COUNTING YOUR CHANGE FOR A TEN: America from 1972 to 1982 as Reflected in the NORC General Social Survey

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ABSTRACT

This paper summarizes trends in 111 GSS (NORC General Social Survey) items for the decade 1972-1982. The main themes are: (I) For the vast majority of items change is modest and linear rather than explosive, (II) Substantively, we find a liberal trend in racial attitudes among whites, shrinking household size and liberal trends in sex roles and sex norms, while diverse measures of occupational structure show surprisingly little change, (III) a structural model comprising Year, Education and Occupational Prestige helps to explain the puzzling stability of occupation, and (IV) The model accounts for substantial fractions of the change in the most volatile items, generally supporting the predictions of Stouffer's classic 1955 monograph.

Introduction

Are we living in a period of fast social change? Pop sociologists say so:

> "A powerful tide is surging across much of the world today, creating a new, often bizarre, environment in which to work, play, marry, raise children, or retire. In this bewildering context, businessmen swim against highly erratic economic currents; politicans see their ratings bob wildly up and down; universities, hospitals and other institutions battle desperately against inflation. Value systems splinter and crash, while the life boats of family, church, and state are hurled madly about" (Toffler, p. 1).

> "While the shift from an agricultural to an industrial society took 100 years, the present restructing from an industrial to an information society took only two decades. Change is occurring so rapidly that there is no time to react . . ." (Naisbitt, p. 18).

Although some work both sides of the street:

> "Increasingly in recent years, our studies of the public show the 'giant plates' of American culture shifting relentlessly beneath us. The shifts create huge dislocations in our lives. Those living closest to society's fault lines are the first to be thrown into new predicaments. But even those living at a remote distance feel the tremors (Yankelovich, p. xii) . . . . In my three decades as a student of changes in American mores, I too have grown accustomed to more continuity than change. Almost every survey measuring trends in American values and behavior exhibits extraordinary stability" (Yankelovich, p. xv).

And academic analysts are not in perfect agreement:

> ". . . the simple and crucial fact which Henry Adams had so poignantly grasped in 1900 was that no longer would any child be able to live in the same kind of world--sociologically and intellectually--as his parents and grandparents . . . . Today, not only does a child face a radical rupture with the past, but he must also be trained for an unknown future" (Bell, p. 149).

> "Indeed the continuity of marriage and family patterns from generation to generation seems to have been more characteristics than change during the last 50 years. Middletown is becoming for the first time in its history a place where the present resembles the past and pre-figures the probable future" (Caplow, et al., p. 272).

Perhaps then, it is not amiss to shift from rhetoric and metaphors to empirical data.

The NORC General Social Surveys (Davis and Smith, 1982) provide appropriate data. They comprise nine national, personal interview samples from 1972 to 1982. Each is a sample of about 1500 cases (multi-stage probability since 1977, modified probability 1972-74, and a combination during the transition years 1975-76) designed to estimate results for English speaking persons 18 years of age and older, living in noninstitutional quarters in the continental United States.

The GSS is appropriate because (a) the series spans a decade, (b) the vast majority of GSS items are repeated verbatim every year or in a fixed rotation scheme, (c) the content covers a broad spectrum including demographic background items, attitude and value questions, stratification measures, satisfaction measures, etc., and (d) the items were selected by panels of sociologists with social change relevance as one of the criteria. In my opinion, the average rate of change over all GSS items is a reasonable first cut at an operational answer to the question, "How fast is American society changing?" This is not to say there are no problems (on this, much, later) but it is to claim that such a number would have scientific advantages over hydrogeologic metaphors.

It should be noted that GSS-72 was "smaller" than its successors in terms of total items. Therefore, this analysis is not completely respentative of the GSS. For what it may be worth my impression is that two subsequent "topical" items (spending priorities and confidence in institutions) are more volatile than the items analyzed here but the remainder show patterns consistent with the generalizations advanced in this essay.

In sum, the purpose of this paper is to describe the rates of change for GSS items from 1972 to 1982 in order to illuminate these broad questions: How fast is American society changing? Which aspects are changing faster and which slower? What are the main mechanisms producing social change?

The Decade 1972-1982

Figure 1 plots the classic socioeconomic indicators, presidential popularity and percentage change in the real GNP, 1972-1982. For presidential popularity I used the difference between the "Approve and Disapprove" percentages averaged from the Gallup surveys closest to GSS field dates (e.g., in the Gallup surveys of 2/4-7, 3/3-5, and 3/24-27, 1972, President Nixon averaged 54.0 percent Approve and 35.0 percent Disapprove, giving a difference of +19). GNP data are from the Statistical Abstract, except for 1982 which is taken from press reports.

In midwinter 1972 Richard Nixon was ending his first term as President. Things looked good. His Gallup rating was a decent +19 and the +5.7 change in real GNP that year would be the best since the mid sixties. One year later, four months after Nixon's landslide victory over George McGovern, things looked even better. The Gallup rating jumped to +33 and the 1973 increase in GNP, +5.8, turned out to be the high water mark for the decade.

But in 1974 things started to turn sour. Nixon's rating plummeted 69 points as the Watergate scandal unfolded and real GNP dropped (only the fourth time since 1947). The next year, 1975, wasn't much better. GNP slipped again (the first time since World War II it had declined two years in a row) and President Ford's Gallup score, -9, was favorable only by contrast to that of his predecessor.

However, the next few years, 1976-77-78, seem sunnier, GNP's returned to the +5s and presidential popularity zoomed to +60, President Carter's "honeymoon" score.

Thereafter, however, the trends were down (save for President Reagan's maiden score of +36). Carter's rating sank to negative in 1979 and Reagan had a shaky +2 in 1982. GNP changes never exceeded +3 after 1978 and showed recessionary negative values in 1980 and 1982.

To the extent these two classic series tap the national mood, one's impression is of marked volatility.

Nevertheless, one source of social change remained muted. By the standards of the twentieth century the decade was pacific. The last U.S. ground troops left Vietnam in early 1973 and no American forces were involved in combat after that. The international scene was hardly tranquil: the nuclear arms race continued, and the period included the fourth Arab-Israeli war, the OPEC oil embargo, the Iranian hostage crisis, and increased insurgency in Latin America--but U.S. battle casualties were not part of the evening news after 1973.

The Basic Findings

The cumulative codebook 1972-1982 includes 115 mnemonics (computer labels for variables) for items appearing in both 1972 and 1982. One (RACSCHOL) had little or no marginal variation and seven mnemonics had reduced N's (under 5,000) because they were asked only of small subpopulations. This left 107. In addition, I created four recoded variables to tap obvious dimensions not captured directly by any of the 107:

COHORT=Age recorded as year of birth

DIVORCED=Ever divorced among the ever married

RAC=Scale on attitudes to segregated schools, combining RACFEW, RACHAF, and RACMOST

WORKMOM=Labor Force status among married women

Columns one and two of Table 1 give the mnemonics and brief descriptors for the 111 items.

Having selected the items, I collapsed each into categories which made sense and gave roughly equal marginals over the total decade. Forty-three were dichotomized, 47 trichotomized, 13 divided into four categories, and 8 grouped into five to eight categories. These mappings appear in column four of Table 1.

Each item has cross-tabulated against Year and the standard Pearson Chi-Square calculated. Eighty-six items appear in all nine years, four in eight years, thirteen in seven years, six in six years, and two in five years - as shown in Column nine of Table 1

TABLE 1

RAW DATA ON CHANGES (1972-1982) FOR 111 GSS ITEMS

MNEMONIC	Topic	N	Categories	Chi-Sq.	Triv.	Q**	Group***	Yea
ABDEFECT	Allow abortion if birth defect likely	13594	1/2,8	53.91xx	3.91	2	ATT	9
ABHLTH	Allow abortion for woman's health	13589	1/2,8	56.47xx	3.73	1	ATT	9
ABNOMORE	Allow abortion if married mother	13595	1/2,8	47.31xx	4.46	2	ATT	9
ABPOOR	Allow abortion if low income	13582	1/2,8	31.58xx	6.67	3	ATT	9
ABRAPE	Allow abortion if woman raped	13578	1/2,8	49.75xx	4.23	2	ATT	9
ABSINGLE	Allow abortion if woman is single	13586	1/2,8	50.97xx	4.13	2	ATT	9
ADULTS	No. of persons 18+ in household	13604	1/2/3-8	302.17xx	1.18	1	FAM	9
AGE	Respondent's age	13565	1,2/3,4/5-8	12.33ns	28.93	4	FAM	9
AGEWED	Age at first marriage	11596	1/2/3-7	15.39ns	19.82	4	FAM	9
ATTEND	Frequency of religious attendance	13559	0,1/2,3/4,5,6/7,8	71.06xx	6.95	3	ETH	9
BABIES	No. of persons under 6 in household	13583	0/1-5	57.65xx	3.65	1	FAM	9
BUSING*	Attitude to busing for desegregation	9006	1,8/2	17.65xx	6.42	2	AT2	7
CHILDS	No. of children born to respondent	13575	0/1,2/3-8	65.13xx	5.48	2	FAM	9
CHLDIDEL	Opinion on ideal number of children	10351	0-2/3/4-7	104.73xx	2.08	1	ATT	7
CHLDMORE	Future children expected	9213	1,3/2	7.09ns	16.36	4	MISC	6
CLASS	Social class, self-placement	12799	1,2/3,4	6.06ns	32.75	4	JUD	8
COLATH	Allow atheist to teach in college	10586	4/5,8	25.52xx	5.22	2	AT3	7
COLCOM	Allow communist to teach in college	10566	1/5,8	45.17xx	2.94	1	AT3	7
COMPREND	Respondent's understanding - interviewer's rating	13507	1/2,3	9.35ns	22.40	4	MISC	9
COURTS	Are local courts harsh enough?	11255	2/1,3,8	263.46xx	.71	1	AT3	9
DEGREE	Does respondent have a high school or college degree?	13562	0/1/2-4	80.71xx	4.42	2	ED	9
DENOM	Denomination - if Protestant	8731	1/2/3/4-7	49.93x	6.37	2	ETH	9
DIVORCE	Ever divorced - if married or widowed	10209	1/2	16.53x	9.58	4	FAM	9
DOTDATA	DOT work with data	12267	0-2.49/2.5-6.49/ 6.5-8.5	34.85x	9.26	3	OCC	9
DOTGED	DOT education required	12267	1.0-2.49/2.5-3.49/ 3.5-6.0	37.72x	8.55	3	OCC	9
DOTPEOP	DOT work with people	12267	0-5.49/5.5-7.49/ 7.5+	27.94x	11.55	4	OCC	9
DOTPRES	DOT prestige	12267	0-2/3/4-8	32.85x	9.82	4	OCC	9
DOTSVP	DOT training required	12267	1.5-3.49/3.5-5.49/ 5.5-7.5	38.92x	8.29	3	OCC	9
DOTTHNG	DOT work with things	12267	0-3.49/3.5-7.49/ 7.5+	20.76ns	15.54	4	OCC	9
EARNRS	Number of earners in family	13476	0/1/2/3-8	62.61xx	7.84	3	FAM	9
EDUC	Years of school completed	13578	0-11/12/13-20	51.95xx	6.87	3	ED	9
ETHNUM	Number of ethnic origin countries	13539	1/2/3/4	100.23xx	4.92	2	ETH	9
EVWORK	Ever work? among retired	5533	1/2	13.74ns	6.20	2	FAM	9

TABLE 1

RAW DATA ON CHANGES (1972-1982) FOR 111 GSS ITEMS
(continued)

