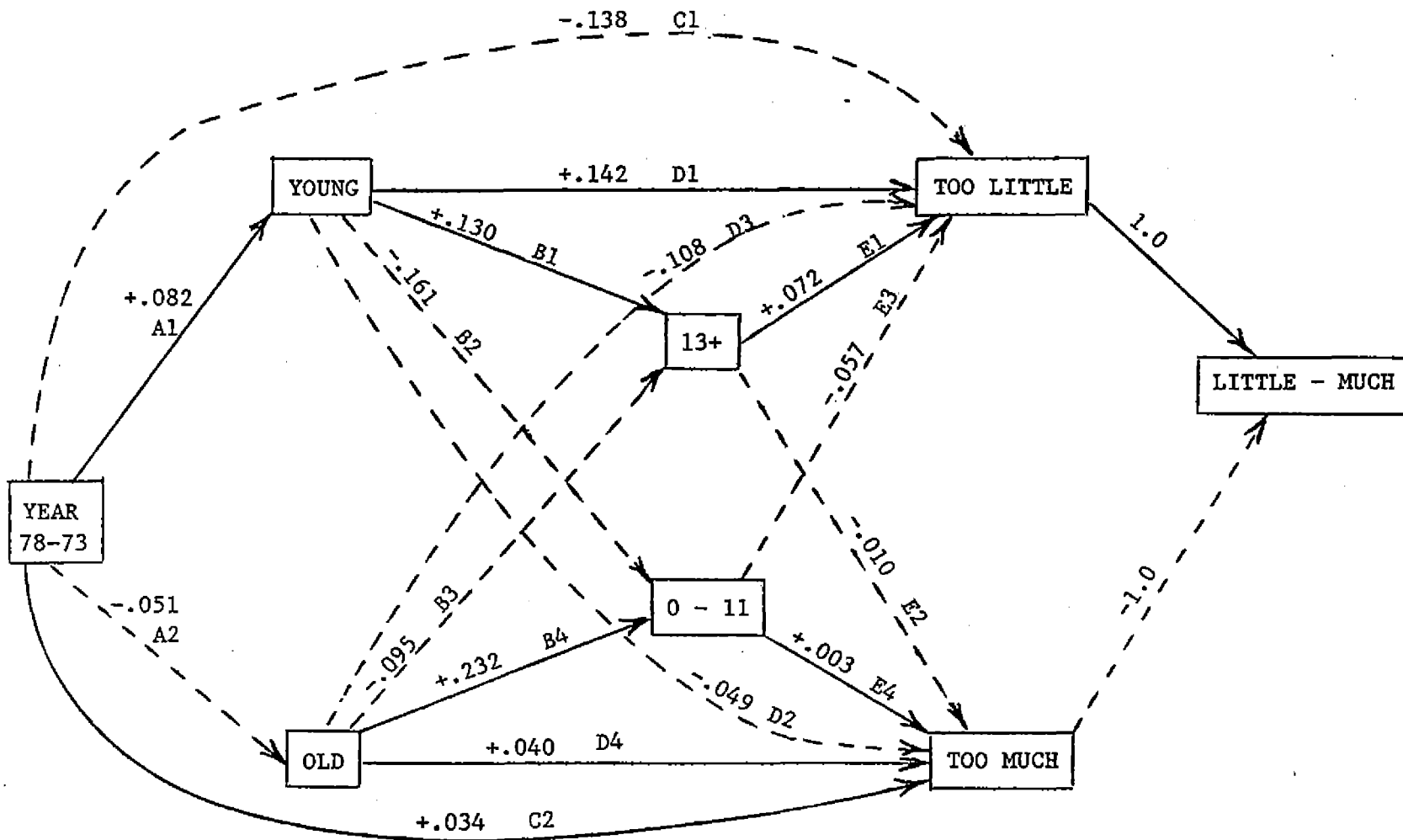


Fig. 4.--Flow graph for change in "Environment," 1973-1978

B1 = +.130 higher in the Young cohort;

B2 = -.095 lower in the Older cohort.

