The Paradox of Declining Female Happiness[†]

By Betsey Stevenson and Justin Wolfers*

The lives of women in the United States have improved over the past 35 years by many objective measures, yet we show that measures of subjective well-being indicate that women's happiness has declined both absolutely and relative to men. This decline in relative well-being is found across various datasets, measures of subjective well-being, demographic groups, and industrialized countries. Relative declines in female happiness have eroded a gender gap in happiness in which women in the 1970s reported higher subjective well-being than did men. These declines have continued and a new gender gap is emerging—one with higher subjective well-being for men. (JEL I31, J16, J28)

By many measures, the progress of women over recent decades has been extraordinary. The gender wage gap has partly closed. Educational attainment has risen and is now surpassing that of men. Women have gained an unprecedented level of control over fertility. Technological change, in the form of new domestic appliances, has freed women from domestic drudgery. In short, women's freedoms within both the family and market sphere have expanded. Francine D. Blau's (1998) assessment of objective measures of female well-being since 1970 finds that women made enormous gains. Labor force outcomes have improved absolutely, as women's real wages have risen for all but the least-educated women, and relatively, as women's wages relative to those of men have increased for women of all races and education levels. Concurrently, female labor force participation has risen to record levels both absolutely and relative to that of men (Blau and Lawrence M. Kahn 2007). In turn, better market outcomes for women have likely improved their bargaining position in the home by raising their opportunities outside of marriage.

Given these shifts of rights and bargaining power from men to women over the past 35 years, holding all else equal, we might expect to see a concurrent shift in happiness toward women and away from men. Yet, in this paper, we document that measures of women's subjective well-being have fallen both absolutely and relatively to that of men. While the expansion in women's opportunities has been extensively studied, the concurrent decline in subjective well-being has largely gone unnoted. One exception to this is David G. Blanchflower and Andrew J. Oswald (2004), who study trends in happiness in the United States and Britain noting that, while women report being happier than men over the period that they examine, the trend in white women's happiness in the United States is negative over the period. We will show, in this paper, that women's happiness has fallen both absolutely and relative to men's in a pervasive way among groups, such that women no longer report being happier than men, and, in many instances, now report happiness that is below that of men. Moreover, we show that this shift has occurred through much of the industrialized world.

Social changes that have occurred over the past four decades have increased the opportunities available to women, and a standard economic framework would suggest that these expanded opportunities for women would have increased their welfare. However, others have noted that with the expansion of opportunities have come costs, and that men may have been the beneficiaries of the women's movement. In particular, many sociologists have argued that women's increased opportunities for market work have led to an increase in the total amount of work that women do. Arlie Hochschild's and Anne Machung's *The Second Shift* (1989) argued that women's movement into the paid labor force was not accompanied by a shift away from household production, and they were, thus, now working a "second shift." However, time use surveys do not bear this out. Mark Aguiar and Erik Hurst (2007) document relatively equal declines in total work hours since 1965 for men and women, with the increase in hours of market work by women offset by large declines in their nonmarket work. Similarly, men are now working fewer hours in the market and more hours in home production. Blau (1998) points to the increased time spent by married men on housework, and the decreased total hours worked (in the market and in the home) by married women relative to married men, as evidence of women's improved bargaining position in the home. However, it should be noted that the argument went beyond counting hours in *The Second Shift*. Women, they argued, have maintained the emotional responsibility for home and family; a point that is, perhaps, best exemplified by the familiar refrains of a man "helping" around the house or being a good dad when "babysitting" the kids. Thus, even if men are putting in more hours, it is difficult to know just how much of the overall burden of home production has shifted, as measuring the emotional, as well as physical, work of making a home is a much more difficult task. A recent paper by Alan B. Krueger (2007) sheds some light on this issue by examining the degree of pleasantness and unpleasantness in daily activities. Assuming that one's enjoyment of particular activities has not changed over time, he finds that women's new mix of daily activities leaves them hedonically unchanged. However, men have had a net increase in the pleasantness of activities in their day. Thus, according to Krueger's estimates, between 1966 and 2005, relative to men, women became hedonically worse off.

Social and legal changes have given people more autonomy over individual and family decision making, including rights over marriage, children born out of wedlock, the use of birth control, abortion, and divorce (Stevenson and Wolfers 2007). However, men may have been able to disproportionately benefit from these increased opportunities. For example, George A. Akerlof, Janet L. Yellen, and Michael L. Katz (1996) argue that sexual freedom offered by the birth control pill may have benefited men by increasing the pressure on women to have sex outside of marriage and reducing their bargaining power over a shotgun marriage in the face of an unwanted pregnancy. There have also been large changes in family life during this period. Divorce rates doubled between the mid-1960s and the mid-1970s, and while they have been falling since the late 1970s, the stock of divorced people has continued to grow (Stevenson and Wolfers 2007). In addition to divorce, there has been an increase in the rate of children born out of wedlock that was concentrated in the 1960s and early 1990s. As a result of increases in divorce and out-of-wedlock childbearing by age 15, about half of all children in the United States are no longer living with both biological parents (David T. Elwood and Christopher Jencks 2004). These changes have, however, disproportionately impacted nonwhite women and white women with less education (Elwood and Jencks 2004; Adam Isen and Stevenson 2008) and thus, if the decline in women's happiness is related to these trends, we should expect to see greater happiness declines among these women.

Both men and women in the United States have faced some other challenging societal trends in the past 30 years as well. While the male-female wage gap converged over this period, income inequality rose sharply through the 1980s and has continued to rise, albeit more slowly, in recent decades. Moreover, the real wages of many men fell during much of this period. In particular, real wages for men with less than a college degree fell from 1979 to 1995 (David H. Autor, Lawrence F. Katz, and Melissa S. Kearney 2008). Many households experienced only moderate growth in household income, with those in the bottom half of the income distribution experiencing real growth of less than 0.5 percent a year from 1973 to 2005 (Claudia Goldin and Katz 2007), and much of this increase was due to the additional earnings of wives. Along with this rise in income inequality have come concerns about increasing income volatility, and a more general concern about households bearing more health and retirement risk (Jacob S. Hacker 2006). While these trends have impacted men and women, it is possible that the effect of these trends on happiness has differed by gender.

Even if women were made unambiguously better off throughout this period, a richer consideration of the psychology behind happiness might suggest that greater gender equality may lead to a fall in measured well-being. For example, if happiness is assessed relative to outcomes for one's reference group, then greater equality may have led more women to compare their outcomes to those of the men around them. In turn, women might find their relative position lower than when their reference group included only women. This change in the reference group may make women worse off, or it may simply represent a change in their reporting behavior. An alternative form of reference-dependent preferences relates well-being to whether or not expectations are met. If the women's movement raised women's expectations faster than society was able to meet them, they would be more likely to be disappointed

by their actual experienced lives. As women's expectations move into alignment with their experiences, this decline in happiness may reverse. A further alternative suggests that happiness may be driven by good news about lifetime utility (Miles Kimball and Robert Willis 2006). Under this view, the salience of the women's movement fueled elation in the 1970s that has dissipated in the ensuing years.

Alternatively, women's lives have become more complex and their well-being now likely reflects their satisfaction with more facets of life compared with previous generations of women. For example, the reported happiness of women who are primarily homemakers might reflect their satisfaction with their home life to a greater extent compared with women who are in both the labor force and have a family at home. For these latter women, reported happiness may reflect aggregating over their multiple domains. While this aggregation may lead to lower reported happiness, it is difficult to know whether this reflects a truly lower hedonic state. There are significant data limitations in testing this theory, as, ideally, one would want a series of questions that asked both about one's satisfaction in various domains and the relative importance of that domain to one's life. In Section III, we explore the extent to which questions about domain specific satisfaction and the importance attached to various life domains can shed light on the relative decline in women's reported happiness.

Our contribution, in this paper, is to carefully document trends over several decades in subjective well-being by gender in the United States and other industrialized countries, collecting evidence across a wide array of datasets covering various demographic groups, time periods, countries, and measures of subjective well-being. To preview our findings, Section I shows that women in the United States have become less happy, both absolutely and relative to men. Women have traditionally reported higher levels of happiness than men, but they are now reporting happiness levels that are similar or even lower than those of men. The relative decline in well-being holds across various datasets, and holds whether one asks about happiness or life satisfaction. In Section II, we explore these trends by demographic group, finding that the relative decline in women's well-being is ubiquitous, and holds for both working and stay-at-home mothers, for those married and divorced, for the old and the young, and across the education distribution. While compositional shifts in these groups make it difficult to interpret trends for each group, the fact that we find similar trends across groups leaves little doubt that the decline in female happiness is widespread and cannot be attributed easily to one social phenomenon. For example, decreases in happiness arising due to the "second shift" should impact working mothers more than others. Similarly, declines in happiness stemming from the challenges of single-parenthood should have greater impact on nonwhite women and white women with less education. Yet, we find no evidence of such differential changes in reported well-being.

We find that these same trends are also evident across those industrialized countries for which we have adequate subjective well-being data. Using data from the Eurobarometer, we find that happiness has risen across the European Union for men and women. However, happiness increases have been greater for men relative to women, leading to a decline in European women's happiness relative to that of European men. We analyze trends separately for 12 European countries (Belgium, Denmark, France, Great Britain, Greece, Ireland, Italy, Luxembourg, Netherlands,

Portugal, Spain, and West Germany), finding relative declines in women's happiness that are similar in magnitude in every country except West Germany. We briefly examine data from a richer set of countries and find that the limited sample size yields extremely wide confidence intervals around these country-specific estimates. However, the relative declines found for Europe and the United States are within a 95 percent confidence interval of 125 of the 147 countries we examine.

Finally, Section III assesses the evolution of satisfaction across a number of domains (marriage, work, health, and finances), and while women report decreasing satisfaction in some of these domains, typically men report similar, or even more rapid, declines. The one clear exception is that women have become less satisfied with their family's financial situation both absolutely and relative to that of men. Unfortunately, most of the available surveys of adults are limited in the extent to which we can assess the satisfaction and importance of multiple domains. Turning to the Monitoring the Future dataset (which surveys American high school students), we find that teenage girls have attached greater importance to a number of domains both absolutely and relative to that of boys. Moreover, they are increasingly dissatisfied with the amount of free time that they have available, perhaps as a result of their increasing desire to excel in their roles in the community, in the labor force, and in their families.

Our findings hold provocative implications for public policymakers, those interested in gender, and those interested in using subjective well-being measures to assess public policy. Did men garner a disproportionate share of the benefits of the women's movement? Alternatively, perhaps the well-being data point to differential impacts of social changes on men and women, with women being particularly hurt by declines in family life, rises in inequality, or reductions in social cohesion. Or one might regard our rather striking observation as an opportunity to better understand the determinants of subjective well-being, and the mapping between responses to survey questions about happiness and notions of welfare.

We highlight a puzzle in trends in women's measured subjective well-being that may be driven by an aggregate change that is impacting women differently than men, a change in the reference group or expectations for women such that their lives are more likely to come up short today than they were in the past, or finally, may be driven simply by a change in how women answer the question. At this stage, our ambitions are somewhat limited. We do not purport to offer an answer to what is driving the decline in subjective well-being among women. Rather, we aim to organize the relevant data, and highlight the robust evidence in favor of a rather puzzling paradox—women's relative subjective well-being has fallen over a period in which most objective measures point to robust improvements in their opportunities.

I. Happiness Trends by Gender

We examine the subjective well-being of men and women in the United States over the last 35 years using data from the General Social Survey (GSS). This survey is a nationally representative sample of about 1,500 respondents each year from 1972 through 1993 (excluding 1979, 1981, and 1992), and continues with around 3,000

respondents every second year from 1994 through 2004, rising to 4,500 respondents in 2006.[1] These repeated cross-sections are designed to track attitudes and behaviors among the US population and contain a wide range of demographic and attitudinal questions.

Subjective well-being is measured using the question: "Taken all together, how would you say things are these days, would you say that you are very happy, pretty happy, or not too happy?" In addition, respondents are asked about their satisfaction with a number of aspects of their life such as their marriage, their health, their financial situation, and their job. (We will return to these data on subjective well-being across life domains in Section III.) The long duration of the GSS and the use of consistent survey language to measure happiness make it ideally suited for analyzing trends in well-being over time. However, there are a few changes to the survey that can impact reported happiness. For example, in every year, but 1972, the question about happiness followed a question about marital happiness and in every year, except 1972 and 1985, the happiness question was preceded by a five-item satisfaction scale. Both of these changes have been shown to impact reported happiness (Tom W. Smith 1990). We can create consistent data that account for these measurement changes, as the GSS used split-ballot experiments to provide a bridge between different versions of the survey. We make adjustments to the data following the approach detailed in Appendix A of Stevenson and Wolfers (2008b).[2] Finally, in order to ensure that these time series are nationally representative, all estimates are weighted (using the GSS weight WTSALL), and we drop the 1982 and 1987 black oversamples. In order to maintain continuity with earlier survey rounds, we also drop those 2006 interviews that occurred in Spanish and could not have been completed had English been the only option, as Spanish language surveys were not offered in previous years.[3]

Beyond measuring subjective well-being consistently, it is useful to consider what it is that a question about happiness is measuring. Although the validity of these measures remains a somewhat open question, a variety of evidence points to a robust correlation between answers to subjective well-being questions and more objective measures of personal well-being. For example, answers to subjective well-being questions have been shown to be correlated with physical evidence of affect such as smiling, laughing, heart rate measures, sociability, and electrical activity in the brain (Ed Diener 1984). Measures of individual happiness or life satisfaction are also correlated with other subjective assessments of well-being such as independent evaluations by friends, self-reported health, sleep quality, and personality (Diener, Richard E. Lucas, and Christine Napa Scollon 2006; Daniel Kahneman and Krueger 2006). Self-reports of happiness have also been shown to be correlated in the expected direction with changes in life circumstances. For example, an individual's subjective well-being typically rises with marriage and income growth

---

[1] Only half the respondents were queried about their happiness in 2002 and 2004, followed by two-thirds in 2006.

