A New Compendium of Trends in the General Social Survey, 1972–2018: Period and Cohort Trends and Differences by Race, Gender, Education, Urban-Rural, and Region for 276 Repeating Items

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GSS Social Change Report No. 64
NORC at the University of Chicago
May 2020

ABSTRACT. This research compares period and cohort trends across many variables at once to assess what aspect of American social life changed the most in the last fifty years. It also catalogues the biggest racial, gender, educational, and geographic gaps in social behaviors and attitudes in those years. Exploiting the consistent measurement in the General Social Survey since 1972, I analyze its "core" items that repeat with every survey and other repeating items that occur regularly but not in every survey. The two dozen items that changed the most, as gauged by the multiple correlation with period and cohort, confirm the emergence of computers in American life and the coincident decline of newspaper reading, the growing acceptance of sexual diversity, a decline in some forms of racial prejudice against African Americans but little change in support for collective action to undo racial disparities, the stalled gender revolution, and support for legalizing marijuana. Persistent race, class, and gender differences mix traditional and emerging disparities. For instance the biggest gender gap over these fifty years was in gun ownership. Regions differ more in religious beliefs than in political ideology or demography.

Introduction

Social science makes progress, for the most part, through the intensive study of relationships among small numbers of variables, selected to test a specific hypothesis or list of hypotheses. Every now and then, though, a broader view helps. The broad perspective involves comparing patterns of association across many variables at once. By considering many variables at once, researchers can answer descriptive questions such as "What aspect of social life changed the most in recent years?" or "Where are the biggest gender gaps in social behaviors and attitudes?"

The General Social Survey (GSS) contributes heavily to the standard approach (Marsden, Smith, and Hout 2020). But from its earliest days, the GSS has been a nearly unique data source for broad analyses (Smith 1978). The late James A. Davis, founder of the GSS, wrote a series of papers characterizing shorter- and longer-term trends as "social weather" and "climate" (Davis 1980, 1992, 2000). He also frequently compared trends over the years with differences among cohorts (Davis 2010). Davis's takeaway was that American society was becoming more liberal in many ways, though in the 1980s "conservative weather" shifted attitudes on taxes, economics, and crime; it also shifted political identities toward conservative and Republican identifications. Issues of racial tension, gender roles, family types, and sexual behavior changed in ways that most people would describe as the liberal or progressive direction. They were not specifically political; few involved public policy or voting — the Equal Right Amendment being an important exception. But liberals tended to adopt new or more inclusive perspectives before conservatives did (Hout and Fischer 2006, Ch. 9). Change varied in other ways, too, of course. In race relations, whites' aversion to close ties with African Americans decreased, but they resisted policies proposed to reduce blacks' disadvantages (e.g., Bobo et al. 2012).

The distinction between period and cohort trends is crucial in this tradition (Davis 2000, 2010). Some trends sweep across all of American society in response to major events (think "women's movement"), new ways of thinking (think "spiritual but not religious"), and new technologies (think "computers"). Other trends work through population replacement as new ways of thinking or acting replace old ways as young people enter adulthood and the senior generation dies out (examples below). The results here, based on 276 repeated variables from the GSS, show stronger cohort trends than annual trends. Lifecycle factors certainly matter, too, but in this report, I will

not open that line of inquiry, to avoid the well known statistical issues that arise when trying to address age, period, and cohort simultaneously (Mason et al. 1972; Fosse and Winship 2019).

This research follows in the tradition established by Davis. I will consider trends by year (period) and year-of-birth (cohort) for the 276 GSS variables that were asked at least four times with a span of at least 20 years between the first and most recent time.[1] Following Davis, I do not include as outcomes the fundamental demographic characteristics that enter the analysis as covariates. I also exclude the variables that refer to the respondent's circumstances while growing up. Americans' origins definitely differ over time and, especially by cohort (Davis 2010). In recent years, and especially in recent cohorts, people had better educated parents, more varied national origins, fewer siblings, and a shifting religious mix while growing up. But we learn more about each of these phenomena by tracking contemporary measures than we would if we were to focus on the questions about growing up.

The broad view in this report allows helps us assess the effectiveness of the GSS project. The charge of the "National Data Program for the Social Sciences," the NSF grant that created and maintains the GSS, is to measure social change and within-year differences. In an efficient program, every variable in the questionnaire should evince either significant change over time, substantial variation within years, or be useful in predicting those changes and differences. That is exactly what the results below show.

Measures of Change to Compare Years and Cohorts

The cumulative GSS consists of 32 cross-sectional surveys. Sampling and interviewing details are on the website (`gss.norc.org`).

The GSS consists of a "core" of items included in each survey,[2] about 120 questions asked as part of the International Social Survey Programme (ISSP),[3] several other repeating items are paid for by federal agencies like the Centers for Disease Control and Prevention and the National

[1] I am reporting on 276 GSS variables that are based on over 300 individual items. Some variables are scales or composites. For example, the vocabulary quiz combines ten questions, the abortion scale six questions, and the four civil liberties scales three questions each.

[2] Some questions have replaced others as core over time.

[3] The ISSP modules are split each year so that a random half of the GSS respondents answer questions from one ISSP module and the other half answers the questions from the other ISSP for that year.

Institute for Occupational Safety and Health, and under other grants. In addition, between 20 and 33 percent of the questions in every GSS are unique to a given year. For this analysis I included all the items that were asked at least four times over a span of at least twenty years, excluding items that ask about parents' characteristics, religious origins, spouse's characteristics, and number of siblings. Fundamental demographic characteristics — race, gender, age, education, immigrant status, urban-rural residence, and region — enter the analysis as covariates so they are not among the outcome variables. The total number of outcome variables is 276.

Most items were analyzed as they appear in the public data set `gss.norc.org`, but some variables had to be recoded for analysis. I modified all but one of the covariates. I combined race and Hispanic origin in a single four-category variable, split cohort and age into 32 categories, combined degree and years of education into a five-category variable, reduced state or country the person grew up in into a dichotomy distinguishing the United States from other countries, and I reduced region from nine to five categories. For rural-urban, I used the six distinctions in the "srcbelt" variable. The details are in the Appendix Table A1.