. . . the proportion with zero to eleven years of Education is . . .

B3 = -.161 lower in the Young cohort;

B4 = +.232 higher in the Older cohort.

Within Education and Cohort combinations, compared with 1973 respondents, 1978 respondents were:

C1 = -.138 lower on Too Little;

C2 = +.034 higher on Too Much.

Within Year and Education combinations, compared with respondents in the Middle cohort:

. . . respondents in the Young cohort were . . .

D1 = +.142 higher on Too Little;

D2 = -.049 lower on Too Much.

. . . respondents in the Older cohort were . . .

D3 = -.108 lower on Too Little;

D4 = +.040 higher on Too Much.

Equation 1 now expands like this:

(A\*B(C) = Direct effect of Year

$$= (C1*+1) + (C2*-1) = (C1-C2)$$

$$= (-.138) - (+.034) = -.172$$

(A\*D) = Indirect effect via Cohort replacement

$$= (A1*D1*+1) + (A1*D2*-1) + (A2*D3*+1) + (A2*D4*-1)$$

$$= [(A1)*(D1-D2)] + [(A2)*(D3-D4)]$$

$$= (+.082) * [(+.142) - (-.049)] + (-.051) * [(-.108) - (+.040)]$$

$$= (+.0157) + (+.0075) = +.0232$$

$$\begin{aligned}
(A*B*E) &= \text{Indirect effect via Cohort effect on Educational composition} \\
&= (A1*B1*E1^{*+1}) + (A1*B1*E2^{*-1}) + (A1*B2*E3^{*+1}) \\
&\quad + (A1*B2*E4^{*-1}) + (A2*B3*E1^{*+1}) + (A2*B3*E2^{*-1}) \\
&\quad + (A2*B4*E3^{*+1}) + (A2*B4*E4^{*-1}) \\
&= (A1*B1 + A2*B3) * (E1-E2) + (A1*B2 + A2*B4) * (E3-E4) \\
&= (+.0155) * (+.082) + (-.0250) * (-.060) \\
&= +.0028
\end{aligned}$$

So the total change in the Environmental priority index from 1973 to 1978 equals:

1) Stoufferian	
via cohort replacement	+ .0232
" via educational composition	<u>+ .0028</u>
	+ .0260
2) Residual, within category change	<u>-.1720</u>
Total	-.1460

There is no paradox. Stouffer was right--in that the index was shifted up +.026 by changes in demographic composition; and the pop sociologists are right--in that an additional -.172 drop in Environmentalism remains. Of course, the amateurs are "righter" in that -.172 is a lot bigger than +.026.

Table 8 shows similar results for the complete set of opinion items. (I left out Finances because I think the relationships there represent an aging effect, not a cohort effect.)

As expected, the Stoufferian process has produced definite "liberal" trends in those items where Table 7 suggested an association with Cohort and/or Education. However, just as in the case of Environment, the effects are all very small (but reliable since the constituent

TABLE 8

FLOW GRAPH RESULTS FOR 12 OPINION ITEMS

Item	Cohort	Change 1973 to 1978 <sup>a</sup> due to . . .		Direct	Grand Total
		Cohort & Education	Total Indirect		
Environment	+ .0232	+ .0028	+ .0260	- .172	- .146
Education	+ .0193	+ .0010	+ .0203	- .009	+ .011
Cities	+ .0140	+ .0024	+ .0164	- .206	- .190
Arms	- .0103	- .0047	- .0150	+ .345	+ .330
Race <sup>b</sup>	+ .0125	+ .0005	+ .0130	- .159	- .146
Health	+ .0094	+ .0001	+ .0095	- .091	- .082
Abortion <sup>a</sup>	+ .0036	+ .0053	+ .0089	- .016	- .007
Space	+ .0007	+ .0071	+ .0078	+ .137	+ .145
Welfare	+ .0102	- .0050	+ .0052	- .165	- .160
Aid	+ .0046	- .0012	+ .0034	+ .012	+ .015
Drugs	+ .0035	- .0011	+ .0024	- .139	- .137
Crime	- .0002	+ .0008	+ .0006	- .014	- .013

<sup>a</sup>Abortion data are for 1972 to 1978.