[2] While the split-ballot experiments allow a comparison to include the years 1972 and 1985, they also mean that it is not possible to simply drop these two outlier years, as results from subsequent surveys also need to be adjusted for the presence of these experimental split ballots.

[3] This treatment of the data also follows Stevenson and Wolfers (2008b).

and falls while going through a divorce. However, it should be noted that subjective well-being is both a function of the individual's personality and his or her reaction to life events. As such, correlations between life outcomes and happiness may not be causal. For example, one reason that married people report substantially greater happiness than unmarried people in a cross-section is because happy people are more likely than unhappy people to marry (Stevenson and Wolfers 2007).

Figure 1 shows how answers to the happiness question have trended over time for men and women. The upper panel shows the raw sample proportions by gender. The top lines show that in the 1970s women were more likely than men to report being "very happy," and this differential began to evaporate in the 1980s. The bottom two lines show that in the 1970s men and women were roughly equally likely to report being "not too happy," and a gap emerges in the 1990s with women more likely than men to report unhappiness. Thus, the decline in women's well-being occurs across the well-being distribution.

The bottom panel combines the data across these categories into a single happiness index by gender, estimated by running an ordered probit on the year by gender fixed effects. The lines plot the estimated happiness index for men and women, while the bars indicated the difference between the two. As has been shown in previous studies (Blanchflower and Oswald 2004), women were historically more likely to report higher levels of subjective well-being, yet we see that this happiness gap has largely reversed as women's reported subjective well-being has fallen over the past 35 years. By the start of the twenty-first century, women reported happiness levels on par with, or perhaps lower than, those reported by men (precise statements about recent levels are somewhat difficult given the noise in these data). The regression at the bottom of the figure shows that this trend in declining female happiness is statistically significant.

Table 1 embeds these findings in a more formal regression analysis, allowing us to combine the data across these categories into a single happiness index by gender. We estimate a regression of the form

$$(1) \qquad Happiness_{i,t} = \ \alpha + \beta_1 Female_i \times (Year_t - 1972)/100$$

$$+ \beta_2 Male_i \times (Year_t - 1972)/100 + \beta_3 Female_i + \varepsilon_{i,t}$$

where i denotes an individual, and t denotes the year in which that individual was surveyed by the GSS. The results of an ordered probit regression of equation (1), in which the standard errors are clustered at the year level, are shown in the first column of Table 1. The regression shows a decline in women's happiness, but very little change in men's reported happiness, indicating that women's happiness has fallen both absolutely and relative to that of men. In Table 1, the fourth row calculates the relative decline in female happiness by showing the estimated difference between the female and male happiness trends.

As was shown in Blanchflower and Oswald (2004), we see a positive and significant coefficient on the female dummy variable indicating that women historically reported higher levels of subjective well-being. The fifth and sixth row of Table 1 report the implied estimates of the gender happiness gap in 1972 and 2006,

"Taken all together, how would you say things are these days, would
you say that you are very happy, pretty happy, or not too happy?"
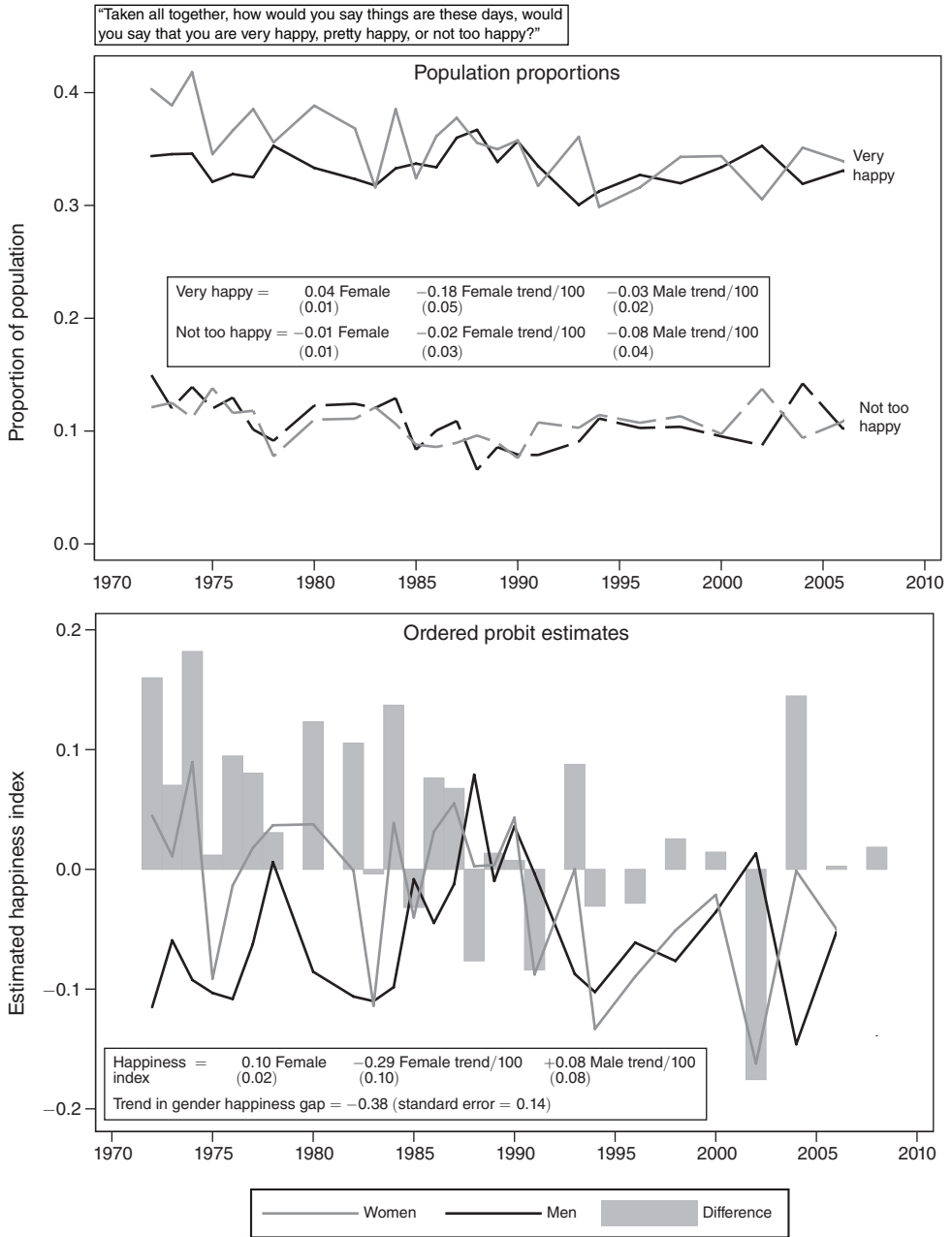
FIGURE 1. HAPPINESS IN THE UNITED STATES, 1972–2006

Notes: Data came from the General Social Survey, 1972–2006 in response to the question "Taken all together, how would you say things are these days, would you say that you are very happy, pretty happy, or not too happy?" The top panel shows raw sample proportions for those who are "very happy" and "not too happy." The middle category, "pretty happy," is omitted. The bottom panel represents estimates from an ordered probit regression of happiness on a full set of survey by gender fixed effects. Bars show the estimated gender well-being gap (female-male) in each survey round. The regression reported at the bottom estimates the trend in happiness over the period for men and women, illustrating that the decline in female happiness has been statistically significant while there has been little change in male happiness.

TABLE 1—HAPPINESS TRENDS IN THE US BY GENDER, GENERAL SOCIAL SURVEY

	Dependent variable: "Taken all together, how would you say things are these days? Would you say that you are: [3] Very happy; [2] Pretty happy; [1] Not too happy?"						
Regression coefficients	Ordered probit (1)	Ordered probit (2)	Ordered probit (3)	OLS (z-score) (4)	OLS (z-score) (5)	Probit (very happy) (6)	Probit (not happy) (7)
Female time trend	−0.294*** (0.100)	−0.297*** (0.115)	−0.400*** (0.119)	−0.256*** (0.088)	−0.332*** (0.098)	−0.495*** (0.125)	−0.125 (0.146)
Male time trend	0.082 (0.076)	0.041 (0.101)	0.061 (0.119)	0.073 (0.068)	0.046 (0.099)	−0.094 (0.057)	−0.430** (0.188)
Female dummy	0.095*** (0.022)	0.095*** (0.023)	NA	0.084*** (0.020)	NA	0.115*** (0.021)	−0.051 (0.035)
Implied trends in gender happiness gap (*female–male*)							
Difference in time trends	−0.376*** (0.135)	−0.338*** (0.133)	−0.460*** (0.173)	−0.329*** (0.119)	−0.378*** (0.144)	−0.401*** (0.121)	0.305 (0.215)
Gender happiness gap in 1972	0.095	0.095	0.182	0.084	0.152	0.115	−0.051
Gender happiness gap in 2006	−0.032	−0.020	0.026	−0.028	0.023	−0.021	0.053
Control variables							
Age, race, native-born[a]		✓	✓		✓		
Socioeconomic controls[b]			✓		✓		

Notes: Robust standard errors are in parentheses, clustered by year. $n = 45,452$. GSS data are from 1972–2006. The estimated regression is $Happiness_{i,t} = \alpha + \beta_1 Female_i \times ((Year_t - 1972)/100) + \beta_2 Male_i \times ((Year_t - 1972)/100) + \beta_3 Female_i + \varepsilon_{i,t}$, thus the coefficients on the female and male time trends report the change in happiness per 100 years. The gender gap in 1972 and 2006 reflects projections based on reported coefficients.

[a] Age controls include indicators for each age decade. Race indicator variables include black, white, and other. Also included is a control for whether a respondent is native born.

[b] Socioeconomic controls include employment, income, marital status, education outcomes, number of children ever born (up to eight), parent's education, religion, and region. All controls are interacted with gender to allow their association with happiness to differ for men and women. Employment status includes indicators for full- and part-time employment, temporary illness/vacation/strike, unemployed, retired, in school, keeping house, and other. Income is a quartic in log real family income per equivalent = 1 + 0.5 (other adults) + 0.3 kids. Marital outcomes include indicators for married, widowed, divorced, separated, and never married. Education variables code the highest degree (< high school, high school, associates/junior college, bachelor's, or graduate degrees) earned by the respondent and the respondent's father and mother. Religion includes separate indicators for Protestant, Catholic, Jewish, none, and other. Region includes indicator variables for each of nine regions. Separate dummy variables are also included for missing values of each control variable.

   ***Significant at the 1 percent level.

   **Significant at the 5 percent level.

   *Significant at the 10 percent level.

respectively. At the start of the sample, women reported higher levels of subjective well-being than did men. However, by 2006, this earlier gap had reversed and women's subjective well-being in recent years is lower than that of men.

Thus far, we have shown the raw trend in reported happiness by gender without adding additional controls. The difficulty with adding controls is that most of the things for which one would like to account are not exogenous life events, but rather choices that people make, and importantly, choices that have been changing over our sample period in both likelihood and the selection of individuals making specific choices. However, we can start by adding controls for exogenous compositional

shifts in the population. In column 2, dummy variables are added to the ordered probit specification for decadal age categories, race, and immigrant status.[4] The United States has undergone large demographic changes over the past 35 years (the population is 4½ years older on average and the nonwhite population has doubled). Yet, accounting for these shifts has little impact on the estimated trends in happiness.

The third column of Table 1 adds controls for socioeconomic characteristics such as income, children, employment status, and marital status. These controls are all interacted with gender to allow for the association between these characteristics and happiness to differ for men and women.[5] Importantly, these controls are not exogenous characteristics assigned by nature, but instead reflect life choices in various domains. Moreover, there have been important shifts in who marries, gets more education, has children, is employed, etc. As such, the relationship between these controls and happiness is likely changing over time due to changing selection into each control category. If, instead, the estimated coefficients on each of the controls represented the causal relationship between the control variable and happiness, then adding these controls would account for changes in happiness due to changes in these socioeconomic characteristics. However, research has repeatedly shown that these estimates should not be considered fixed causal relationships.[6] Thus, we add these controls with a note of caution that interpreting happiness trends conditional on endogenous socioeconomic controls is not straightforward. Despite these caveats, the inclusion of these controls has little effect on our estimated trend in the gender happiness gap. The similarity of the estimated trend in the gender happiness gap to that in column 1 highlights the fact that the relative (and absolute) decline in female happiness is not easily explained by these important, and changing, facets of adults' lives.