Some outcome variables also needed to be transformed. Categorical outcomes had to be turned into dichotomies; they are listed in Appendix Table A2. More complicated transformations, including scales, are shown in Appendix Table A3. I reversed about twenty variables to aid interpretation. For example, church attendance and the social life variables score the most frequent activity lowest and give the highest score to "never." I found the results easier to interpret after I reversed the scores, putting never at zero and giving the most often response the highest score.

Finally, Smith (1988) listed over 40 data collection issues, slight changes of wording or context, that complicated the interpretation of trends. When Smith recommended dropping some cases, I usually followed his recommendation. I did not use the weights he proposed for aligning time series from different ballots. Another exception concerned several race relations items. In the 1972-1977 GSSs, African American were not asked questions such as "Blacks should not push themselves where they're not wanted." Beginning in 1978 they were. Smith (1988) recommended dropping black respondents from all years. Instead, I dropped the answers to these questions in 1972-1977 as not comparable to the answers from 1978 onward. My implementation of Smith's (1988) recommendations can be found near the beginning of the Stata code I provide as a supplement to this paper.

The analytical goals here are the same as the goals of the GSS as a whole: to compare period and cohort perspectives on changing behaviors and attitudes and to document within-year and within-cohort differences and gaps. The obvious way to do that would be to regress each outcome variable on dummy variables for years and cohorts. But as the number of cohorts (118) far exceeds the number of surveys (32), the comparison might be inconclusive if it turned out that cohort trends exceeded period trends. To eliminate the artifactual difference between the number of cohort and period predictors, I combined years of birth so that the cohort variable is made up of 32 categories, equaling the number of surveys.[4] The first cohort is composed of everyone born before 1902, cohorts 2 through 31 are each three years wide (i.e., 1902-04, 1905-07, ..., 1989-91), the last cohort is composed of everyone born after 1991.

For each of the 276 outcome variables Y_{ki} (k = 1, ..., 276), I fit six models:

$$Y_{ik} = \alpha_{1k} + \sum_t \beta_{1kt} Year_{it} + u_{1ki} \quad (1)$$

$$Y_{ik} = \alpha_{2k} + \sum_j \gamma_{2kj} Cohort_{ij} + u_{2ki} \quad (2)$$

$$Y_{ik} = \alpha_{3k} + \sum_t \beta_{3kt} Year_{it} + \sum_j \gamma_{3kj} Cohort_{ij} + u_{3ki} \quad (3)$$

$$Y_{ik} = \alpha_{1k} + \sum_t \beta_{1kt} Year_{it} + \sum_x \delta_{6kx} X_{ix} + u_{1ki} \quad (4)$$

$$Y_{ik} = \alpha_{2k} + \sum_j \gamma_{2kj} Cohort_{ij} + \sum_x \delta_{6kx} X_{ix} + u_{2ki} \quad (5)$$

$$Y_{ik} = \alpha_{3k} + \sum_t \beta_{3kt} Year_{it} + \sum_j \gamma_{3kj} Cohort_{ij} + \sum_x \delta_{6kx} X_{ix} + u_{3ki} \quad (6)$$

The covariates in equations 4, 5, and 6 were gender, a combination of race and Hispanic origin, age, education, grew up in the United States, current rural-urban residence, and region of current residence.[5] All covariates, even age and education, were treated as categorical variables. For simplicity, ordinary least squares regression (OLS) was used for each outcome variable. Each model yields a ratio of regression variance to total variance: R^2_{km}. From the R^2s I calculate six

[4]Models that fit *linear* trends to years and cohorts (Firebaugh 1989) equalize degrees of freedom at one, of course, but they fail to take account of trends off the straight line. As theory predicts nonlinearities (Fischer 1978; Fischer and Hout 2006, pp. 217-224), a linear model must be used with caution, if at all.

[5]The GSS variables are `sex`, a composite race-ethnicity variable, `age` in 32 categories, a combination of `degree` and `educ`, `reg16`, `srcbelt`, and `region`. See Appendix Table A1 for details.

correlation-like quantities:

$$\begin{aligned}
\text{Net cohort}_k &= \sqrt{R^2_{k3} - R^2_{k1}} \\
\text{Net period}_k &= \sqrt{R^2_{k3} - R^2_{k2}} \\
\text{Total}_k &= \sqrt{R^2_{k3}} \\
\text{Net cohort with covariates}_k &= \sqrt{R^2_{k6} - R^2_{k4}} \\
\text{Net period with covariates}_k &= \sqrt{R^2_{k6} - R^2_{k5}} \\
\text{Total with covariates}_k &= \sqrt{R^2_{k6}}
\end{aligned}$$

Each of these quantities is similar to Blalock's (1979, p. 488) "multiple partial correlation" except I have not normalized by dividing through by one minus the baseline. In the figures below, the y-axes are labelled to show the multiple correlations and, in parentheses, the more familiar R^2s.

Period and Cohort Trends

The GSS captured most of America's major social changes in the last half-century, either as period or cohort trends. Most, but not all, the 276 repeating variables considered here changed since the 1970s or differ substantially across cohorts.

Figure 1 shows the multiple correlations (R^2s in parentheses) for 274 of the 276 variables in this analysis. Two demographic variables (being never married and being retired) correlated strongly with year and cohort, but the dominant relationship of each is with age, so I defer discussing them now and address them in their own section below. The "box" of each boxplot runs between the 25th percentile of multiple correlations of each type and its 75th percentile. The vertical lines coming out of the top (and sometimes bottom) of the "box" show the range of upper and lower "adjacent" values, and the variable names show outliers, multiple correlations substantially above the 75th percentile of multiple correlations of that type. The labels are small, crowded, and some overlap, so the 24 variables that changed the most are listed, by topic, in Table 1.

Figure 1 and Table 1 about here

The biggest changes reflect technological change — more use of computers and less reading of newspapers — and the treatment of sexual minorities — support for gay marriage, civil liberties

for a hypothetical gay man, and less moral sanction for same-sex sex (Dangelis, Hardy, and Cutler 2007). Racial attitudes (Bobo et al. 2012), family (fewer households with children, more adults living alone), gender roles, and the 1960s issues of sexual morality and marijuana also changed substantially over time or among cohorts.

