

Unhappiness on the 1985 GSS:
Confounding Change and Context

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To study change in attitudes and attributes, replicative measurements are needed. The surveys must aspire to standardize all relevant procedures and features of measurement across time to avoid associating measurement variation with change in the dependent variable. Alteration in almost any feature of the survey (the sample universe, sampling method, interviewer training and composition, question wording, item order, or coding procedure) can confound time with measurement and make it impossible to accurately measure true change. For example:

- 1) The switching between five-point, agree/disagree and seven-point scales on the American national election studies has made it impossible to study changes in distributions and problematic to evaluate fluctuations in inter-item associations from 1956 to 1972 (Nie and Rabjohn, 1979; Sullivan, et al., 1979; and Bishop, et al., 1979);
- 2) The near total omission of Southern Blacks from Gallup surveys from 1935 to 1954 prohibits analysis of the black population before the mid-fifties (Glenn, 1975);
- 3) Changes in the number of ethnic groups listed on the Canadian census drastically changed the reported ethnic distribution from 1961 to 1971 (Kraft, 1977); and
- 4) Changes in coding conventions for open-ended questions on child rearing exaggerated changes between 1953 and 1971 (Duncan, Schuman, and Duncan, 1973).

While each and every variation in procedures will not change the characteristics being measured, such distortions are always possible and procedures should be standardized to minimize this danger.¹

¹Not are we protected from artificial results by simply replicating all relevant procedures. Identical procedures may not produce equivalent stimuli across time because of changes in language or other phenomenon. For example, Gallup asked in 1954 "Which American city do you think has the gayest night life?" If repeated today the item would tap different images and San Francisco would presumably rank well above its fifth place finish in 1954.

GSS

The General Social Surveys of the National Opinion Research Center are serial or repeating cross-sections designed to measure changes (and constancies) in American society and have tried to follow standards of strict replication. (For details on the surveys see Davis and Smith, 1986.) GSS has consistently replicated question wordings and has tried to standardize other measurement procedures. When changes have been made, every attempt has been carried out to isolate changes from measurement from changes across time. For example,

- 1) The impact of the shift from block quota to full probability sampling was measured in two split-ballot experiments in 1975 and 1976 that employed both sampling procedures on equivalent halves of the survey (Stevenson, 1979);
- 2) The change from NORC's 1970 sample frame to its new 1980 frame was gauge by a similar split ballot comparison in 1983 (Peterson and Smith, forthcoming);
- 3) Changes in religion and income response categories were designed to be collapsable into original categories; and
- 4) alterations in filtering procedures (e.g. on approval of hitting and racial items) permit replication of original procedures by censoring the data to duplicate the original filters.

Order

One measurement procedure that has been difficult to standardize is question order or context. Exact replication of order has been impossible because of several other features of the GSS:

- 1) In order to include more items on the GSS most items are placed on rotation, appearing two out of every three surveys. As shown below this means that the same question mixture appears only on every fourth survey and therefore it is impossible to duplicate completely the order across adjoining surveys.

Rotation Design of GSS

<u>Patterns</u>	<u>Year</u>					
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
A	X	X	O	X	X	O
B	X	O	X	X	O	X
C	O	X	X	O	X	X
D	X	X	X	X	X	X

- 2) The content of the survey has been changes by the addition and deletion of items. These changes were especially large between 1972 and 1973 when the survey length was substantially expanded and from 1984 to 1985 as items were dropped or shifted from permanent to rotating status to make room for annual supplements.
- 3) Methodological experiments on alternative wordings and on context itself have altered the order of questions.

To minimize distortion created by these factors the project has tried to 1) keep order as constant as possible within rotation patterns (i.e. having the fourth year follow the order of the first year, the fifth year follow the order of the second year, and so on), 2) keep items within scales in the same order (e.g. the abortion, spending priority, and approval of hitting batteries), 3) place new items after rather than before old items that might be affected by their presence, and 4) in general consider the possible impact of order when constructing the instrument each year.