The next few columns explore whether the results are robust to alternative specifications. In columns 4 and 5, we run OLS rather than an ordered probit. Happiness is coded as a variable with values of 1, 2, or 3, with higher numbers indicating greater happiness. In order to make the coefficients comparable, we first standardize the happiness variable by subtracting the mean and dividing by the standard deviation.[7] Column 4 shows the baseline specification without any additional controls, while column 5 adds the full set of control variables. In both cases, the estimates are quite similar to those of the ordered probit.

In columns 6 and 7, we run probit models to explore whether the trends in happiness reflect both changes in the propensity of people to report being "very happy"

---

[4] Ethnicity is not available for the entire sample, so we do not control for Hispanics in this specification. However, in Table 2, we explore differences by race further and consider a subsample of non-Hispanic whites.

[5] Specifications that simply include each control variable, rather than each control variable and interactions of each control variable with gender, yield very similar results and are thus not shown.

[6] For example, Stevenson and Wolfers (2007) show that happier people are more likely to get married, thus accounting for some of the relationship between marital status and happiness.

[7] Both ordered probit and OLS on a standardized variable create coefficients that are roughly comparable both with each other and across datasets (the ordered probit standardizes happiness conditional on the covariates, while our standardization for the OLS specification is unconditional). As a result, these are our two preferred specifications for dealing with happiness data. For more information on cardinalizing happiness variables see Bernard Van Praag and Ada Ferrer-i-Carbonell (2008).

as well as changes in the propensity of people to report being "not too happy."[8] Column 6 shows the results of a probit regression in which the dependent variable is an indicator variable reporting whether the respondent is "very happy." We report probit coefficients (rather than implied percentage point changes) to make the results comparable to the coefficients in columns 1–3, which are also elasticities of a latent standard normal happiness index. The probit coefficient on the female time trend is similar, albeit slightly larger, to that seen for happiness overall in column 1, as is the difference between the female and male trends. Evaluating the coefficients at the mean, women begin the sample 4 percentage points more likely than men to report that they are very happy, and end the sample 1 percentage point less likely, with the proportion of women reporting they are very happy falling 0.15 percentage points a year, relative to men.

Turning to the bottom category, we see that women became slightly less likely, albeit statistically insignificantly so, to say that they were "not too happy." However, men became even less likely to be in this category. As such, relative to men, women became more likely to be in the bottom category of happiness. The magnitude of the decline is similar to that seen for happiness overall (albeit inversely signed since this specification assesses unhappiness). Converting this to the proportional changes evaluated at the mean, women were 1 percentage point less likely than men to say that they were not too happy at the beginning of the sample. By 2006, women were 1 percentage point more likely to report being in this category. This smaller shift partly reflects the smaller proportion of respondents in this bottom category. While more of the absolute happiness decline appears to have come from a reduction in women selecting the top happiness category, movement throughout the distribution is consistent with a relative fall in women's happiness, compared to that of men.

In a further set of robustness checks (not shown), we investigate whether the absolute and relative decline in female happiness is occurring throughout the sample period. We test for this by breaking the sample at various points and estimate equation (1) separately using each of the subsamples. While the estimates obtained in various subsamples differ in the point estimate and the statistical significance of the estimated difference between the trends in female and male happiness, we found no time period for which the estimated happiness trends over the full sample were not contained in a 90 percent confidence interval. We also test for a trend break in the mid-1980s when female happiness fell below men's for the first time. In none of these specifications did we find a statistically significant trend break that differed for men and women. In addition, we replace the linear trends with quadratic trends. These results also pointed to a decline in women's happiness, both absolutely and relative to that of men. The coefficient estimates suggest that women are getting less happy at a decreasing rate over time, although the coefficient on the quadratic term was not significant. The quadratric trend does a better job of explaining the male trend in happiness—men were getting happier at a slightly decreasing rate over time. The linear and quadratic terms for men were both individually and jointly significant. However, a calculation of the gender happiness gap over the 35-year period

---

[8] Results are shown only for the simplest specification for space considerations. Similar results are obtained when we include a full set of control variables.

using the quadratic trend estimates yields the aforementioned reversal of the gender happiness gap. Comparing the difference between the happiness of women and men throughout the sample, the result is very similar to that which is seen with a linear trend. Finally, we allow for a completely nonparametric specification of the time trend by controlling for year fixed effects and test for a gender difference in a quadratic term. Again, we find results that are qualitatively similar to those seen using a linear trend.

The consistent estimates across all specifications suggest that women have become less happy over time, both absolutely and relative to men. However, how much less happy have they become? Given that the dependent variable is qualitative in nature, one must take care in interpreting these magnitudes. In 1972, women were happier than men, on average, and the median woman was as happy as a man at the 53.3 percentile in the male distribution. By 2006, however, the median woman's happiness was less than that of the median man in 1972, while the median man in 2006 was slightly happier than his counterpart in 1972. Comparing the 2006 medians with the distribution for men in 1972, we see that the median woman in 2006 is as happy as a man at the 48.8 percentile in 1972 (almost 5 percentage points below her position 34 years prior), while the median man in 2006 is as happy as the man at the 50.7 percentile in 1972.

From 1972 to 2006, women's happiness relative to men's fell by $(\beta_2 - \beta_1)\Delta t$ $= (-0.294 - 0.082) \times (2006 - 1972)/100 \approx 0.13$ points. The ordered probit normalizes the underlying distribution of happiness to have a standard deviation of one, and, hence, this shift amounts to about one-eighth of the cross-sectional standard deviation of happiness. Of course, the cross-section variation in happiness is much larger than the intertemporal variation, and so the same shift is 1½ times the standard deviation of the aggregate annual gender happiness gap.[9] To compare this change with other well-known shifters of the happiness distribution, we can consider how large an increase in unemployment would be needed to generate a similar shift in subjective well-being. In a related context, Wolfers (2003) regressed individual happiness against a state's unemployment rate, controlling for state and year fixed effects, finding that a one percentage point rise in a state's unemployment rate leads to a decline in happiness of 0.015 points. The ratio between these two estimates suggests that the relative decline in the subjective well-being of US women over the past 35 years is roughly comparable to the effects of an 8½ percentage point rise in unemployment rates (that is, a rise from, say, 4 percent unemployment to 12½ percent). An alternative metric comes from the literature assessing the cross-country relationship between happiness and levels of gross domestic product (GDP) per capita (Angus Deaton 2008; Stevenson and Wolfers 2008a). Across a range of ordered probit regressions of happiness or life satisfaction on the log of GDP per capita, Stevenson and Wolfers (2008a) find coefficient estimates of around 0.4, suggesting

---

[9] The intertemporal variability of the gender happiness gap was computed by running an ordered probit of happiness on the interaction of year and gender fixed effects. This yielded 26 annual (or biennial) observations of the gender happiness gap, and these had a standard deviation of 0.082.
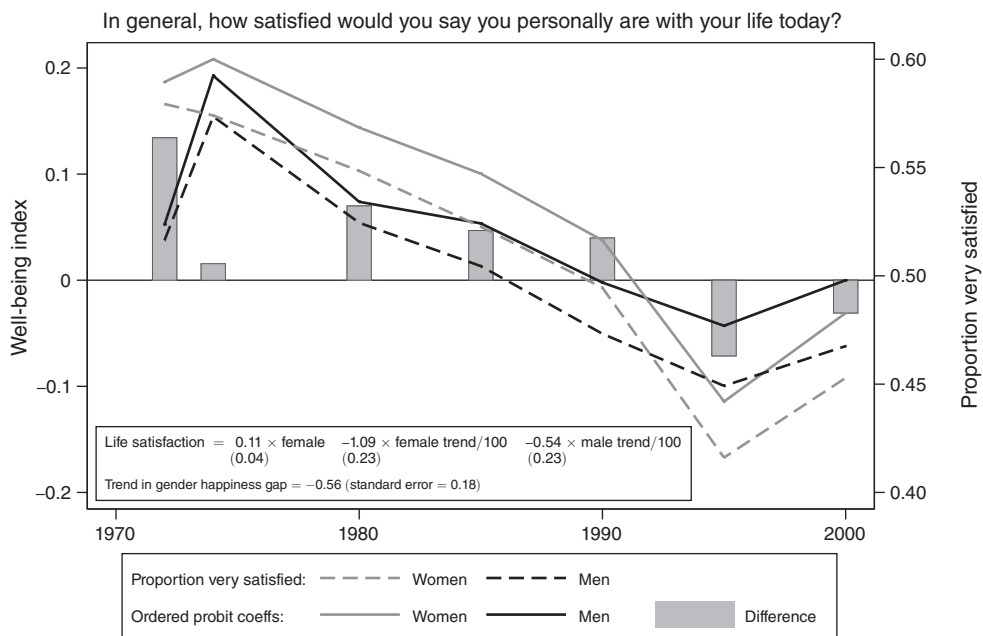
In general, how satisfied would you say you personally are with your life today?

FIGURE 2. LIFE SATISFACTION IN THE UNITED STATES, VIRGINIA SLIMS POLL

Notes: Data are from the Virginia Slims Survey of American Women. The survey is a representative sample of US adults (including men) conducted in 1972, 1974, 1980, 1985, 1990, 1995, and 2000 (by Harris & Associates in 1972 and Rooper Starch Worldwide (previously known as the Roper Organization) in 1974, 1980, 1985, 1990, 1995, and 2000). Dashed lines show the proportion of the population reporting that they are very satisfied with their lives (right axis). Solid lines represent estimates from an ordered probit regression of life satisfaction on a full set of survey by gender fixed effects (left axis). Bars show the estimated gender well-being gap (female-male) in each survey round. The regression reported at the bottom estimates the trend in happiness over the period for men and women, while the difference in the female and male trends is reported below the regression. Standard errors are clustered by year.

that the relative decline in women's well-being over the past 35 years is equivalent to a fall in GDP of 0.32 log points ($\Delta y = 0.4 \times 0.32 = 0.13$).[10]

Given the large declines seen in the General Social Survey, it is worth analyzing happiness trends in alternative datasets and using alternative measures of well-being. The "Virginia Slims American Women's Opinion Polls" (fielded initially by Harris and Associates, and later by Roper Starch Worldwide, previously known as the Roper Organization) have asked both women and men about women's issues approximately every 5 years since their inception in 1970, providing us with 7 samples to assess.[11] The first question on each survey (since 1972) asks respondents about their life satisfaction and Figure 2 summarizes these data in two ways. The dashed lines show the proportion of the population "very satisfied" with their lives,

---

[10] An alternative means of assessing the magnitude is to compare the shift to the cut points. Doing this, we find that the shift is about 8 percent as large as the gap between cut points in the baseline specification.

[11] Weights are used when provided to ensure that the sample is representative of the US population age 18 and over.

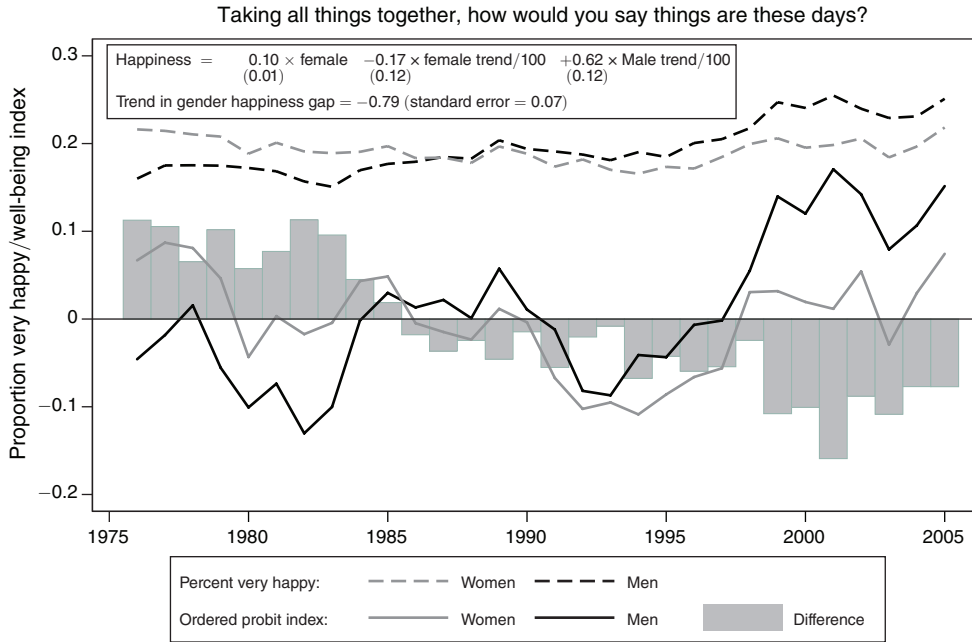Taking all things together, how would you say things are these days?

FIGURE 3. HAPPINESS AMONG US TWELFTH GRADERS, 1976–2005

Notes: The data are from Monitoring the Future study of twelfth graders, conducted annually from 1976 to 2005, by the Survey Research Center in the Institute for Social Research at the University of Michigan. Dashed lines show the proportion of the population reporting that they are very satisfied with their lives. Solid lines represent estimates from an ordered probit regression of life satisfaction on a full set of survey by gender fixed effects; bars show the estimated gender well-being gap (female-male) in each survey round. The regression reported at the bottom estimates the trend in happiness over the period for men and women, while the difference in the female and male trends is reported below the regression.

while the solid lines report a well-being index constructed by running an ordered probit regression of life satisfaction on a saturated set of year-by-gender fixed effects; the bars show the implied gender satisfaction gap. These data reveal a strong downward trend in life satisfaction for both men and women. The regression specification shown on the bottom of the graph shows an overall downward trend that is larger than that observed in the GSS.[12] However, the decline in happiness is stronger for women, and the magnitude of the difference in the trend in men's and women's subjective well-being is similar to that seen in the GSS.