Cohort differences exceeded period trends for 69 percent of variables. Notice how the cohort boxes and outliers in Figure 1 are higher than the corresponding period boxes and outliers. The biggest cohort changes include all the aforementioned changes — technology, sexual minorities, racial attitudes, and sexual morality and marijuana. Cohort also differed in their rates of full-time employment and in experiencing unemployment in the ten years prior to the interview; almost 10 percent of the variation in these items was between cohorts. Women's greater engagement in full-time work and millennials' experience of the Great Recession right at the beginning of their work life were key factors in these patterns. Cohort differences also substantially exceeded period changes in civil liberties for religious and political "nonconformists": atheists, communists, and militarists.[6] Period changes exceeded cohort differences for marrying and living near people of another race, and for several political variables: confidence in the press, confidence in the U.S. Congress, taxes for rich people, and spending on weapons and space. Some subtrends, especially in confidence in institutions, are missed this way. For example, many people's confidence in the executive branch and Congress depends on their political identity and the party in power (Smith 2012). So when an election changes the party of the president or the balance of power in Congress, the average level of confidence does not shift much but the party-specific confidence flips.

Some changes were quite small. The racial stereotype suggesting that whites are wealthier than blacks, general happiness, attributing success to luck or hard work, belief in life after death, and size of workplace changed the least. These variables have their own literatures (Bobo et al. 2012; Firebaugh and Tach 2012; Fischer 2010, pp. 312-314; Greeley and Hout 1999).[7] All are clearly important variables for various reasons, but over 99 percent of their variance is within years and cohorts.

[6]In the 1950s, Stouffer (1955) asked a nationally representative sample about "nonconformists" then being investigated by the House UnAmerican Activities Committee: communists, socialists, atheists, and homosexuals. The GSS later added militarists and an anti-American Muslim cleric to the list.

[7]I suspect that size of workplace is a more common predictor variable than outcome but that is hard to ascertain from bibliographic searches.

We can understand more by examining the period and cohort variation for the variables that changed the most. To that end, Figure 2a shows smoothed trends for the 24 items with the biggest total Rs. The vertical axis of each graph shows the z-score for the item, so changes are calibrated in standard deviation units, varying around a mean of zero. Colored lines show selected cohorts, separated by 15 years; pale gray lines show the intervening cohorts. Large cohort differences appear in the graph as height, the lines separated vertically. Period differences appear in the standard way, as lines sloping upward, downward, or curving. Figure 2b shows the complementary view, with year of birth on the x-axis and lines representing different years; period differences appear as vertical spread and cohort differences as sloping or curving lines.

Figures 2a and 2b about here

The rise of computers and the decline of newspaper readership constitute the two biggest changes since 1972 (upper left panels). Both have strong period components and stronger cohort components. Newspaper reading was high through the 1990s; it declined precipitously between 2000 and 2018. Computer use had already taken root before the GSS first asked about it, but each successive cohort from 1900 to 1960 used computers more; subsequent cohorts do not use computers much more than the 1960 cohort did.

Americans dramatically moved toward acceptance of sexual minorities, mainly through a dynamic of cohort replacement. The GSS first asked about gay marriage in 1988, then repeated the question every year since 2004. Cohorts differed very sharply; there is a modest upward trend over time within cohorts born since 1960. differences among cohorts. Questions about civil liberties for a hypothetical gay man and the morality of same-sex sex have been in the GSS since 1973. Recent cohorts supported civil liberties substantially more; the net trend across years is barely perceptible (lines in Figure 2a are nearly horizontal; lines in Figure 2b are on top of one another). The question about same-sex sex being moral changed both between and within cohorts; the cohort differences were larger.

The imprint of second-wave feminism shows in the trends involving traditional gender roles. Each cohort born in the first two-thirds of the twentieth century was more likely than the one before it to reject the traditional division of roles. Then, as England (2010) famously noted, the gender revolution "stalled." The very close curves in Figure 2b make clear that the revolution, while it

lasted, was mainly driven by cohort succession. Translating the new roles into action, working full-time rose from cohort to cohort until it, too, stalled out for cohorts born after 1967. The sexual revolution that coincided with the gender revolution was also driven by cohort differences. Shifting sexual mores were almost completely a cohort phenomenon. There was a modest lifecycle pattern behind the number of sex partners.

The Civil Rights Movement and subsequent developments in black self-image and white reaction appear in the big trends too, although somewhat obliquely because the questions do not address the issues as directly as one might hope (Bobo et al. 2012). The period and cohort changes that occurred added to each other to yield a substantial change. Not shown, though, because I am focused on the big changes, are whites' (and some blacks') resistance to government efforts to ameliorate racial disparities and whites' racial resentments (Kinder and Sears 1981; Simmons and Bobo 2018).

Support for civil liberties for other "nonconformists" — an atheist, a militarist ("a person who advocates doing away with elections and letting the military run the country"), and a communist — increased in the same cohorts that supported nontraditional gender roles, those born 1900--1966 or so. This change too has stalled, albeit at a level closer to something resembling "a national consensus" (Davis 2012). Noteworthy are the two hypothetical nonconformists who did not benefit from growing tolerance to the same extent: a racist and a Muslim cleric "who preaches hate against America." Critiques of racist speech show in opposition to speeches, in particular, by "a person claiming blacks are inferior" among people born after 1970. Protecting the civil liberties of an America-hating Muslim cleric was, in the context of post-9/11 tensions, less popular than protecting the civil liberties of the others. We have no measures of it before 2008, so it is not actually in this analysis (which requires twenty years of data).

Support for legalizing marijuana declined from 1972 to 1990, then rebounded to its 1970s levels before rising from 36 to 65 percent between 2006 and 2018. Some of that increase in recent years reflects the passing of older cohorts, but mainly it is a period effect, as can be seen in the upward sloping lines in Figure 2a and the vertical climb of the red-toned lines in Figure 2b.

The complementary trends of living alone and with children blend life cycle with period and cohort trends. The identification issues aside, it is clear that age, period, and cohort effects are reflected in the consequences of falling fertility and mortality on Americans' households and living

arrangements. The two social life trends — spending an evening at a bar or with friends — are further downstream markers of these changes. With fewer people living with them, Americans of recent cohorts have spent more time out. But young people do that more than older people, even unmarried older people.