Over the past 12 surveys the GSS has found several suspected instances of order effects distorting the time series.² These include:

- 1) changes in confidence due to a different ordering of institutions in 1974 and 1975 than in other years (Smith, 1981);
- 2) an increase in happiness from 1972 to 1973 because of the addition of a prior item on marital happiness that was confirmed by a split ballot experiment in 1978 (Smith, 1979);
- 3) a drop in support for abortion in 1980 when two questions about children immediately preceded the abortion scale however a split ballot experiment in 1983 testing for this effect provided only weak support (Smith, 1983B);
- 4) the intentional alteration of the context of an item on experiences of grace to duplicate the context effects of a baseline reading (Smith, 1984); and
- 5) similar intentional impacts on the time series resulting from context experiments on taxes, anomia, and child qualities (in each case the standard order, and therefore the time series, was preserved on one half of the sample, Smith, 1982; Smith, 1983A; and Smith, 1984).

On the 1985 GSS another example of an unintended order effect resulting from order changes appears to have affected the general and marital happiness item.

Observed Changes in Happiness

Table 1 shows the time trends for happiness and marital happiness. Happiness has been stable with four exceptions, a rise in happiness from 1972 to 1973 and declines in happiness from 1974 to 1975, 1978 to 1980, and 1984 to 1985. Similar^{ly} marital happiness has been virtually constant except for the drop from 1984 to 1985.³

²We are not claiming that these are the only instances of order effects. In fact we are sure that many order effects occur on the GSS. See for example the abortion experiments in Schuman and Presser, 1981. But in most of these probable cases the order has remained constant and therefore changes in order do not interact with time.

³From 1973 to 1984 no significant change occurs across all years or when compared together.

Table 1

Trends in General and Marital Happiness

	1972	1973	1974	1975	1976	1977	1978	1980	1982	1983	1984	1985
Happiness												
Very	30.3%	35.9%	37.9%	32.9%	34.1%	34.8%	34.3%	33.9%	33.2%	31.2%	34.7%	28.6%
Pretty	53.2	51.1	49.0	54.1	53.4	53.2	56.1	52.7	53.8	56.1	52.3	60.0
Not Too	16.5	13.1	13.1	13.1	12.5	11.9	9.6	13.3	13.0	12.8	12.9	11.4
N=	1606	1500	1480	1485	1499	1527	1517	1462	1505	1573	1445	1530
Change prob. ^a	--	.001	.046	.011	.754	.833	.076	.004	.839	.426	.085	.001
Marital Happiness												
Very	---	67.8%	69.1%	67.4%	66.8%	65.5%	65.2%	67.9%	65.7%	62.4%	65.6%	56.5%
Pretty	---	29.6	27.4	29.8	30.8	30.9	32.2	29.3	31.4	34.3	31.4	40.1
Not too	---	2.6	3.5	2.7	2.4	3.6	2.6	2.8	2.8	3.2	3.0	3.4
N=		1072	1059	995	973	965	954	882	846	961	825	863
Change Prob. ^a		--	.304	.316	.809	.258	.403	.394	.608	.345	.385	.001

^aSRS probability that change from prior survey is significant.

1972-1973

Two factors explain the increase in happiness from 1972 to 1973. The addition of the marital happiness item immediately before the general happiness item inflated general happiness. Marriages are rated as very happy by substantial majorities and asking about the marital domain first appears to lead respondents to recall a happier mixtures of memories when the general happiness item immediately follows. A split ballot experiment in 1980 showed that the proportion of married saying they were very happy was 7.4% higher on the form in which marital happiness came first (SRS prob.=.041). (See also,

Smith, 1979 and 1982). Applying this effect to the 1972-73 data would account for an overall rise in happiness of 5.3%, almost all of the observed 5.6% rise. In addition, an over-representation of blacks in 1972 accounted for an artificial gain in happiness of 0.5%. Taken together these two factors completely explain the 1972-1973 rise in happiness.

1972-1984

Davis (1984) examined determinants of happiness and found that the three chief predictors of happiness were race, marital status, and recent changes in financial situation. Being married, white, and financially upwardly mobile all significantly contribute to happiness. To explain changes in happiness across time he used marital status and changes in financial condition (since the racial distribution does not change it does not contribute to the change model). He found that this model explained the variation in happiness from 1973 to 1982 and in addition explained all significant year-to-year changes in happiness. For example, the drop in 1975 resulted from the secular decline in the proportion married coupled with the negative economic consequences of the 1975 recession.