The other main collection of US happiness data comes from the Monitoring the Future study, which surveys approximately 15,000 US twelfth graders each year about their attitudes, and has run since 1976.[13] Figure 3 shows that these data suggest that young men have become increasingly happy, while young women have become slightly less happy. While these absolute declines are not as large as those

---

[12] We cannot tell whether the differences in the overall trend in well-being reflect differences in the questions asked between the Virginia Slims and GSS data, or other methodological differences.

[13] Sampling weights are used to ensure a nationally representative sample of students each year in the twelfth grade.

Table 2—Differential Happiness Trends in the US by Race, General Social Survey

Ordered probit regression	Dependent variable: "Taken all together, how would you say things are these days? Would you say that you are: [3] Very happy; [2] Pretty happy; [1] Not too happy?"					
	Blacks		Whites		Non-Hispanic whites	
Regression coefficients	No controls	Full controls	No controls	Full controls	No controls	Full controls
Female time trend	0.698*** (0.272)	0.587* (0.334)	−0.338*** (0.102)	−0.578*** (0.122)	−0.321*** (0.119)	−0.564*** (0.138)
Male time trend	0.559** (0.247)	0.218 (0.247)	0.088 (0.077)	0.070 (0.123)	0.167 (0.114)	0.305** (0.143)
Female dummy	−0.088 (0.080)	NA	0.129*** (0.024)	NA	0.137*** (0.029)	NA
Implied trends in gender happiness gap (female–male)						
Difference in time trends	0.139 (0.400)	0.370 (0.469)	−0.427*** (0.123)	−0.648*** (0.170)	−0.489*** (0.177)	−0.869*** (0.229)
Gender happiness gap in 1972	−0.088	−0.029	0.129	0.233	0.137	0.286
Gender happiness gap in 2006	−0.040	0.097	−0.016	0.013	−0.029	−0.009

Notes: Robust standard errors in parentheses, clustered by year. $n = 5{,}605$ blacks, 38,136 whites, 27,383 non-Hispanic whites. GSS data are from 1972–2006. The estimated no controls regression is $Happiness_{i,t} = \alpha + \beta_1 Female_i \times ((Year_t - 1972)/100) + \beta_2 Male_i \times ((Year_t - 1972)/100) + \beta_3 Female_i + \varepsilon_{i,t}$, thus the coefficients on the female and male time trends report the change in happiness per 100 years. The gender gaps in 1972 and 2006 are projections based on reported coefficients. The no controls regression specifications are done as in column 1 of Table 1. Full controls includes interaction of individual-level observables with gender, as in the final column of Table 1.

***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

seen among US adults, the difference between these trends implies a large decline in girls' happiness relative to that of boys—a difference that is somewhat larger than that seen among US adults. The larger samples in this data collection yield a less noisy series, suggesting a roughly continuous trend decline in the gender happiness gap. While there is some change in the composition of the sample due to rising high school graduation rates, this is unlikely to explain much of these trends, as the relative change in the share of girls reporting that they are very happy is larger than the rise in the proportion of girls staying in school until the twelfth grade.[14] Similar surveys of eighth and tenth graders have also been run since 1991, but interestingly, for those age groups, we find boys and girls both getting happier at roughly equal rates (while for twelfth graders, even over this sub-period, we find girls getting less happy relative to boys).

II. Trends in the Gender Happiness Gap Across Groups

We now turn to breaking these trends apart by various demographic and socioeconomic groups. While adding controls for race, immigration status, and age had little

[14] The US Census Bureau (2007) reports that the proportion of 18–24-year-olds who were high school graduates rose from 82 percent of young women in 1976 to 86 percent in 2005, while the proportion of young men who graduated was unchanged at 79 percent.

impact on the overall trend, it is possible that there are important differences in happiness trends for each group. In particular, one might expect differences in the happiness trends observed for blacks. The civil rights movement dramatically expanded the opportunities available to blacks and, while these improvements are evident in most objective measures, it is useful to consider whether these changes are evident in aggregate trends in subjective well-being. Table 2 examines the gender happiness gap separately by race.[15] Trends in happiness among blacks are examined in columns 1 and 2. These data show that happiness has trended quite strongly upward for both female and male blacks, erasing about two-thirds of the large racial differences in subjective well-being evident in the early 1970s (Stevenson and Wolfers 2008b).

However, there is little difference in these trends by gender. Indeed, the point estimates suggest that well-being may have risen more strongly for black women than for black men, an outcome that is consistent with other indicators of economic and social progress. While the point estimates suggest that the gender gap in happiness for blacks has increased over this period, the estimated change in the gap is not statistically significant. Moreover, the results on the trend in the gender gap are sufficiently imprecise as to be statistically indistinguishable from the trend estimated among whites. It is also worth noting that the difference in subjective well-being for black women and men in 1972 is very different from that seen for whites. Black women in 1972 were less happy than black men, while white women were happier than white men.

Given the findings among blacks, we should expect that the downward trend in female happiness will be larger when we examine trends among whites. Columns 3 and 4 of Table 2 report the results from running the regressions for whites only, initially with no controls (column 3), and then with a full set of controls interacted with gender (in column 4). Excluding blacks has a small amplifying effect on the coefficients and the decrease in happiness for women, relative to men, is slightly larger than our whole-population estimates in Table 1.

Given these racial differences, it is worth exploring whether there are compositional shifts among whites that might be impacting our finding of declining female happiness. In particular, the Hispanic population as a proportion of the total US population has tripled over our sample period.[16] Unfortunately, it is not possible to control for Hispanic origin throughout the entire sample as the GSS began to collect information on Hispanic ethnicity in 2000. However, in each year, approximately 80 percent of the sample identified the country from which their ancestors came. As such, we construct a subsample of those who identify themselves as white and selected a non-Spanish-speaking country as their heritage. Our results for this group of white, non-Hispanics, shown in columns 5 and 6 of Table 2, are very close to those for all whites. In further checks of potential shifts in the composition of

---

[15] The GSS classifies race into "white," "black," and "other." A separate analysis of the "other" category yields results that are statistically significantly indistinguishable from those for whites. However, the small sample size yields estimates that are not precisely estimated, and, therefore, not particularly informative.

[16] The United States went from 4.7 percent in 1970 to an estimated 15.5 percent in 2010. For more information see the census presentation "Hispanics in the United States" located at: http://www.census.gov/population/www/socdemo/hispanic/files/Internet_Hispanic_in_US_2006.pdf.

TABLE 3—TRENDS IN HAPPINESS BY DEMOGRAPHIC GROUP, UNITED STATES (*Whites only*)

	Estimated time trend in happiness					
	No controls			Full controls		
Ordered probit	Women	Men	Difference	Women	Men	Difference
All whites	−0.338***	0.088	−0.427***	−0.578***	0.070	−0.648***
	(0.102)	(0.077)	(0.123)	(0.122)	(0.123)	(0.170)
Panel A. By age						
18–29	−0.101	0.342**	−0.444**	−0.015	0.484***	−0.499*
	(0.181)	(0.169)	(0.225)	(0.227)	(0.184)	(0.307)
30–44	−0.410*	0.064	−0.474*	−0.487**	0.267	−0.754***
	(0.216)	(0.150)	(0.270)	(0.220)	(0.187)	(0.274)
45–59	−0.500***	−0.284**	−0.216	−0.750***	−0.294**	−0.456**
	(0.204)	(0.121)	(0.185)	(0.208)	(0.143)	(0.216)
60+	−0.329*	0.089	−0.418**	−0.988***	−0.155	−0.832***
	(0.173)	(0.184)	(0.214)	(0.214)	(0.206)	(0.264)
p-value of between row differences	0.524	0.007	0.584	0.005	0.001	0.529
Panel B. By employment status						
Employed	−0.409	0.213	−0.622***	−0.639***	−0.151	−0.488**
	(0.124)	(0.163)	(0.171)	(0.132)	(0.149)	(0.201)
Not employed	−0.216	0.116	−0.332*	−0.460***	0.184	−0.644***
	(0.153)	(0.102)	(0.175)	(0.175)	(0.146)	(0.194)
p-value of between row differences	0.314	0.640	0.240	0.374	0.081	0.433
Panel C. By marital status						
Married	−0.049	0.459***	−0.508***	−0.589***	0.005	−0.594***
	(0.149)	(0.101)	(0.164)	(0.184)	(0.141)	(0.220)
Widowed	0.103	0.764	−0.661	−0.599***	0.485	−1.085*
	(0.234)	(0.538)	(0.624)	(0.230)	(0.528)	(0.589)
Divorced/separated	−0.069	0.626***	−0.695***	−0.588**	0.229	−0.818***
	(0.289)	(0.218)	(0.241)	(0.269)	(0.222)	(0.262)
Never married	−0.365	0.291	−0.657***	−0.516*	0.131	−0.647**
	(0.297)	(0.190)	(0.265)	(0.283)	(0.178)	(0.295)
p-value of between row differences	0.591	0.686	0.927	0.993	0.600	0.861
Panel D. By fertility (live births)						
Children	−0.175	0.121	−0.295	−0.397*	0.046	−0.443
	(0.191)	(0.166)	(0.243)	(0.211)	(0.159)	(0.274)
No children	−0.386***	0.116	−0.502***	−0.640***	0.082	−0.722***
	(0.128)	(0.104)	(0.143)	(0.132)	(0.152)	(0.166)
p-value of between row differences	0.391	0.982	0.466	0.278	0.858	0.256
Single parents versus married parents						
Single	−0.122	0.537**	−0.658**	−0.535***	0.365	−0.900***
	(0.219)	(0.253)	(0.312)	(0.195)	(0.285)	(0.270)
Married	−0.074	0.523***	−0.598***	−0.575***	0.204	−0.779***
	(0.150)	(0.113)	(0.163)	(0.163)	(0.168)	(0.212)
p-value of between row differences	0.860	0.956	0.865	0.878	0.539	0.743

TABLE 3—TRENDS IN HAPPINESS BY DEMOGRAPHIC GROUP, UNITED STATES (*Whites only*) (*Continued*)

| | Estimated time trend in life satisfaction | | | | | |
| | No controls | | | Full controls | | |
Ordered probit	Women	Men	Difference	Women	Men	Difference
Working parents versus nonworking parents						
Employed	−0.226	0.184	−0.407*	−0.456**	0.374*	−0.830***
	(0.205)	(0.134)	(0.231)	(0.200)	(0.197)	(0.219)
Nonemployed	−0.550***	−0.039	−0.511**	−0.678***	−0.116	−0.563**
	(0.135)	(0.182)	(0.248)	(0.158)	(0.175)	(0.237)
p-value of between row differences	0.156	0.327	0.773	0.383	0.013	0.412
Panel E. By education						
< High school	−0.500***	−0.382**	−0.118	−0.357	−0.074	−0.283
	(0.198)	(0.179)	(0.252)	(0.236)	(0.214)	(0.296)
High school	−0.779***	−0.190	−0.589***	−0.667***	−0.056	−0.611***
	(0.130)	(0.132)	(0.176)	(0.146)	(0.161)	(0.224)
Junior college	−1.265***	0.154	−1.419***	−1.241***	0.146	−1.387***
	(0.312)	(0.360)	(0.463)	(0.311)	(0.411)	(0.503)
Bachelors	−0.194	0.521***	−0.715**	−0.216	0.372*	−0.587**
	(0.273)	(0.196)	(0.302)	(0.299)	(0.208)	(0.293)
Graduate	−0.433	0.617*	−1.050**	−0.484***	0.433	−0.917*
	(0.343)	(0.347)	(0.485)	(0.358)	(0.344)	(0.532)
p-value of between row differences	0.018	0.000	0.090	0.126	0.207	0.479
By father's high school education						
Father high school dropout	−0.516***	0.278***	−0.793***	−0.771***	0.078	−0.849***
	(0.129)	(0.095)	(0.159)	(0.169)	(0.159)	(0.235)
Father high school grad	−0.546***	0.213***	−0.759***	−0.567***	0.182	−0.749***
	(0.179)	(0.096)	(0.221)	(0.185)	(0.144)	(0.259)
Father > high school	−0.493*	0.199	−0.692**	−0.596**	0.223	−0.819**
	(0.273)	(0.158)	(0.329)	(0.310)	(0.191)	(0.388)
p-value of between row differences	0.982	0.823	0.960	0.707	0.613	0.957

Notes: Robust standard errors are in parentheses, clustered by year. $n = 38{,}136$ whites (the exact sample varies slightly for each demographic group due to missing information). GSS data are from 1972–2006. Each block shows the results of two regressions. The first two columns are the coefficients on female by time and male by time each interacted with dummy variables for each specific panel category from an ordered probit that also controls for a female dummy, as in column 1 of Table 1. Time is measured per 1/100 of a year. As such, the coefficients on the time trends report the change in happiness per 100 years. The third column shows the difference between the male and female time trends. The last three columns repeat this exercise but add individual-level controls interacted with gender, as in the final column of Table 1. The bottom row of each block shows *p*-values from an *F*-test of the equality of the relevant trends.