The last trend among the top 24 is unemployment. Here the Great Recession looms large. Generations of economic prosperity had pushed unemployment out of most Americans' experience. But the financial collapse of 2007-08 and the ensuing recession meant that many members of the last two cohorts had that unhappy experience early in their careers. The experience was still recent enough to figure in their answers through 2018 (Smith and Schapiro 2017).

Two exceptional trends: Marriage, retirement, and the life cycle

To this point I have excluded two of the biggest changes: being never married and being retired. Their overall correlations with period and cohort ranked first and second biggest, but their period and cohort patterns are spurious without considering age first. Figure 3 shows how age is crucial to both.

Figure 3 about here

Few Americans married before adulthood during the half century over the GSS's existence, but by age 35, one-fourth or less of any cohort was still unmarried. So age, focused on the fifteen years between 20 and 35, was a major factor explaining the percentage never married. However, at age 25, the percent never married varied over a forty-point range from 75 percent for the most recent cohort to reach 25 (born around 1990) to 30 percent for the first baby-boomers (born around 1948). There was almost as much variation at age 30; the percent never married ranged from 50 percent of the 1981 cohort to 11 percent of the cohort born around 1942. In short, age at marriage has been rising in the United States since the 1960s, and the GSS reflects that important trend as cohort variation after holding age constant.

Retirement, once a luxury available to few, evolved more or less continuously throughout the twentieth century (Costa 1998). In the GSS, the percent retired rises sharply with age, beginning between ages 55 and 60. Sharp cohort difference exist, too, suggesting that retirement occurred earlier for recent cohorts reaching their 60s than it used to. Of people born around 1912, only a

few percent retired by age 60; of people born in 1936, 25 percent were retired by 60, and so, too, for the 1951 cohort. At ages 70 and over, cohorts differed even more, from a low of 45 percent retired among those born in the 1930s to 75 percent of the most recent cohorts to reach 70 (born in the late 1940s).

Other variables, not considered separately, also contain substantial age variation. Those variables include living alone, having children in the household, and being a parent. For the most part, these are demographic events and their proxies. I found no attitudes or identifications for which analyzing period and cohort while ignoring age constituted much of a problem of excluded variable bias.

Major Differences Within Years and Cohorts

The GSS is as useful for studying within-year differences as it is for studying trends. For each of the 276 items, I included a regression of the outcome on gender, race (4 categories), education (5 categories), age (32 categories), raised in the USA (2 categories), metro-suburban-urban-rural residence (6 categories), and region (5 categories).[8]. The model captures average within-year and within-cohort differences. Important changes over time in differentials are not included in these calculations. Nor are important differences on dimensions that are substantively important but less unambiguously exogenous, such as marital, political, and religious differences. Figure 4 shows the absolute value of regression coefficients for eight binary comparisons for each of the 276 items. Each predictor is net of the other variables in Figure 4 and of age and immigration status which were also in the model. All outcome variables were measured in standard deviation units to facilitate comparisons among them; for instance, a coefficient of 0.5 implies that the named group is one-half of a standard deviation away from default group on a given outcome.

Figure 4 about here

The biggest within-year differences are, perhaps unsurprisingly, between African Americans and whites. That is true for the median difference, the difference at the 75th percentile, and the number of gaps of one-half of a standard deviation or more. The three biggest black-white gaps concern whether the government should help blacks; they are two forms of the spending item

[8]See Appendix Table A1 for details

plus another that asks whether the government should or should not assist blacks; blacks were a standard deviation more supportive of assistance than were whites. Four other items with explicitly racial content also scored high: relative marrying a black person, feeling close to blacks, whether their workplace was racially segregated, and support for hiring preferences for blacks. Blacks were more likely to vote for Democrats, less likely to vote for Republicans, and more likely to identify as Democrats than whites.

Language loomed large in differences between Latinx and white respondents. The two biggest were speaks a second language and speaks it well. Latinx respondents also were more likely than whites to say it was ever acceptable for a policeman to hit an adult male citizen.[9]

The biggest differences between college graduates and high school graduates concern human capital and social capital. College graduates worked in better occupations, scored higher on the vocabulary quiz, belonged to more social organizations, and had higher subjective social class than high school graduates. College graduates also had their children later.

Most big gender differences were in traditionally gendered statuses and activities. Women owned fewer guns, served less in the military, kept house more, were more afraid walking at night, had lower personal earnings, prayed more, were less likely to work full time, went hunting less often, had their first birth younger, watched fewer X-rated movies, agreed pornography should be limited, believed more in heaven and religious miracles than men did.

The lifestyle differences between city and country appeared in the gap between residents of major central cities and rural places. Big city dwellers were much more likely to be afraid to walk at night, less likely to have any guns, less likely to own their home, thought the government spent too little helping big cities, and were less likely to work in a racially segregated workplace. Differences between city and suburb were also mainly about lifestyle. Central city residents were more likely than suburban residents to be afraid of walking alone at night, rent, to have grown up in the same city, to live alone, thought the government spent too little helping big cities. The big city residents also had lower family incomes than suburban residents, support spending for blacks and the unemployed, and were less likely to say extramarital sex was always wrong.

Many regional differences referred to religion. Southerners were more likely than Northerners

[9]African Americans were as likely as Latinxes to say hitting was unacceptable, but it was not one of the top black-white differences.

to have had a born-again religious experience and tried to convert others to their religion. They were more likely than West Coast, Alaska, and Hawaii residents to believe in God, attend religious services, allow prayer in school, and believe in heaven. In addition, guns were more prevalent in the South than in the North.

Many of these differentials and gaps got bigger over time; some got smaller. Many also differ by cohort. Considering all those complexities is beyond the scope of this report. The coefficients graphed in Figure 3 all refer to average within year and within cohort differences.