MNEMONIC	Topic	N	Categories	Chi-Sq.	Triv.	Q**	Group***	Yea
FAMILY16	Living with own parents when 16?	13616	1/2-0	15.41ns	13.70	4	FAM2	9
FEPRES	Vote for woman for president?	9141	1/2,5,8	84.92xx	1.19	1	AT1	6
FEWORK	Should married women work?	9137	1/2,8	56.41xx	1.79	1	AT1	6
FINALTER	Finances gotten better, worse?	13503	1/2/3	165.75xx	2.14	1	JUD	9
FINRELA	Relative financial situation	13506	1,2/3/4,5	62.92xx	5.65	2	JUD	9
GUNLAW	Favor gun registration?	12061	1/2,3	19.36x	8.77	3	AT3	8
HAPPY	Happiness self-rating	13581	1/2/3	55.70xx	6.41	2	JUD	9
HEALTH	Own health excellent . . . poor	12077	1/2/3,4	14.16ns	20.20	4	JUD	8
HOMPOP	Household size	13621	1/2/3-4/5-16	346.38xx	1.43	1	FAM1	9
INCOME16	Parental income rating	13472	1,2/3/4,5	48.42xx	7.32	3	JUD	9
INDUSTRY	Respondent's industry	12362	0/1-3/4-9	17.45ns	18.63	4	OCC	9
LIBATH	Allow atheist book in library?	10586	1/2,8	7.69ns	17.33	4	AT3	7
LIBCOM	Allow communist book in library?	10563	1/2,8	11.00nx	12.09	4	AT3	7
MADEG	Mother's education, degrees	11780	0/1/2-4	60.56xx	5.16	2	ED	9
MAEDUC	Mother's years of schooling	11078	0-11/12/13-20	78.52xx	3.71	1	ED	9
MARITAL	Marital status	13625	1/2/3,4/5	178.68xx	2.78	1	FAM1	9
MOBILE16	Same city or state as age 16?	12822	1/2/3	56.67xx	8.55	3	GEO	9
NEWS	Frequency of newspaper reading	7657	1/2/3-5	100.40xx	1.18	1	MISC	5
OCC	Occupation - Census categories	12400	0,1/2/3/4,5/6,7/8	71.41xx	11.27	4	OCC	9
PADEG	Father's education, degrees	10515	0/1/2-4	58.30xx	4.74	2	ED	9
PADOTDAT	DOT - father's work with data	11541	see DOTDATA	30.16x	10.06	4	OCC	9
PADOTGED	DOT - father's educ. required	11541	see DOTGED	43.57xx	6.97	3	OCC	9
PADOTPEO	DOT - father's work with people	11541	see DOTPEOP	37.96x	8.00	3	OCC	9
PADOTPRE	DOT - father's prestige	11541	see DOTPRES	24.16ns	12.56	4	OCC	9
PADOTSVP	DOT - father's training	11541	see DOTSVP	36.19x	8.39	3	OCC	9
PADOTHN	DOT - father's works with things	11541	see DOTTHNG	42.82xx	7.09	3	OCC	9
PAEDUC	Father's years of schooling	9783	0-11/12/13-20	58.35xx	4.41	2	ED	9
PAIND16	Father's industry	11686	0/1-3/4-9	34.41x	8.93	3	OCC	9
PAOCC16	Father's job - Census group	11689	see OCC	84.27xx	9.00	3	OCC	9
PAPRES16	Father's job Prestige (HSR)	11689	0-2/3/4/5-8	46.42x	9.17	3	OCC	9
PARTYID	Political Party Preference	13309	3/0/1,2/4,5/6	128.97xx	4.74	2	AT3	9
PAWRKSLF	Father self-employed	11773	1/2	17.36x	10.52	4	OCC	9
PREMARSX	Is premarital sex wrong?	8823	1/2,3/4	92.90xx	1.74	1	AT1	9
PRESTIGE	Job prestige (HSR)	12400	1,2/3/4/5-8	49.33x	9.15	3	OCC	9
PRETEEN	Persons Age 6-12 in household	13582	0/1-6	53.21xx	3.96	2	FAM1	9
RACDIN*	Reaction to Black dinner guest	9273	1,2/3	32.69xx	3.57	1	AT2	7
RACE	Race	13521	1/2	56.97xx	3.68	1	ETH	9
RACHOME*	Has had Black guests	7900	1/2	26.02xx	3.82	2	AT2	6
RACLIVE*	Blacks in this neighborhood	11514	1/2	138.27xx	1.29	1	AT2	9
RACMAR*	Opinion - miscegenation laws	10546	1,8/2	59.75xx	2.48	1	AT2	8
RACPRES*	Vote for Black for President	7967	1/2,8	67.17xx	1.31	1	AT2	6
RACPUSH*	Blacks shouldn't push	9283	1/2/3,4	102.44xx	1.14	1	AT2	7
RACSEG*	Neighborhood Segregation rights	6409	1,2/3/4	82.66xx	1.20	1	AT2	5
REGION	Census region	13626	1,2/3,4/5, 6,7/8,9/0	20.21ns	24.56	4	GEO	9
RELIG	Religious preference	13409	1/2/3/4	34.93nx	13.98	4	ETH	9
RES16	Size of place at age 16	13599	1,2/3/4-6	35.53x	10.07	4	GEO	9
SATFIN	Satisfaction, finances	13568	1/2/3	51.09xx	6.98	3	JUD	9

TABLE 1

RAW DATA ON CHANGES (1972-1982) FOR 111 GSS ITEMS
(continued)

MNEMONIC	Topic	N	Categories	Chi-Sq.	Triv.	Q**	Group***	Yea
SATJOB	Satisfaction, current job	10670	1/2/3,4	40.71xx	6.89	3	JUD	9
SEX	Gender	13626	1/2	30.26xx	6.98	3	FAM2	9
SIBS	No. of brothers and sisters	13601	0,1/2,3/4,5	36.90x	13.42	4	FAM2	9
SIZE	Size of Place	13626	under 10,000/ 10K-99,999/ 100K-999,999/ 1 million+	116.82xx	4.25	2	GEO	9
SPDEG	Spouse's education, degrees	8830	0/1/2-4	64.70xx	3.59	1	ED	9
SPDOTDAT	Spouse job, DOT, data	7996	see DOTDATA	27.46x	7.66	3	OCC	9
SPDOTGED	Spouse job, DOT, educ. required	7996	see DOTGED	18.52ns	11.36	4	OCC	9
SPDOTPEO	Spouse job, DOT, people	7996	see DOTPEOP	16.83ns	12.50	4	OCC	9
SPDOTPRE	Spouse job, DOT, prestige	7996	see DOTPRES	29.66x	7.09	3	OCC	9
SPDOTSVP	Spouse job, DOT, training required	7996	see DOTSVP	26.65x	7.89	3	OCC	9
SPEDUC	Spouse's education in years	8835	0-11/12/13-20	50.45xx	4.61	2	ED	9
SPIND	Spouse job, industry	8063	0/1-3/4-9	22.38ns	9.48	3	OCC	9
SPKATH	Free speech for atheists	10598	1/2,8	9.94ns	13.42	4	AT3	7
SPKCOM	Free speech for communists	10585	1/2,8	23.38xx	5.70	2	AT3	7
SPOCC	Spouse job, Census categories	8107	see OCC	105.96xx	4.96	2	OCC	9
SPPRES	Spouse job, prestige (HSR)	8107	1,2/3,4/5-8	56.53xx	5.23	2	OCC	9
SPWRKSLF	Is spouse self-employed?	8118	1/2	4.18ns	30.12	4	OCC	9
SPWRKSTA	Spouse's Labor Force Category	8949	1/2/3/4/5/6/7/8	109.00x	6.09	2	OCC	9
SRCBELT	Size of place (SRC categories)	13626	1,2/3,4/5/6	139.47xx	3.54	1	GEO	9
TEENS	Persons 13-17 in household	13593	0/1-8	81.19xx	2.60	1	FAM1	9
UNRELAT	Unrelated persons in household	11518	0/1-8	15.46ns	11.55	4	FAM1	9
WKSUB	Do you have a supervisor?	7567	1/2	10.28ns	9.26	3	OCC	7
WKSUBS	Supervisor's supervisor?	5943	3/4	8.53ns	8.77	3	OCC	7
WKSUP	Do you supervise?	7311	1/2	20.20xx	4.56	2	OCC	7
WRKSLF	Are you self-employed?	12419	1/2	17.46x	11.03	4	OCC	9
WRKSTAT	Labor Force Category	13626	1/2/3/4/5/6/7/8	154.06xx	6.56	3	OCC	9
XNORCSIZ	Size of Place (NORC categories)	13626	1/3-5/2/4-6/7-10	122.14xx	5.12	1	GEO	9
			RECODES					
Cohort	Age recoded as year of birth	13565	XXXX-1917/1918-1933/1934-1947/1948-XXXX	469.7xx	1.05	1	FAM2	9
Divrced	Ever divorced among ever married	11552	Yes=Divorced=1 or Marital=3,4/ No=Divorce=2 and Marital=1,2	82.1xx	2.18	1	FAM2	9
Rac*	Scale on attitudes to segregated schools, combining RACFEW, RACHAF, and RACMOST	7802	Group FEW HAF MOST a 1 0 0 b 2 1 0 c 2 2,8 2,8 d 2 2 2	51.22xx	3.81	1	AT2	6

TABLE 1

RAW DATA ON CHANGES (1972-1982) FOR 111 GSS ITEMS
(continued)

MNEMONIC	Topic	N	Categories	Chi-Sq.*	Triv.	Q**	Group***	Yea
Workmom	Labor Force Status among Married	4524	WRKSTAT 1-4/7 among Sex=2, Marital = 1	59.26xx	1.18	1	FAM2	9

* = Tabulated for whites only.

** = Quantile of triviality score.

*** = Categories:

AT1	Family Attitudes	ED	Education
AT2	Race Relations	ETH	Ethnic
AT3	Political Attitudes	GEO	Geography
JUD	Judgments	OCC	Occupation
FAM1	Family Structure	MISC	Miscellaneous
FAM2	Family, Other		

Since a Year by Variable correlation (association) is logically equivalent to change-in-the-variable, the simplest answer to our question--How much did things change between 1972 and 1982?--is given in Table 2.

TABLE 2

SIGNIFICANCE TESTS FOR YEAR BY VARIABLE

Result	Items	
	Number	Proportion
Not Significant ($p \geq .05$)	23	.207
Significant		
s.r.s.	24	.216
cluster adjusted*	64	.577
	111	1.000

*See text for explanation.

Applying text book formulas, 79 percent of the items showed a significant change. But GSS, like all sophisticated national surveys, uses a multistage or clustered design which allows it to collect more cases for the money at the price of some redundancy for variables where neighbors resemble each other (e.g., in most American neighborhoods you don't have to interview lots

of people to learn whether the neighborhood is White or Black). In theory one may calculate the redundancy (increased sampling variance due to clustering) for each variable. In practice, the problem is usually ignored. I steer between these extremes by following the rule of thumb (based on in-house NORC research) that one should multiply the sampling variances by 1.5, i.e., count each case as worth .667 simple random sample (s.r.s.) cases. In terms of Table 2 this is logically equivalent to multiplying the criterion value (magnitude of chi-square that would be significant at the .05 level) by 1.5. When this is done, 58 percent of the changes are statistically significant. (See Column 5, Table 1 for Chi-Squares.) Half of the GSS items show significant changes 1972-1982.

Is 58 percent low or high? The question is unanswerable, but applying the methodological principle that an arbitrary interpretation of complicated numbers is better than no interpretation at all, I'd say the proportion is not as high as one would expect from the pop sociologists metaphors.

In samples ranging up to 13,626 cases (see Column 3, Table 1 for Ns), statistical significance per se doesn't tell us much. However, a simple adjustment to chi-square transforms it into a useful, though not flawless, measure of magnitude. The rationale is this: for any particular table the value of chi-square is a function of N and of effect size. Given any particular "effect," the larger the N, the larger the chi-square. Conversely, for any chi-square, the smaller the N which generates it, the larger the effect. Therefore, the number of cases necessary to obtain significance for a particular table can serve as a crude measure of effect size. Equation 1 shows the calculation:

(1)

$$\text{Trivality} = \frac{\text{(Criterion Value of Chi-Square, s.r.s.)*(1.5 adjmnt. for clustering)}}{\text{Observed value of Chi-Square}} * \frac{N}{1500}$$

Consider, for example the item ABDEFECT (abortion attitude) on line 1 of Table 1. It has a chi-square value of 53.91. For 8 d.f. (9-1 years * 2-1 categories) a 15.507 value would be significant at the .05 level, and if we multiply the criterion by 1.5 to adjust for clustering, the criterion value is 23.26. Since 53.91 is larger than 15.507, ABDEFECT changed significantly. Dividing the criterion by the observed 23.26/53.91) we get .4315--which says the relationship would be significant even if N were only 43 percent as large as the actual size, 13594. Multiplying .4315 by 13594 we get 5865.8. Thus change in ABDEFECT would be statistically significant in an otherwise identical table with N reduced from 13,594 to 5866. To put this adjusted N in perspective, we divide it by 1500, the sample size of a typical GSS and the traditional size of national sample surveys. Since 5866/1500 equals 3.91, it would take a sample of a bit less than four GSSs to detect change in ABDEFECT.

Such adjusted chi-squares may be termed "trivialities" since high values along with significance suggest a relationship which is reliable but trivial in magnitude. Column 6, Table 1 gives trivialities for the 111 items, Figure 2 gives a stem and leaf display (Tukey, 1977, pp. 7-24). Scores for three key variables, cohort, prestige, and education (EDUC) are flagged.

FIGURE 2

DISTRIBUTION (Stem and Leaf Display) OF TRIVIALITY SCORES FOR 111 GSS ITEMS, 1972-1982

f	Cumulative	1st digit	decimal
13	111	0/1	7/0* 1 1 1 2 2 3 4 7 7 8 8
18	98	2/3	0 1 1 4 6 8/4 5 5 5 6 6 7 7 8 8 9 9
19	80	4/5	1 2 2 4 4 5 6 6 7 7 9 9/1 1 2 2 4 6 7
19	61	6/7	0 2 3 4 4 5 6 8 8**9 9 9 9/0 0 3 6 8 8
16	42	8/9	0 2 3 5 5 7 7 9/0 1*** 2 2 4 5 8
8	26	10/11	0 0 5/0 2 3 5 5
7	18	12/13	0 5 5/4 4 7 9
1	11	15	5
2	10	16/17	3/3
2	8	18/19	6/8
1	6	20	2
1	5	22	4
1	4	24	5
0	3	26	
1	3	28	9
1	2	30	1
1	1	32	7

* = Cohort	Maximum = 32.75	upper quartile = 9.58	median = 6.56
** = Education	minimum = 0.71	lower quartile = 3.81	mean = 7.81
*** = Prestige		quartile difference = 5.77	sigma = 6.10

The 111 trivality scores:

- range from 0.71 (COURTS) to 32.75 (CLASS)
- are centered around a value of seven (median=6.56, mean=7.81)
- are typically between four (lower quartile +3.81) and ten (upper quartile=9.58)
- have a standard deviation of 6.10

For comparison

- artificial data

  in which a dichotomy flip flops back and forth from 0 to 100 percent annually from 1972 to 1982--give a triviality of .012

  in which a dichotomy rises from 0 to 100 percent in even steps through the GSS years--give a triviality of 0.33

- triviality for the Gallup presidential popularity data in Figure 1 equals .241

All in all, the magnitude scores do not seem totally consistent with images of earthquakes or life boats hurled madly about.

