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Prevailing stereotypes of older people hold that their attitudes are inflexible or that aging tends to promote increasing conservatism in sociopolitical outlook. In spite of mounting scientific evidence demonstrating that learning, adaptation, and reassessment are behaviors in which older people can and do engage, the stereotype persists. We use U.S. General Social Survey data from 25 surveys between 1972 and 2004 to formally assess the magnitude and direction of changes in attitudes that occur within cohorts at different stages of the life course. We decompose changes in sociopolitical attitudes into the proportions attributable to cohort succession and intracohort aging for three categories of items: attitudes toward historically subordinate groups, civil liberties, and privacy. We find that significant intracohort change in attitudes occurs in cohorts-in-later-stages (age 60 and older) as well as cohorts-in-earlier-stages (ages 18 to 39), that the change for cohorts-in-later-stages is frequently greater than that for cohorts-in-earlier-stages, and that the direction of change is most often toward increased tolerance rather than increased conservatism. These findings are discussed within the context of population aging and development.

Although the implications of population aging for the financing of social insurance programs and the size and composition of the labor market have been widely studied, the potential repercussions of the demographic transition for political sentiments and sociopolitical attitudes have received less systematic investigation. As the average life expectancy is extended, the number of cohorts, or generations, coexisting will increase; longer life expectancies coupled with recent trends in fertility will make older and younger cohorts more equal in size; and the increasing size of older age groups coupled with their improved health will likely mean that organizations, social institutions, and political groups will age, as well. More diversity in race/ethnicity, religious affiliation, sociodemographic identities, and sexual orientation (to name a few) will mean more groups competing for resources, struggling for political power, and trying to shape public opinion and social policy. Three of the more contentious attitudinal arenas in contemporary U.S. culture involve attitudes about the political and economic roles of historically subordinate groups (e.g., women and blacks), attitudes toward the civil liberties of groups outside the U.S. mainstream (e.g., atheists and homosexuals), and attitudes toward privacy in areas such as the right-to-die and sex between consenting adults. What are the impli-

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cations of population aging for social change in sociopolitical attitudes regarding these controversial issues?

The uncertain policy implications of population aging have prompted renewed interest in whether older cohorts are more fervent in defending their beliefs and, therefore, more resistant to change (see, e.g., Peterson 1999; Roszak 1998). Two related propositions are relevant to the debate over the relationship between population aging and the nature of economic, political, and social change: (1) as people age, they hold more tenaciously to their views and are more resistant to change (Alwin 2002) and (2) older people's attitudes are more stable than those of younger people (Krosnick and Alwin 1989). We must be careful to distinguish between changes in cohort distributions and changes in individuals' opinions. Whereas the latter is an issue of intra-individual change, aging, or development, the former refers to intracohort aging as an aspect of social structure. Intracohort aging summarizes the net results of individual-level change and is, therefore, a conservative aggregate measure of what is happening at the individual level. As indicators of a demographic process, measures of intracohort aging allow us to assess broader societal patterns in how different birth cohorts are characterized.

Whether cohorts-in-old-age can change is behind long-standing discussions of the societal implications of population aging. The Commission on Population Growth and the American Future (1972:96), for example, noted that "one concern often expressed about an older age structure is that there will be a larger proportion of the population who are less adaptable to social and political change, thus suggesting the possibility of 'social stagnation.'" Much more recently, Peterson (1999:213) predicted that "as the culture ages, the social temperament will grow more conservative and less flexible." Further, a 2000 replication of the earlier Louis Harris and Associates' National Council on Aging (1976) study reported that the statement "most people over 65" are "very open-minded and adaptable" is endorsed by only 10 percent of 18 to 64-year-olds and 16 percent of those over age 65, which represents a *decline* for both age groups when compared to the 1976 results (Cutler 2000).

Changes in attitudes can come from various sources. Younger generations replace older ones, historical events can alter people's views, and people may be exposed to new perspectives as they accumulate experiences. The relative prominence of these mechanisms not only affects the pace of social change, but also the extent to which change (or shifts in attitudes) is localized by other demographic characteristics, such as age. Since predictions about future trends must rely on historical evidence, we formulate an answer to the question posed above—what are the implications of population aging—by examining more than 30 years of data on sociopolitical attitudes among adults in the United States. We will *not* attempt to disaggregate age, period, and cohort effects, nor will we assess motivations for individual-level change. Further, rather than emphasize how cohort replacement produces changes in public opinion, we examine within-cohort change and ask specifically: how does the magnitude and direction of intracohort change at older ages compare to the changes that occur when cohorts occupy a younger age range?

COHORT REPLACEMENT, INTRACOHORT AGING, AND ATTITUDES

To the extent that different cohorts can be characterized by different experiences, the social presence of these experiences changes with modifications in the age structure of the population. As noted by both Mannheim (1952) and Ryder (1965), early formative experiences can leave an indelible stamp on the attitudes and values of generations and cohorts. Evidence from Schuman and Scott (1989) generally supports the notion of generational effects, while Griffin (2004) shows that such effects may also be geographically localized in the case of controversial issues like those involving race relations conflicts. The "increasing persistence" hypothesis (Glenn 1974; Inglehart and Baker 2000) can be coupled with the "impressionable years" perspective (Sears 1975; Visser and Krosnick 1998), which suggests that late adolescence and early adulthood are the phases of the life course in which attitudes and values are most likely to be formed and crystallized. As a result, successive cohorts are socialized to different social and political attitudes, values, and ideologies as

cultural and historical circumstances change, forming the basis for cohort differences. As cohorts age, they are increasingly integrated into the social system with growing family, occupational, and community involvement, which presumably leads to a greater stake in maintaining the status quo.

The empirical evidence cited above is consistent with the stereotype of rigidity among older age groups. Indeed, there appear to be age differences in *how* people learn, including, for example, the training regimens that are most effective, the amount of time it takes to acquire new skills, and the speed at which tasks can be completed (Czaja and Moen 2004; Hardy 2006). Nevertheless, relatively recent work on age differences in learning, responses to training, changes in brain structure, and adaptability suggest that change can occur at older ages (Wang and Chen 2006). Further, life-course research on responses to major life transitions provides evidence on the adaptability of older people to changes in social circumstances, family structure, living arrangements, and health status.

While recognizing the significance of age differences in how events are experienced, individuals appear open to new experiences and capable of reevaluating their beliefs in light of new evidence. The "lifelong openness model" (Visser and Krosnick 1998) suggests that age is unrelated to openness to attitude change. Reconciling this perspective with the empirical evidence regarding the relative stability of attitudes among older age groups (e.g., Alwin, Cohen, and Newcomb 1991) involves the distinction between manifest change and the *capacity* to change. In other words, if we assume equal exposure to salient experiences, the lifelong openness model suggests that both younger and older age groups can and will modify their perspectives.