   ***Significant at the 1 percent level.
   **Significant at the 5 percent level.
   *Significant at the 10 percent level.

whites, we limit the sample to whites who hail from individual European countries and find similar results for each group.

In Table 3, we turn to further disaggregating the trends among whites by age, employment, marital status, fertility, and education. If there are particular changes in men's and women's lives that explain the decline in subjective well-being for women, then one might expect to see differences based on the time period in life that we examine. For example, if female unhappiness is rising due to the extra pressures

of combining home and market work then one would suspect that the decline in female happiness would be particularly large among women in their peak child-rearing years or among women with young children in the home.

Before describing these results, it is worth emphasizing the tremendous changes in the composition of these groups. In 1970, less than a quarter of the adult population had attended college and only 10 percent had a bachelor's degree. By 2005, over 50 percent had attended college and half of those had earned a bachelor's degree. Moreover, this change was not gender-neutral, as there has been a large scale increase in female educational attainment both absolutely, and relative to that of men, with female college attendance rates exceeding those of men for cohorts born in 1960 or later (Goldin, Katz, and Ilyana Kuziemko 2006). Female labor force participation rates also rose dramatically from 43 percent in 1970 to 59 percent in 2005, while male labor force participation fell from 80 percent to 73 percent. Marital behavior has changed substantially, with a greater percentage of the population having experienced divorce and remarriage (Stevenson and Wolfers 2007), and the married population has shifted toward those who are more educated and older (Isen and Stevenson 2008). Finally, even the composition of people at various ages is shifting as life expectancy has increased. Because happiness can be considered a trait of the individual as well as a reaction to the individual's life circumstance, this shifting of people into different categories confounds their underlying tendency toward happiness with changes in the hedonic experience of people in the group. While we endeavor to examine differences in the trends in happiness across groups, we want to emphasize the difficulty in interpretation as compositional shifts may result in trends over time that reflect changing selection. Even a finding of no difference between groups may be masking changes in the hedonic experience of various groups if the changes resulting from compositional shifts go in the opposite direction of the changing hedonic experience.

Turning to examining happiness by age group, the first three columns of panel A in Table 3 show the results of an ordered probit regression of happiness on *female* $\times$ (*Year* $-$ 1972)/100 and *male* $\times$ (*Year* $-$ 1972)/100 each interacted with four age categories. The trend toward lower subjective well-being for women, both absolutely and relative to men, is seen in every age category in roughly equal measure. The bottom row of the panel reports the *p*-value from testing whether the coefficients in each age category are statistically significantly different from one another. The trends for women and the difference in the trends between women and men are not significantly different across the ages. Among men, there is a pattern of increasing happiness among the young and decreasing happiness among those ages 45 to 59.

Columns 4–6 add controls for life outcomes with the same caveats about the difficulty of interpreting results with controls as discussed previously. As in Table 1, controls are added for employment, income, marital status, education outcomes, number of children ever born, parents' education, religion, and region separately for men and women. Examining the trends holding these life outcomes constant, we see that the trends in happiness have favored the young over the old for men and women. The decline in female happiness is largest among those over age 60, while the happiness of young men has trended upward compared with flat trends for older men. While these trends are statistically significantly different across the age groups,

these differences across age are similar for men and women, and thus the differences between the female and male trends are not statistically significantly different from one another. Thus, trends in the gender happiness gap by age offer no evidence of particularly large declines for prime-age women (or any other group of women) relative to that of men. Moreover, even though happiness rises unconditionally with age, controlling for the aging of the population has no impact on the estimated trends.

In addition to breaking the results down by age, we investigated the possibility of cohort specific trends, analyzing trends separately for decadal birth cohorts from the 1910s through the 1960s. This exercise yielded similar declines in the relative well-being of women across these cohorts. Adding controls—particularly controls for age—complicates things, due to the well-known collinearity of age, cohort, and time. Our case is slightly different in that we are interested in the interactions of time with gender. Consequently, we can break this collinearity by assuming that happiness varies by age in a stable way over time, that is the same for both genders, allowing us to estimate separate cohort and time effects by gender. Again, we find similar declines in the gender happiness gap across all cohorts. Thus, there is no evidence that women who experienced the protests and enthusiasm of the women's movement in the 1970s have seen their happiness gap widen more than those women who were just being born during that period. This finding provides suggestive evidence that the decline in happiness cannot be explained by the peaking optimism of those participating in the women's movement in the 1970s.

If the burdens of entering the workforce are playing a role in declining female happiness, then, perhaps, the decline in happiness will be concentrated among women who are employed. Panel B shows the results of an ordered probit of happiness on *female* $\times$ (*Year* $- 1972)/100$ and *male* $\times$ (*Year* $- 1972)/100$ each interacted with two employment status variables. This regression shows that employed and nonemployed women have experienced roughly similar declines in subjective well-being in the main specification shown in column 1 and when controls are added in column 4. Similarly, there are no differences by employment in the trend for males or the difference between women and men in the trends. There have been large compositional shifts in employment for women, but there are neither trend nor level differences (results not shown) in happiness by employment for women throughout the 35-year period.

Panels C and D of Table 3 disaggregate our data by marital status and fertility outcomes. While the proportion in the sample who are married fell by one-third over the course of our sample, and married people typically report being happier than unmarried people, this compositional change does not explain the decline in female happiness. Panel C shows no significant differences in the happiness trends by marital status for women or men or the difference between the two. Table 1 showed that adding controls for life outcomes, including marriage, yields similar trends in happiness. One possible explanation for why this compositional shift has little impact on the trends in happiness is simply that the causal impact of marriage on happiness is much smaller than that which is observed in the cross-section, due to selection into marriage on happiness traits.

A common suspect for the source of women's declining happiness is the burden of balancing children and a career. In panel D, we first run regressions for the total

population, in which we estimate female and male time trends separately for those with and without children. There are no statistically significant differences in the trends for women with and without children nor are there differences between these groups in the trend in happiness for men (or the subsequent trend in the happiness gap). Along with the decline in marriage has come a rise in single parenthood, both through growth in out-of-wedlock births and through divorce.[17] Thus, we disaggregate the fertility results to consider trends in happiness separately among single parents and married parents, and between employed parents and nonemployed parents, to account for the dual burden of working parents. Once again, we see similar trends in happiness across these groups, casting doubt on the hypothesis that trends in marriage and divorce, single parenthood, or work-family balance are at the root of the happiness declines among women. However, it bears reminding that compositional shifts in all of these groups may hinder identifying the true hedonic shifts that may have occurred due to societal changes in family behavior.

Finally, we turn to examining differential trends in happiness across education groups. Education has been rising throughout the period, and higher education is associated with greater happiness. Moreover, rising inequality has led to higher incomes for those with more education, while the wages of men with less education have fallen or been stagnant for much of this period. Trends in male happiness mirror these trends in male earnings. Men with a college degree or more have become happier over time, while men with a high school degree or less have become less happy over time. The patterns for women, however, are not similar. Women of all education groups have become less happy over time with declines in happiness having been steepest among those with some college. Examining the differences in the trends between women and men, declines are seen for all groups. However, as with the absolute decline in women's happiness, the relative decline is largest among those with some college. If, however, we condition on life outcomes, the differences in the trends by age group for women and men are less pronounced.

Before concluding that women with some college have experienced particularly large declines in subjective well-being, it is worth emphasizing the changed composition of the education category. Both men and women have had increasing educational attainment over this period. However, those changes have been most pronounced for women. In particular, few women had degrees beyond high school in the 1970s and the number of those continuing on to college has risen enormously, both absolutely and relative to that of men. Thus, changing selection into higher levels of education likely contributes to the differential happiness trends by educational attainment. Since the differences in the trends by education may partly, or wholly, reflect the differential changes in which women and men select into higher education, we reanalyze these data, grouping individuals instead by their father's level of education (a rough measure of socioeconomic status). While there is likely changing selection of fathers into education through time, this differential selection is likely similar for fathers of daughters and fathers of sons. These results suggest that the trend in the gender happiness gap is roughly similar across the socioeconomic spectrum.

---

[17] Equally, divorce began declining in 1979, and the proportion of children involved per divorce also began to decline in the 1980s.

All told, these data suggest that both the absolute decline in happiness among US women, and the even larger decline relative to men, appears pervasive and is evident irrespective of the age, marital, labor market, or fertility status of the group analyzed. As such, these data provide little evidence for any of the mechanisms discussed in the introduction to be driving the decline in women's happiness.

We now turn to examining trends across a number of European countries. Happiness in Europe, unlike that in the United States, has been increasing along with rising GDP. Despite this difference in overall happiness trends, we find a similar pattern of relative declines in women's happiness in Europe. Our main international data source is the Eurobarometer, a series of repeated cross-sections, designed to gauge trends within member states of the European Union. The Eurobarometer began asking about life satisfaction in a core of 9 countries in 1973 and expanded to 12 countries by 1985 (including Northern Ireland), and included 17 countries (counting East and West Germany separately) by the end of our sample. (We are analyzing the Mannheim Eurobarometer Trend File, 1970–2002.)[18] For most countries, a cross-section of roughly 1,000 people is interviewed in each biannual survey round (turning to quarterly in 2000). There are two key questions measuring an individual's subjective well-being. The first asks about life satisfaction—"On the whole, are you very satisfied, fairly satisfied, not very satisfied, or not at all satisfied with the life you lead?" while the second question asks more directly about happiness—"Taking all things together, how would you say things are these days? Would you say you're very happy, fairly happy, or not too happy these days?" The life satisfaction question is available for a longer period, it was asked every year from 1973 to 1998, except 1974 and 1996, while the happiness question was asked only from 1975 to 1986 (and not in 1980 or 1981). While life satisfaction and happiness are somewhat different concepts, responses are highly correlated.

Figure 4 shows trends in life satisfaction by gender, aggregating across the European Union. As in the US, women's well-being was higher than men's in the early 1970s, but by the early 2000s, women were somewhat less well off. As with US women, the well-being of European women has declined relative to men. However, while US women also experienced an absolute decline in well-being, the subjective well-being of European women has risen in an absolute sense. In the first row of Table 4, we formalize these comparisons, finding that the magnitude of the difference between the female and male trends—the closure of the gender happiness gap—is both statistically significant and remarkably similar to that for the United States. The last three columns report on these trends when conditioning on a rich set of controls (including age, nation, employment status, marital status, and education, all interacted with gender), and yield findings that are similar to the raw trends.[19] The sparser data asking about happiness are analyzed in the second row, and suggest a similar pattern, albeit showing a somewhat larger decline in the happiness of women relative to men.

---

[18] Country samples are weighted to be representative of the entire European Union.

[19] It should be noted that the set of control variables available in these data are not quite as rich as those available in the GSS.

Satisfaction index = 0.52 Female trend/100 + 0.73 Male trend/100 + country × gender fixed effects
                          (0.15)   (0.14)

Trend in gender happiness gap = −0.21 (0.07)

| Percent very satisfied: | - - - - Women | - - - - Men | |
| Ordered probit index: | ——— Women | ——— Men | ▮ Difference |

FIGURE 4. LIFE SATISFACTION IN THE EU, 1973–2002

Notes: Data are from the Eurobarometer Trendfile (1973–2002); and biannual Eurobarometer reports (for 2002–2007). Dashed lines show the proportion of the population reporting that they are very satisfied with their lives. Solid lines represent estimates from an ordered probit regression of life satisfaction on a full set of survey × gender fixed effects controlling for country × gender fixed effects. Bars show the estimated gender well-being gap (female-male) in each survey round. Observations are weighted to be representative of the entire European Union. The regression reported at the bottom estimates the trend in happiness over the period for men and women, while the difference in the female and male trends is reported below the regression.

The remainder of Table 4 estimates trends in subjective well-being separately by country. In order to maintain reasonable sample sizes, we focus only on life satisfaction, and only on those countries entering the data before the 1990s. These results suggest that the trend rise in well-being across Europe is fairly widespread, and the well-being of men rose in all countries with the exception of a small (and insignificant) decline in Greece and a larger decline in Belgium. The increase in well-being in many of these countries is remarkable, with Italy experiencing particularly large increases. In most of these countries, women's life satisfaction has also grown.