<sup>b</sup>Item was asked of whites only, but cohort and education coefficients are based on all races.

coefficients are all highly significant) and generally swamped by the "residual" changes.

The results lead me to shift metaphors in midstream, as it were. The notion of a conservative "tide" implies (a) everything is going in the same direction and (b) if we were to wait, things would reverse. Neither is justified by the GSS data. Although small in magnitude, the Stoufferian trend toward "liberalism" is clearly present in the GSS surveys, even in as short a period as six years; furthermore, we have no evidence that the conservative-within-category (residual) effect will stop or reverse.



Perhaps we can do better by leaving the water and taking to the air. Instead of tides and waves, I think we should invoke the well-known distinction between "climate" and "weather"--that is, the difference between long-term changes in climate (ice ages and the like) and the short-run storms and air masses that produce the day's weather.

The GSS results suggest this: the long-term liberal ("warming"?) trend in attitudes and opinions continued through the early 1970s, but politicians and practical opinion analysts were wise to wear policy overcoats and mittens since the attitude and opinion weather was dominated by a large-scale conservative "cold front."

#### Tracking the Conservative Cold Front

So far we have looked at overall change without considering subgroup differentials. My sociological imagination tells me we may have been missing some very interesting differences. In particular, it is widely believed new ideas (a) start in the most educated groups and then trickle down to the hoi polloi and (b) start among the flexible young people and then percolate up to their relatively rigid elders. The same data analyzed in Tables 6-8 enable us to examine these hypotheses.

Actually, the answer appears in Table 6 in the columns headed "Int." If some group, say respondents with thirteen or more years of Education, were first off the blocks--changed their opinions before those in other groups--their distance from other groups would vary with time. We might expect the difference between their opinions and others to go up when they begin to change and then to go down