In studies of intra-individual change, personal experiences influence attitudes as much for older people as younger people (e.g., Czaja and Sharit 1998). If this openness exists, then population aging may be largely irrelevant to whether attitudes change, since significant historical events can potentially change everyone's attitude, regardless of cohort membership. This "openness" will likely be central to how U.S. society adapts to the increasing heterogeneity of the population. To the extent that attitudes toward historically subordinate groups are based on stereotypes and unfamiliarity with other cultures, then general social initiatives that increase interaction and direct experience with these subgroups may produce equivalent levels of acceptance across all cohort subgroups.

By contrast, attitudes toward privacy issues, which are more heavily rooted in definitions of morality, are less sensitive to accumulated experience. Attitudes about civil liberties, which address the proper roles for a variety of unpopular groups, may lie between these two sets. On the one hand, historical events may trigger insecurities, which might lead some to question whether protecting civil liberties for all groups could make a nation more vulnerable. On the other hand, historical events are interpreted by different cohorts in different ways, so cohorts-at-older-ages may react differently from cohorts-at-younger-ages.

Cohort succession and intracohort aging are two principal mechanisms by which aggregate attitude change may occur (Firebaugh 1997). If cohorts are characterized by attitudes and values formed during the "impressionable years," the attitudinal "stamp" may be resistant to change. Evidence that cohorts are socialized to different normative attitudes that persist through cohort aging is consistent with the hypothesis of change through replacement. In a model that emphasizes this type of successive cohort differentiation, aggregate change in attitudes occurs principally through the metabolic process of older cohorts dying off and being replaced by younger cohorts who are products of a different socialization experience.

The second mechanism for social change is intracohort aging, or normative shifts in cohort-specific distributions. Cohorts are characterized by modifiable belief structures as they age. Three ways these modifications can occur are selective attrition/retention (through mortality and out-migration), selective addition (through in-migration), and net change among cohort members. Our primary interest is in the last mechanism. Regardless of the motivation behind the change—whether experience, reassessment, pressure from others, or something else—such change is more likely when the attitudes or beliefs rely on stereotypical representations rather than direct experience. If attitudes are based on negative stereotypes, then as time (chronicled as cohort aging) increases the likelihood of direct interaction, cohort members

may accumulate experiential evidence that leads to a change in the normative perspective. Given that these experiences may occur across various institutional settings (e.g., work, church, community, business), this model is consistent with what Visser and Krosnick (1998) and others refer to as "lifelong openness" and "perpetual susceptibility."

For example, recent studies of political ideology find that both younger and older age groups have become more liberal since the 1960s regarding race in a variety of contexts (e.g., Danigelis and Cutler 1991a; Schuman et al. 1997). Liberal trajectories have also been reported for all age cohorts in abortion attitudes (Misra and Panigrahi 1998), public support for working women (Misra and Panigrahi 1995), and women's liberation (Konty and Dunham 1997). In other domains, trends toward conservatism appear to characterize the population in general and both younger and older cohorts separately—especially in the area of law and order issues (e.g., Danigelis and Cutler 1991b).

Many studies specifically address the relative contributions of cohort replacement and intracohort aging to aggregate trends in attitudes over a range of items. For example, Firebaugh and Davis (1988) report that, between 1972 and 1984, traditional anti-black prejudice declined, in part because of intracohort attitude change and, in part, because of the replacement in the later samples of older respondents by younger respondents. Similarly designed studies indicate cohort replacement's primacy in explaining increased flexibility about gender roles (Brooks and Bolzendahl 2004), gender differences in liberalized abortion attitudes (Scott 1998), more egalitarian attitudes toward the family provider role among men (Wilkie 1993; see also Brooks and Bolzendahl 2004), and increased tolerance toward leftist groups (Wilson 1994).

Other studies, however, find intracohort aging to be an important factor along with cohort replacement on a number of issues, including liberal trends on religious matters among Mennonites (Kanagy and Driedger 1996) and increased environmental concern (Kanagy, Humphrey, and Firebaugh 1994). Davis (1996) finds that on a wide range of attitudes relating to crime, free speech, politics, race, religion, gender, and sexuality both intracohort aging and cohort replacement are important, sometimes working in the same direction, sometimes in opposing directions.

In sum, although the public opinion literature contains many studies that look at attitude trends and the demography literature includes a number of studies that decompose cohort replacement from intracohort aging within various domains, our study is the first to provide a thorough examination of intracohort aging for people age 60 and older and to show how that change, in both extent and direction, compares with change exhibited by younger adults.

DATA AND METHODS

The data for this study are drawn from the 1972 to 2004 cumulative version of the National Opinion Research Center's General Social Surveys (GSS) (Davis, Smith, and Marsden 2005). The 25 surveys in this series, with a total N of 46,510, are based on nationally representative samples of the English-speaking, noninstitutionalized population of the United States, age 18 and older. Additional, detailed information about differences in sampling designs, rotational systems governing the inclusion of replicated items, and changes in other major features of the GSS over the years may be found in Davis and colleagues (2005).

Thirty-three items asked of respondents in at least 14 of the 25 surveys produce 16 measures of attitudes toward historically subordinate groups, support for civil liberties, and boundaries of privacy after composite indices were constructed where appropriate (see Appendix A for question wording). For example, questions about the civil liberties of homosexuals fall in the civil liberties domain, while attitude toward the acceptability of homosexual practices falls in the boundaries of privacy domain. This is consistent with evidence that suggests clear differences between homosexuality as a moral question and the civil liberties one would be willing to accord to homosexuals (Loftus 2001). Indices were prepared when the component items were asked in the same years, where face validity appeared to warrant index construction, and where reliability tests justified the creation of composite measures. Attitudes toward historically subordinate groups are measured by six items, two dealing with women and four with blacks; support for civil liberties by

five items that focus on different disfavored groups outside the American mainstream; and attitudes toward boundaries of privacy by five measures that deal with the right-to-die, sexual behavior, and divorce (see Appendix B for information on the number of surveys used for each measure, the period of time encompassed by each, and key characteristics related to the construction of the measures).

Analytic Approach

To assess how attitude change occurs, we employ the decomposition methodology described by Firebaugh (1989). The decomposition technique has been applied to the adult population to determine the relative contributions of intracohort aging and cohort replacement to social change. We use this same approach but focus on the intracohort aging component rather than cohort replacement. Although linear decomposition assumes the unit of analysis to be the individual, our conclusions about intracohort aging change will be limited to the sum of individual changes because of the assumptions underlying linear decomposition. Further, to determine whether intracohort change occurs only or primarily among cohorts-at-earlier-stages rather than also at later-stages, we estimate these components within age groups—those younger than 40 and those age 60 or older. Substantively, these two age ranges represent different life stages in social development, reflecting the primacy of education, occupation, marriage, and family (18 to 39) versus later life and retirement (60+) (see, e.g., Erikson 1963; Neugarten 1968). Pragmatically, the groups are of sufficient size to allow stable statistical interpretation of age group comparisons.[1] Rather than one homogeneous adult population, we conceptualize two age-specific populations into and out of which cohorts can age.