Conclusion

The GSS captured most of the major changes in American society, some in the form of year-to-year changes, some as differences among birth cohorts. Computer technology, race, sex, sexuality, and marijuana all feature in the top two dozen changes. Race, sex, and marijuana have roots in the "generation gap" of the 1960s; that they continue to change is kind of remarkable. Technology and sexuality emerged under the view of the GSS. The stalled gender revolution (England 2010; England et al. 2020; Pedulla and Thiebaud 2015), mostly documented in labor force and economic data by England, shows here in a variety of gender role attitudes that changed a great deal through 2000 and, like the labor force variables, stalled in the last twenty years. Gender attitudes also changed across cohorts born in the first sixty years of the twentieth century, but, again, not among cohorts born in the last forty years of the century.

Some of the most researched trends are missing in this inventory. To catch quantity of explanation I occasionally missed quality. For example, Putnam's (1995) discovery of declining social connection, as represented by the voluntary associations that were the hallmark of American social life from the 1850s to the 1980s, was originally based on the GSS variable `memnum` and its parts. As Putnam argued, it had implications for American democracy and culture that ran far deeper than some trends twice as steep. Similarly, the decline of identification with organized religion but perhaps not with religion itself (Fischer and Hout 2002) is now a widely accepted fact of life, Nonetheless, it failed to reach the top 50 among trends as I ranked them here. In short, my reliance on a single metric of change is a limitation of my study worth keeping in mind.

I have only explicitly mentioned 43 of the 276 variables in the statistical analysis. Lack of

mention does not imply lack of change. Every one of the 233 variables not mentioned here changed significantly, either over time or between cohorts. The lack of deadwood is no accident. The Board of Overseers regularly reviews the content of the core, removing items whose trends have topped out or have otherwise become dated or irrelevant and replacing them with more relevant content. Experts from the Board and beyond review content in their specialty and, when needed, recommend changes.[10]

Differences within years and cohorts were also substantial. Many are domain specific in the sense that blacks and whites disagreed on racial issues, men and women differed in gendered activities like gun ownership or fear of victimization (but, interestingly, much less in attitudes), college graduates had more human and social capital than high school graduates, big and small places differed in lifestyle. One modest surprise is that the biggest regional differences were religious rather than lifestyle-related. The South stood out from the rest of the country as more aligned with traditional views of God, heaven, and miracles as well as religious participation.

Altogether these interesting results document the value of the General Social Survey in pursuing the goals laid out at its inception: measuring trends and differentials. The few relative constants in the data, such as gender and the size of workplaces, are essential to understanding the items that are changing.

[10]There was a wholesale removal of almost one-third of the core in 1993 in response to NSF reviewers calls for more flexible content.

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Figures and Tables

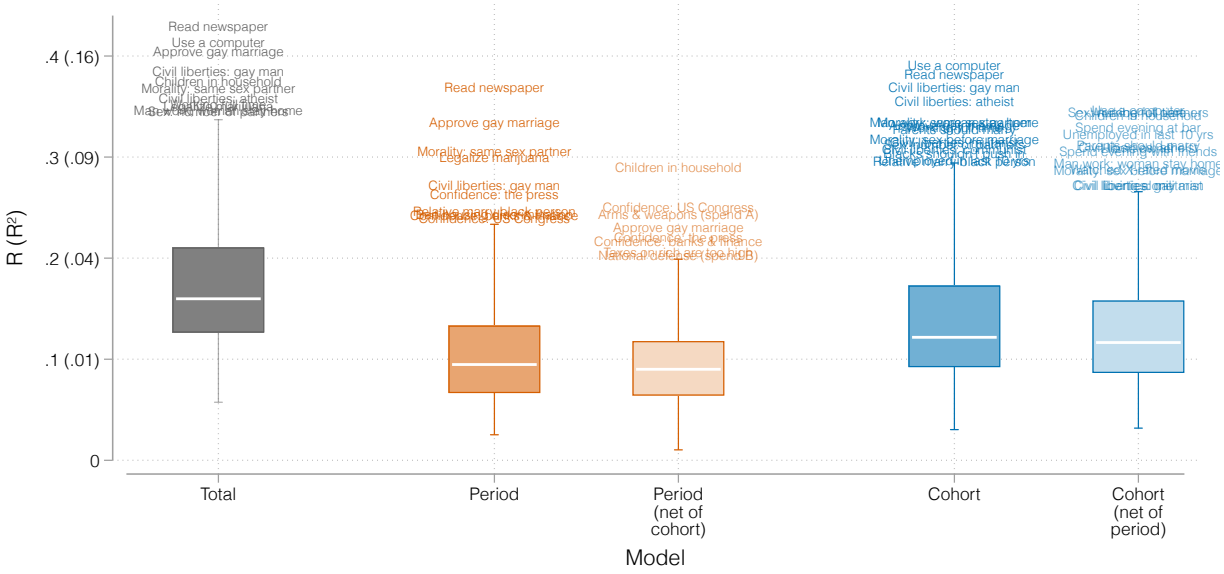

Figure 1. Amount of Change over Time and Across Cohorts, Combined (Total) and Separately for 270 GSS Variables: Adults in Households, 1972-2018

Notes: In these boxplots, the "boxes" span the interquartile range of R values for the total, period, and cohort differences, including period and cohort net of the other; the horizontal white line shows the median of each set of R values, and the words show the variables that changed the most. Overlapping words are clarified in lists in Table 1.

Source: Author's calculations from the General Social Surveys.