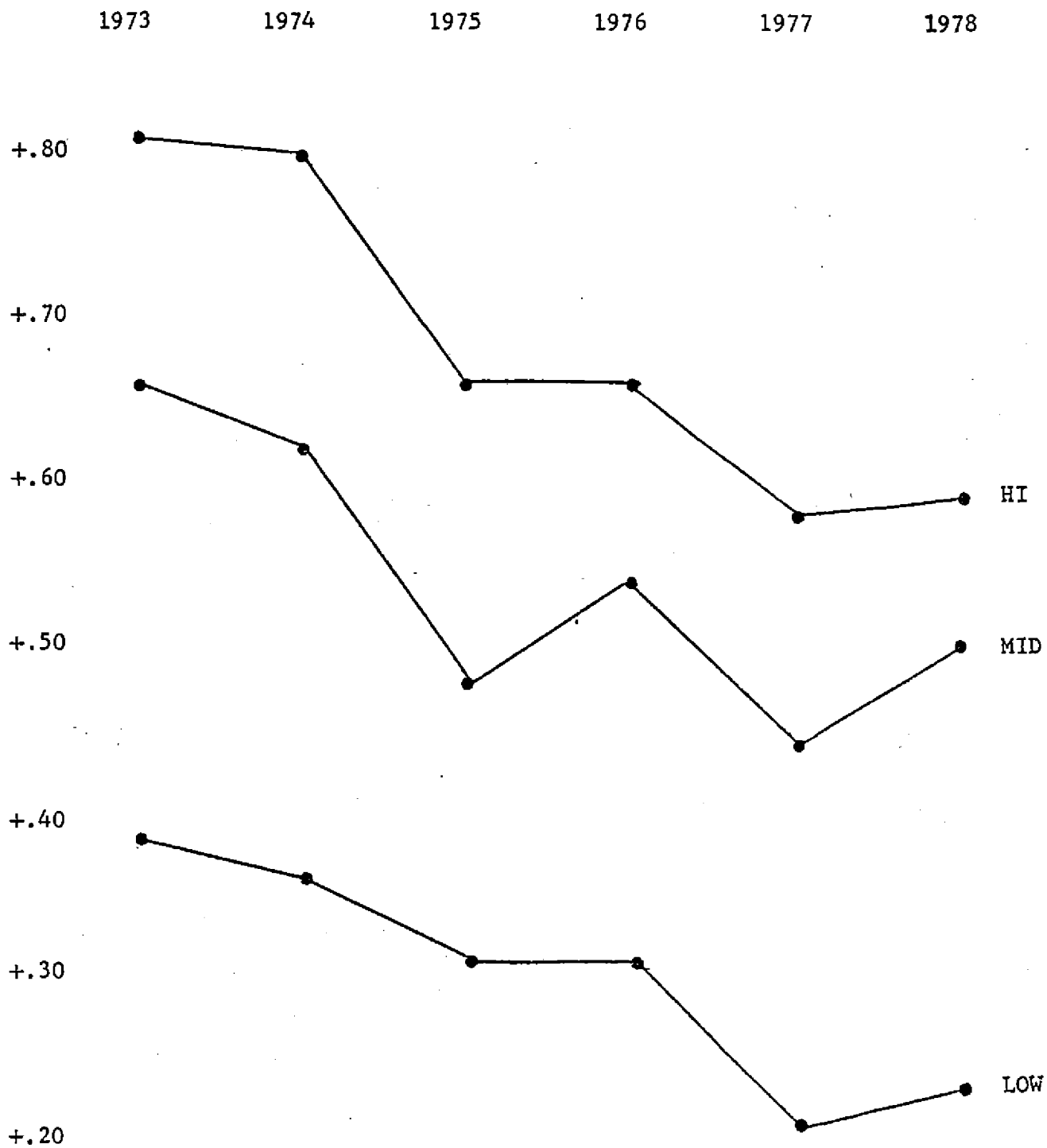
when the backwoods persons caught up with their trendy beliefs. Technically, such a pattern implies lots of interactions in the data (Davis 1978b), that is, difficulty in fitting the data using the same percentage differences in each year.

The figures in the "Int." columns in Table 6 are probabilities for the 100 Chi Square tests for interaction. To make the tests, the computer program compared the raw data with the proportions implied by a no-interaction model. If the discrepancy was strong, the probabilities would be small, while conversely, if the data are devoid of interactions, the discrepancies will be small and the Chi Square probabilities will be large.

The data in Table 6 show a remarkable absence of sociological imagination. None of the 100 Chi Square tests is significant at the .05 level, the median probability is .920, and 74 percent of the probabilities are .85 or higher. Granted it requires a large interaction to be statistically significant and the blanket hypothesis of no interaction at all might conceal some effects (with four variables, for example, it might be that the BCD interaction was non-zero but it got lost because ACD, ABD, and ABCD interactions were so small the hypothesis of no interactions at all came off well); nevertheless, the sample size is nontrivial (8,000 or more cases per variable) and therefore substantial interactions should show their faces through low probabilities in the Chi Square tests.

Direct inspection of the data confirms the impression given by the Chi Square tests. Figures 5-9 illustrate.

The figures show the trends within subgroups for five arbitrarily selected items. The point is simple and clear. The lines