In 1972, our first wave of data, sample members born in 1954 (members of the 1954 birth cohort) are age 18. From 1972 to 1993, this cohort ages from 18 to 39; therefore, in the 1972 to 1993 waves, the 1954 birth cohort is part of the <40 population. From 1994 through 2004, however, the 1954 birth cohort has aged out of the <40 population, but has not yet aged into the 60+ population. By contrast, in 1972 the 1937 birth cohort is age 35 and therefore part of the <40 population, and they remain part of this population through 1976. By 1977, they have aged out of the <40 population, and in 1997, when they turn 60, they age into the 60+ population. In sum, cohorts age into the younger of our two populations when they turn 18, and they age into our older population when they turn 60; cohorts age out of our younger population when they turn 40 but exit the older population only when they die.

Each of our two populations is represented by sample members in the appropriate age ranges; therefore, we begin by regressing each attitude measure, Y_i, on period (the year of the survey) and cohort (the birth year of the respondent) within the younger and older age ranges:

$$Y_i = \hat{\beta}_0 + \hat{\beta}_1\, period + \hat{\beta}_2\, cohort + e_i \quad (1)$$

In contrast to the APC (age/period/cohort) accounting scheme, which aims to disentangle the unique "effects" of these three timing measures, the decomposition technique we employ is designed to distinguish between the two processes described above—cohort replacement and intracohort aging—and their relative contributions to macrolevel, or population, change. As Ryder (1965) notes, to learn how much of social and cultural change is due to cohort succession rather than intracohort aging, disentangling age, period, and cohort effects is not necessary.

For each of the attitude measures and the life course stages, we estimate the net amount of aggregated individual-level change, or intracohort aging, and change due to differences in the cohort membership of the two age ranges. We then compare our findings for the two age groups to determine whether intracohort aging is a more important component at younger age ranges than at older age ranges. Within this framework, we build on the estimated coefficients for period and cohort, where $\hat{\beta}_1$ estimates the average change over time within cohorts

[1] As an alternative to the above older category, for example, we made the older category cutoff 65 and older. We opted for the set of categories including 60 and older because both sets of groups produce similar results. Also, 60 and over provides a larger N in the older group and, therefore, a more stable set of findings.

and $\hat{\beta}_2$ estimates the average cohort-to-cohort difference at a given point in time (Firebaugh 1989). We are particularly interested in our estimates of $\hat{\beta}_1$ for the 60+ population, since they indicate whether the attitude change occurs for cohorts in the later stages.

Once we analyze the relative contributions of cohort succession and intracohort aging for the older and younger age groups, our next task is to determine whether our findings persist when we control for sources of change in cohort composition. As cohorts age, their composition may also change as a result of differential rates of attrition and addition. For example, differences in death rates by socioeconomic status can produce a cohort with a higher level of educational attainment. Gender and racial differences in mortality can lead to higher proportions of women and whites as a cohort ages. If outcome variables are related to these changing compositional characteristics, normative shifts can occur due to composition effects alone. To control for possible composition effects, our equations include gender (male versus female), race (white versus non-white), marital status (married versus not married), education (number of years of formal schooling), and household income (midpoints of income ranges; missing values cases are estimated on the basis of known income ranges for gender, household size, and education subgroups).

Preliminary Analyses

Our central objective is to determine whether intracohort aging significantly contributes to aggregate change in social and political attitudes in later as well as earlier stages. Therefore, we must establish, first, that change occurred and, second, if change has occurred, that linear decomposition models are appropriate. To begin, we examine the attitudinal indicators for the total sample and for each age group (<40 and 60+) to determine whether change in aggregate opinion occurs. We refer to our three categories of items as HSG (attitudes toward historically subordinate groups), CL (support for the civil liberties of disfavored groups), and BP (attitudes involving the boundaries of private behavior).

All items are found to register significant change for the total population and for either the younger or older populations separately or for both younger and older populations. Most items (all six in HSG, four of five in CL, and three of five in BP) change for both younger and older populations, as well as for the total population. Remaining items change either for the younger population (tolerance of extramarital sex) or for the older population (civil liberties for atheists and tolerance of premarital sex) (see Appendix C for results).

The question of whether linear decomposition adequately models the changes summarized above is based on two considerations: Initially, we asked whether the explained variance in each item over time, attributable to the joint effect of intracohort aging and cohort replacement, is meaningful. We arbitrarily chose a relatively low 2 percent (rounded) as our cutoff point. For each of the measures analyzed, the explained variance of 2 percent (rounded) is met for the total population and for either the younger or older populations separately or for both the younger and older populations. We then asked how the actual change scores for each measure compare to their estimated change scores based on the addition of the intracohort aging and cohort replacement components (Firebaugh 1997:24–26). Calculation of these components is based on the unstandardized regression coefficients and the start and end points in years for the appropriate equations. For example, estimated change in the "Political Gender Equality" for the total sample is calculated as follows:

$$\text{Estimated Linear Change} = \text{Intracohort Aging effect} + \text{Cohort Replacement effect} \quad (2)$$

$$= + .372 + .345 = + .717$$

where

$$\text{Intracohort Aging} = B_{YEAR}\,(YEAR_j - YEAR_i) = + .0155 \times (1998 - 1974) = + .372$$

in which B_{YEAR} is the unstandardized slope for year of survey,

$YEAR_i$ is first year in which question was asked, and

$YEAR_j$ is last year in which question was asked.

and

$$\text{Cohort Replacement} = B_{COHORT}(AVB_j - AVB_i) = +.0150 \times (1952.4 - 1929.4) = +.345$$

where B_{COHORT} is the unstandardized slope for respondent's birth cohort, AVB_i is average cohort year for the first year in which question was asked, and AVB_j is average cohort year for the last year in which question was asked.

The actual observed change is + .616 (rounded to .62 in Appendix C), so the ratio of estimated change to observed change is + .717 / + .616 or 1.16. As summarized in Appendix D, all item ratios are within 75 to 133 percent (3/4 to 4/3) of observed change for the total or for either or both of the two age groups.[2]

ANALYTIC RESULTS

In this second stage of analysis, we address three questions for the two age groups that are the focus of this article: (1) Is there evidence of a significant intracohort aging effect on attitudes for the 60+ age group as well as the <40 age group? (2) Does the direction of the intracohort aging effect for the 60+ group indicate increased tolerance? (3) Does the age group comparison of intracohort aging effects on attitudes toward historically subordinate groups differ from the comparison of attitudes toward civil liberties and privacy issues? We address the first question by examining the significance of regression coefficients indicative of intracohort aging for both age groups across all items and by comparing the proportion of aggregate change allocated to intracohort aging relative to cohort replacement. We address the second question by attending to the sign of significant regression coefficients indicative of intracohort aging and comparing them across categories of attitudes. Finally, we address the third question by comparing the magnitude of the intracohort aging components for younger and older age groups; significant age group differences are determined through inference tests for the difference in coefficients (Hardy 1993; Howell 1987).