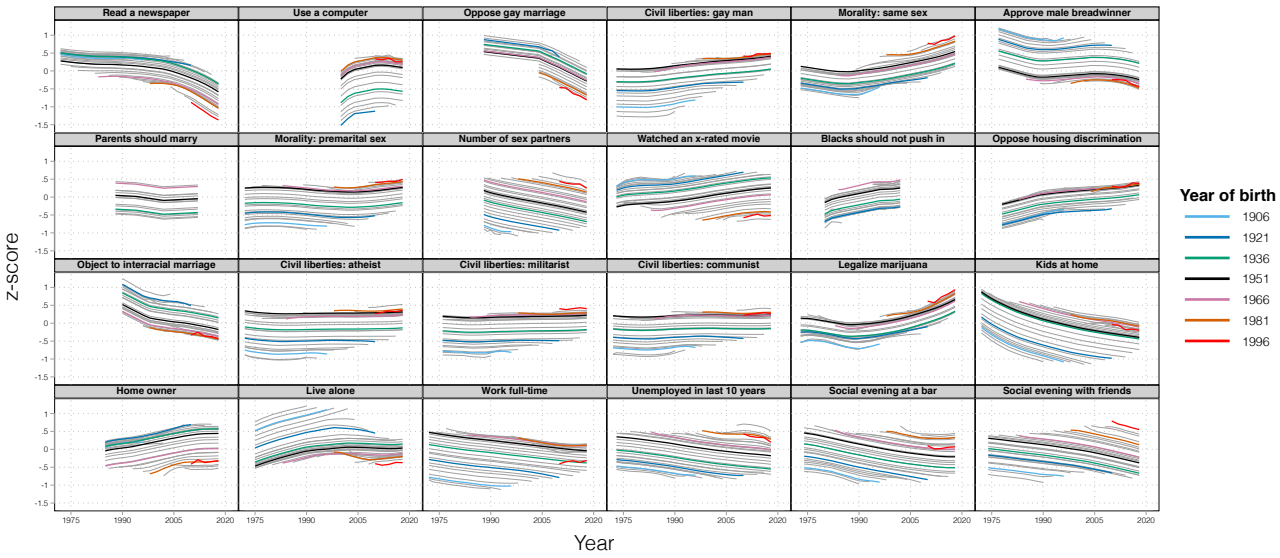

Figure 2a. Smoothed values of 24 variables that changed the most (biggest R^2 in total model) by year and cohort: Adults in Households, 1972-2018

Note: Trends were smoothed by locally estimated regression (lowess) using a wide bandwidth (.8). Cohorts not listed in the legend are shown in pale gray lines. Cohorts are identified by the central year of a three-year cohort group; 1906 represents 1905-1907, 1921 represents 1920-1922, 1936 represents 1935-1937, 1951 represents 1950-1952, 1966 represents 1965-1967, 1981 represents 1980-1982; 1996 represents the open-ended cohort group born after 1991.

Source: Author's calculations from the General Social Surveys.

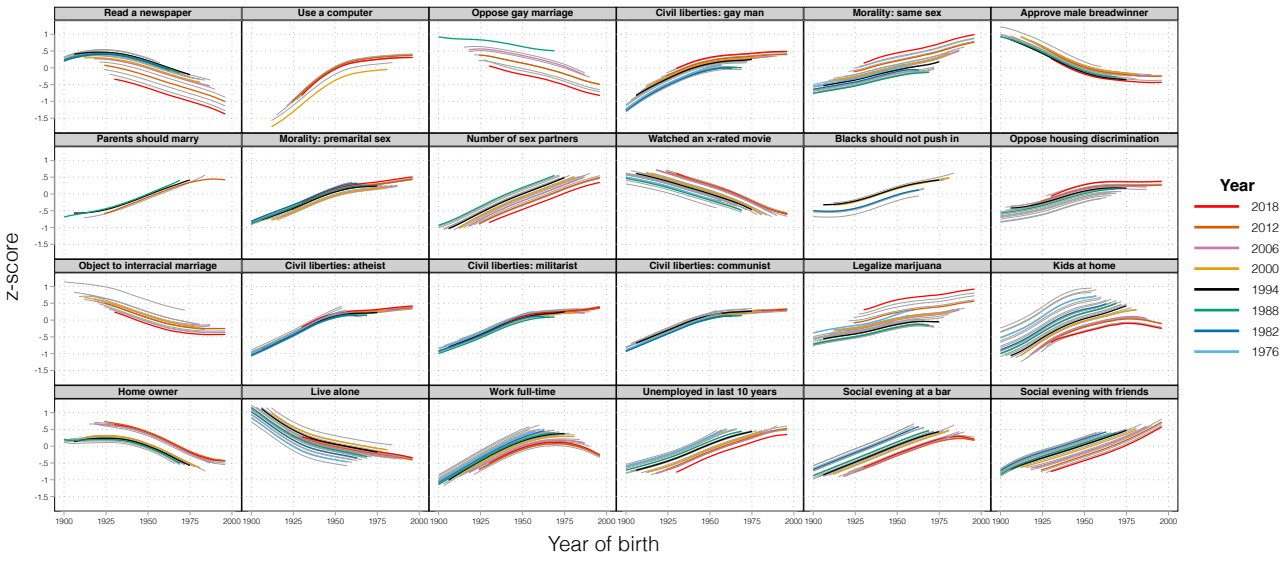

Figure 2b. Smoothed values of 24 variables that changed the most (biggest R^2 in total model) by cohort and year: Adults in Households, 1972-2018

Note: Trends were smoothed by locally estimated regression (lowess) using a wide bandwidth (.8). Years not listed in the legend are shown in pale gray lines.

Source: Author's calculations from the General Social Surveys.

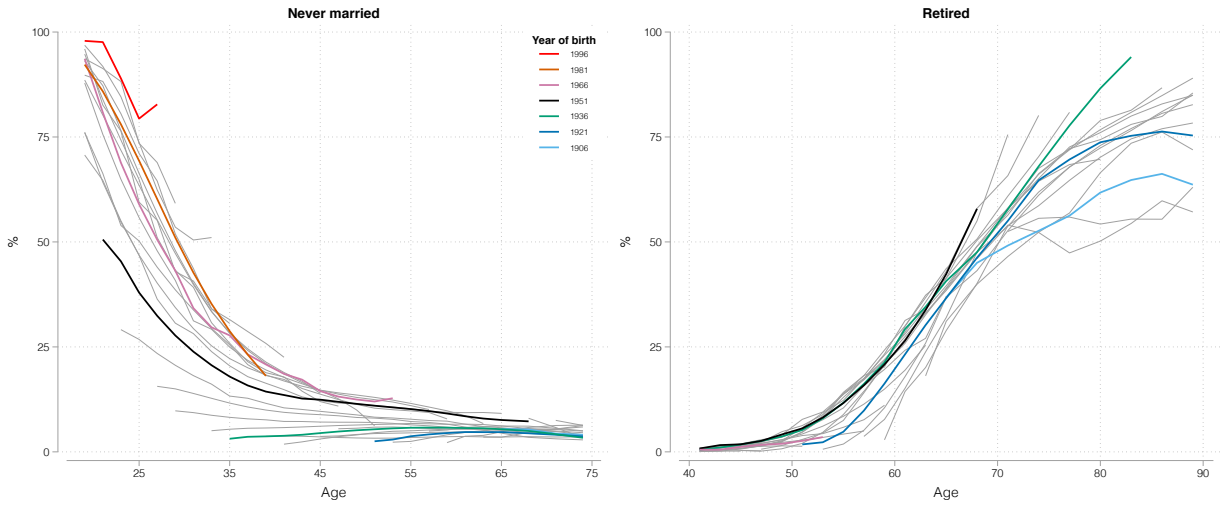

Figure 3. Percentages Never Married and Retired by Age and Cohort: Adults in Households, 1972-2018

Note: Trends were smoothed by locally estimated regression (lowess) using a wide bandwidth (.8). Years not listed in the legend are shown in pale gray lines.