However, these increases in subjective well-being have been experienced to a greater degree by men, leading to a pervasive decline in well-being among women relative to men. Indeed, women's happiness fell relative to men's in all but one of the countries in the sample, and while the pattern is by no means uniform, the magnitudes

TABLE 4—LIFE SATISFACTION TRENDS BY COUNTRY, EUROBAROMETER SURVEY

		Estimated time trend in life satisfaction					
		No controls			Full controls[a]		
Ordered probit	# surveys	Women	Men	Difference	Women	Men	Difference
All EU (life satisfaction)	47	0.522*** (0.149)	0.729*** (0.135)	−0.207*** (0.067)	0.666*** (0.155)	0.868*** (0.192)	−0.201* (0.114)
All EU (happiness)	14	1.352** (0.667)	1.725*** (0.550)	−0.373 (0.246)	1.554** (0.782)	2.202*** (0.613)	−0.648 (0.435)
Life satisfaction by country							
Belgium	47	−1.421*** (0.257)	−1.325*** (0.245)	−0.097 (0.113)	−1.240*** (0.361)	−1.535*** (0.334)	0.296 (0.229)
Denmark	47	1.179*** (0.193)	1.467*** (0.192)	−0.288** (0.136)	1.222*** (0.264)	1.382*** (0.242)	−0.159 (0.204)
France	47	0.413* (0.249)	0.961*** (0.235)	−0.548*** (0.104)	0.897 (0.259)	1.281*** (0.271)	−0.384** (0.180)
Great Britain (including Northern Ireland)	47	0.137 (0.124)	0.247** (0.123)	−0.110 (0.103)	0.432*** (0.161)	0.540*** (0.212)	−0.108 (0.204)
Greece	36	−0.589 (0.427)	−0.204 (0.425)	−0.386** (0.194)	−0.470 (0.486)	−0.179 (0.474)	−0.291 (0.306)
Ireland	47	−0.155 (0.293)	0.032 (0.308)	−0.187* (0.100)	−0.503** (0.244)	−0.022 (0.255)	−0.450** (0.206)
Italy	47	1.714*** (0.219)	2.177*** (0.201)	−0.463*** (0.153)	1.716*** (0.172)	2.123*** (0.248)	−0.408** (0.193)
Luxembourg	47	0.184 (0.292)	0.879*** (0.215)	−0.696*** (0.260)	−0.239 (0.317)	0.734*** (0.209)	−0.972*** (0.301)
Netherlands	47	0.311 (0.208)	0.694*** (0.154)	−0.383*** (0.137)	0.505 (0.364)	1.000*** (0.260)	−0.495 (0.325)
Portugal	28	−0.081 (0.593)	1.275** (0.598)	−1.356*** (0.138)	−0.118 (0.593)	1.646** (0.730)	−1.529*** (0.314)
Spain	28	0.309 (0.484)	0.532 (0.512)	−0.223 (0.226)	1.107* (0.634)	0.780 (0.516)	0.327 (0.360)
West Germany	47	0.468 (0.291)	0.160 (0.213)	0.308** (0.154)	0.392 (0.362)	0.383 (0.306)	0.009 (0.255)

Notes: Robust standard errors are in parentheses, clustered by Eurobarometer survey round. Eurobarometer data are from the 1973–2002 ZEW Eurobarometer Trend File. Those countries entering the Eurobarometer in the 1990s are not shown separately. Life satisfaction: $n = 636,400$ in 47 survey rounds, drawn from 1973, 1975–2002. Happiness: $n = 134,504$ in 14 survey rounds, drawn from 1975–1979, 1982–1986. Country samples are weighted to be representative of the entire European Union. As with the US data, time is measured per 1/100 of a year; as such, the coefficients on the time trends report the change in happiness per 100 years.

[a] Controls include fixed effects for 10-year age groups, marital and employment status, education, nation, and for missing values of each control variable.

*** Significant at the 1 percent level.
** Significant at the 5 percent level.
* Significant at the 10 percent level.

are remarkably similar. The only exception to this rule is West Germany, although even there, the data are not clear cut.[20]

We have also examined alternative data sources on the evolution of happiness in other industrialized nations, but either the infrequency or small country sample sizes in data collected by the International Social Survey Program and the World Values

---

[20] Referring instead to the GSOEP (a German panel dataset that has run since 1984), we find parallel declines in life satisfaction for both men and women in West Germany, and, hence, no trend in the gender happiness gap.

Study make them ill-suited for assessing whether the gender happiness gap is changing. To see this, note that using annual GSS data for the United States yielded an estimate of the change in the gender happiness gap over a 35-year period that was 1½ times the standard deviation of annual measures of the gender happiness gap.

Thus, while the magnitude of trend in the gender happiness gap could be reliably discerned from idiosyncratic year-to-year changes in data collections running for many years (like the GSS or the Eurobarometer), these alternative cross-national data cover shorter periods (over which less change occurred), involve fewer observations, and involve greater noise due to changes in survey design between waves, ultimately undermining the ability of these data to falsify most interesting hypotheses. And indeed, this is what we find: our key estimates for the United States and Europe (shown in Tables 1 and 4) suggest a trend in the gender well-being gap of about 0.3/100 per year, and this lies in the 95 percent confidence interval of 125 of the 147 country-survey estimates of the differential trend that we examine. The confidence intervals around these country-specific estimates are extremely wide—typically 5–10 times those from either the GSS or Eurobarometer estimates.

III. Satisfaction in Various Life Domains

In aggregate, women's subjective well-being has declined relative to that of men, but with which aspects of their lives are women now less satisfied? In this section, we explore a number of survey questions that assess men's and women's satisfaction across a number of domains: their work, financial situation, family, and health.

We begin by analyzing job satisfaction, motivated by the observation that many laud the women's movement for having improved their employment options.[21] Research in social psychology and labor economics has long highlighted the "paradox of the contented female worker" (Faye J. Crosby 1982). The paradox is simply that despite women being over-represented in jobs that are worse by many objective standards—they face lower wages, occupational segregation into jobs with lower pay, and fewer opportunities for advancement—they have historically reported higher levels of job satisfaction than men. One possible explanation is that women who would get the least satisfaction from market work have been more likely to select home production. A particular advantage of job satisfaction data from the GSS is that they ask both homemakers and the employed: "On the whole, how satisfied are you with the work you do? Would you say you are very satisfied, moderately satisfied, a little dissatisfied, or very dissatisfied?" The trends in the gender job satisfaction gap are shown in panel A of Table 5. The first row shows trends in job satisfaction for men and women, and there is no discernable trend for either men or women over the period

---

[21] In an open-ended question from the 1999 Virginia Slims American Women's Opinion Poll, respondents were asked "What do you think are the key accomplishments of the women's movement?" More women nominated improved employment opportunities than any other category. Overall, 17 percent of women nominated "employment opportunities/better jobs available to women;" 7 percent noted "women are now accepted in the work-force;" 6 percent noted "equal paying jobs;" 6 percent noted "equal jobs;" 5 percent noted "better paying jobs;" 2 percent noted "less discrimination;" and in broader categories, 14 percent suggested "equal rights/equal opportunities;" and 10 percent pointed to "more freedom/freedom to make choices."

TABLE 5—TRENDS IN WELL-BEING BY DOMAIN, GSS

| Question | Estimated time trend in well-being | | | | | |
| | No controls | | | Full controls | | |
Sample	Women	Men	Difference	Women	Men	Difference
Panel A. Job satisfaction						
"On the whole, how satisfied are you with the work you do? Would you say you are [4] Very satisfied; [3] Moderately satisfied; [2] A little dissatisfied, or [1] Very dissatisfied?"						
All respondents	0.181	0.059	0.123	0.119	0.120	−0.000
	(0.141)	(0.146)	(0.131)	(0.195)	(0.212)	(0.246)
If market work	−0.047	0.032	−0.078	−0.325	0.082	−0.407**
	(0.157)	(0.129)	(0.139)	(0.218)	(0.206)	(0.262)
If keeping house	0.566*	1.983***	−1.417**	1.043***	2.073	−1.030
	(0.310)	(0.618)	(0.692)	(0.365)	(1.464)	(1.494)
Panel B. Family finances						
"We are interested in how people are getting along financially these days. So far as you and your family are concerned, would you say that you are [3] Pretty well satisfied with your present financial situation; [2] More or less satisfied; or [1] Not satisfied at all?"						
All adults	−0.184*	0.140	−0.324***	−0.614***	−0.417**	−0.197*
	(0.113)	(0.119)	(0.064)	(0.166)	(0.203)	(0.104)
Married	0.204**	0.516***	−0.312***	−0.587***	−0.474*	−0.114
	(0.089)	(0.136)	(0.084)	(0.164)	(0.259)	(0.141)
Single	−0.555***	−0.249	−0.306	−0.561***	−0.240	−0.321**
	(0.185)	(0.180)	(0.208)	(0.224)	(0.181)	(0.165)
Panel C. Marital happiness						
If currently married: "Taking things all together, how would you describe your marriage? Would you say that your marriage is [3] Very happy; [2] Pretty happy; or [1] Not too happy?"						
Currently married	−0.376***	−0.350**	−0.026	−0.568***	−0.323	−0.245
	(0.149)	(0.166)	(0.205)	(0.188)	(0.217)	(0.279)
Panel D. Health						
"Would you say your own health, in general, is [4] Excellent; [3] Good; [2] Fair, or [1] Poor?"						
All adults	0.370***	0.005	0.365***	−0.241**	−0.273**	0.032
	(0.118)	(0.087)	(0.130)	(0.110)	(0.121)	(0.179)

Notes: Robust standard errors are in parentheses, clustered by year. GSS data are from 1972–2006; sample sizes vary by data availability. Each row examines a different subset of the total white population and shows the results of two regressions. The first three columns are the coefficients on female × time and male × time and the difference in these estimates, estimated from an ordered probit of each satisfaction measure, controlling for a female dummy, as in column 1 of Table 1. Time is measured per 1/100 of a year; as such the coefficients on the time trends report the change in happiness per 100 years. The last three columns report the same coefficients, but from a specification that includes individual-level controls interacted with gender, as in the final column of Table 1.

***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

(and, hence, no differential trend). Examining differences in levels, we found little difference in the mean job satisfaction of men and women.

Subsequent regressions disaggregate these data so as to disentangle job satisfaction among those engaged in market versus nonmarket work. These comparisons reflect both the changing hedonic experience of work for men and women and large changes in the selection of women into market-based employment through this period. Trends in job satisfaction among women and men engaged in market work have remained roughly constant, although the point estimates suggest a decline in satisfaction among women. Throughout the period women "keeping

house" report lower job satisfaction compared with women who are employed in the market. Examining the trends over time, we see that the job satisfaction of women "keeping house" has risen, and, thus, closed some of the job satisfaction gap between women engaged in market work and women engaged in home production.[22] Compositional shifts can potentially explain a simultaneous rise in job satisfaction among homemakers and a decline in job satisfaction with market work. This would occur, for example, if the women most likely to shift from home-making to the market have lower job satisfaction with home-making compared to the median homemaker and lower job satisfaction than the median women working in the labor market. All told, job satisfaction can do little to explain the overall happiness patterns observed as women, unconditional on their choice of market versus home production, remain similarly satisfied with their work when compared with both the past, and with men.

As women have entered the labor force they have also increased their role in managing household finances, leading us to explore, in panel B, the GSS question asking: "We are interested in how people are getting along financially these days. So far as you and your family are concerned, would you say that you are pretty well satisfied with your present financial situation, more or less satisfied, or not satisfied at all?" Women begin the sample with reported financial satisfaction that is similar to that seen for men, and men's satisfaction shows no obvious trend. In contrast, women's financial satisfaction declines through the sample, and, by the end of the sample, women are substantially less satisfied with their household financial situation than are men. Women's relative decline in financial satisfaction is similar in the baseline specification and when controlling for life outcomes including family income (interacted with gender). However, in the full controls specification, we also see a decline in the financial satisfaction of men, albeit a decline that is smaller than that seen among women.

Because the survey question asks about a family's financial situation, it is useful to assess whether these trends reflect the different subjective responses of men and women to their combined family circumstances, or different satisfaction of female- and male-headed households. Thus, we disaggregate by marital status. We find here that while married women, unconditionally, have become more satisfied with their family's financial situation, married men have become even more satisfied and the relative decline in financial satisfaction is similar to that seen for the entire sample. Adding controls leads to a finding of steeper declines in financial satisfaction among married women as well as declines among men. Among those not married, in both the baseline and full controls specifications, we see that men and women have become less satisfied, but, again, women have become even less satisfied with their financial situation relative to the trends for men, and the differential gap remains negative.

---

[22] While the job satisfaction of men keeping house has risen substantially, this difference is not worth emphasizing as only around 1 percent of men are homemakers—compared with 30 percent of women—and the size of this group has tripled from about 0.5 percent to 1.5 percent of men since 1970, suggesting large compositional shifts.

Financial satisfaction is correlated with happiness for men and women—with a correlation between the two of 0.3 for both. And the magnitude of the decline in women's satisfaction with their financial situation is similar to the decline in women's happiness overall. However, the relative declines in financial satisfaction are not sufficient to explain the decline in women's happiness. To assess the potential role for declining financial satisfaction in the overall decline in the happiness of women, we include the subjective assessments of financial satisfaction as controls in our earlier regressions. Specifically, we re-ran equation (1), including, as further controls, financial satisfaction interacted with gender. This regression (not shown) reveals that financial satisfaction is an important contributor to men's and women's happiness. However, it only dampens the absolute decline in female happiness slightly and yields no change in the relative decline (as controlling for financial satisfaction contributes to a positive male trend in happiness). Thus, while declining financial satisfaction is clearly contributing to women's declining happiness, this alone cannot account for either the absolute or relative decline in women's happiness.

Turning to marital satisfaction in panel C, we analyze trends in answers to the question "Taking things all together, how would you describe your marriage? Would you say that your marriage is very happy, pretty happy, or not too happy?" Naturally this question is only asked of married people, so it is worth re-emphasizing our earlier finding that the overall relative decline in women's happiness was common across the married and unmarried populations. On average, women are less happy with their marriage than men and women have become less happy with their marriage over time. However, men have also become less happy with their marriage over time and, thus, the gender gap in marital happiness has been largely stable over time.