One way to look at these results is to ask how many items have triviality scores of 2.00 or less. Roughly speaking, with triviality scores greater than 2.00 we should not expect significant differences if we compare a pair of GSSs. The top "stem" in Figure 2 tells us there are 13 such items or 12 percent of the total. Thus, for the vast majority of items we would not expect significant differences in marginals if we compare results in two years.

Even for the most volatile items, the pattern is generally one of gentle slopes rather than cataclysmic eruptions. Table 2 shows the 1972-82 marginals for the 13 least stable items--those with trivialities less than 2.00.

Thus, for example, the proportion stating their local courts are "not harsh enough" rose steadily from 74.2 percent in 1972 to 89.5 percent in 1982, the proportion approving of married women's employment rose from 64.0 percent to 74.2 percent, etc. Reading across the rows of Table 2 one gains the impression of steady increase. A more objective answer is given by weighted regression (Davis, 1978; Taylor, 1980). Table 3 summarizes:

TABLE 2

13 LEAST STABLE ITEMS DICHOTOMIZED AND PERCENTAGED

Item	Categories	Year									Trivia-lity*
		72	73	74	75	76	77	78	80	82	
Courts	Not harsh enough	.742	.805	.836	.851	.861	.879	.896	.884	.895	0.71
Cohort	Born before 1934	.394	.434	.451	.472	.490	.499	.599	.550	.578	1.05
Racpush	Disagree	.554	.557	na	.537	.573	.558	.655	na	.729	1.14
Adults	1	.121	.131	.144	.174	.204	.227	.245	.253	.278	1.18
News	Not "every day"	.314	na	na	.341	na	.377	.428	na	.464	1.18
Workmom	In labor force	.337	.416	.403	.410	.383	.479	.452	.470	.542	1.18
Fepres	Yes	.701	na	.778	.778	na	.771	.794	na	.834	1.19
Racseg	Disagree	.599	na	na	na	.607	.576	na	.688	.726	1.20
Raclive	Yes	.298	.413	.438	.343	.444	.406	.505	.478	.488	1.29
Racpres	Yes	.692	na	.799	.769	na	.748	.815	na	.828	1.31
Hompop	1 or 2	.370	.398	.411	.429	.479	.479	.492	.532	.546	1.43
Premarsx	Not wrong at all	.273	na	.307	.328	na	.365	.387	na	.410	1.74
Fework	Approve	.640	na	.678	.700	na	.654	.724	na	.742	1.79

*From Table 1.

TABLE 3

LINEAR TRENDS IN THE 13 LEAST STABLE ITEMS

Item	r^2	Equation		Significant Outliers
		a	b	
Courts	.73	-.15	+.0132	72, 78
Cohort	.93	-.90	+.0182	78
Racpush	.75	-.87	+.0193	72, 75, 77
Adults	.95	-1.14	+.0175	
News	.94	-.84	+.0160	
Workmom	.79	-.82	+.0163	
Fepres	.79	-.04	+.0107	72, 74
Racseg	.68	-.49	+.0145	72, 77
Raclive	.56	-.80	+.0161	72, 73, 74, 75, 77
Racpres	.56	.01	+.0100	72, 74, 77
Hompop	.96	-.93	+.0182	
Premarsx	.94	-.76	+.0145	
Fework	.64	-.01	+.0092	77

Using r^2 for the correlation between Year and Marginal Proportion as an index of goodness of fit: five exceed .90, nine exceed .70, all exceed .50. Thus, we can describe the changes quite accurately using straight lines. Figures 3, 4, and 5 illustrate. They show the fitted lines and the raw data points with outliers (years significantly different from the fitted value, using the .05 level for chi-square) circled.

The pictures in each case describe steady change. The 95 data points include 20 significant outliers but to my eye they form no patterns and 13 of the 20 are for race relations items where geographical patterning is likely and hence our significance levels dubious.

An additional impression from Figures 3, 4, and 5 is that the fitted lines are roughly parallel--that is, the rate of change for these items is homogeneous. Turning to the slope coefficients (the column headed "b" in Table 3) the range is only from .009 to .019, with a median of .016. Thus, the 13 most volatile items of the 111 appear to be changing non-explosively. Instead, the pattern is one of gradual increase at the rate of 1 to 2 percentage points per year.

In sum:

Conclusion I

> The rate of change in the 111 GSS items appears modest. Only 13 items change enough so one would expect significantly different marginals in pairs of GSS surveys and all of the 13 show a gradual linear pattern of 1 to 2 points change per year.

Substantive Themes

Because the trivialities range from 0.71 to 32.75, the items vary considerably in stability. Which ones are more volatile? Popular sociology would suggest:

regional shifts from the "snow belt" to the "sun belt"

migration from the central cities

an aging population

a white backlash on racial matters

political reaction and conservativism

shifts toward a postindustrial occupational structure

a breakup of the traditional family

greater employment for married women

increased sexual permissiveness

To test these hunches I grouped the 111 items into common sense categories. First, I divided them into three:

Attitudes:	positive or negative sentiments toward groups, policies, institutions, etc.
Judgments:	self-placements (e.g., social class) and self-evaluations (e.g., financial satisfaction)
"Objective":	characteristics of the respondent

Attitudes were subdivided as follows:

Race Relations:	nine items on segregation and integration. (Since most were not asked of black respondents in the early years, all tabulations on race were limited to whites)
Family:	ten items on abortion, women's employment, sex, etc.
Politics:	nine items on party identification, free speech, political issues, etc.

Objective characteristics were subdivided as follows:

Family, current structure:	ten items on marital status, household composition, etc.
Family, other:	nine items on age, sex parental family, etc.
Education:	eight items on respondent's, spouse's, and parents' schooling

TABLE 4

TOPIC AND CHANGE QUARTILE

Type	Category	Label	Quartile 4	3	2	1	Total	Percentage (1 and 2)	(1)
Attitudes									
	Race relations	AT2			2	7	9	100	78
	Family	AT1		1	4	5	10	90	50
	"Political"	AT3	3	1	3	2	9	56	22
	Total		3	2	9	14	28	82	50
Judgments (Success)		JUD	2	3	2	1	8	38	12
"Objective" Characteristics									
	Family, Structure	FAM1	1	1	2	6	10	80	60
	Education	ED		1	5	2	8	88	25
	Family, Other	FAM2	5	1	1	2	9	33	22
	Ethnic	ETH	1	1	2	1	5	40	20
	Geography	GEO	2	1	2	1	6	50	17
	Occupation	OCC	12	18	4		34	12	0
	Total		21	23	16	12	72	39	17
Miscellaneous		MISC	2			1	3		
			28	28	27	28	111	50	25

Ethnic: 5 items on religion, physical race, national origins, etc.

Geography: 6 items on size of place, region, etc.

Occupation: 34 items on respondent's and others' occupational classification, prestige level, etc.

Column 8 of Table 1 shows the category for each item using abbreviations shown in Table 4 below.

Table 4 cross tabulates these groupings against the triviality index divided into quartiles (Table 1, column 7).

Sociological lore suggests attitudes would be more volatile than "objective" characteristics and Table 4 supports this hunch: 82 percent of

the attitude items are in the top half on change (50 percent in the top quarter) in contrast to 39 percent of the objective characteristics (17 percent in the top quarter).

Variation within these broad groups is considerable, however. Among the most volatile are:

> Race relations with 100 percent in the top half, 78 percent in the top quartile
>
> Family structure with 80 percent in the top half, 60 percent in the top quartile
>
> Family attitudes with 90 percent in the top half, 50 percent in the top quartile
>
> Education with 88 percent in the top half, 25 percent in the top quartile

At the other extreme:

> Of the 34 occupational items, 12 percent are in the top half, none in the top quartile.

Most insights of popular sociology do not fare well in Table 4:

> Regional changes are not statistically significant
>
> While size of place (SRCBELT) is in the first quartile the change is small (the proportion living in the central city in the 12 largest SMSAS declines but only from 13.2 percent in 1972 to 10.2 percent in 1982)
>
> The age distribution does not change significantly
>
> While race attitudes are among the biggest changers, the shift is in a steadily more liberal direction (see RACPUSH, RACPRES, RACSEG, and RACLIVE in Figures 4 and 5)
>
> The occupational structure is perhaps the most stable of any of the groups. For example, DOTDATA--whether the job involves working with data--is in the third quartile with a triviality score of 9.26

The results for political conservativism are mixed:

> While the political items as a group do not change much and the six Stouffer free speech items, if anything, shift in the liberal direction, the strongest shift among the 111 is the 15 point jump in the punitive direction for COURTS

But in the case of family, sexual permissiveness, and women's employment, pop sociology seems vindicated. Thus, among the 13 items showing the strongest changes were:

> An increase from 12.1 percent to 27.8 percent for households with only one adult
>
> An increase from 33.7 percent to 54.2 percent for labor force participation among married women
>
> An increase from 70.1 percent to 83.4 percent in willingness to vote for a woman for president
>
> An increase from 37.0 percent to 54.6 percent in the proportion from households of size 1 or 2
>
> An increase from 27.3 to 41.0 in the proportion saying premarital sex is "not wrong at all"
>
> An increase from 64.0 percent to 74.2 percent in approval of married women working

In sum:

Conclusion II

> Three substantive clusters show relatively rapid change: a "liberal" trend in racial attitudes among whites, shrinking household size, and a "liberal" trend in sex roles and sex norms. At the opposite pole, a variety of measures of occupational structure show surprisingly low rates of change.

Popular sociology does not embarrass easily, but the results for occupation may be of concern to academic sociological theorists. If any notion permeates contemporary sociological thinking it is the proposition that changes in the occupational structure drive social trends in modern societies. Nevertheless, our data challenge that assumption.

I do not claim that the occupational structure of the U.S. is frozen, merely that it is changing much more slowly than the dependent variables it supposedly drives. Consider, for example, perhaps the most influential statement on occupational changes, Bell's The Coming of Post-Industrial Society (1973). He writes (p. 134) "Since 1920, the white-collar group has been the

fastest-growing occupational group in the society, and this will continue. In 1956, for the first time, this group surpassed the employment of blue-collar workers. By 1980 the ratio will be about 5:3 . . . ." Turning to Table 2-4 on the same page we see that in 1920 blue-collar workers made up 24.9 percent (of some undefined population) in contrast with 42.0 percent in 1960. Dividing the difference (.420 - .249 = +.171) by 40 years we get an annual rate of +.004275, which is about half of the smallest rate in Table 3. Applying the classic methodological rule it takes a big change in an independent variable to account for a small change in a dependent variable, the "giant plates" of the occupational structure are unlikely candidates to explain 1972-1982 changes.

What candidates are likely? Noting that Cohort (year of birth) is among the top 13 changers (triviality=1.05) and Education (triviality=6.87) shows more change than Occupation (triviality for Census Group=11.27), we next turn to a model which incorporates Cohort and Education, provides some insight into the less than volcanic changes in occupation, and goes some distance toward explaining the biggest changes in the data set.

A Model for Changes in the '70s

The model draws on two research traditions in Sociology. First, is the "achievement process" school (Blau and Duncan, 1967; Duncan, Featherman, and Duncan, 1972; Featherman and Hauser, 1978; Jencks, 1972; Jencks, et al., 1979). The focus is on variables, in particular, educational attainment that link parental and adult socioeconomic status. A second approach, much more diffuse, focuses on cohort replacement and educational upgrading as sources of change (Davis, 1975, 1980; Evan, 1959; Nie, Verba, and Petrocik, 1976, pp. 47-95; Ryder, 1965; Stouffer, 1955). We can dub this the "Stouffer School" since its main themes were first raised in his famous chapter "How Tolerant is the New Generation?".

There is no conflict between the two "schools" as both can be encompassed in a single structural model. Figure 6 presents the model in schematic terms, Figure 13 shows the parameter estimates.

The model has five variables or blocks

(I) Time, as indexed by year (1972, 1973, 1974, etc.)

(II) Cohort or year of birth. For cases in a particular study Cohort = Year - Age

(III) Ascriptive variables, in particular parental socioeconomic status (e.g., Father's occupation, mother's education) and ethnicity (race, national origin, perhaps region of birth)

(IV) Educational attainment (typically in years of schooling)

(V) Adult socioeconomic status (occupational prestige, earnings, subjective social class, etc.)

The main relationships which sociologists have examined are:

(A) The effect of Year on Cohort. Consider the population sampled for the GSS in a given year. It has some mean year of birth (e.g., 1928.1). A year later a new cohort of 18 year olds--born later than anyone in the previous year population--have entered and a number of older people, mostly born after the mean year, have died, while those remaining in the population age one year but do not change their year of birth. Consequently, the mean date of birth increases. This virtually inexorable tendency for a population to get "younger" while its people get older is the major source of system change in the model.

(B) Cohort and Education. At least until very recently, successive birth cohorts have received more schooling than their predecessors.