Source: Author's calculations from the General Social Surveys.

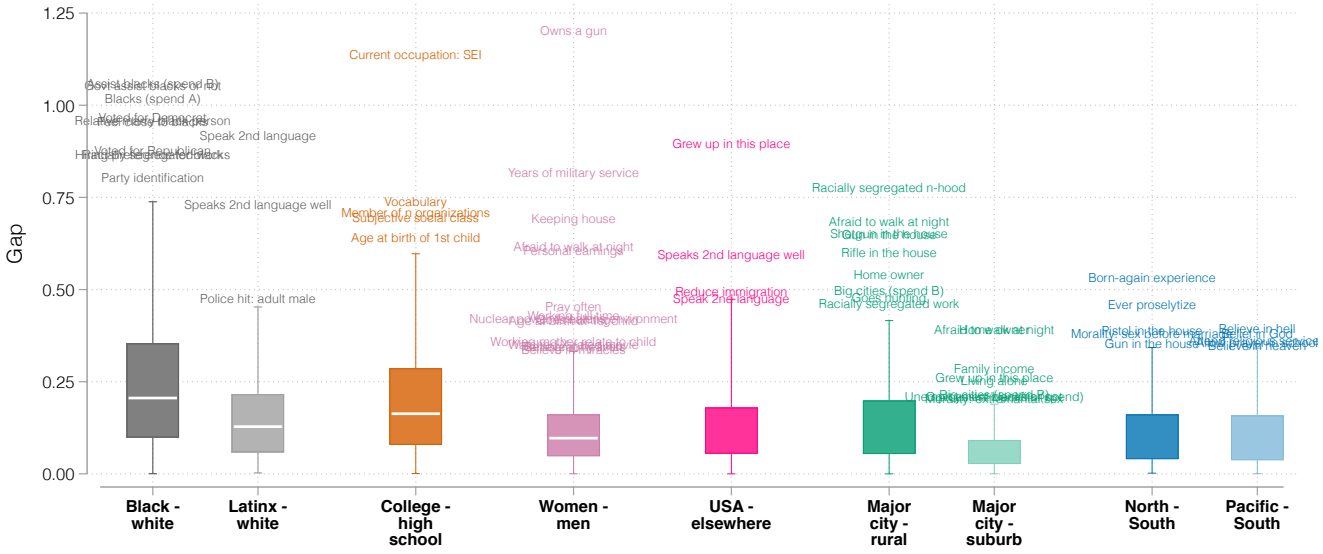

Figure 4. Differentials by Race, Hispanic Origin, Education, Gender, Rural-Urban Residence, and Region: Aldults in Households, 1972-2018

Key: In these boxplots, the boxes span the interquartile range of regression coefficients of each of the listed covariates, controlling for the others, period, and cohort; the horizontal white line shows the median of each regression coefficient, and the variable labels show outlying values.

Source: Author's calculations from the General Social Surveys.

Table 1. Multiple correlations (Rs) for outlying variables from each boxplot in Figure 1 by model and topic: Total, period, and cohort trends, and period and cohort net of each other

Variable	Total	Period	Period (net of Cohort)	Cohort	Cohort (net of Period)
A. Technology					
Read newspaper	**.43**	**.37**	.20	**.38**	.22
Use a computer	**.41**	.23	.13	**.39**	**.35**
B. Groups considered "nonconformist"					
Approve gay marriage	**.40**	**.33**	**.23**	**.33**	.23
Civil liberties: gay man	**.39**	**.27**	.11	**.37**	**.27**
Civil liberties: atheist	**.36**	.18	.04	**.36**	**.31**
Civil liberties: militarist	.32	.16	.04	**.31**	**.27**
Civil liberties: communist	.31	.17	.05	**.31**	.26
C. Family, gender, & living arrangements					
Children in household	**.38**	.16	**.29**	.24	**.34**
Man work; woman stay home	**.35**	.18	.09	**.33**	**.29**
Home owner	.31	.06	.16	.27	**.31**
Living alone	.30	.13	.16	.25	**.27**
D. Sex & drugs					
Morality: same sex partner	**.37**	**.31**	.15	**.33**	.20
Legalize marijuana	**.35**	**.30**	.19	.29	.18
Sex: number of partners	**.35**	.03	.15	**.31**	**.34**
Parents should marry	.33	.11	.05	**.33**	**.31**
Morality: sex before marriage	.32	.15	.07	**.32**	**.29**
Watched X-rated movie	.30	.09	.15	.26	**.29**
E. Work, employment, & leisure					
Working full time	**.35**	.08	.13	**.33**	**.34**
Unemployed in last 10 yrs	.33	.07	.15	**.30**	**.32**
Spend evening at bar	.33	.05	.19	.28	**.33**
Spend evening with friends	.31	.04	.17	.26	**.31**
F. Racial attitudes & experiences					
Relative marry black person	.34	**.25**	.16	**.30**	.23
Blacks shouldn't push in	.33	**.23**	.16	**.30**	.24
Ban housing discrimination	.31	**.24**	.13	.28	.19
G. Public policy & trust					
Confidence: banks & finance	.28	**.24**	**.22**	.17	.13
Confidence: the press	.27	**.26**	**.22**	.15	.04
Confidence: US Congress	.27	**.24**	**.25**	.09	.11
Arms & weapons (spend A)	.27	.22	**.24**	.11	.15
Taxes on rich are too high	.24	.21	**.21**	.12	.11
National defense (spend B)	.22	.17	**.20**	.09	.14

Notes: Variables sorted from highest to lowest total R within category. R values in **bold** type are outliers for the model in that column. For data details, see the GSS cumulative codebook (Smith et al. 2019).