It is still possible that declines in marital satisfaction have contributed differentially to men's and women's happiness. Examining the correlation between happiness and marital happiness, we find that marital happiness is more closely linked to happiness for women. The correlation between overall happiness and marital happiness is 0.4 for married men and 0.5 for married women. It should be noted that it is difficult to assess the role of changes in marital satisfaction on women's overall happiness since marital satisfaction is only asked among those who are married, and changing selection over time in this group makes causal inference challenging. However, as with financial satisfaction, we attempt to examine the possible role that marital happiness is playing in the declining happiness among married women, relative to married men, by including controls for marital happiness interacted with gender in the specification from Table 1. We find that the relative decline between women's and men's happiness is similar in magnitude (with a point estimate that is somewhat larger) once controls for marital happiness are taken into account.

Finally, in panel D, we examine women's and men's subjective assessment of their health. When asked to rate their health on a four-point scale from poor to excellent, women throughout the period report lower health satisfaction than do men. However, Table 5 shows that women's assessment of their health over this period—a period during which the women's movement led to an increased focus on women's specific

health needs—has increased.[23] In contrast, men's subjective health assessment has not changed much over this period. As a result, women are reporting greater health over the period both absolutely and relative to men. By the end of the sample, the subjective health "gap" between men and women has nearly closed. With controls for life outcomes added, the trend in women's reported health changes sign and is declining over this period.

In order to try to assess whether the combination of these measures of domain-specific satisfaction can account for the overall decline in the relative happiness of women, we included these subjective assessments of job, marital, financial, and health satisfaction as controls simultaneously in our earlier regressions. As done for each of the domains individually, we start with equation (1) and add a saturated set of dummy variables describing each of these four satisfaction measures, interacting each with gender, to allow for different effects by gender. Because of the way these variables were collected, this required us to analyze a sample of married men and women who were either working or keeping house. Missing values in various domain-specific data also meant dropping four years from the sample. While these estimates are not intended to reflect a causal model of happiness, they provide a useful accounting device. These control variables all had the expected signs, with greater satisfaction in any domain yielding greater overall happiness. Yet, overall, the residual (or unexplained) trend in the relative happiness of women is even more negative.

From 1976–1994, the GSS also included a battery of questions asking how much satisfaction respondents get from a range of areas. Analysis of these data are shown in Table 6. These regressions show that friends and hobbies have become more important sources of satisfaction for women over time, both absolutely and relative to men. However, the nature of the question makes this finding difficult to interpret, as the increase in satisfaction that women derive from friends may imply greater satisfaction with that domain, or differences in how men and women have come to see friends as a source of life satisfaction. Indeed, one limitation of the GSS data is that we have no way of assessing whether the importance of specific domains to overall happiness has changed over time.

We now turn to the Monitoring the Future survey, which probes subjective well-being in far greater detail than any other study run during our sample period. The obvious limitation with these data is that the important dimensions of well-being for twelfth graders may be very different from those for adults. Nonetheless, the relative decline in the subjective well-being of twelfth grade girls appeared as strongly as in our adult samples, and a greater understanding of changes in the well-being of these girls may shed light on the overall paradox. The data contain two useful sets of questions that allow us to assess the changing contribution of specific areas of these teenagers lives to well-being and their changing satisfaction in specific areas.

---

[23] The Boston Women's Health Book Collective published the first edition of *Our Bodies, Ourselves* in 1973 and launched a movement encouraging women to have a say in their own healthcare and a focus on women-specific healthcare issues. This movement grew in the ensuing decades and led to increased research and understanding of conditions affecting women exclusively or differently than men.

TABLE 6—TRENDS IN SATISFACTION BY DOMAIN, GSS

| | Estimated time trend in well-being. "For each area of life I am going to name tell me the number that shows how much satisfaction you get from that area: [7] A very great deal; [6] A great deal; [5] Quite a bit; [4] A fair amount; [3] Some; [2] A little; [1] None." | | | | | |
| Question | No controls | | | Full controls | | |
Sample	Women	Men	Difference	Women	Men	Difference
The city or place you live in						
All respondents	−0.199*	−0.151	−0.048	−0.529*	−0.120	−0.409**
	(0.122)	(0.156)	(0.146)	(0.321)	(0.322)	(0.211)
Your non-working activities—hobbies and so on						
All adults	0.428***	0.175	0.253	−0.245	−0.470	0.224
	(0.166)	(0.205)	(0.158)	(0.201)	(0.321)	(0.257)
Your family life						
All adults	0.073	−0.091	0.164	0.029	0.352	−0.324
	(0.175)	(0.184)	(0.212)	(0.269)	(0.368)	(0.412)
Your friendships						
All adults	0.373*	−0.245	0.617***	0.253	−0.306	0.560*
	(0.198)	(0.227)	(0.245)	(0.256)	(0.424)	(0.297)
Your health and physical condition						
All adults	−0.127	−0.229	0.101	−0.824***	−0.612**	−0.212
	(0.173)	(0.168)	(0.170)	(0.335)	(0.264)	(0.327)

Notes: Robust standard errors are in parentheses, clustered by year. GSS data are from 1972–2006. Sample sizes vary by data availability. Each row examines a different subset of the total white population and shows the results of two regressions. The first three columns are the coefficients on female × time and male × time and the difference in these estimates, estimated from an ordered probit of each satisfaction measure, controlling for a female dummy, as in column 1 of Table 1. Time is measured per 1/100 of a year; as such, the coefficients on the time trends report the change in happiness per 100 years. The last three columns report the same coefficients, but from a specification that controls for a rich array of individual-level characteristics interacted with gender, as in the final column of Table 1.

  ***Significant at the 1 percent level.
   **Significant at the 5 percent level.
    *Significant at the 10 percent level.

We first explore the satisfaction of youth with various aspects of their lives. As before, we use ordered probit regressions to estimate trends in these variables, and Figure 5 shows these trends by gender, and in the leftmost panel, the trend in female relative to male well-being. Two of these questions are rather global in nature, asking about satisfaction with "yourself," or with "your life as a whole these days." These results largely parallel the response to the happiness question analyzed in the previous section, with the subjective well-being of girls falling and the well-being of boys rising. Turning to the more specific questions, the common thread appears to be that twelfth grade girls increasingly find themselves to be under time pressure, with absolute and relative declines in reported satisfaction with "time for doing the things you want," "the way you spend your leisure time," and "the amount of fun you are having." Interestingly, there is also a substantial decline in the proportion of these young women reporting satisfaction with "friends and people you spend time with." Because the trends for twelfth grade boys are typically to the right of those for girls—either less negative or even positive—girls have lost ground both absolutely and relative to boys.
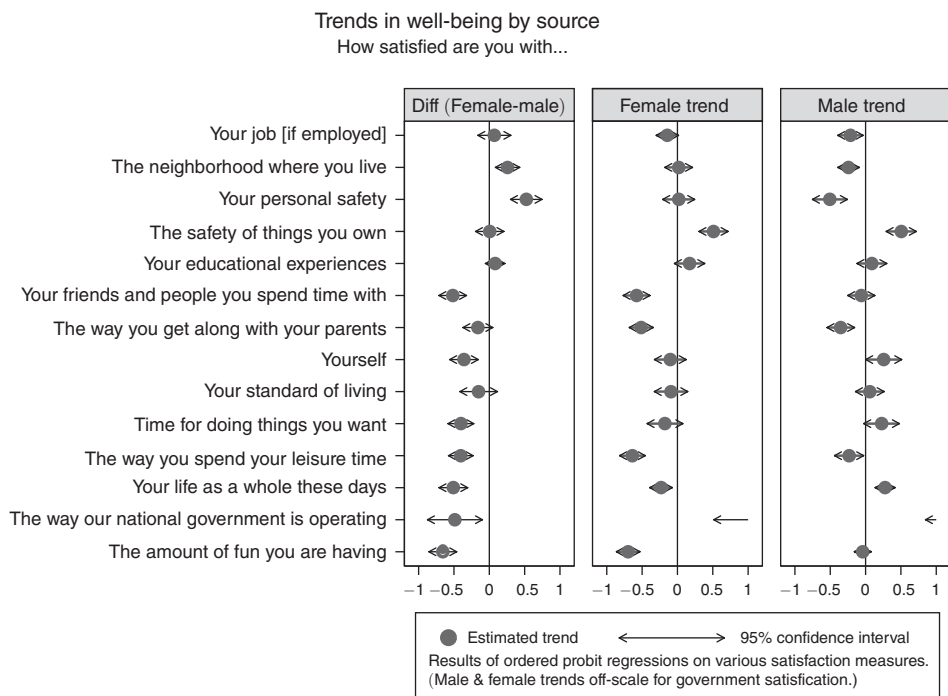
FIGURE 5. TRENDS IN WELL-BEING BY SOURCE, US TWELFTH GRADERS, 1976–2005

Notes: Data are from the Monitoring the Future twelfth grade study, conducted annually from 1976 to 2005, by the Survey Research Center in the Institute for Social Research at the University of Michigan. Figure shows estimated coefficients and 95 percent confidence intervals from estimating an ordered probit of domain-specific satisfaction (rated on a scale from 7 = "completely satisfied" to 4 = "neutral" to 1 = "completely dissatisfied") on separate time trends and intercepts for men and women (as in equation (1)). Standard errors are clustered by year.

Next, we turn to a battery of questions that measure the perceived importance of various aspects of their lives, as what may be changing are the weights given to various domains in determining global well-being. In Figure 6, we show the trends for young women and men in self-reports of the importance attached to various life domains. The most striking point is that young women are increasingly attaching greater importance to 13 of the 14 domains examined, with "finding purpose and meaning in my life" the only exception. An intensification of importance in many domains has also occurred among young men, albeit to a lesser extent. In terms of the differences in these trends by gender, young women have had an even greater intensification in most areas. In particular, there appears to be increasing ambition of young women beyond the domestic sphere, with greater importance attached to "being successful in my line of work," "being able to find steady work," "making a contribution to society," and "being a leader in my community." These data arguably suggest that women's life satisfaction may have become more complicated as the women have increased the number of domains in which they wish to succeed. Moreover, these data point to rising pressures beyond the much discussed work-family tradeoff.
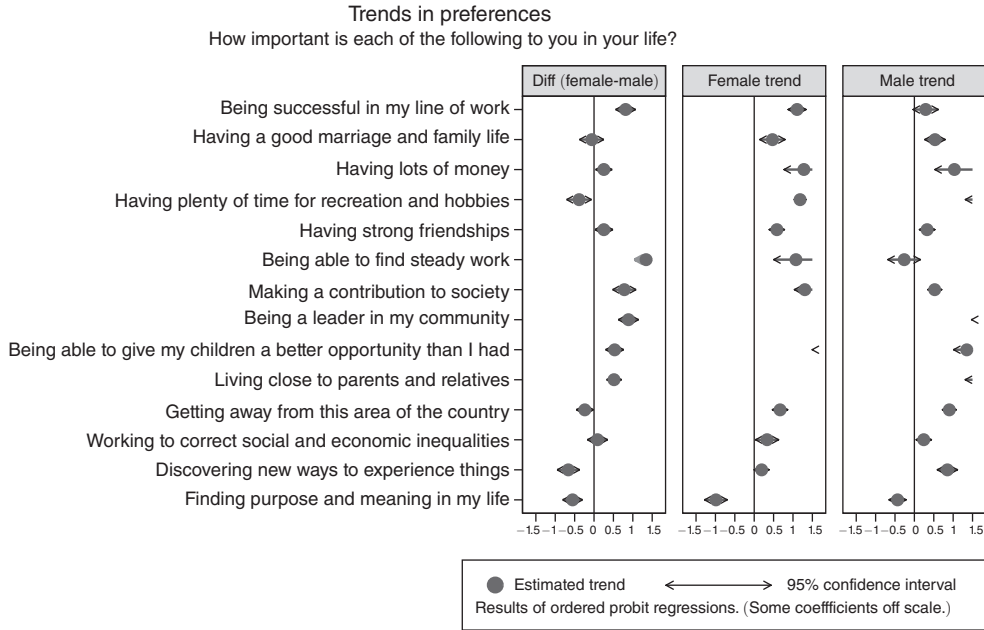
Trends in preferences
How important is each of the following to you in your life?

FIGURE 6. TRENDS IN STATED PREFERENCES, US TWELFTH GRADERS, 1976–2005

Notes: Data are from the Monitoring the Future twelfth grade study, conducted annually from 1976 to 2005, by the Survey Research Center in the Institute for Social Research at the University of Michigan. Figure shows estimated coefficients and 95 percent confidence intervals from estimating an ordered probit of the importance of each domain (rated as either [1] "not important," [2] "somewhat important," [3] "quite important," and [4] "extremely important") on separate time trends and intercepts for men and women (as in equation (1)). Standard errors are clustered by year.

Although the analysis in this section is necessarily limited by available data, a few rough conclusions suggest themselves. Female subjective well-being is decreasing in many domains, however, these decreases are in many cases similar to those experienced by men. There are few occurrences of a large or significant decrease in female subjective well-being relative to male well-being among the domains. Thus, it is difficult to pinpoint one aspect of women's lives that is contributing to their overall decrease in happiness relative to men. These data suggest an alternative framing of our research question: perhaps the puzzle is why men's happiness has not declined in line with women's happiness, given their observed decrease in well-being across a multitude of domains.