The Contribution of Intracohort Aging to Attitude Change

Table 1 shows the intracohort aging (IA) and cohort replacement (CR) standardized[3] regression coefficients within each age group for unadjusted analyses (columns 1 to 4) and for analyses adjusted for the compositional effects of gender, race, marital status, education, and household income (columns 5 to 8). Of the 16 attitude items, intracohort aging appears to make a significant unadjusted contribution to aggregate change in 13 items for the <40 age group compared to 11 items for the 60+ age group (columns 1 and 3). When composition effects are controlled, the number of significant intracohort aging effects drops to 12 for the younger age group and remains at 11 for the older group (columns 5 and 7).

For the adjusted results, the 60+ group is characterized by significant intracohort aging effects in four of the six items relating to historically subordinate groups, compared to five of six for the <40 age group. There are three significant effects for the five civil liberties items in both age groups and four significant intracohort aging effects for the five privacy items in both age groups.

When we look more closely at the items for which intracohort aging is a significant component in the adjusted results, all of the significant effects for the historically subordinate groups and civil liberties items change in the direction of increased tolerance for the 60+ age group. By contrast, structural reasons for inequality (HSG) and two of three significant civil liberties effects are in the opposite direction for the <40 age group. Within the bound-

[2] Readers familiar with the GSS will recognize that some items that might logically have been included—such as attitudes toward abortion—are omitted from our analysis. The abortion questions are all dichotomies, so indices were constructed and submitted to the same kinds of tests for significant change over time, linearity, and linear decomposition as were the measures analyzed here. Unlike the measures used in this article, none of the abortion measures could meet all of the criteria established.

[3] We report standardized regression coefficients in this table because we are primarily interested in the comparison of the two components of change for each item; therefore, our comparison occurs within equations.

Table 1. Intracohort Aging (IA) and Cohort Replacement (CR) Betas by Age Categories, Unadjusted and Adjusted for Composition Effects (General Social Survey, 1974–2004)

	Unadjusted Betas				Adjusted Betas			
	< 40 Years		60+ Years		< 40 Years		60+ Years	
Measure	IA (1)	CR (2)	IA (3)	CR (4)	IA (5)	CR (6)	IA (7)	CR (8)
Attitudes Toward Historically Subordinate Groups								
Political Gender Equality	.165	.039	.104	.200	.121	.059	.094	.137
Economic Gender Equality	.064	.041	(.027)	.216	.042	.037	(.002)	.190
Blacks are Pushing too Hard	.199	.130	.249	(.038)	.109	.168	.228	(.001)
Whites have Right to Seg. Neighbor.	.167	.079	.159	.079	.099	.129	.166	(.007)
Individual Reasons for Race Inequality	.084	(.036)	.117	.095	(.019)	.085	.090	.073
Structural Reasons for Race Inequality	–.176	.052	(.023)	–.106	–.206	.058	(.006)	–.108
Support for Civil Liberties								
Civil Liberties for Communists	(.028)	.057	.060	.199	–.052	.094	.051	.088
Civil Liberties for Racists	(.030)	–.095	.052	.087	(–.012)	–.062	.048	.039
Civil Liberties for Homosexuals	.131	(.009)	.101	.249	.051	.054	.081	.156
Civil Liberties for Militarists	.056	(–.011)	(.028)	.203	(–.005)	.037	(.009)	.128
Civil Liberties for Atheists	(–.014)	.049	(.034)	.231	–.084	.080	(.025)	.128
Attitudes Toward Boundaries of Privacy								
"Right to Die"	.044	.045	.063	.087	.039	.048	.067	.044
Tolerance of Homosexual Sex	.055	.072	(.011)	.171	(.017)	.068	(–.017)	.131
Tolerance of Extramarital Sex	–.145	(–.015)	–.067	.093	–.134	–.089	–.089	.073
Tolerance of Premarital Sex	–.110	.145	–.103	.249	–.081	.079	–.100	.205
Less Restrictive Divorce Laws	–.135	.076	–.094	.106	–.094	(–.022)	–.108	.099

Note: All Betas are significant at the .05 level (two-tailed test) except for those in parentheses.

aries of the privacy domain, both age groups show similar patterns for their significant intracohort aging effects: a trend toward increased tolerance on the "right to die" issue but a trend away from tolerance on issues relating to premarital and extramarital sex and divorce laws.

When one examines the proportion of the trend that is attributable to intracohort aging (Table 2), the range of percentages is substantial—from a nonsignificant 1.4 (economic gender equality in the adjusted comparisons for 60+) to a high of 99.6 (blacks are pushing too hard in the adjusted comparisons for 60+). Focusing only on the effects in the analyses adjusted for sample composition (columns 3 and 4), three patterns can be discerned. First, the *proportional* effect attributable to intracohort aging is equal to or greater than that of cohort replacement a little over half the time (10 times for measures among those <40 and eight times for measures among those 60+). Second, the percent of effect attributable to intracohort aging is larger in the younger group for 10 of the items, and this pattern applies especially to boundaries of privacy, which includes three items for which the trend is away from increased tolerance. Third, although very few of the percentages for any item (e.g., civil liberties for Communists and tolerance of extramarital sex) are within 10 percent of each other, the discrepancies between the <40 and 60+ percentages are quite obvious but not all in one direction. Within the historically subordinate groups' domain, for example, half the comparisons show a much larger IA percentage for the younger group, while half reflect a much larger percentage for the older group. The scales for atheists and racists reflect this difference in the civil liberties domain, as the former trend is comprised mostly of IA effects in the younger group, while the latter results primarily from IA effects in the older group. Finally, the boundary items tend to show substantial IA effects, regardless of age group.

Differences in the proportion of total change attributable to the IA process provide information about the relative composition of change that occurs. We want to know whether the coefficient relevant to the IA component of change differs by when in the life course that change occurs. Continuing to focus on intracohort aging only, we address the potential importance of

Table 2. Percent of Trend Attributable to Intracohort Aging Change Effect, Unadjusted and Adjusted for Composition Effects (General Social Survey, 1974–2004)