(C) Education and Adult SES. The positive relationship between years of schooling and adult SES is one of the cornerstones of the achievement process model.

(D-E) The effects of Year and Cohort on Adult SES are subtle and

controversial. They will be discussed at length later.

(F) Cohort and Ascriptive Variables. As the United States experienced modernization and discontinuous patterns of immigration, successive birth cohorts grew up in rather different family settings. For example, GSS data (Davis, 1981) estimate that in the birth cohort of 1890 about 10 percent were the children of High School graduate fathers and this proportion increased steadily to a value of almost 60 percent for the birth cohort of 1955. Similarly, Americans born at different times had vastly different chances of being children of immigrants.

(G) Ascription and Education. The effect of ascriptive variables such as Race or parental SES on educational attainment, another focus of the achievement process model, may be thought of as a measure of differential opportunity.

(H) Ascription and Adult SES. The correlation between ascriptive variables and adult SES, i.e., the persistance of inequality across generations, is the nub of "stratification" as a technical sociological concept. The magnitudes of the (H) coefficients before and after various controls are the major theme of achievement process research.

Assuming one has over-time data and the coefficients can be estimated, the model may be used to analyse change in various dependent variables as follows:

> The relationship between Year and the dependent variable is change in the dependent.
>
> Following classic principle of systems (path) analysis the relationship between the first and last variable in the system can be decomposed into portions associated with the various paths from first to last variable.
>
> Since path is (as we shall see) a particular change mechanism, we can use standard path analysis to see whether and how the intervening variables (II, III, IV, V) account for change in the dependent variable.

We are now ready to estimate a concrete version of the schematic model

in Figure 6.

For simplicity, I dropped block III. Ethnicity does not seem to change much during this period and there is doubt that parental SES has much to do with current behavior of the sort studied in GSS (Davis, 1982b). A case might be made for including "modernization" as we know the proportion of farm reared Americans has declined steadily (Davis, 1981) and farm origins do seem to predict some current behaviors. To explore this idea I estimated a model including farm origins. In terms of statistical significance, I found farm origins associated with cohort and with nine of the twelve most changeable items, net of Cohort, Education and Occupation. Following the logic of the model, the secular trend away from rural upbringing did contribute to the 1972-82 changes--but in every case the magnitudes were so small the variable was more trouble than it was worth.

In addition, I limited the analysis to GSS respondents 25 years of age and older because educational trajectories are iffy for respondents in their teens and early twenties. (Doing the analysis on the complete GSS sample would not change any of the conclusions appreciably.)

Although GSS includes many occupational measures, I selected the Hodge-Segal-Rossi (HSR) prestige scale as my measure of adult SES. It is amenable to regression, widely studied in Sociology, and captures much of the variance associated with its competitors. For example when one cross-tabulates HSR against the seven standard Census major groups in the '72-82 GSS $eta^2 = .713$; for HSR and DOTDATA $r^2 = .601$.

Table 5 gives the basic data for estimating the coefficients:

TABLE 5

BASIC DATA FOR ESTIMATING CHANGE MODEL
(Respondents Age 25 and Older, GSS '72-82)

(a) Univariate

	Year	Cohort	Education	HSR Prestige
Maximum	82	1957	20	82
Upper Quartile	78	1943	14	48
Mean	76.312	1928.093	11.664	39.309
Median	76	1929	12	39
Lower Quartile	74	1915	10	29
Minimum	72	1883	0	12
Standard Deviation	3.109	16.452	3.415	13.899
N	11823	11762	11779	10964

(b) Bivariate

	Cohort		Education		HSR Prestige	
			(1) Raw			
Year	+.9948		+.07156		+.01942	
		(.019)*		(.025)*		(.103)*
Cohort			+.07567		+.07940	
				(.004)*		(.019)*
Education					+2.31432	(.077)*
			(2) Standardized			
Year	+.18793		+.06516		+.004344	
		(.023)*		(.023)*		(.023)*
Cohort			+.35460		+.09398	
				(.021)*		(.023)*
Education					+.56857	
						(.019)*

* = .96 sigma confidence interval after multiplying estimated sampling variance by 1.50 to adjust for clustering.

Coefficient A, the effect of Year on Cohort is simply the bivariate regression:

$$\text{COHORT} = 1852.202 + .99448 * (\text{YEAR} - 1900) \qquad (2)$$

$$2s = \qquad (\pm.119)$$

The coefficient, +.994, says each year the GSS population becomes almost exactly one year "younger" in terms of its mean year of birth. Figure 7 illustrates.

In 1972 the average GSS adult was born in 1924; by 1982 the mean had moved to 1934. All nine points are close to the fitted value. Nevertheless, in standardized terms the beta is just .188 because, of course, enormous variation remains within each GSS. Since the number of years is arbitrary (If we ran the relationship out over many decades we could pump the beta up to almost any size we wish) we shall stick with raw coefficients, although standardized values are reported in Figure 13.

Moving to Educational Attainment (years of schooling) the multiple regression equation is:

$$\text{EDUCATION} = -134.20476 + .07581 * \text{COHORT} - .003829\ (\text{YEAR} - 1900) \qquad (3)$$

$$2s = \qquad (\pm.005) \qquad (\pm.024)$$

The coefficient for cohort is 15 times its two sigma (.05) confidence interval (all confidence intervals have been adjusted for clustering by assuming N=.667N). The coefficient, +.07581, says that each year's delay in being born adds a little less than a tenth of a year to mean education. Putting it another way, a cohort decade seems to affect schooling about 3/4 of a year. Figure 8 illustrates.

Save for blips in the 1895 and 1955 cohorts the 14 data points fit the straight line very well. Does the droop for the 1955 cohort presage an end to the continual expansion of education? Some authorities predict a leveling off

(Freeman, 1976) but since the 1982 mean is estimated at 12.4 (Figure 8) under the assumption of a ceiling around 13.0, mean Education will probably continue to increase (although perhaps at a slowly declining rate) during the next decade.

The coefficient for year is much smaller than its two sigma confidence interval, i.e., once Cohort is controlled, year has no direct influence on Educational levels. In this period at least, people got all the schooling they were going to get by age 25.

But this is not to say that Educational levels are frozen. Rather, following path principles (see Figure 13), the intervening variable, COHORT, explains the correlation between YEAR and EDUCATION. Thus:

$$\text{Change in Education} = -.003829 + (.9948 * .07581 = .0754158) = .0715868 \ .$$

The model implies that cohort succession raised the mean level of American Education about 3/4 of a year between 1972 and 1982. Figure 9 illustrates in regression form the same relationship that produced a triviality of 6.87 in Table 1.

The final equation in the model treats HSR prestige scores as dependent:

(4)

$$\text{HSR} = 223.30548 - .05211 * (\text{YEAR}-1900) - .10854 * \text{COHORT} + 2.50808 * \text{EDUCATION}$$
$$2s = \qquad (\pm.085) \qquad (\pm.017) \qquad (\pm.082) \ .$$

In English, an additional year of . . .

Education is associated with a 2.5 point increase in HSR

Recency of birth (COHORT) is associated with a tenth of a point decrease in HSR

Time (YEAR) has no significant net effect on HSR scores

The Education effect is familiar and is, indeed, one of the larger and

most reliable correlations in contemporary Sociological research. The other two are not only less familiar but subtle and ambiguous because of the complexities of interpreting Age-Period-Cohort data.

Coefficient E (Figures 6 and 13) is, by definition, the (statistical) effect of time (years) on prestige for persons in a particular Cohort and Level of Schooling. It might be interpreted as the effect of experience or seniority. But equally plausibly, it could be interpreted as across board structural changes in the occupational system (the earthquakes in the introduction). In either case the effect is tiny and unreliable.

There is no evidence whatsoever in these data that Americans improved or declined in occupational prestige from 1972 to 1982 over and above any effects of Cohort and Education.

Coefficient D is small but highly reliable (13 times its standard error). It says within years and educational levels, the younger the person in terms of birth year the lower his average HSR score, such that otherwise similar people born a decade apart would differ by 1 HSR point. Such an effect has at least two interpretations: Within a given year, Cohort differences may be viewed as measures of seniority or experience. If so, inexperienced people seem to pay a small but reliable price in HSR. But if coefficient D taps "experience," it seems to me that coefficient E should also be positive because it too seems to tap experience. An alternative interpretation is the notion of "status inflation," the hypothesis that the return on educational investment has declined for more recent entrants into the labor force (Freeman, 1976; Easterlin, 1980).

Since the hypothesis is controversial (but highly strategic for understanding social change in the contemporary U.S.), we shall look at the raw data in some detail. First, to get some sense of scale, Figure 10 shows the

relationship between HSR scores and the familiar Census occupational groups.

We see:

> The classic white collar - blue collar gap in prestige: the bottom quartile for white collar workers (HSR=39) exceeds the top quartile for blue collar workers (HSR=36)
>
> The rather high prestige score (HSR=41) for the 70 percent of farm workers coded as farm owners, operators and tenant farmers
>
> The gap between the upper and lower white collar groups (professionals and managers vs. sales and clerical, a similar gap between crafts workers and other blue collar workers (operatives, service, labor) and the similarity of prestige for crafts workers and the bottom white collar groups

From all these well known patterns, I divided scores at the median and quartiles for all cases, giving four groups, as shown in Table 6.

TABLE 6

GROUPED HSR SCORES AND CENSUS OCCUPATIONAL CATEGORIES
(GSS 1972-1982)

	HSR Score				
Census Group	Label Score	Lower 12-28	Lower Middle 29-37	Upper Middle 38-47	Upper 48-82	All Respondents
Prof., Tech., Mgr.		.000	.006	.121	.804	.352
Farm		.029	.001	.080	.000	.026
Sales, Clerical		.041	.397	.469	.109	.125
Crafts		.001	.190	.258	.052	.254
Operatives, Labor Service		.929	.405	.072	.034	.242
TOTAL		1.000	.999	1.000	.999	.999
N		2899	3347	2875	3279	12,400
Col. proportions		.234	.270	.232	.264	
					.496	

Chi-Square = 13351.867, d.f. = 12, Triviality = .019

Upper States (HSR=48-82): Upper status jobs include three quarters of the professional and managerial workers and exclude more than three quarters of workers in the other categories. Table 6 shows 80 percent of the upper status workers are professionals and managers

Upper-Middle (HSR=38-47): Upper middle jobs exclude most managers and professionals and most operative-service-labor workers, but include big portions of the lower white collar and crafts jobs. Table 6 shows that 73 percent of the upper middles are sales-clerical-crafts

Lower-Middle (HSR=29-37): Lower middle jobs are sales-clerical-blue collar, but tilted toward the non-crafts part of blue collar. Table 6 shows that 40 percent are non-crafts blue, 60 percent are crafts and lower white collar

Lower Status: These are mostly (93 percent) operative-service-labor jobs

With these groupings as a yard stick, let us look at the mean HSR scores by cohort for persons who have completed 0-8, 9-11, 12, 13-15, 16, and 17-20 years of schooling, i.e., primary school, part high school, high school graduates, part college, bachelor's degree recipients, and those with graduate study. Table 7 and Figure 11 show the results.

To my eye, the data support the "inflation" interpretation. For each of the six education groups the overall trend is down--that is, for Americans in later cohorts, the same amount of schooling seems to have a "lower pay off" in terms of HSR scores. Thus:

Prior to 1915, High School graduates are clearly upper middles, from 1915 to 1945, their means lie right on the line between upper middle and lower middle, and for the 1950 and 1955 cohorts the means are clearly lower middle.

Part college (13-15 years) start on the border between upper middle and upper, but end up in the center of upper middle.

Bachelors (16 years) start around HSR=55 (about the median for professionals and managers) and end up perilously close to the border between upper middle and upper.

For each of the six education groups, Americans born after the Great Depression have HSR scores characteristic of the next higher education group at the turn of the century, e.g., part college Americans born in 1950 and 1955 have about the same HSR scores as high school graduates born in 1890 and 1900.

TABLE 7

MEAN HSR SCORE BY COHORT AND YEARS OF SCHOOLING
(Respondents Age 25 and Older, GSS 1972-82)

	Years Completed					
COHORT	0-8	9-11	12	13-15	16	17-20
1955	27.0	29.8	34.6	40.9	48.6	54.8
	(9)=N	(28)	(146)	(79)	(45)	(22)
1950	26.1	30.7	36.0	41.2	47.6	58.6
	(22)	(111)	(352)	(276)	(173)	(95)
1945	28.0	30.7	37.6	43.6	52.3	56.1
	(64)	(171)	(541)	(294)	(192)	(157)
1940	28.3	31.3	38.0	43.8	55.5	59.5
	(66)	(175)	(459)	(213)	(102)	(103)
1935	29.6	31.0	38.6	43.5	53.9	59.6
	(109)	(170)	(385)	(183)	(98)	(70)
1930	28.7	31.7	38.3	43.7	52.7	59.8
	(128)	(169)	(337)	(134)	(82)	(81)
1925	29.0	32.1	38.6	44.7	50.0	59.9
	(165)	(238)	(359)	(156)	(78)	(61)
1920	29.1	32.7	37.9	45.3	51.1	59.5
	(203)	(188)	(321)	(140)	(64)	(54)
1915	29.9	32.6	38.0	44.3	54.6	58.5
	(265)	(187)	(278)	(109)	(44)	(42)
1910	30.1	32.4	41.0	44.6	52.4	59.8
	(253)	(148)	(183)	(89)	(32)	(36)
1905	28.9	34.8	39.0	46.7	56.5	60.0
	(267)	(134)	(98)	(59)	(35)	(15)
1900	32.0	35.1	41.8	49.8	55.0	63.6
	(196)	(73)	(52)	(41)	(36)	(13)
1980*	33.4	39.8	44.7	47.1	55.1	66.2
	(183)	(37)	(40)	(35)	(22)	(8)

* = 1885, 1890, 1895 combined.