IV. Discussion

By most objective measures, the lives of women in the United States have improved dramatically over the past 35 years. Moreover, women believe that their lives are better. In recent polls asking about changes in the status of women over the past 25 or 50 years, about 4 of 5 adults state that the overall status of women in the United States has gotten better (and the remaining respondents break two-for-one toward

"stayed the same" over "worse").[24] Additionally, the 1999 Virginia Slims Poll found that 72 percent of women believe that "women having more choices in society today gives women more opportunities to be happy" while only 39 percent thought that having more choices "makes life more complicated for women." Finally, women today are more likely than men to believe that their opportunities to succeed exceed those of their parents.

Yet trends in self-reported subjective well-being indicate that happiness has shifted toward men and away from women. This shift holds across industrialized countries regardless of whether the aggregate trend in happiness for both genders is flat, rising, or falling. In all of these cases, we see happiness rebalancing to reflect greater happiness for men relative to women. This finding of a decline in women's well-being relative to that of men's well-being raises questions about whether modern social constructs have made women worse off, or, alternatively, about the interpretability of subjective well-being data analyzed over long time periods. Despite findings of higher well-being among women in countries with less gender discrimination (Christian Bjørnskov, Axel Dreher, and Justina A. V. Fischer 2007), the decrease in gender discrimination since the 1970s has not improved the (subjectively perceived) lot of women. Rather than immediately inferring that the women's movement failed to improve the lot of women, we conclude with a simple taxonomy for organizing alternative explanations of this paradox.

First, there may be other important socioeconomic forces that have made women worse off. A number of important macro trends have been documented: decreased social cohesion (Robert D. Putnam 2000), increased anxiety and neuroticism (Jean M. Twenge 2000), and increased household risk (Hacker 2006). While each of these trends have impacted men and women, it is possible for even apparently gender-neutral trends to have gender-biased impacts if men and women respond differently to these forces. For example, if women are more risk averse than men, then an increase in risk may lower women's utility relative to that of men.

The second possibility is that broad social shifts such as those brought on by the changing role of women in society fundamentally alter what measures of subjective well-being are capturing. Over time it is likely that women are aggregating satisfaction over an increasingly larger domain set. For example, life satisfaction may have previously meant "satisfaction at home" and has increasingly come to mean some combination of "satisfaction at home" and "satisfaction at work." This averaging over many domains may lead to falling average satisfaction if it is difficult to achieve the same degree of satisfaction in multiple domains. One piece of evidence along these lines is that the correlation between happiness and marital happiness is lower for women who work compared with those who are stay at home wives, and the correlation has fallen over time for all women in our sample. Unfortunately, data limitations prevent us from fully exploring this theory.

Subjective well-being data have come to be used in the psychology and economics literatures because they have been shown to be correlated with more objective

---

[24] Survey by *CBS News*, April 28–April 30, 2006; Survey by *CBS News*, May 20–May 24, 2005. Retrieved September 10, 2007 from the iPOLL Databank, The Roper Center for Public Opinion Research, University of Connecticut.
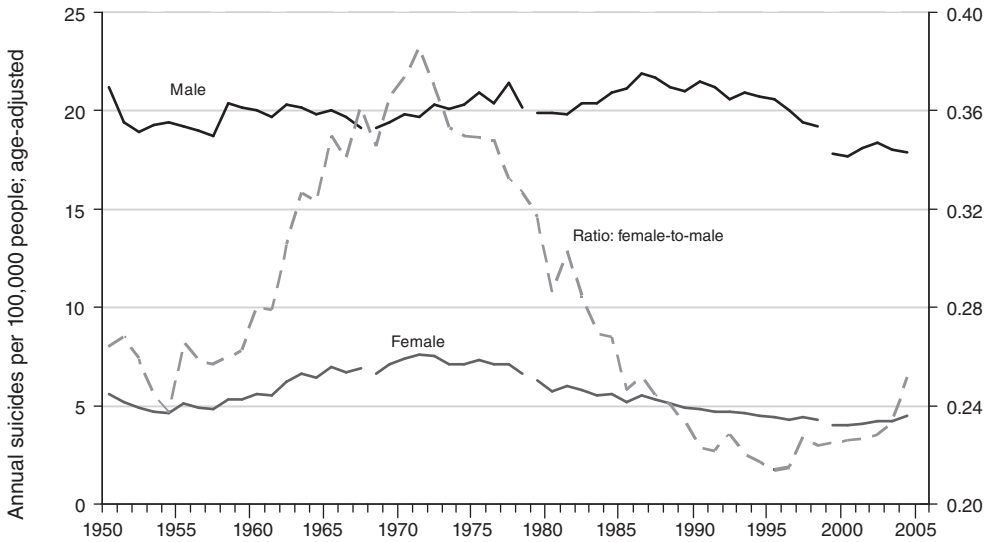
FIGURE 7. US SUICIDE RATES, BY GENDER

Notes: Suicide data for 1950–1998 are from the National Center for Health Statistics report "Vital Statistics: Mortality, Vol. 2." Data from 1999–2005 have been downloaded from the Center for Disease Control's Wonder system which accesses the NCHS "Compressed Mortality Files" (http://wonder.cdc.gov/). Series breaks correspond with changing ICD codes.

measures of happiness. Yet these measures do not necessarily indicate that subjective well-being measures are able to capture the positive or negative consequences of large-scale social changes over time. It has been recognized that an individual's assessment of their well-being may reflect the social desirability of responses. Kahneman (1999) argues that while people in good circumstances may be hedonically better off than people in worse circumstances, they may require more to declare themselves happy. In the context of the findings presented in this paper, women may now feel more comfortable being honest about their true happiness and have deflated their previously inflated responses. Or, as in Kahneman's example, the increased opportunities available to women may have increased what women require to declare themselves happy. And indeed, Figure 7 shows that contrary to the subjective well-being trends we document, female suicide rates have been falling, even as male suicide rates have remained roughly constant through most of our sample. As such, from the early 1970s to the mid-1990s, the ratio of female-to-male suicide declined. It is plausible that the happiness of those at the extreme tail that is represented by suicide may have risen, while the happiness of those at the median may have fallen. Equally, this may indicate changing responses to the well-being question for a given level of happiness. In either case, the link between reported well-being (a subjective measure) and suicide (an objective measure) has changed over time.

Finally, the changes brought about through the women's movement may have decreased women's happiness. The increased opportunity to succeed in many dimensions may have led to an increased likelihood of believing that one's life is not measuring up. Similarly, women may now compare their lives to a broader group,

including men, and find their lives more likely to come up short in this assessment. Or women may simply find the complexity and increased pressure in their modern lives to have come at the cost of happiness.

Diener (2000) notes that one of the hallmarks of subjective well-being is that it is subjective, stating that "objective conditions such as health, comfort, virtue, or wealth" are "notably absent" and, while influencing subjective well-being, "they are not seen as inherent." This aspect of subjective well-being makes understanding what is behind declining female happiness a challenging task, yet decoding the paradox identified in this paper may be the key to a better understanding of subjective well-being.

REFERENCES

▶ **Aguiar, Mark, and Erik Hurst.** 2007. "Measuring Trends in Leisure: The Allocation of Time over Five Decades." *Quarterly Journal of Economics*, 122(3): 969–1006.

▶ **Akerlof, George A., Janet L. Yellen, and Michael L. Katz.** 1996. "An Analysis of out-of-Wedlock Childbearing in the United States." *Quarterly Journal of Economics*, 111(2): 277–317.

▶ **Autor, David H., Lawrence F. Katz, and Melissa S. Kearney.** 2008. "Trends in U.S. Wage Inequality: Revising the Revisionists." *Review of Economics and Statistics*, 90(2): 300–323.

Bjørnskov, Christian, Axel Dreher, and Justina A. V. Fischer. 2007. "On Gender Inequality and Life Satisfaction: Does Discrimination Matter?" University of St. Gallen Department of Economics Working Paper Series 2007-07.

▶ **Blanchflower, David G., and Andrew J. Oswald.** 2004. "Well-Being over Time in Britain and the USA." *Journal of Public Economics*, 88(7–8): 1359–86.

Blau, Francine D. 1998. "Trends in the Well-Being of American Women, 1970–1995." *Journal of Economic Literature*, 36(1): 112–65.

▶ **Blau, Francine D., and Lawrence M. Kahn.** 2007. "Changes in the Labor Supply Behavior of Married Women: 1980–2000." *Journal of Labor Economics*, 25(3): 393–438.

Crosby, Faye J. 1982. *Relative Deprivation and Working Women*. New York: Oxford University Press.

▶ **Deaton, Angus.** 2008. "Income, Health, and Well-Being around the World: Evidence from the Gallup World Poll." *Journal of Economic Perspectives*, 22(2): 53–72.

▶ **Diener, Ed.** 1984. "Subjective Well-Being." *Psychological Bulletin*, 95(3): 542–75.

Diener, Ed. 2000. "Subjective Well-Being: The Science of Happiness and a Proposal for a National Index." *American Psychologist*, 55(1): 34–43.

▶ **Diener, Ed, Richard E. Lucas, and Christine Napa Scollon.** 2006. "Beyond the Hedonic Treadmill: Revising the Adaptation Theory of Well-Being." *American Psychologist*, 61(4): 305–14.

Easterlin, Richard A. 1974. "Does Economic Growth Improve the Human Lot? Some Empirical Evidence." In *Nations and Households in Economic Growth: Essays in Honor of Moses Abramovitz*, ed. Paul A. David, Melvin W. Reder, 89–125. New York: Academic Press.

Elwood, David T., and Christopher Jencks. 2004. "The Spread of Single-Parent Families in the United States since 1960." John F. Kennedy School of Government Faculty Research Working Paper No. RWP04–008.

Goldin, Claudia, and Lawrence F. Katz. 2007. "Long-Run Changes in the Wage Structure: Narrowing, Widening, Polarizing." *Brookings Papers on Economic Activity*, (2): 135–65.

▶ **Goldin, Claudia, Lawrence F. Katz, and Ilyana Kuziemko.** 2006. "The Homecoming of American College Women: The Reversal of the College Gender Gap." *Journal of Economic Perspectives*, 20(4): 133–56.

Hacker, Jacob S. 2006. *The Great Risk Shift: The Assault on American Jobs, Families, Health Care, and Retirement—And How You Can Fight Back*. Oxford, UK: Oxford University Press.

Hochschild, Arlie, and Anne Machung. 1989. *The Second Shift*. New York: Viking.

Isen, Adam, and Betsey Stevenson. 2008. "Women's Education and Family Behavior: Trends in Marriage, Divorce and Fertility." Unpublished.

Kahneman, Daniel. 1999. "Objective Happiness." In *Well-Being: The Foundations of Hedonic Psychology*, ed. Daniel Kahneman, Ed Diener, and Norbert Schwarz, 3–25. New York: Russell Sage Foundation.

► **Kahneman, Daniel, and Alan B. Krueger.** 2006. "Developments in the Measurement of Subjective Well-Being." *Journal of Economic Perspectives*, 20(1): 3–24.

Kimball, Miles, and Robert Willis. 2006. "Utility and Happiness." Unpublished.

Krueger, Alan B. 2007. "Are We Having More Fun Yet? Categorizing and Evaluating Changes in Time Allocation." *Brookings Papers on Economic Activity*, (2): 193–215.

Oswald, Andrew J., and Nattavudh Powdthavee. 2007. "Death and the Calculation of Hedonic Damages." Unpublished.

Pezzini, Silvia. 2005. "The Effect of Women's Rights on Women's Welfare: Evidence from a Natural Experiment." *Economic Journal*, 115(502): C208–27.

Putnam, Robert D. 2000. *Bowling Alone: The Collapse and Revival of American Community.* New York: Simon & Shuster.

Robinson, John P., and Geoffrey Godbey. 1999. *Time for Life.* University Park, PA: Pennsylvania State University Press.

Ross, Catherine E., and Marieke Van Willigen. 1997. "Education and the Subjective Quality of Life." *Journal of Health and Social Behavior*, 38(3): 275–97.

Smith, Tom W. 1990. *Timely Artifacts: A Review of Measurement Variation in the 1972–1989 GSS.* Unpublished.

► **Stevenson, Betsey, and Justin Wolfers.** 2007. "Marriage and Divorce: Changes and Their Driving Forces." *Journal of Economic Perspectives*, 21(2): 27–52.

Stevenson, Betsey, and Justin Wolfers. 2008a. "Economic Growth and Subjective Well-Being: Reassessing the Easterlin Paradox." *Brookings Papers on Economic Activity*, (1): 1–87.

Stevenson, Betsey, and Justin Wolfers. 2008b. "Happiness Inequality in the United States." *Journal of Legal Studies*, 37(2): S33–79.

Twenge, Jean M. 2000. "The Age of Anxiety? Birth Cohort Change in Anxiety and Neuroticism, 1952–1993." *Journal of Personality and Social Psychology*, 79(6): 1007–21.

US Census Bureau. 2007. School Enrollment, Historical Tables, Table A-5a. http://www.census.gov/population/www/socdemo/school.html. (accessed September 9, 2007).

Van Praag, Bernard, and Ada Ferrer-i-Carbonell. 2008. *Happiness Quantified: A Satisfaction Calculus Approach.* Oxford and New York: Oxford University Press.

Wolfers, Justin. 2003. "Is Business Cycle Volatility Costly? Evidence from Surveys of Subjective Well-Being." *International Finance*, 6(1): 1–26.

Wolfers, Justin. 2006. *Reassessing the Growth-Happiness Nexus.* Conference Presentation at University of Southern California Economics of Happiness Symposium, Los Angeles, CA.