	Percent Change Effect Due to IA			
	Unadjusted		Adjusted	
	< 40 Years	60+ Years	< 40 Years	60+ Years
Measure	(1)	(2)	(3)	(4)
Attitudes Toward Historically Subordinate Groups				
Political Gender Equality	84.4	43.6	72.5	50.0
Economic Gender Equality	67.1	15.9	59.6	1.4
Blacks are Pushing too Hard	63.7	89.0	42.7	99.6
Whites have Right to Segregated Neighborhood	74.1	75.8	50.6	97.2
Individual Reasons for Race Inequality	75.3	65.1	22.3	65.3
Structural Reasons for Race Inequality	81.5	24.9	82.2	8.0
Adjusted Average Percent Change Due to IA			*55.0*	*53.6*
Support for Civil Liberties				
Civil Liberties for Communists	36.2	27.6	39.1	42.1
Civil Liberties for Racists	27.7	44.1	19.0	62.2
Civil Liberties for Homosexuals	94.4	34.7	53.0	40.7
Civil Liberties for Militarists	86.6	15.2	13.1	8.6
Civil Liberties for Atheists	24.8	15.5	55.2	19.5
Adjusted Average Percent Change Due to IA			*35.9*	*34.6*
Attitudes Toward Boundaries of Privacy				
"Right to Die"	54.9	50.4	50.2	68.2
Tolerance of Homosexual Sex	47.2	7.9	23.2	14.3
Tolerance of Extramarital Sex	91.8	49.0	63.8	61.6
Tolerance of Premarital Sex	47.0	34.4	54.6	38.1
Less Restrictive Divorce Laws	67.6	53.0	83.2	57.9
Adjusted Average Percent Change Due to IA			*55.0*	*48.0*

Note: See text for formulas to calculate intracohort aging and cohort replacement effects.

compositional effects and explicitly compare IA coefficients for each age group, both without and with composition controls, using the difference of coefficients test mentioned above. Table 3 (columns 1, 2, 4, and 5) shows these coefficients for the earlier and later stages of the life course, without and with controls for differential mortality. Composition controls appear to matter more for the younger age group, because, as shown in columns 1 and 4, some attitudes' significant intracohort aging effects become nonsignificant with controls, while others' nonsignificant effects become significant with controls. While one item in each domain (individual reasons for inequality in HSG, civil liberties for militarists in CL, and tolerance of homosexual sex in BP) becomes nonsignificant with controls, in the CL categories compositional effects appear to play the most important role among the younger age group, as negligible intracohort aging effects regarding Communists and atheists become significantly negative when compositional effects are controlled. In contrast, composition controls do not affect the significance of any of the intracohort aging coefficients for the older age group.

Comparing older and younger intracohort aging coefficients when composition is controlled shows significantly greater intracohort aging shifts toward tolerance or significantly lower conservative shifts in the older group for eight of the 16 comparisons (four HSG, three CL, one BP). Only economic gender equality shows the <40 group becoming more liberal and the 60+ group not changing, but the difference is not significant.[4] Among the remain-

[4] In earlier analyses, we created a second economic gender equality measure that had one additional item but was limited to a shorter time period (1977 to 1998 as opposed to 1977 to 2004). The alternate measure showed that, while both younger and older groups exhibit a liberal effect in predicting economic gender equality, the younger group's effect is significantly stronger. We chose to use the

Table 3. Intracohort Aging Unstandardized Slope Comparisons Between <40 and 60+, Unadjusted and Adjusted for Composition Effects (General Social Survey, 1974–2004)

	Unadjusted for Composition Effects			Adjusted for Composition Effects		
	< 40 Slope	60+ Slope	T-Test	< 40 Slope	60+ Slope	T-Test
Measure	(1)	(2)	(3)	(4)	(5)	(6)
Attitudes Toward Historically Subordinate Groups						
Political Gender Equality	.018	.016	.55	.013	.015	–.36
Economic Gender Equality	.018	(.008)	1.40	.012	(.000)	1.56
Blacks are Pushing too Hard	.022	.024	–.58	.012	.022	–2.97**
Whites have Right to Segregated Neighborhood	.024	.026	–.55	.014	.027	–3.26***
Individual Reasons for Race Inequality	.008	.013	–1.69	(.002)	.010	–2.74**
Structural Reasons for Race Inequality	–.020	(.003)	–6.91***	–.023	(.001)	–7.18***
Support for Civil Liberties						
Civil Liberties for Communists	(.003)	.008	–1.36	–.006	.006	–4.16***
Civil Liberties for Racists	(.004)	.008	–.94	(–.002)	.007	–2.43*
Civil Liberties for Homosexuals	.016	.014	.37	.006	.012	–1.73
Civil Liberties for Militarists	.008	(.004)	1.17	(–.001)	(.001)	–.56
Civil Liberties for Atheists	(–.002)	(.004)	–1.94	–.009	(.003)	–4.34***
Attitudes Toward Boundaries of Privacy						
"Right to Die"	.005	.007	–.90	.004	.007	–1.22
Tolerance of Homosexual Sex	.008	(.001)	2.25*	(.003)	(–.002)	1.40
Tolerance of Extramarital Sex	–.013	–.005	–4.38***	–.012	–.006	–3.03**
Tolerance of Premarital Sex	–.014	–.014	–.01	–.010	–.013	.96
Less Restrictive Divorce Laws	–.013	–.008	–2.32*	–.009	–.009	.00

Notes: All unstandardized slopes are significant at the .05 level (two-tailed test), except for those in parentheses. Differences of slopes t-tests are based on the difference between the age-specific unstandardized slopes divided by the square root of the sum of the respective variances for each slope (Hardy 1993; Howell 1987).
* $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed).

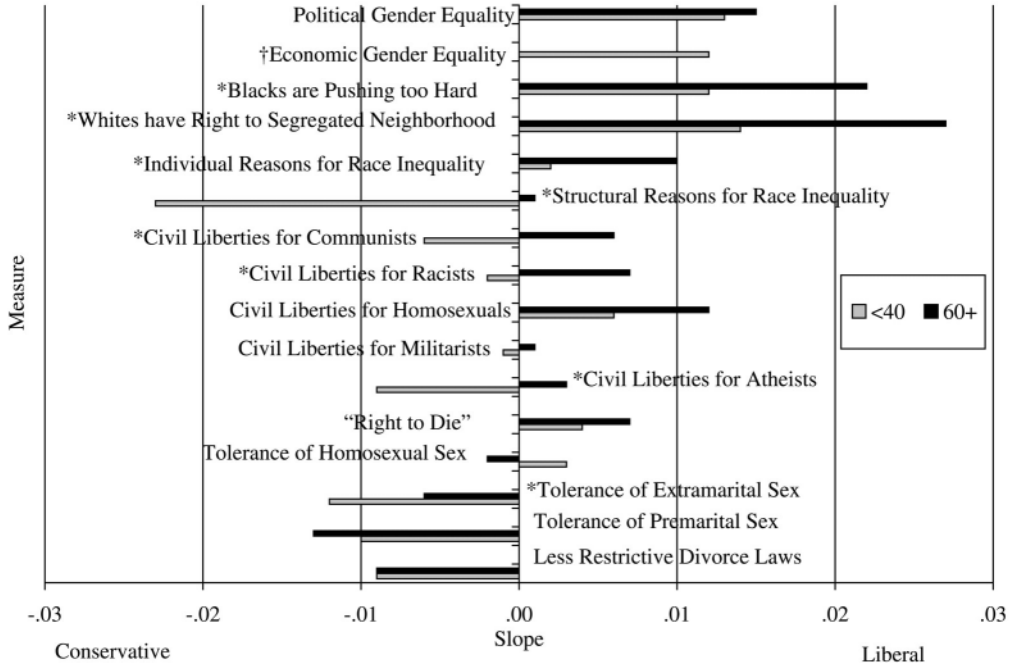

Figure 1. Unstandardized Intracohort Aging Slopes by Age and Measure and Adjusted for Composition Effects

Notes: † = no change for the 60+ group. * = significant slope differences at the .05 level (two-tailed tests).

ing seven items, four of which are in the privacy area, change or the absence of change appears similar for both age groups.