None of which is to say that "Education doesn't make a difference any more." Figure 12, for example shows the relationship between Years of School and HSR score for three cohorts, 1900, 1930, and 1955. Each shows a steep slope and the three lines are roughly parallel (there is little interaction) but there is a roughly six point gap between the 1900 and 1955 data, which, of course is exactly what one would expect from multiplying (D = -.10854)*(1955 - 1900 = 55) = 5.97.

Figure 13 shows the complete model.

The model can be used to see why changes in the occupational structure from 1972 to 1982 turn out to be glacial rather than volcanic. Decomposing Change in Prestige (the bivariate coefficient for Year and Prestige):

Reliable Effects		
Improved credentials = (A*B*C) = .9948 * .07581 * 2.50808		= +.1891488
Status inflation = (A*D) = .9948 * -.10854		= -.1079756
		+.0811732
Unreliable Effects		
Experience, Structural Shifts (E) = -.05211		-.05211
"Adult Education" = -.003829 * 2.50808		-.0096034
		-.0617134
	TOTAL	+.0194598

Each year improved credentials (Cohort succession and cohort differences in schooling) raised the mean HSR about one fifth of a point, while status inflation (the lower HSR scores of more recent cohorts) lowered it about a tenth of a point. The net consequence of these contradictory causal processes is a net increase of about a tenth of an HSR per year.

In addition, the bivariate relationships contains two unreliable negative components for "structural changes in the occupational system" and what might be called "adult education," i.e. year differences in education net of cohort times the coefficient for Education and Prestige.

In sum there was virtually no change in Occupational Prestige levels from 1972 to 1982 because status inflation cut into the improved credentials

produced by cohort succession and the effect of experience or structural change was, if anything, negative.

These findings do not fully confirm the claims of the "cohort Cassandras" (e.g. Easterlin, Freeman, Blumberg, 1980)--in the Figure 11 (to my eyes at least) suggests a long term decline rather than a precipitous shift for the post-World War II baby boom cohorts. Whether they gibe with the results of the Attainment Process school is not easy to say since these authors appear not to have treated the problem in detail at any one place in their encyclopedic writings. Featherman and Hauser (1978, p. 252) suggest that age controlled Duncan SEI scores increased from OCGI to OCGII, but in an analysis with Education and family background controlled (p. 348) conclude "white men of all ages in 1973 could expect to hold lower average socioeconomic statuses, net of education and social background than their counterparts in 1962." They reach a similar conclusion (negative shift net of background and Education) in their 1977 report on CPS data (Hauser and Featherman, 1977, p. 131).

In sum:

Conculsion III

> A structural model comprising Year, Cohort, Education, and Occupational Prestige shows that (a) Each calendar year raised the mean year of birth .99448 years, (b) mean years of schooling increased about three quarters of a year during the decade, entirely because of cohort succession and (c) an increase in occupational prestige due to Educational upgrading was almost offset by status inflation across cohorts so net change in prestige from 1972 to 1982 was trivial.

Accounting for Change

So far we have used the model to illuminate the unanticipated stability of occupational prestige from 1972-1982. Now we ask whether it can account for changes in the relatively volatile items shown in Table 2. (If it does well on big changes, one may expect it to do even better on smaller changes in Table 1).

To proceed, we simply regress each of the 12 items (recoded to 0-1 with 1 assigned to the increasing category) on Year, Cohort, Education, and Prestige, as shown in Table 8.

TABLE 8

Net Effects (multiple regression) Of Year, Cohort, Education, And HSR Score On Twelve Most Volatile GSS Items

	Per Year					
	A	B		Per Year of	Per Year of	Per Point
Item	Bivariate	Net	(A-B)/A	Cohort	Education	of HSR
FEWORK	1.055	.290	72%	.557	2.933	.693
2 sigma=	.467	.411 NS		.084	.482	.111
FEPRES	1.199	.669	44%	.414	1.648	.032
2 sigma=	.424	.384		.078	.451	.104 NS
PREMARSX	1.790	1.028	43%	.732	.474	.018
2 sigma=	.462	.416		.085	.489 NS	.112 NS
RACPRES	1.073	.637	41%	.357	2.030	.698
2 sigma=	.576	.567		.189	.680	.155
WORKMOM	1.457	.881	40%	.408	3.553	.130
2 sigma=	.660	.652		.148	.895	.178 NS
NEWS	1.694	1.167	31%	.798	-3.686	-.102
2 sigma=	.472	.456		.093	.535	.123 NS
RACSEG	1.392	.980	30%	.328	2.476	.318
2 sigma=	.650	.636		.129	.761	.174
RACPUSH	1.541	1.097	29%	.356	2.449	.244
2 sigma=	.594	.576		.117	.691	.158
RACLIVE	1.108	.877	21%	.213	.665	.067
2 sigma=	.657	.664		.134	.796 NS	.182 NS
COURTS	1.549	1.698	-	-.126	-.385	.023
2 sigma=	.389	.395		.081	.464 NS	.107 NS
ADULTS	1.812	2.291	-	-.494	.311	.105
2 sigma=	.401	.401		.083	.471 NS	.108 NS
HOMPOP	1.871	3.299	-	-1.495	.800	.098
2 sigma=	.494	.408		.085	.479	.110 NS

NS = coefficient above is not statistically significant at the .05 level
note: metrics are in terms of percentage points (proportions x 100)

The left hand column of Table 8 gives the bivariate coefficient for Year and the dependent dichotomy. Thus, the 1.055 for FEWORK says that approval of married women working increased at the rate of 1.055 percentage points per year. Since 1.055 is larger than its two sigma confidence interval below, the change is statistically significant.

Although the model runs aground on family composition and punitiveness, for most of the fastest changing items, the Stouffer model--social change through the replacement of older, poorly educated cohorts by newer, better Educated cohorts--works well. Even more clearly, its competitor--social change through evolving occupational structures--does poorly.

In sum

Conclusion IV

For the majority of the most volatile items, the Stouffer model, centering on Cohort replacement and Educational upgrading, accounts for 30 to 40 percent of the change.

Conclusion

Compared with the dramatic metaphors of pop Sociologists the actual rates of social change, as indexed in the GSS from 1972-1982 are modest. Even the most volatile items in the set seem to be moving in a linear fashion at the rate of 1 or 2 percentage points changer per year.

Compared with the themes of pop Sociology, GSS trends certainly agree that a restructing of family composition and a reevaluation of sex roles and behavior are among the main trends of the period. However, the strongly liberal trend among whites in Race relations does not support popular notions and a number of other widely publicized shifts (e.g., migration to the "Sun Belt") are not detectable with our data.

Compared with the theoretical concerns of academic Sociology GSS trends suggest considerable merit in the Stouffer model of social change

centered on cohort replacement and Educational attainment. The remarkable stability of numerous occupational measures and the weak correlations between occupation and changeable items, however, suggests that those Socological theories centering on occupational structures as the main engine of social change are not tightly linked to the data in the contemporary United States.

Glancing up and down the left hand column we see that, as expected, the items were increasing at the rate of 1 or 2 points per year.

Column 2 gives the year coefficient from the multiple regression run including Year, Education, and HSR score. For FEWORK, the net coefficient shrinks to .290 (about a quarter of a point) and is no longer significant. Hence, the model explains the increased approval of women's employment.

Column 3 tells how much of the original relationship is explained, i.e., divides the difference between bivariate and net by the bivariate. The median is 30 percent. On the average our model explains 30 percent of the change. Putting it another way, for half the variables, COURTS, ADULTS, AND HOMPOP, no percentage appears.

Observe, however, for the three bottom variables, COURTS, ADULTS, and HOMPOP, no percentage appears. This is because the net coefficient is <u>larger</u> that the bivariate, i.e., our model has acted as a suppressor variable. In other words, for punitiveness and family composition we have tended to become more like those in the older generation rather than those in the younger.

The last three columns give the net coefficients for the predictor variables, COHORT, EDUCATION, AND HSR, i.e., the effect of a unit change for each on percentages for the dependent variable. To interpret them it is helpful to multiply each coefficient by the amount it changed from 1972 to 1982. Thus, for example, the analysis suggests that a year of COHORT affects FEWORK .557 or half a percentage point. Since the mean on COHORT shifted

9.9448 during the period the total effect of COHORT on Attitudes Toward Married Women working is 9.9448 * .557 = 5.539. Thus, sheer cohort replacement raised favorability to women's employment 5 percentage points from 1972 to 1982.

Table 9 gives the complete results.

TABLE 9

Changes for Decade 1972-1982

Item	COHORT[1]	EDUCATION[2]	HSR[3]
FEWORK	5.539	2.212	0.563
FEPRES	4.117	1.243	NS
PREMARSX	7.280	NS	NS
RACPRES	3.550	1.531	0.027
WORKMOM	4.057	2.680	NS
NEWS	7.936	-2.780	NS
RACSEG	3.262	1.867	0.258
RACPUSH	3.540	1.847	0.198
RACLIVE	2.118	NS	NS
COURTS	-1.253	NS	NS
ADULTS	-4.913	NS	NS
HOMPOP	-14.867	0.603	NS

[1]Coefficient in Table 9 x 9.9448.

[2]Coefficient in Table 9 x .754158.

[3]Coefficient in Table 9 x .811732.

The implications of Table 9 are clear: Cohort replacement is the most powerful variable in the model--for 9 out of the 12 items it accounts for 2 to 7 points change per decade. Education is second--for about half the variables it accounts for one or two points change. Occupational prestige has virtually no effect at all because its coeffecients are mostly insignificant and its rate of change is small.

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FIGURE 1

PRESIDENTIAL POPULARITY AND CHANGE IN REAL GNP (1972-1982)