1984-1985

The 1984-1985 drop in general and marital happiness was immediately conspicuous because it was both the largest change ever detected on these items and the largest change across all variables on the 1984 and 1985 GSSs. Inspection of the question order suggested a likely explanation for these shifts. From 1973 to 1984 the immediate order was fixed: five satisfaction items (SATCITY, SATHOBBY, SATFAM, SATFRND, SATHEALT), marital happiness, and then general happiness.⁴ In 1985 however the satisfaction scale was dropped

⁴Actually in 1973 a single, non-GSS item on moving from residence intervened between the five satisfaction items and marital happiness and, as mentioned below, on two of three forms in 1980 the Kohn Child qualities question appeared between the satisfaction and happiness items.

as an annual item to make room for our topical supplement on social networks. We hypothesize that either the omission of the satisfaction item or the appearance in its stead immediately before marital happiness of an item on whether life is exciting, routine, or dull (LIFE), significantly altered the context for respondents and led to the sharp drop in happiness. We were able to indirectly evaluate whether the drop in 1985 reflected true change or merely measurement artifact.

First, we applied the Davis happiness change model that had explained changes in general happiness over the 1973-1982 (both year-by-year and over the entire period) by changes in marital composition and respondent evaluations of recent financial changes. We updated the model through 1984 and confirmed that all significant change in happiness over these years could be accounted for by the Davis model. When we applied the model to explain the change from 1973 to 1985 or from 1984 to 1985, the model failed to perform as in previous years. For 1973 to 1985 the majority of the change could not be accounted for by the change variables (Table 2). Unlike any previous fitting^s, change across time, net of the other variables, was the largest factor. This failure of the Davis model is even more striking when we observe the 1984-1985 period. For this interval financial and marital status make no contribution towards explaining the change.

A second even simpler model also shows how 1985 deviates from established patterns (see Table 3). Only in two years does financial satisfaction exceed general happiness: in 1972 and 1985 when the five item satisfaction scale did not appear. If general happiness and financial satisfaction had the same marginal difference in 1985 as they had for the entire 1973-1984 period, then happiness would have been 5.0% points higher in 1985. This would have placed the 198⁵ figures only 1.1% lower than in 1984.

Table 2

Net Changes Explained by Variables

	1973-1985	1984-1985
Time	-.033	-.056
Financial Status	-.004	-.0
Marital Status	-.024	-.0
Total Modelled Change	-.061	-.056
Raw, Observed Change	-.073	-.062 ^a

^a Total modelled change always falls slightly short of the raw, observed change because insignificant paths are set to zero. See Davis, 1984 for details of the d-system.

Table 3

A Comparison of Financial Satisfaction with
General and Marital Happiness
(% Financially Satisfied - % Very Happy)

Year	General Happiness	Marital Happiness
1972	2.4%	----
1973	-5.2	-35.9%
1974	-6.7	-36.2
1975	-1.6	-35.2
1976	-3.3	-35.2
1977	-0.6	-28.6
1978	-0.3	-29.3
1980	-5.3	-37.9
1980 Standard Order	-8.0	-41.0
1980 Variant Order ^a	-4.1	-36.4
1982	-6.8	-37.7
1983	-2.3	-31.0
1984	-6.5	-35.9
1973-1984 Pooled	-3.8	-34.2
1985	1.2	-26.6

^aKohn child qualities intervene between satisfaction and happiness.

Similarly, if we adjusted marital happiness in 1985 by the long-term differential (-34.2%), we would show a drop in 1985 of only - 1.5% instead of - 9.1%. In sum, the financial satisfaction comparison, like the Davis model, suggests that happiness in 1985 does not follow its usual empirical pattern and further suggests (from the similarity of 1985 to 1972 on general happiness) that the absence of the five-item satisfaction scale might cause the deviation.

Finally, there is some linkage between question order and the association between items. The measure of the excitement of life is more highly associated with general happiness in years in which it immediately precedes the happiness questions (1985) or immediately precedes the satisfaction question (1977 and 1982) as opposed to other years (1973, 74, 76, 80, 84) when it followed the happiness questions by many questions. In the close encounter situations gamma averaged .583 while in the removed situations it averaged .465. The pattern with marital happiness was similar, but not as large or consistent (close gammas averaged .457, removed gammas averaged .408). (For similar finding on anomia and misanthropy items see Smith, 1983.)