Figure 1 illustrates the main patterns of findings, which allows a visual comparison of the magnitude and direction of intracohort aging slopes by age group. Bars are arranged vertically by measure and paired by age group within each measure, with the first bar of each pair illustrating change for the 60+ group, and the bar immediately below illustrating change for the <40 adults. Consistent with table coefficients, bars moving in a positive direction represent liberal change, while bars moving in a negative direction represent conservative change. An asterisk next to a 60+ bar represents a significant difference between age groups, as shown in Table 3.

We find no significant difference in the IA coefficient for the two measures of gender inequality: both age groups move toward greater acceptance of political gender equality, while intracohort aging is more important for the younger group on economic gender equality. For items relating to race, within-cohort shifts toward tolerance occur more rapidly among the 60+ group on three of four items. On the structural reasons for inequality measure—whether discrimination and the absence of educational opportunities bear significant responsibility for racial inequality—the younger group registers significantly lower levels of agreement over time, while the older age group is stable.

Within-cohort change for the older group shifts them at a faster rate toward tolerance than the younger group on three of the five civil liberties items. Notably, the younger age group becomes significantly less interested in protecting the civil liberties of Communists and atheists over time. The two age groups either change at the same rate or remain stable on civil liberties for homosexuals and militarists.

The 60+ group is not significantly different from the <40 group on four of the five privacy items: both groups become more favorable toward the right-to-die, both become less tolerant of extramarital and premarital sex and

current measure because it covers a longer time span and excludes an item that had become quite skewed and was dropped from the GSS after 1998.

easier divorce laws, and neither group changes their assessment of homosexual sex. The one difference is that the younger group becomes more intolerant of extramarital sex at a faster rate than the older group.

DISCUSSION

Having completed a systematic analysis of more than 30 years of change in sociopolitical attitudes among people at different stages of the life course, we find that change is as common among older adults as younger adults. These findings contradict commonly held assumptions that aging leads to conservatism, as defined by stability of opinions or by beliefs associated with the political right. More generally, our results also question life course theories and theories of aging that at least implicitly set older people apart and emphasize persistence and adherence to earlier attitudes, values, and world views. Impressionable years' hypotheses and gerontological theories that focus on disengagement and persistence imply that aging is accompanied by a growing resistance to change. We do not claim to have falsified these theories, although the present findings lend little support to the more determinate predictions associated with these arguments. Rather, our data suggest that an emphasis on social structure that differentiates the old from the young fails to capture a social structure in which period effects can influence people across the lifespan.

Although cohort replacement has received considerable attention as a key mechanism of social change, within-cohort change is also important. If these mechanisms operate in the same direction, as they do in a number of items relating to women and African Americans, not only does society benefit by replacing less tolerant cohorts with more tolerant cohorts, but as cohorts advance through stages of the life course, they attend less to the arguments of cohorts who came before them and move more in the direction of cohorts who follow them, cohorts that include their children and grandchildren. But even when the 60+ group moves toward more tolerant attitudes, we find no case where they end the observation period by overtaking the younger age group. At best the "tolerance gap" between the older and younger groups collapses, and no significant gap remains. In other cases the gap narrows, and occasionally both age groups become more tolerant, but the "gap" between them remains roughly the same.

When intracohort aging and cohort replacement operate in opposite directions, as they do on the question about premarital sex for both age groups (Table 1), changes in attitudes as cohorts age provide a braking action to the more permissive attitudes that characterize incoming cohorts. If change is simply a function of the shifting composition of social actors, societal change could occur steadily or profoundly, depending on how radically cohorts-at-early-stages of the life course disagree with their parent and grandparent generations. But social change occurring in this way can also alienate cohorts-in-middle and later-adulthood, since the conflict cannot be reduced by persuasion or debate or discussion, or any of the civil processes at the heart of democracies. As cohorts reach later life-course stages, they would feel increasingly dissatisfied and perhaps become increasingly disengaged. Society as a whole would receive little benefit from the experience, strategic insight, and general knowledge held by these cohorts. If instead, cohort views bounced back and forth so that children's views on these issues were more similar to their grandparents, and less like their parents, then the ideas of the middle generation would be under constant critique from both newer and older cohorts. Clearly, our data do not support replacement as the sole or exclusive mechanism of social change; instead, the effects of cohort replacement are often either reinforced or reigned in by intracohort aging changes in attitudes.

The fact that for a number of attitudes, older cohorts become more liberal when younger cohorts are becoming more liberal, and more conservative when younger cohorts are becoming more conservative, strongly suggests an "event-graded" model of change:

> From this perspective, individual attitudes are continually susceptible to change over the life course. People's attitudes are assumed to be responsive to changes in their immediate social and political environments. Technological innovations, changes in economic welfare, and changes in the quality of life are examples of factors that influence individuals vulnerable to change, regardless of age. (Alwin et al. 1991:18)

This model is also consistent with "a lifelong openness to change" (Kinder and Sears 1985).

The apparent susceptibility of different age groups to social change strongly suggests the importance of period effects, but it also leads us to some cautions regarding the interpretation of results from this research.

Limitations

The data are from successive cross-sectional surveys, not panel data. While intracohort aging changes in attitudes over time reflect the net results of individual changes, a more definitive test would require panel data on individuals who are followed over multiple waves and measures suited to repeated assessment. We thus do not claim to have studied "individual-level change." Instead, as is often the case in physics, we identified a pattern that, at a distance, suggests such change is occurring. Neither have we attempted to separately account for age, period, and cohort effects. Period effects are implicated in both the cohort replacement mechanism and the mechanism of intracohort aging (Firebaugh 1990), as are any interactions between period and cohort or period and aging. But our goal is not to explain how or why intracohort aging might occur; this first analytic step is to demonstrate that it does occur, that it is nontrivial in accounting for changes in attitudes, and that the direction of this shift cannot be taken for granted. With that in mind, we present evidence that malleability is common and that shifts in attitudes are neither necessarily nor inevitably in a conservative direction.

Time and place are two additional limitations. Our analysis focuses on roughly the last quarter of the twentieth century in the United States for a variety of conceptual and practical reasons. Would our results be replicated for the 30 preceding years and earlier? While we cannot know for certain, our earlier review of research centered on the 1960s and 1970s suggests that older cohorts have been changing attitudes right along with the rest of the adult population. Further, our own sensitivity analyses, using different starting and ending years, persuade us that our results are robust relative to small adjustments in timeframe. Nevertheless, analyses on the volatility of occupational aspirations by gender (Jacobs 1989) and of gender ideology (Bolzendahl and Myers 2004; Brewster and Padavic 2000) suggest potential period effects during the course of the time period we examine in this article.