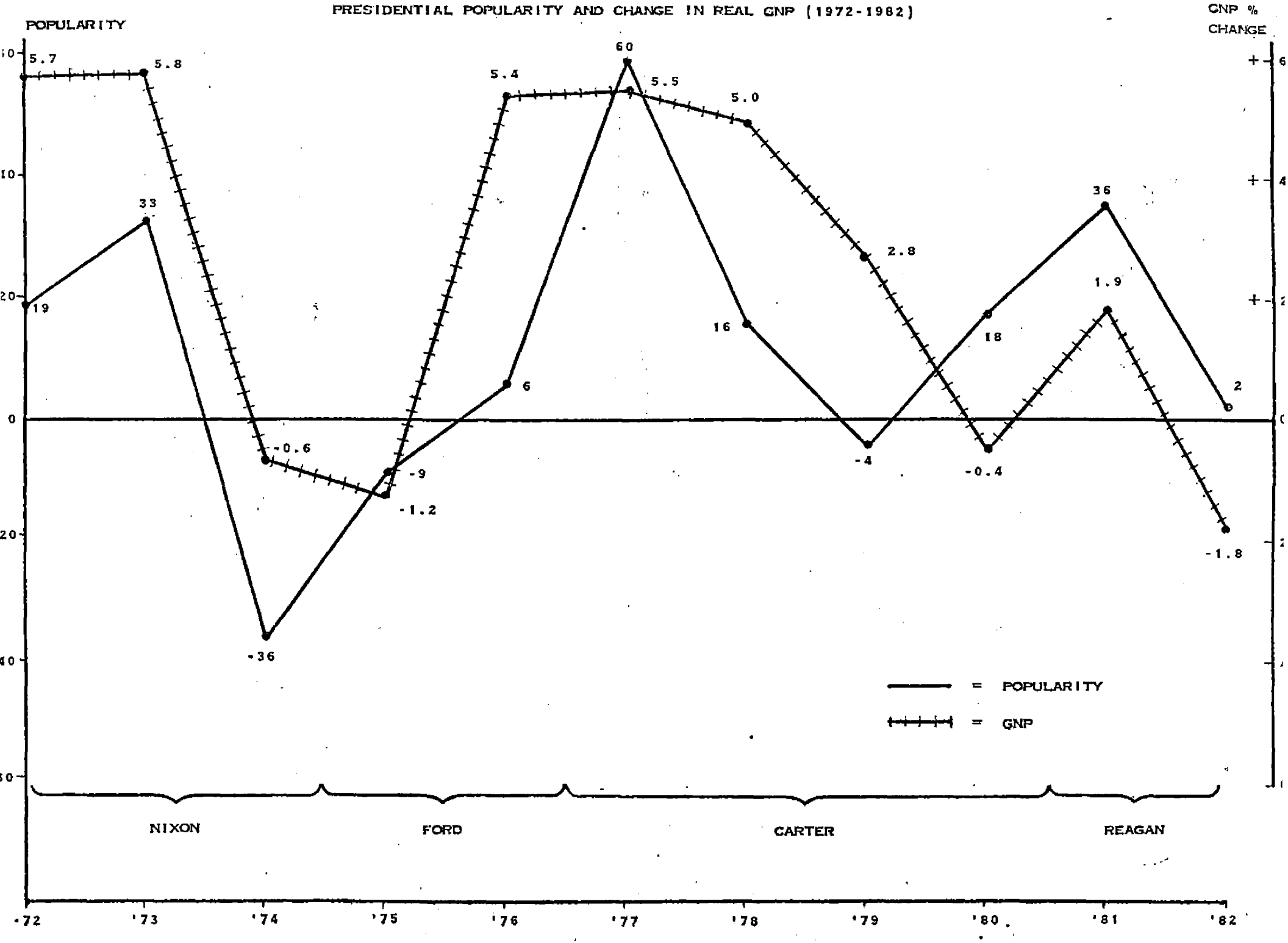


FIGURE 3

TRENDS IN ITEMS WITH $R^2 > .90$ IN TABLE 3

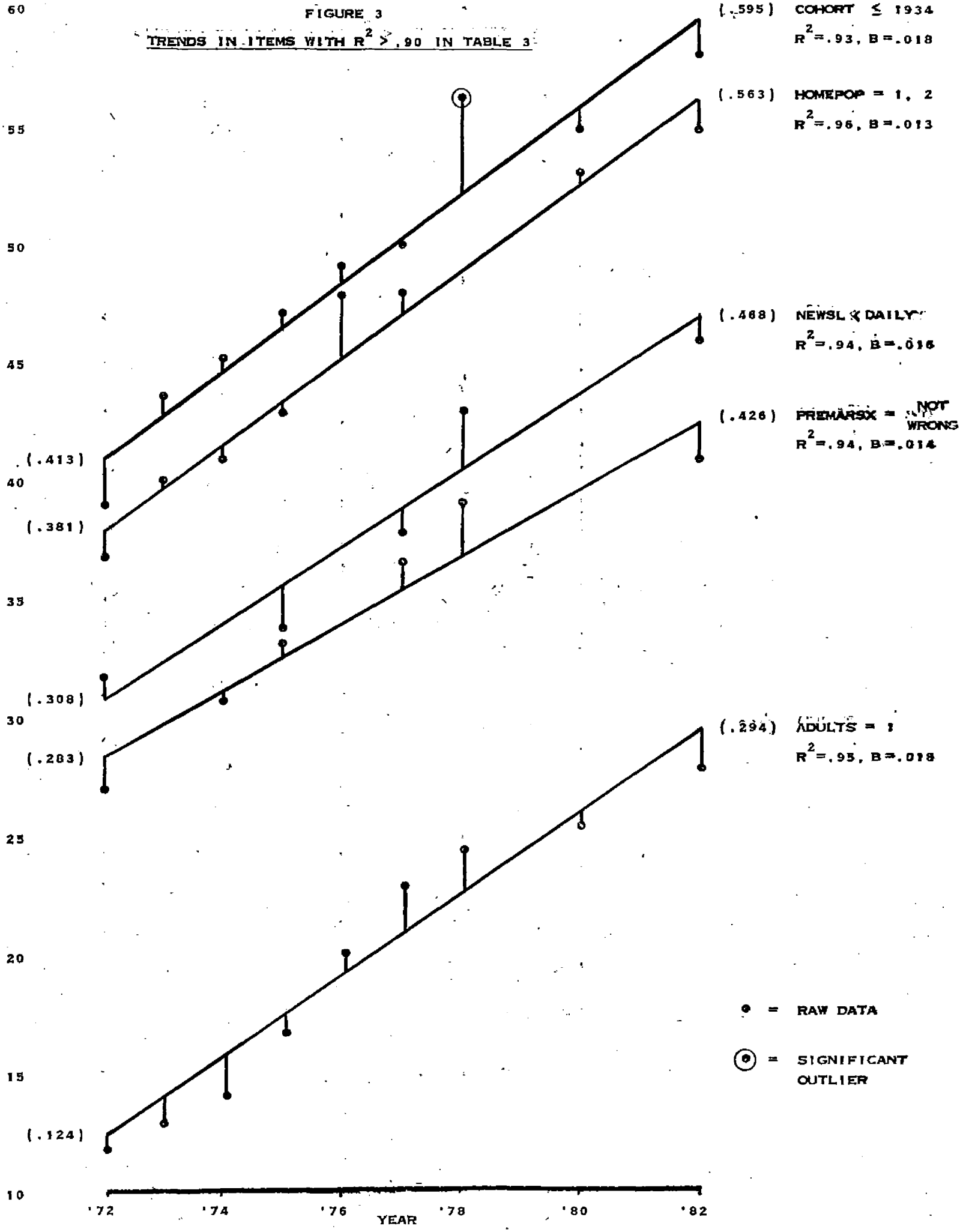


FIGURE 4

TRENDS IN ITEMS WITH R^2 = .70-.89

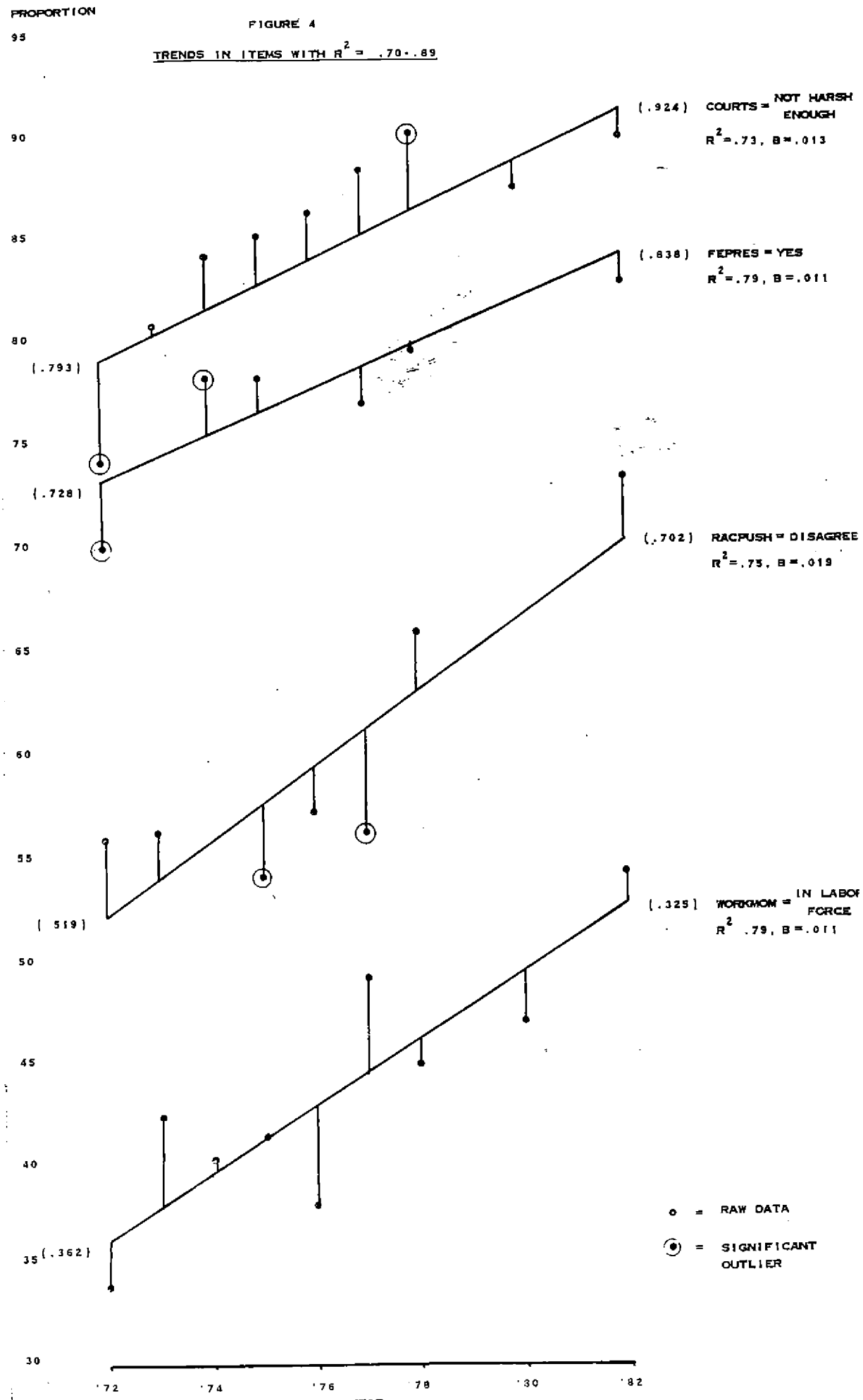


FIGURE 5

TRENDS IN ITEMS WITH R^2 = .50-.69

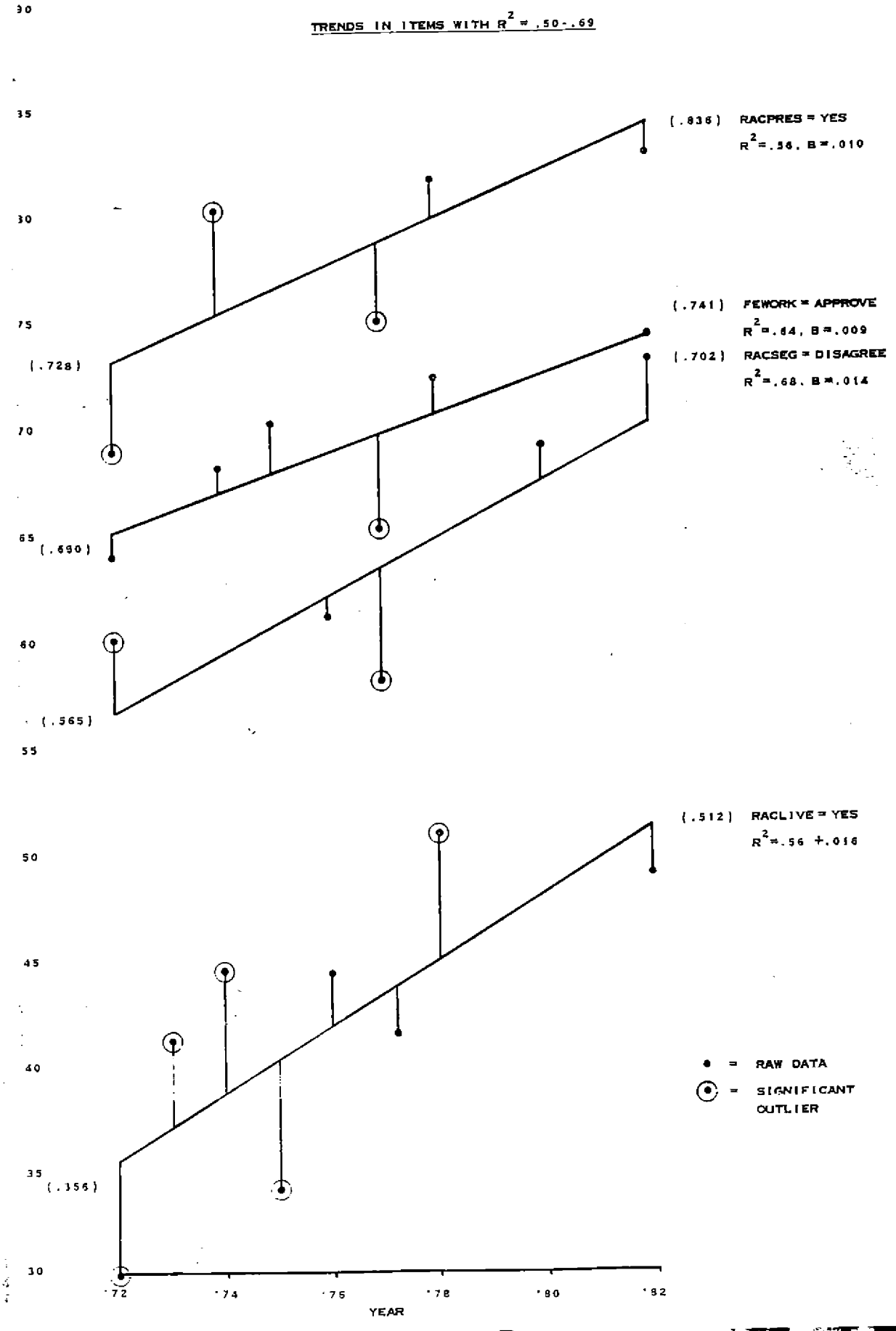


FIGURE 6

CHANGE MODEL (SCHEMATIC)