Also, comparison of the association between the five satisfaction items and the happiness items on the 1980 split ballots indicated that proximity increased associations (Table 4). The item on the satisfaction scale that shows the largest and most consistent effect is satisfaction with family. This makes sense since the intervention of the child qualities items are more relevant for this domain of satisfaction than the others (friends, community, health, and leisure time).

Since it appears that context can influence associations between these items, this supports the hypothesis that the 1985 drop in happiness results from the alteration in order and not from changes in the level of happiness.

Experimental Verification⁵

To test for the context effect suggested by the previous analysis, we designed an experiment on the 1986 GSS. Half of the sample received the two happiness items immediately after the five satisfaction items, as in years from 1973 to 1984, while the other half of the sample had the satisfaction items follow the happiness questions, thereby resembling the situation in 1985 when satisfaction did not appear. As Table 5 indicates for both marital and general happiness, the experimental results were in the anticipated direction. The marital difference (-5.0%) is not statistically significant, but the difference on general happiness (-4.6%) is significant. Table 6 shows that the observed difference on the 1986 experiment was smaller than anticipated (based on the 1985 pattern) for marital happiness. This suggests that marital happiness in 1985 declined for reasons other than the absence of the satisfaction items. This may be due to other context effects not tested for in the 1986 experiment (most likely the absence of the exciting life item) or to a true dip in marital happiness of around 2.6-3.0 % in 1985. Since both the experimental effects and the unexplained difference after adjusting for the context effect are not significant, neither suggestion can be reliably accepted. On general happiness the pattern is much clearer. The context effect is significant and its magnitude (-4.6%) neatly matched the deviations from the 1982-84 pooled figures (-4.4%) and the 1985 financial satisfaction estimate (-5.0%). In sum, the 1986 experiment confirms the context effect explanation for the drop of general happiness in 1985 and suggests that context probably explains at least a major portion of the drop in marital happiness observed in 1985.

⁵This section and Table 5 and 6 are the only significant revisions to the 1985 version of this report.

Table 4
Change in Associations (Gammas) by Order, 1980
Question Order

	5SAT/HM/H	5SAT/CQ/HM/H	5SAT/CQ/H/HM
Satisfaction Scale x Marital Happiness	.479	.437	.412
Satisfaction Scale x General Happiness	.463	.374	.424

5SAT=five satisfaction items HM=marital happiness H=general happiness
CQ=child qualities.

Table 5
Happiness by Question Context, 1986 Experiment

	Satisfaction First	Satisfaction Later	Difference (First-Later)	Probability ^a
Marital Happiness (%Very Happy)	65.7%	60.7%	-5.0%	.15
General Happiness (%Very Happy)	34.6%	30.0%	-4.6%	.04

^aOne tail test with adjustment for design effects.

Table 6
Comparison of Experimental and
Non-Experimental Results
for 1985 Happiness Marginals

	Deviation of 1985 Results from:			Deviation explained by 1986 Experiment
	1984 Marginals	1982-84 Marginals	1985 SATFIN Estimates	
Marital Happiness (%Very Happy)	-9.1%	-8.0%	-7.6%	-5.0%
General Happiness (%Very Happy)	-6.1%	-4.4%	-5.0%	-4.6%

The Moral

Alteration of the content of the GSS either by the addition or deletion of items, by the switching of items from permanent to rotating status, or by switching items from one rotation to another hampers our ability to keep measurement conditions constant and therefore increases the danger that true change will be confounded with measurement effects.⁶ This appears to have occurred on the 1985 GSS with regards to happiness. Users of the happiness items should adjust for this artifact.

⁶The 1985 GSS conducted split ballot experiments involving other changes. Preliminary analysis indicates that the BIBLE/BIBLEY, spending priorities, and expectation of war experiments duplicated previous experimental results. No significant differences appear on the images of countries. On the racial items there was evidence of a slight effect. Across 15 comparisons two racial items varied significantly by form (but only at the .045 and .041 SRS levels). On the three racial items that immediately followed the standard racial items that were being dropped from the GSS (RACSCHOL, RACPUSH, RACDIN), there was a consistent shift to more liberal responses on the variant form that omitted the traditional items (BUSING = +.038, prob. = .095; RACSEG = +.025, prob. = .045; and RACMAR = +.039, prob. = .099).

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