Table 2. Outcomes with largest differences by covariate: Adults in households, 1972-2018

Outcome	*Difference (σ units)*
Race-Hispanic origin	
Black – white	
Assist blacks[b]	1.06
Govt assist blacks or not	1.05
Blacks[a]	1.02
Voted for Democrat	.97
Relative marry black person	.96
Feel close to blacks	.96
Voted for Republican	.88
Racially segregated work	.87
Hiring preference for blacks	.87
Party identification	.80
Latinx – white	
Speak 2nd language	.92
Speaks 2nd language well	.73
Police hit: adult male	.48
Education	
College – high school	
Current occupation: SEI	1.14
Vocabulary	.74
Member of n organizations	.71
Subjective social class	.69
Age at birth of 1st child	.64
Gender	
Women – men	
Owns a gun	1.20
Years of military service	.82
Keeping house	.69
Afraid to walk at night	.62
Personal earnings	.61
Pray often	.45
Working full time	.43
Nuclear power threatens environment	.42
Goes hunting	.42
Age at birth of 1st child	.42
Working mother relate to child	.36
Watched X-rated movie	.35
Pornography limits	.35
Believe in heaven	.35
Believe in miracles	.34

Outcome	*Difference (σ units)*
Rural-urban	
Major city – rural	
Afraid to walk at night	.69
Shotgun in the house	.65
Gun in the house	.65
Rifle in the house	.60
Home owner	.54
Big cities[b]	.50
Goes hunting	.48
Racially segregated work	.46
Major city – suburb	
Afraid to walk at night	.39
Home owner	.39
Family income	.29
Grew up in this place	.26
Living alone	.25
Big cities[b]	.22
Unemployment benefits (spend)	.21
Govt assist blacks or not	.21
Morality: extramarital sex	.20
Region	
North – South	
Born-again experience	.53
Ever proselytize	.46
Pistol in the house	.39
Morality: sex before marriage	.38
Gun in the house	.35
Pacific – South	
Belief in God	.38
Attend religious services	.36
Allow prayer in school	.36
Believe in heaven	.35

[a] Form A of national spending items. [b] Form B of national spending items.

Note: For data details see the GSS cumulative codebook (Smith et al. 2019).

Appendix table A1. Recoding of covariates in multivariate analyses

Variable name	GSS mnemonic(s)	New mnemonic	New code	Category label
Gender	sex	—	1	Men
			2	Women
Race	race	Race4	1	White (non-Hispanic)
	hispanic		2	Black (non-Hispanic)
	ethnic		3	Hispanic
			4	All other
Age	age	Age32	19	18-19
			21	20-21
			23	22-23
			...	
			63	62-63
			65	64-66
			68	67-69
			...	
			86	85-87
			89	88+
Grew up in USA	reg16	USA16	0	Elsewhere
			1	US state
Education	degree	Educ5	0	No credentials
	educ		1	High school diploma
			2	Some college
			3	College degree
			4	Advanced degree
Region	region	Region5	1	Northeast
			2	Midwest
			3	South
			4	Mountain
			5	Pacific
Rurual-urban	srcbelt	—	1	Large metro: central city
			2	Mid-sized metro: central city
			3	Large metro: suburb
			4	Mid-sized metro: suburb
			5	Other urban
			6	Rural

Note: For data details, see the GSS cumulative codebook (Smith et al. 2019). New mnemonics refer to the `Stata` .do file in the online supplement.

Appendix table A2. Recoding of 14 dependent variables as dichotomies in multivariate analyses

Variable name	GSS mnemonic(s)	New mnemonic	*Category coded:* 1	0	Conditions
Work status	wrkstat	Atwork	1, 2	3-8	
		Fulltime	1	2-8	
		Retired	5	1-4, 6-8	
		Keephouse	7	1-6, 8	
Household	hhtype	Livealone	1	2-204	
Marital status	marital	Nevermar	5	1-4	
Home owner	owndwel	Owndwell	1	2, 3	
Lives where grew up	mobile16	Samecity	1	2, 3	
Religion	relig	None	4	All other	
Voted	vote`tt`	Vote	1	2	if last election was `tt`
Party voted for	pres`tt`	Demvote	1	2, 3, 4	if voted in `tt`
	pres`tt`	Repvote	2	1, 3, 4	if voted in `tt`
Sexual identity	sexornt	LGBQ	1-2	3	
Sex: same-sex	sexsex	Sexsex	1, 3	2	if male
			2, 3	1	if female

Note: For data details, see the GSS cumulative codebook (Smith et al. 2019). New mnemonics refer to the `Stata` .do file in the online supplement.

Appendix Table A3. Recoding of 18 dependent variables as scales, counts, or recodes in multivariate analyses

Variable name	mnemonic(s)	mnemonic	Transformation	Conditions
Children at home	babies preteen teens	Numkids	Sum of 3 variables	
Age at first birth	agekdbrn	Agekidborn	Recode <15 to 15 Recode >50 to 50	
Income	income`tt` rincom`tt`	lnIncome18 lnRincome18	Transformed as in Hout (2004)	Year `tt` brackets Year `tt` brackets
Subjective class	class	Class	Recode 5 to missing	
Next generation	kidssol	Kidssol	Recode 6 to missing	
Party identification	partyid	Partyid7	Recode 8 to missing	
Civil liberties	spk`grp` col`grp` lib`grp`	civ`Grp`	Sum of pro-liberty responses	`grp` = atheist, communist, racist, gay man, militarist, and Muslim cleric
Abortion attitude	abhlth abdefect abrape abpoor absingle abnomore	Abscale	Sum of "yes"es	
Multi-ethnic	ethnum	Ethnum	Recode 4 to zero	
Racial stereotypes	intlwhts, intlblks lazyblks, lazywhts wlthwhts, wlthblks	Intel_wb Lazy_wb Wealthy_wb	Difference	

Note: For data details, see the GSS cumulative codebook (Smith et al. 2019). New mnemonics refer to the `Stata` .do file in the online supplement.