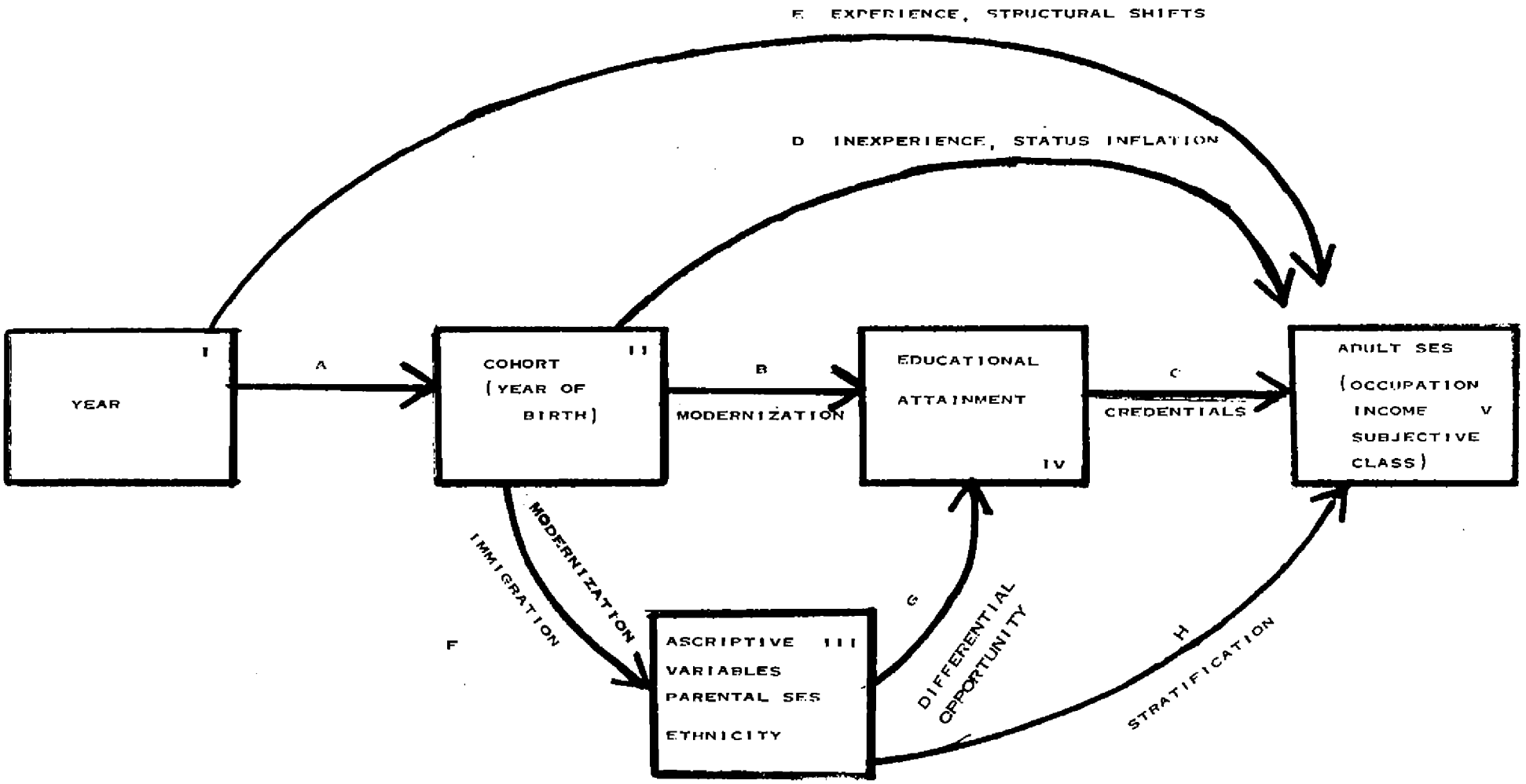
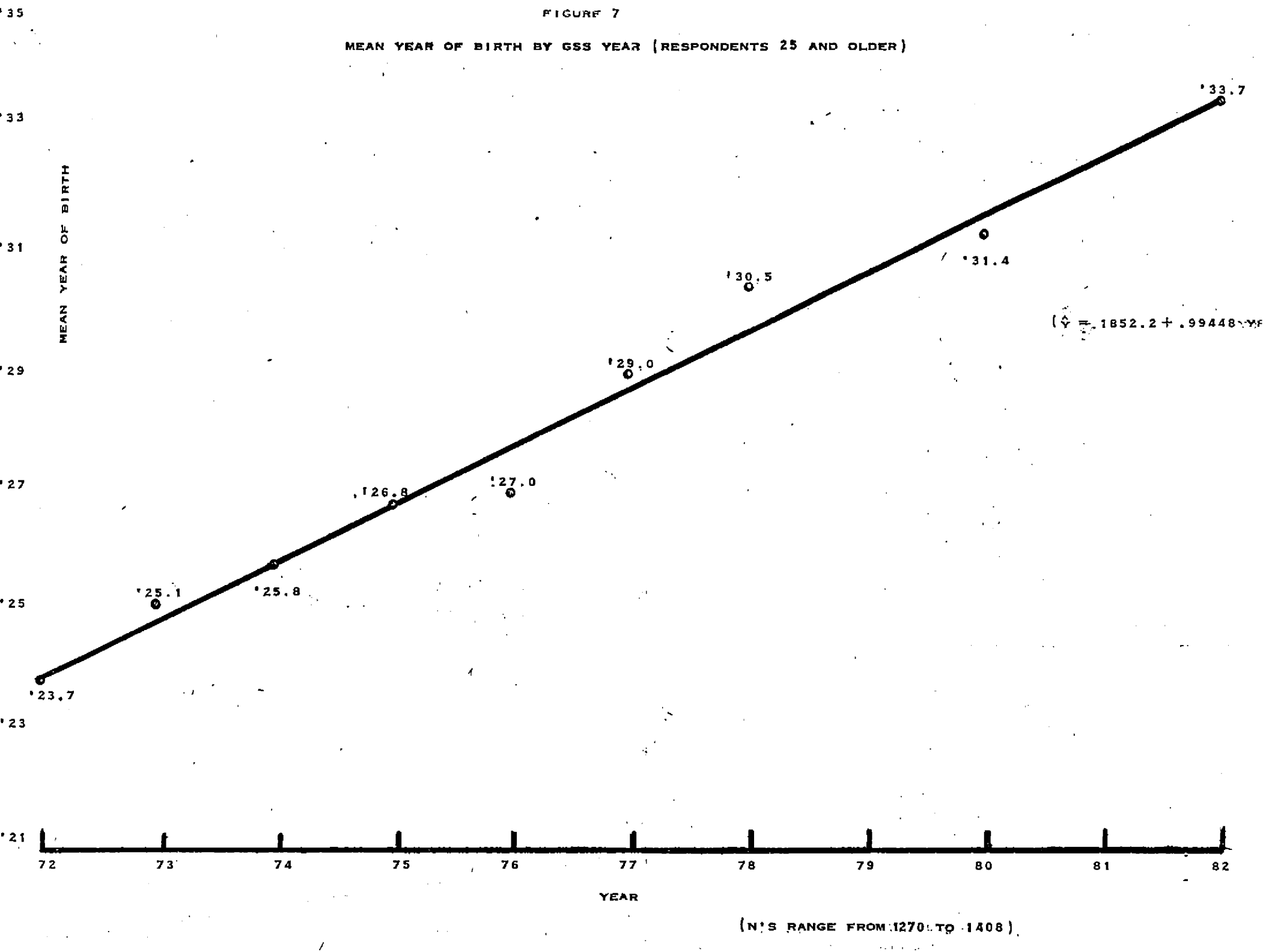


FIGURE 7

MEAN YEAR OF BIRTH BY GSS YEAR (RESPONDENTS 25 AND OLDER)



(N'S RANGE FROM 1270 TO 1408)

FIGURE 8

MEAN EDUCATION BY COHORT (AGE $\geq$ 25)

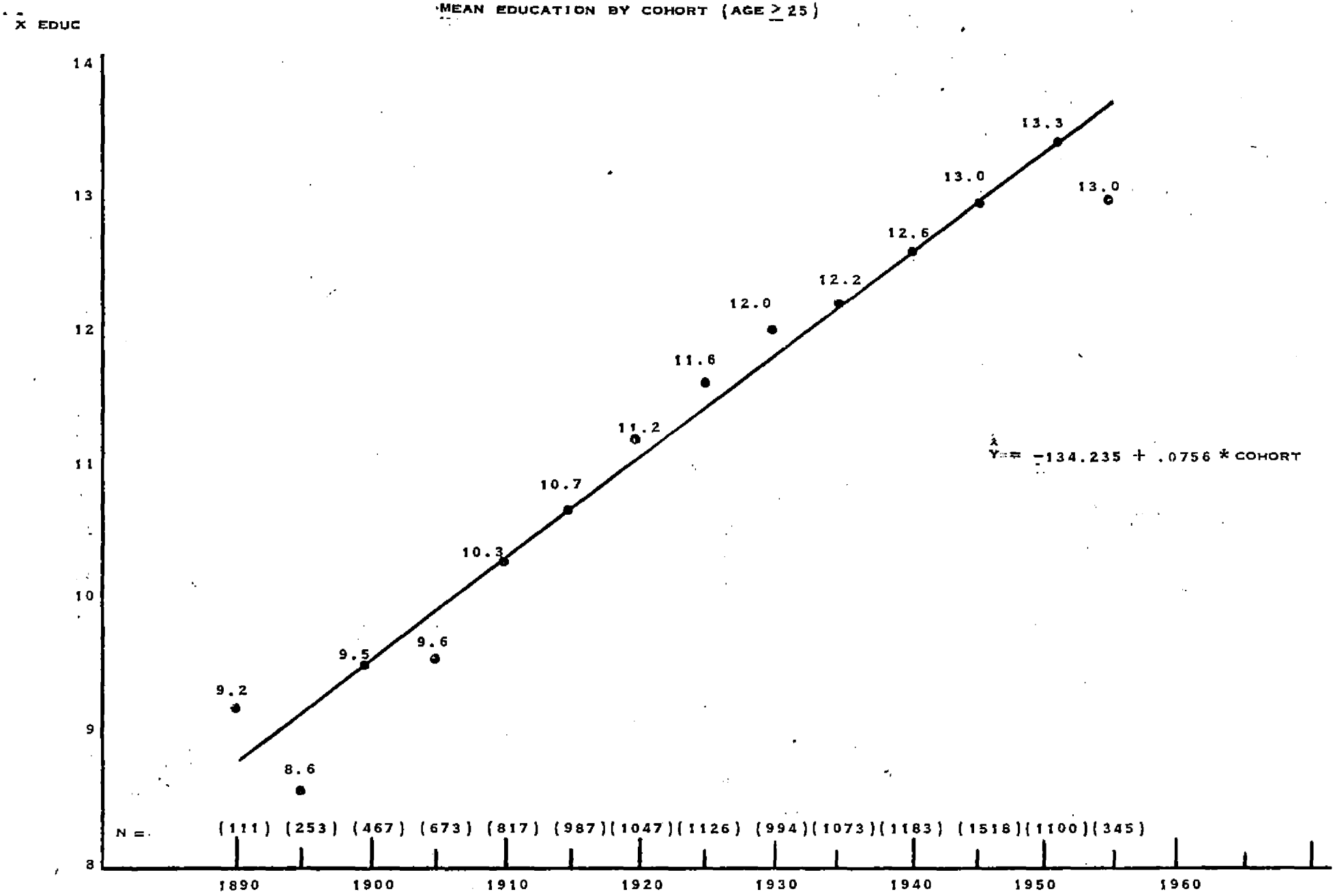
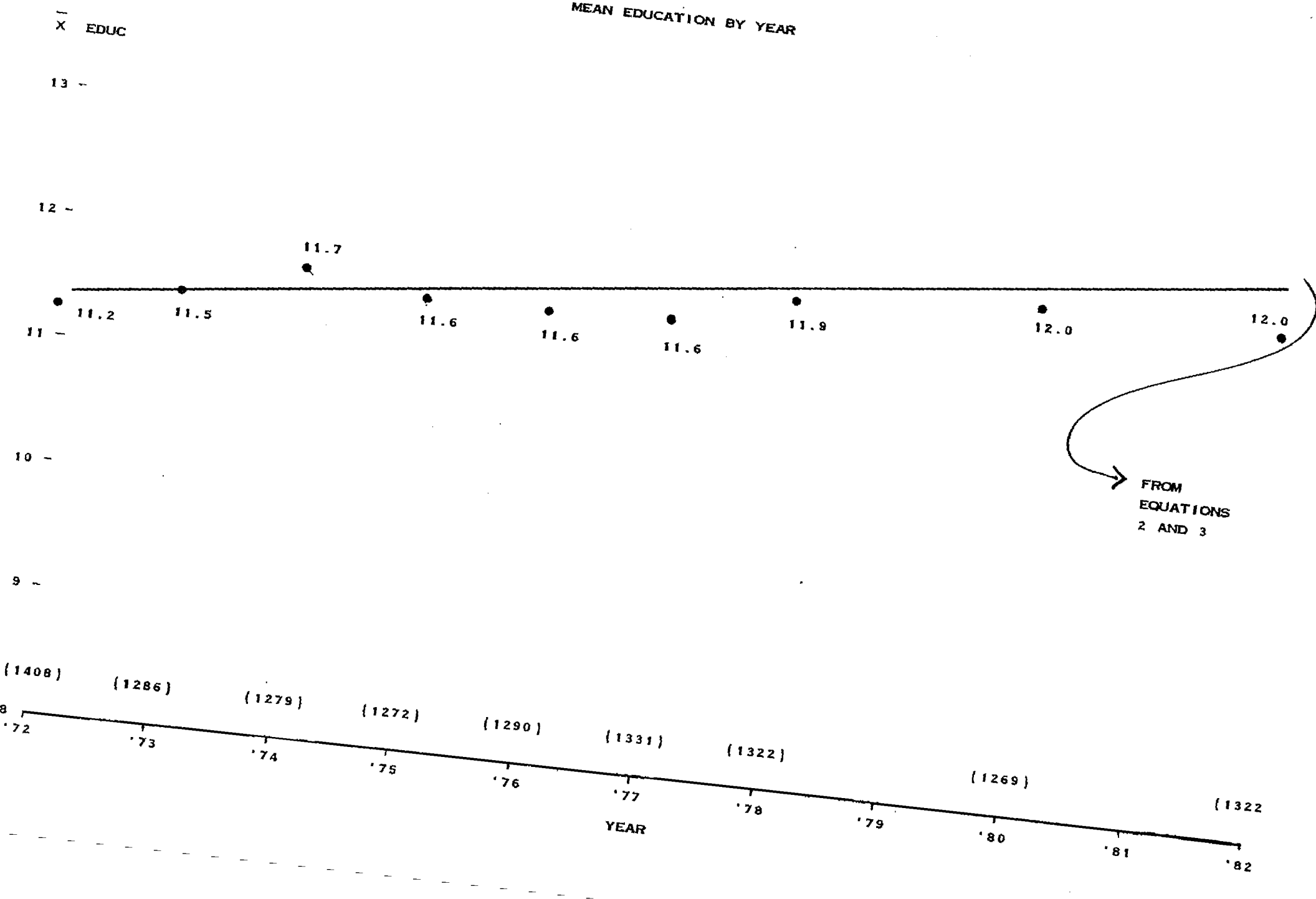