Place limitation, of course, raises two sorts of questions. First, are these changes peculiar to the United States? Again, limited information is available—primarily from Canada (e.g., Kanagy and Driedger 1996), Western Europe (e.g., Kraaykamp 2002; Scott 1998), Scandinavia (e.g., Hamberg 1991), and Taiwan (e.g., Hsu, Lew-Ting, and Wu 2001)—but it does suggest that these results may very well be representative of other cultures. Second, the sampling design of the GSS is structured to represent the adult U.S. population, but earlier research demonstrates that attitudes are not uniformly distributed across regions; therefore, change in attitudes may not be uniformly distributed.

Macro- and Microlevel Cohort Attitude Change and the Future

At the beginning of this article, we noted the changing demographic makeup of the U.S. population and the important policy concerns associated with population aging that have taken center stage in our cultural and political debates. The concern voiced by Peterson (1999), that population aging will be accompanied by either increasing conservatism or increasing inflexibility, does not appear to be warranted by the data. Nor does the liberal enthusiasm of Roszak's (1998) predictions about baby boomers' continued progressive ideas appear justified. It may be true that the generation of baby boomers will retain the enthusiasm and interest in political and social matters that are core to the well-being of our society, but that is not the same as saying they will remain inflexibly liberal (for another empirical treatment, see Davis 2004). Finally, perhaps the most sobering interpretation of these findings of increased tolerance is to note that this greater tolerance is expressed to a survey researcher; such expressions do not necessarily manifest themselves in more tolerant, more accepting behavior in social situations. One could argue that what has changed is the understanding that one must *seem to be* tolerant when asked about attitudes. But even that is a change—a change in what is considered acceptable in today's society.

Other feared consequences of population aging also seem unfounded. For example, a

working paper on the implications of "age retardation" prepared for the President's Council on Bioethics (2003, paragraph 7) echoes concerns about the social and psychological accompaniments of population aging:

> If individuals did not age, if their functions did not decline and their horizons did not narrow, it might just be that societies would age far more acutely, and would experience their own sort of senescence—a hardening of the vital social pathways, a stiffening and loss of flexibility, a setting of the ways and views, a corroding of the muscles and the sinews.

These and similar cautionary expressions again appear to be rooted, at least implicitly, in the assumption that aging necessarily or inevitably brings with it increasing conservatism or rigidity, notions that receive no support in this study.

The implications of our aging society for both stability and change in social policy are profound. We face finite natural, social, and economic resources that threaten to reinvigorate generation gap debates concerning Social Security, Medicare, child care, school budgets, and the like. The results of this analysis clearly demonstrate that assumptions about the presumed inherent conservatism and inflexibility of aging are indeed stereotypes that are contradicted by the facts and thus have no place in our thinking about these issues.

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APPENDIX

Appendix A: Question Wording

All variables have been recoded or constructed so that higher scores represent more liberal attitudes.

Attitudes Toward Subordinate Groups

Political Gender Equality: range = 3–6

Do you agree or disagree with this statement? Women should take care of running their homes and leave running the country up to men?

If your party nominated a woman for President, would you vote for her if she were qualified for the job?

Tell me if you agree or disagree with this statement: Most men are better suited emotionally for politics than are most women.

Economic Gender Equality: range = 4–16

Now I'm going to read several more statements. As I read each one, please tell me whether you strongly agree, agree, disagree, or strongly disagree with it. For example, here is the statement:

A working mother can establish just as warm and secure a relationship with her children as a mother who does not work.

It is more important for a wife to help her husband's career than to have one herself.

A preschool child is likely to suffer if his or her mother works.

It is much better for everyone involved if the man is the achiever outside the home and the woman takes care of the home and family.

**Blacks are Pushing too Hard:* range = 1–4

(Negroes/Blacks/African Americans) shouldn't push themselves where they're not wanted.

**Whites have Right to Segregated Neighborhoods:* range = 1–4

White people have a right to keep (Negroes/Blacks/African Americans) out of their neighborhoods if they want to, and (Negroes/Blacks/African Americans) should respect that right.

On the average (Negroes/Blacks/African Americans) have worse jobs, income, and housing than white people. Do you think these differences are . . .

A. Mainly due to discrimination?

B. Because most (Negroes/Blacks/African Americans) have less in-born ability to learn?

C. Because most (Negroes/Blacks/African Americans) don't have the chance for education that it takes to rise out of poverty?

D. Because most (Negroes/Blacks/African Americans) just don't have the motivation or will power to pull themselves up out of poverty?

**Structural Reasons for Race Inequality:* range = 0 – 2

Sum of A and C

**Individual Reasons for Race Inequality:* range = 0 – 2

Sum of B and D

*Analyses of these items are based on the white subsample only.

Support for Civil Liberties

There are always some people whose ideas are considered bad or dangerous by other people. For instance, somebody who is against all churches and religion . . .

Civil Liberties for Atheists: range = 0–3

If such a person wanted to make a speech in your (city/town/community) against churches and religion, should he be allowed to speak, or not?

Should such a person be allowed to teach in a college or university, or not?

If some people in your community suggested that a book he wrote against churches and religion should be taken out of your public library, would you favor removing this book, or not?

Now, I should like to ask you some questions about a man who admits he is a Communist.

Civil Liberties for Communists: range = 0–3

Suppose this admitted Communist wanted to make a speech in your community. Should he be allowed to speak, or not?

Suppose he is teaching in a college. Should he be fired, or not?

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

Or consider a person who believes that blacks are genetically inferior.

Civil Liberties for Racists: range = 0–3

If such a person wanted to make a speech in your community claiming that blacks are inferior, should he be allowed to speak, or not?

Should such a person be allowed to teach in a college or university, or not?

If some people in your community suggested that a book he wrote which said blacks are inferior should be taken out of your public library, would you favor removing this book, or not?

Civil Liberties for Homosexuals: range = 0–3

And what about a man who admits that he is a homosexual?

Suppose this admitted homosexual wanted to make a speech in your community. Should he be allowed to speak, or not?

Should such a person be allowed to teach in a college or university, or not?

If some people in your community suggested that a book he wrote in favor of homosexuality should be taken out of your public library, would you favor removing this book, or not?

Consider a person who advocates doing away with elections and letting the military run the country.

Civil Liberties for Militarists: range = 0–3

If such a person wanted to make a speech in your community, should he be allowed to speak, or not?

Should such a person be allowed to teach in a college or university, or not?

Suppose he wrote a book advocating doing away with elections and letting the military run the country. Somebody in your community suggests that the book be removed from the public library. Would you favor removing it, or not?