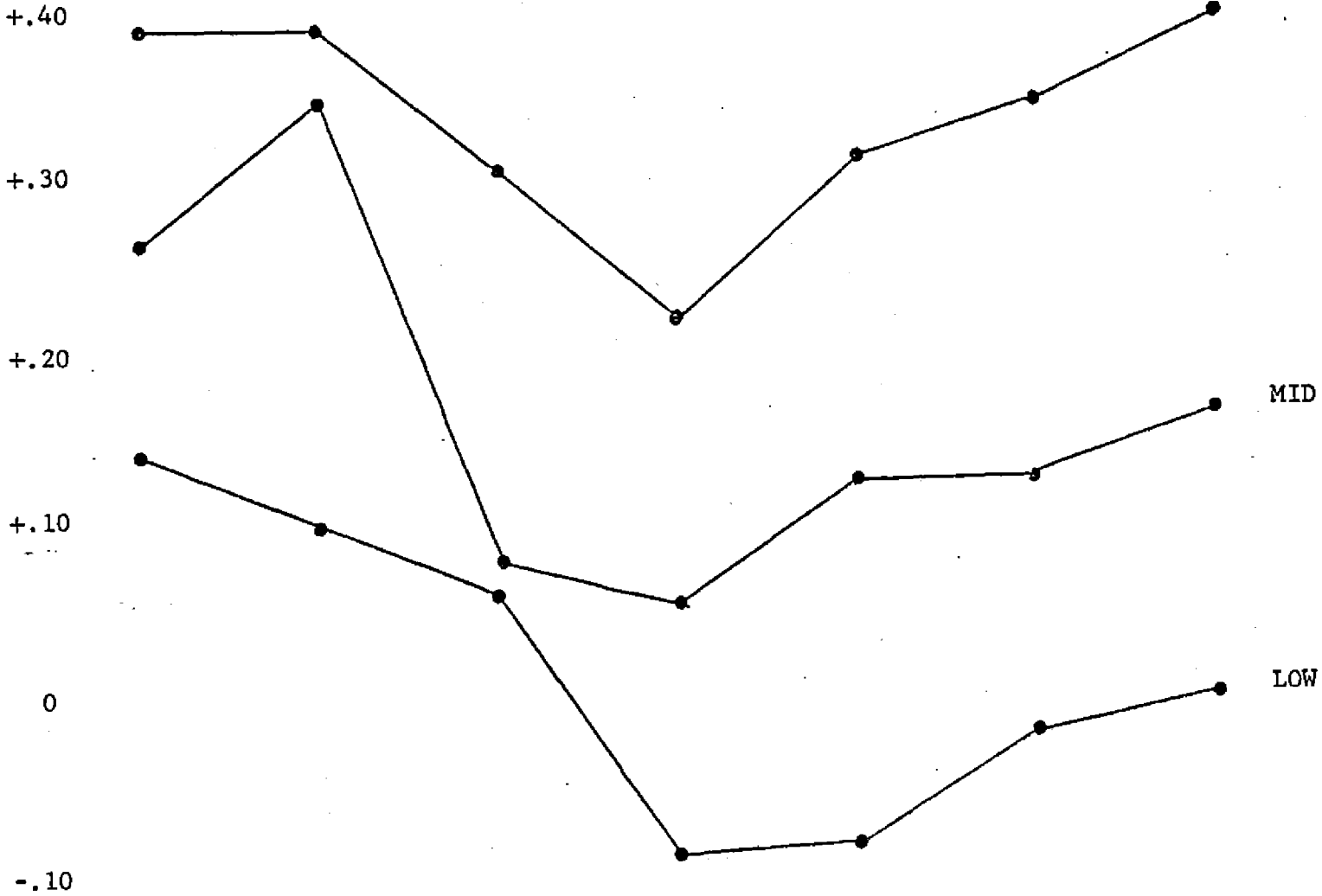
Typology of Favorability Groups  
Education