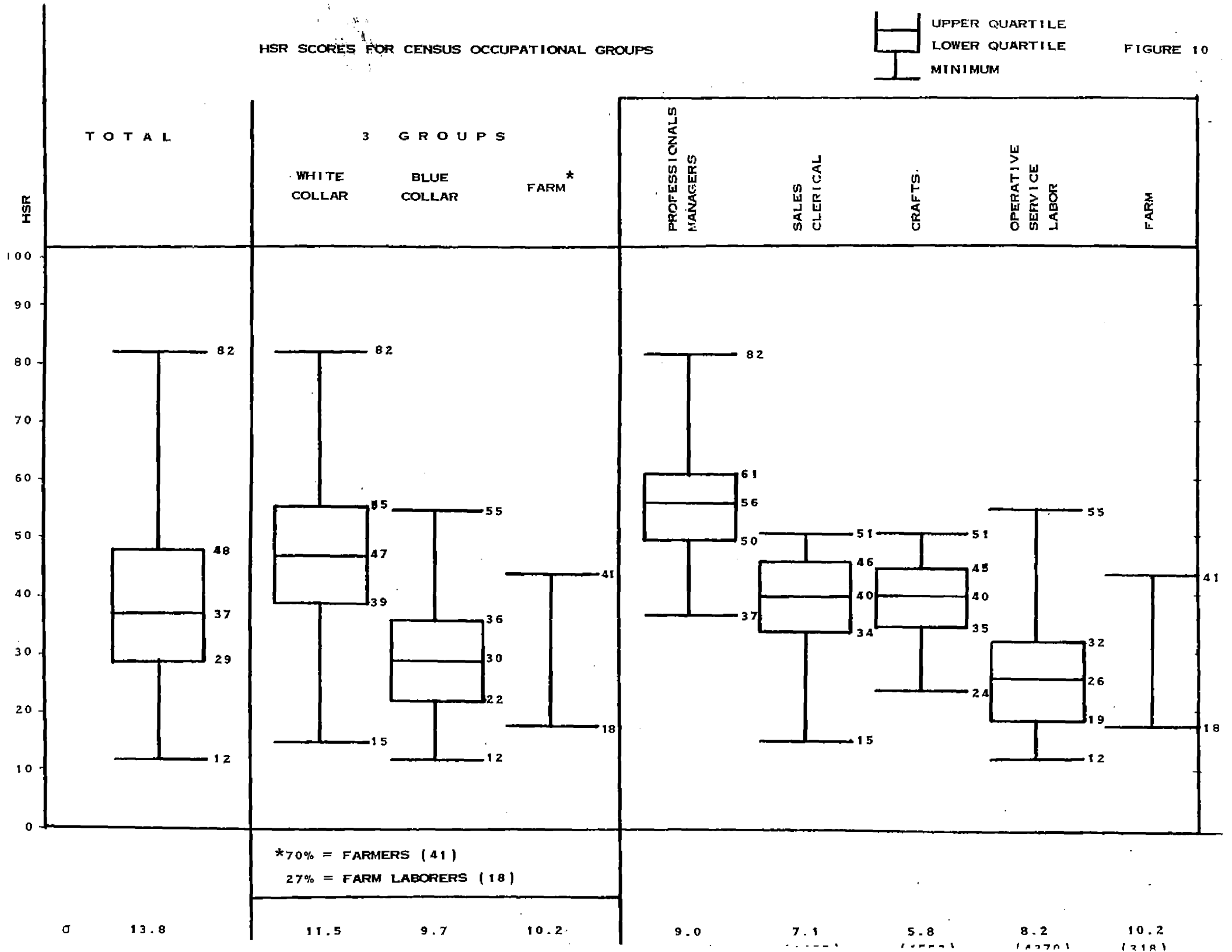
FIGURE 9

MEAN EDUCATION BY YEAR



HSR SCORES FOR CENSUS OCCUPATIONAL GROUPS

FIGURE 10



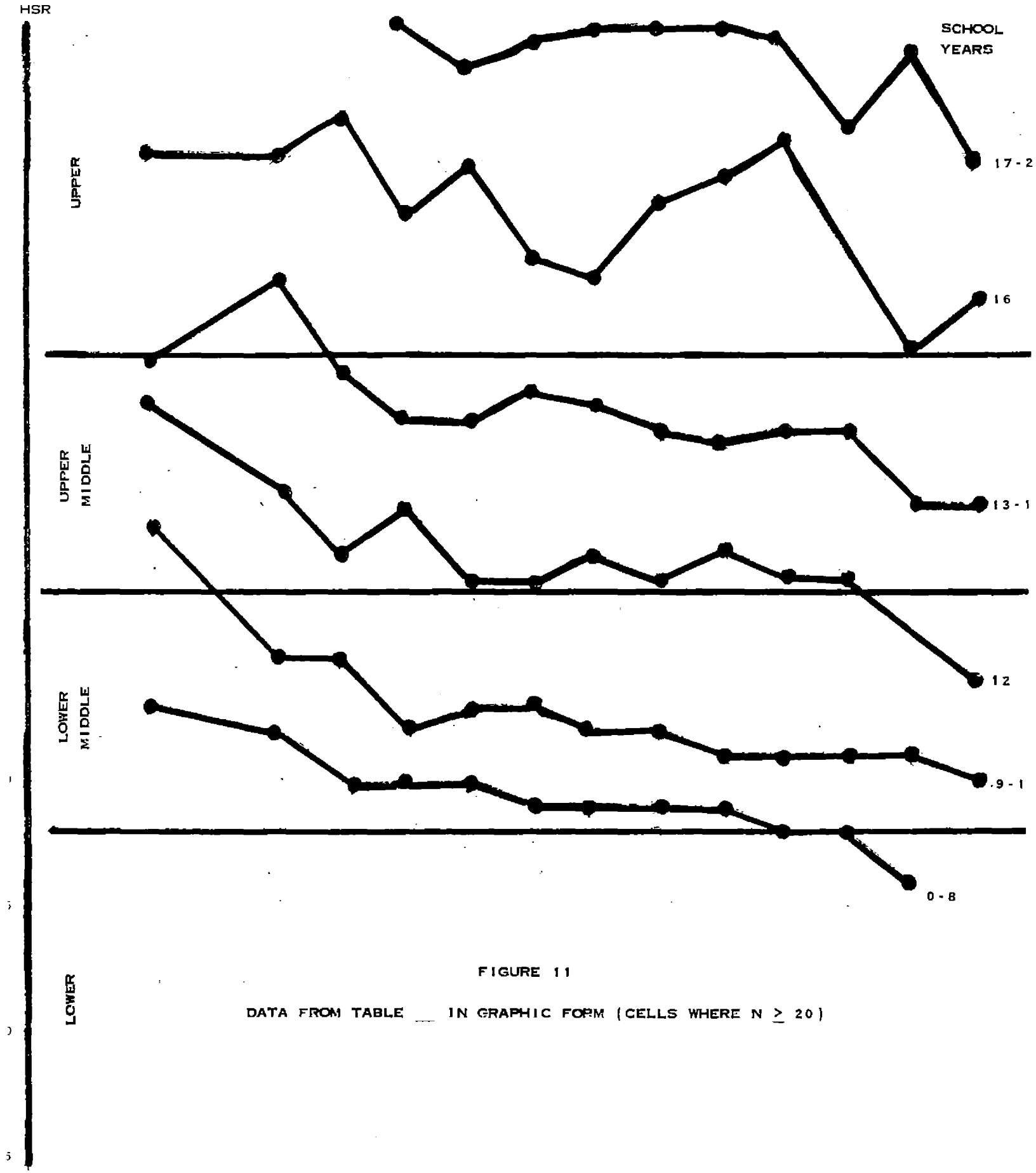


FIGURE 11

DATA FROM TABLE ___ IN GRAPHIC FORM (CELLS WHERE N $\geq$ 20)

FIGURE 12

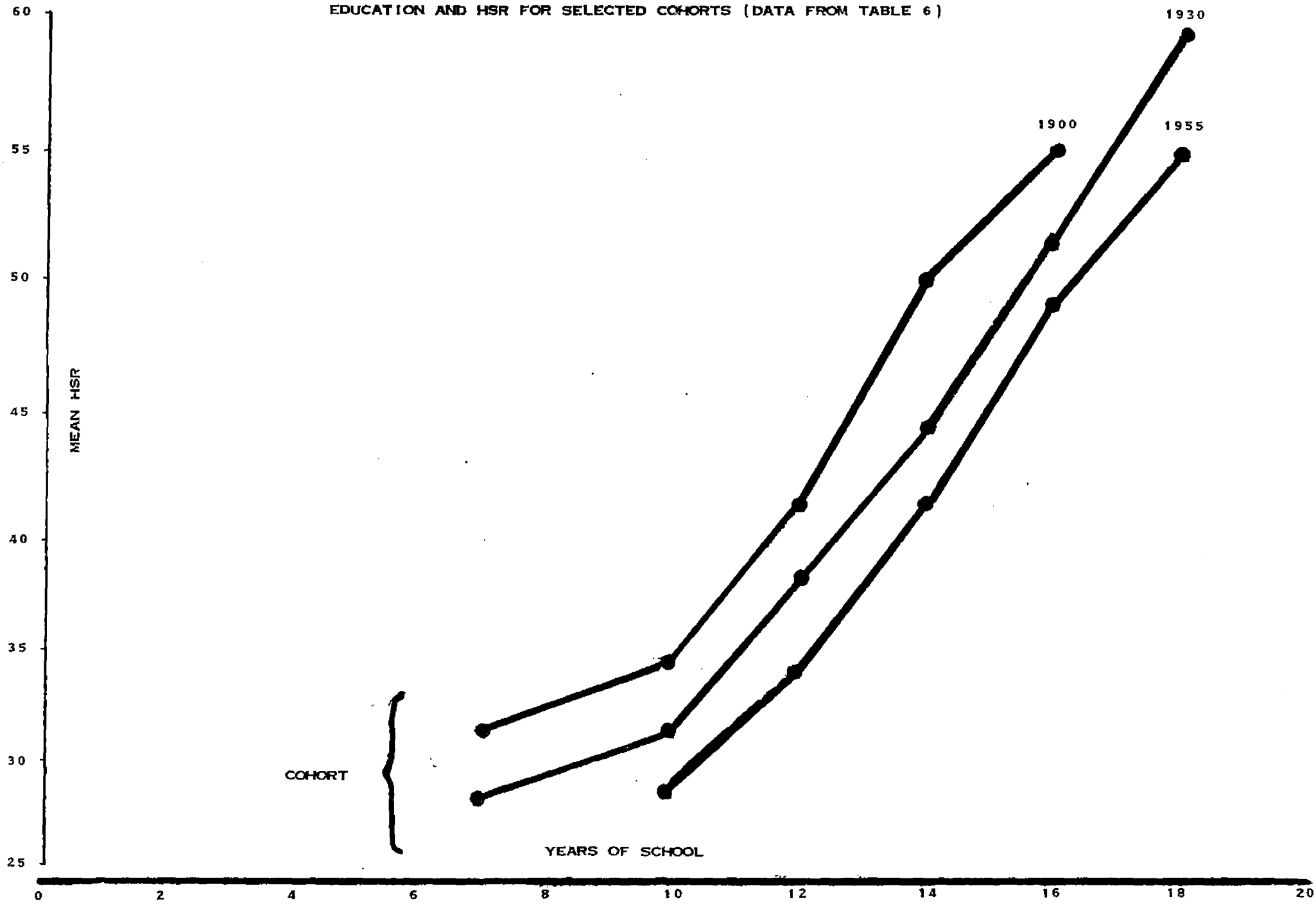

EDUCATION AND HSR FOR SELECTED COHORTS (DATA FROM TABLE 6)
MEAN HSR
YEARS OF SCHOOL
COHORT
1900
1930
1955
60
55
50
45
40
35
30
25
0
2
4
6
8
10
12
14
16
18
20

FIGURE 13

CHANGE MODEL