Attitudes Toward Boundaries of Privacy

Right to Die: range = 0–2

When a person has a disease that cannot be cured, do you think doctors should be allowed by law to end the patient's life by some painless means if the patient and his family request it?

Do you think a person has the right to end his or her own life if this person . . .

Has an incurable disease?

Tolerance of Homosexual Sex: range = 1–4

What about sexual relations between two adults of the same sex—do you think it is always wrong, almost always wrong, wrong only sometimes, or not wrong at all?

Tolerance of Extramarital Sex: range = 1–4

What is your opinion about a married person having sexual relations with someone other than the marriage partner—is it always wrong, almost always wrong, wrong only sometimes, or not wrong at all?

Tolerance of Premarital Sex: range = 1–4

There's been a lot of discussion about the way morals and attitudes about sex are changing in this country. If a man and woman have sex relations before marriage, do you think it is always wrong, almost always wrong, wrong only sometimes, or not wrong at all?

Less Restrictive Divorce Laws: range = 1–3

Should divorce in this country be easier or more difficult to obtain than it is now?

Appendix B. Characteristics of Social and Political Attitude Measures (General Social Survey, 1974–2004)

Measure	Number of Surveys	Period	Number of Items	Range	Cronbach's Alpha
Attitudes Toward Historically Subordinate Groups					
Political Gender Equality	16	1974–1998	3	3–6	.70
Economic Gender Equality	14	1977–2004	3	3–12	.70
Blacks are Pushing too Hard	14	1972–2002	1	1–4	—
Whites have Right to Segregated Neighborhoods	15	1972–1996	1	1–4	—
Individual Reasons for Race Inequality	14	1977–2004	2	0–2	.43
Structural Reasons for Race Inequality	14	1977–2004	2	0–2	.48
Support for Civil Liberties					
Civil Liberties for Communists	21	1972–2004	3	0–3	.78
Civil Liberties for Racists	18	1976–2004	3	0–3	.73
Civil Liberties for Homosexuals	20	1973–2004	3	0–3	.82
Civil Liberties for Militarists	18	1976–2004	3	0–3	.79
Civil Liberties for Atheists	21	1972–2004	3	0–3	.75
Attitudes Toward Boundaries of Privacy					
"Right to Die"	17	1977–2004	2	0–2	.69
Tolerance of Homosexual Sex	20	1973–2004	1	1–4	—
Tolerance of Extramarital Sex	20	1973–2004	1	1–4	—
Tolerance of Premarital Sex	20	1972–2004	1	1–4	—
Less Restrictive Divorce Laws	19	1974–2004	1	1–3	—

Note: Higher scores denote more liberal attitudes, lower scores more conservative attitudes.

Appendix C. Difference of Means Tests to Determine Change Over Time and Significant Attitude; Begin and End Points by Dependent Variable (General Social Survey, 1974–2004)

	Actual Change ($Att_j - Att_i$)[a]			T-Values	
Measure	Total	< 40	60+	Att_i for 60+ minus Att_i for < 40	Att_j for 60+ minus Att_j for < 40
Attitudes Toward Historically Subordinate Groups					
Political Gender Equality	+.62	+.40	+.73	–8.06***	–8.23***
Economic Gender Equality	+1.35	+1.00	+1.75	–16.96***	–6.97***
Blacks are Pushing too Hard	+.92	+.78	+.84	–10.78***	–5.93***
Whites have Right to Seg. Neighs.	+.73	+.64	+.69	–9.36***	–7.65***
Individual Reasons for Race Inequality	+.34	+.19	+.54	–10.92***	–3.76***
Structural Reasons for Race Inequality	–.23	–.38	–.20	–1.52 (NS)	+1.43 (NS)
Support for Civil Liberties					
Civil Liberties for Communists	+.66	+.37	+1.00	–15.28***	–3.23**
Civil Liberties for Racists	+.11	–.28	+.53	–12.77***	–.17 (NS)
Civil Liberties for Homosexuals	+.70	+.44	+1.27	–16.08***	–3.45***
Civil Liberties for Militarists	+.40	+.19	+.69	–16.24***	–5.37***
Civil Liberties for Atheists	+.47	(+.04)	+.93	–19.12***	–3.65***
Attitudes Toward Boundaries of Privacy					
"Right to Die"	+.28	+.18	+.32	–7.31***	–3.16**
Tolerance of Homosexual Sex	+.55	+.36	+.63	–13.69***	–3.24**
Tolerance of Extramarital Sex	–.22	–.43	(–.00)	–9.95***	1.04 (NS)
Tolerance of Premarital Sex	+.41	(+.15)	+.53	–14.12***	–5.62***
Less Restrictive Divorce Laws	–.16	–.28	–.18	–7.49***	–4.63***

Notes: In columns 1 to 3, "+" indicates a liberal shift, "–" a conservative shift. All differences are significant at the .05 level (two-tailed test) except for those in parentheses. In columns 4 and 5, * $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed difference of means test).

[a] Att_i = average attitude score for first survey year in which question was asked; Att_j = average score for last year.

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Appendix D. Comparisons Between Firebaugh Estimate and Actual Change by Dependent Variable for Total Sample and by Age Categories (General Social Survey, 1974–2004)

	Firebaugh Estimated Change ($IAE_{j-i} + CRE_{j-i}$)[a] / Actual Change ($Att_j - Att_i$) Ratio[b]		
Measure	Total	< 40	60+
Attitudes Toward Historically Subordinate Groups			
Political Gender Equality	1.16*	1.29*	1.22*
Economic Gender Equality	.79*	.71	.74
Blacks are Pushing too Hard	1.12*	1.33*	.96*
Whites have Right to Segregated Neighborhood	1.16*	1.19*	1.19*
Individual Reasons for Race Inequality	1.20*	1.43	.97*
Structural Reasons for Race Inequality	1.09*	1.11*	.73
Support for Civil Liberties			
Civil Liberties for Communists	.93*	.80*	.88*
Civil Liberties for Racists	1.30*	.69	.91*
Civil Liberties for Homosexuals	1.17*	1.17*	1.01*
Civil Liberties for Militarists	1.30*	1.02*	1.07*
Civil Liberties for Atheists	1.13*	2.27	.93*
Attitudes Toward Boundaries of Privacy			
"Right to Die"	1.24*	1.26*	1.16*
Tolerance of Homosexual Sex	1.05*	1.44	.72
Tolerance of Extramarital Sex	.99*	1.01*	–2.44
Tolerance of Premarital Sex	.82*	.36	.74
Less Restrictive Divorce Laws	.49	.75*	.15

Note: * Indicates ratio is within range of +.75 to +1.33.

[a] $IAE_{j-i} + CRE_{j-i}$ = Intracohort Aging Effect + Cohort Replacement Effect between time *i* and time *j* (see Firebaugh 1997).

[b] Att_j = average attitude score for last survey year in which question was asked; Att_i = average score for first year.

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