		0-11	12	13+
Cohort	Young	Mid	Mid	Hi
	Middle	Low	Low	Mid
	Older	Low	Low	Low

Fig. 5.--Change in "Environment" within favorability groups

1972 1973 1974 1975 1976 1977 1978

Better - Worse



Typology of Favorability Groups  
Education

Cohort	Education		
	0-11	12	13+
Young	Lo	Hi	Hi
Middle	Lo	Mid	Hi
Older	Lo	Lo	Mid

Fig. 6.--Change in "Finances" within favorability groups

Little - Much  
+.20

1973

1974

1975

1976

1977

1978

+.10

0

-.10

-.20

-.30

-.40

-.50

-.60

HI

MID

LO

Typology of Favorability Groups

Education

		0-11	12	13+
Cohort	Young	Hi	Mid	Low
	Mid	Hi	Hi	Mid
	Older	Hi	Hi	Mid

Fig. 7.--Change in "Arms" within favorability groups

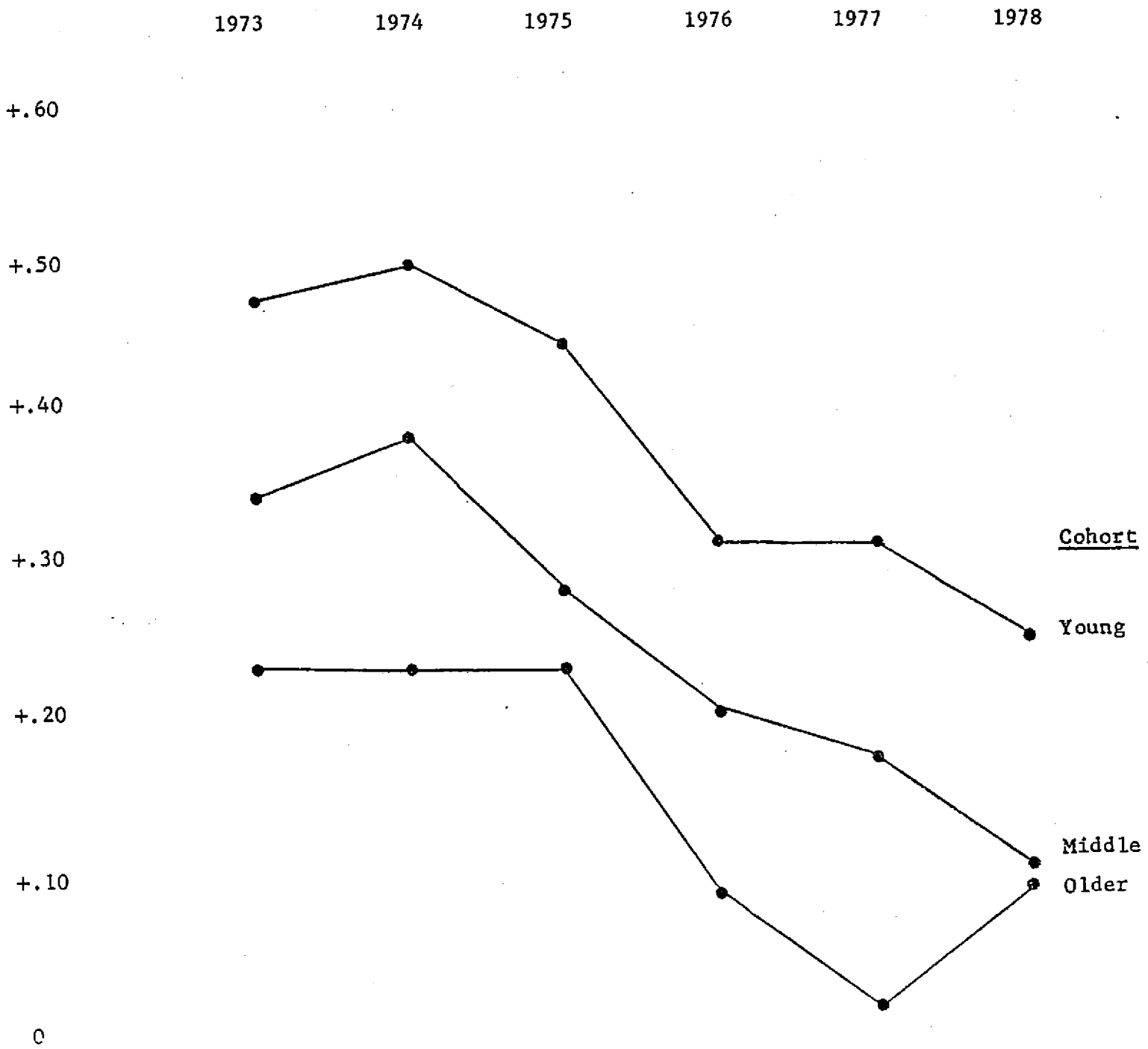


Fig. 8.--Change in "Cities" within cohorts

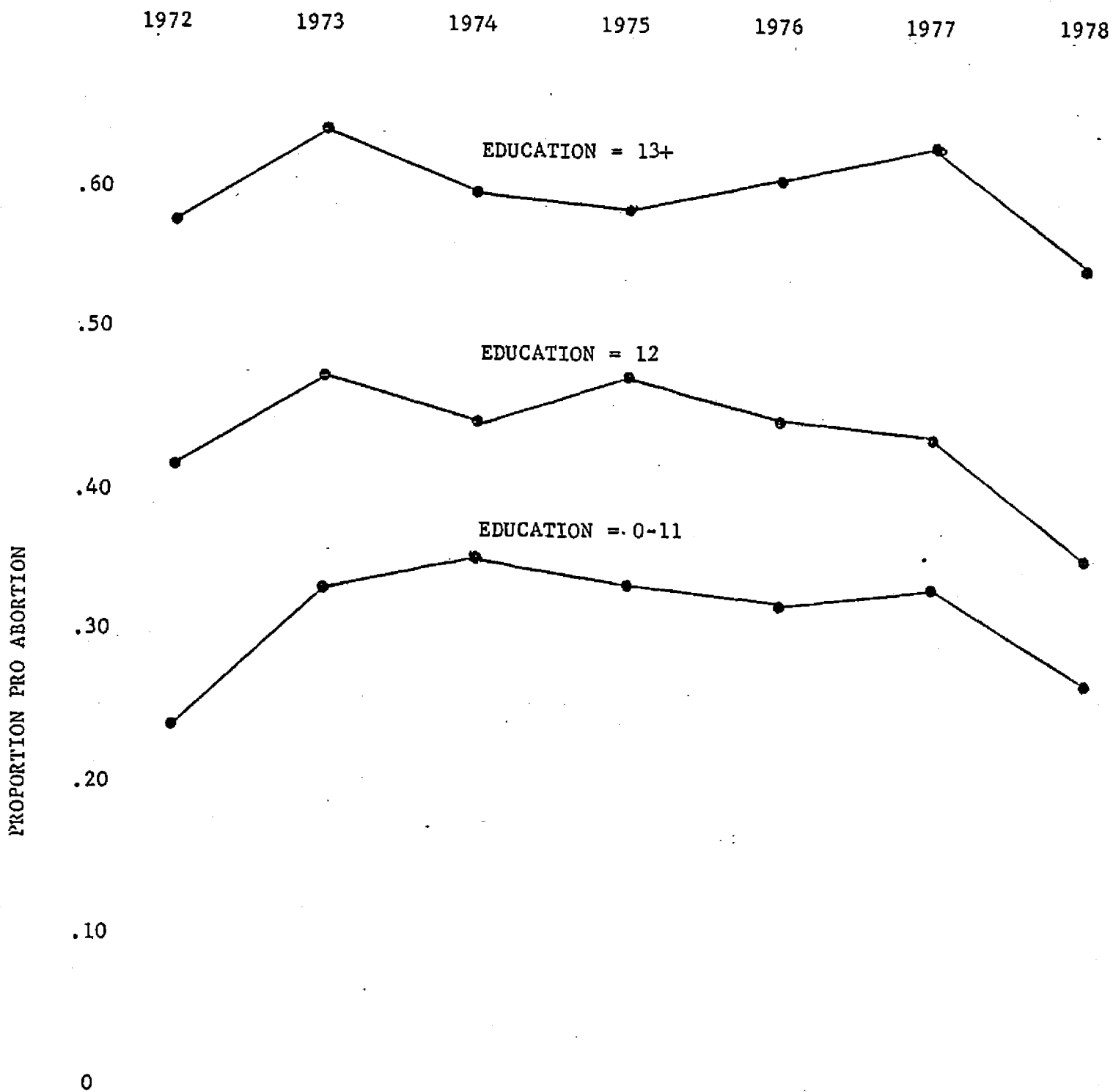


Fig. 9 .--Change in "Abortion" within educational groups

move together, in parallel, the no-interaction property meaning that subgroups maintain a constant distance from each other is changing. While all five illustrate this point, two are especially interesting. Figure 6 shows--despite claims that recent economic trends have pressed especially hard on the younger cohorts and the middle class--the young, better-educated respondents are consistently the most favorable on Financial changes and the older, less-well educated are the least. The "Low" group shows the only negative values of the Better-Minus-Worse index for the period 1972 to 1978--but all three subgroups move together, dipping down in 1974 and 1975 and moving upwards again in 1976, 1977, and 1978. The economic weather of the 1970s seemed to hit all these subgroups at the same time. Figure 9 is also of special interest since one might argue in the other cases that the "bellweather" shifts might have occurred before 1972. For Abortion, however, the 1978 change was not the continuation of a previous pattern; nevertheless, the three education groups moved together, maintaining virtually constant distances apart.

In sum, the weather of "conservativism" not only obscured the long run climatic changes in liberalism, but the sharp change in "temperature" seems to have hit the various age-education combinations at exactly the same time and with exactly the same strength, producing a remarkably interaction-free set of data that gives no support to the hypotheses about subgroup differences in "opinion leadership."



Conclusion

During the relatively brief period 1972 to 1978, the GSS managed to show not only striking change (in selected items), but a lopsided combination of two change models operating simultaneously. There is definite evidence for a long-term "climatic" trend toward "liberalism," predicted by Samuel Stouffer in 1954; but these changes are overshadowed by a "conservative" shift in the "weather" that appears to have hit bellweather groups such as the young and the better educated and back-water categories such as the old and poorly educated at about the same time and with the same impact.

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APPENDIX

The General Social Survey

The NORC General Social Survey (GSS) is an annual personal interview sampling of the United States adult population funded by the National Science Foundation. Surveys have been completed in 1972, 1973, 1974, 1975, 1976, 1977, and 1978 and additional studies will take place in 1980 and 1982.

Sampling

The universe is the total non-institutionalized English-speaking population of the continental United States, 18 years of age or older, carried out in the late winter (most interviews are carried out in the month of March). In 1972 to 1974, the design was of the modified probability type with quota elements introduced at the final stage. In 1977, 1978, 1980, and 1982, the design is full probability, with predesignated respondents. In 1975 and 1976, random halves of the sample were executed each way. (Although the anticipated significant differences in variances turned up in the experiment, no differences of importance to the vast majority of research users were detected [Stephenson, forthcoming].) Both designs have an average cluster size of five respondents.

Sample sizes average 1,520, with a total of 10,652 cases from 1972 to 1978.

## Content

The items cover a deliberately wide variety of content: detailed background characteristics with special emphasis on current and parental socioeconomic status; abortion, sex, and sex roles; racial attitudes (mostly limited to whites prior to 1978); morale and satisfaction measures; a vocabulary test; crime and violence; the Stouffer measures of tolerance on nonconformists, etc., etc., etc. Roughly half the items are permanent and appear each year. The others are assigned to one of three rotation schemes arranged so zero order correlations for any two variables in the plan can be obtained at least every two surveys. Items have been dropped because of extreme marginal distributions and one or two items have been added each year. The 1972 study has fewer variables than the later ones because it had a smaller budget.

Many items are exact replications of questions from one or more prior national surveys so the time span of analysis can be cast back before 1972, sometimes as far as the 1940s.

## Distribution

GSS was designed to be placed in the public domain on completion of coding and data processing (usually on July 1 of the same year) to give research workers in a variety of institutions access to recent, high quality data and to promote standardization in sociological research. Codebooks and data sets are not copyrighted and users are free to copy and/or distribute the materials. Major vendors for the data are The Roper Public Opinion Research Center, Yale University; The Interuniversity Consortium for Social and Political Research, University

of Michigan; and CONDUIT. In Fall, 1978, NORC created a cumulative tape and codebook of all 10,652 cases, which is sold by the Roper Center for approximately \$55.

