

## Nonstandard work schedules over the life course: a first look

*High percentages of Americans work nonstandard schedules over the course of their worklife; almost 90 percent of those ages 14 to 18 in 1979 had at least one such experience by age 39, with some marked differences by gender, race or ethnicity, and education*

Harriet B. Presser  
and  
Brian W. Ward

Large numbers of Americans work nonstandard schedules. Cross-sectional data reveal that one-fifth of all employed Americans work mostly in the evening, at night, or on a rotating shift.<sup>1</sup> Moreover, one-third of all dual-earner couples with children include at least one spouse working one of these shifts.<sup>2</sup> Such widespread employment at nonstandard times is a significant social phenomenon, with important implications for the health and well-being of individuals and their families and for the implementation of social policies. Yet we know so little about this phenomenon. Much attention has been paid to the *number* of hours Americans work,<sup>3</sup> but the issue of *which* hours Americans work has generally gone unnoticed by researchers and policymakers alike. At present, we cannot answer the simple, but important, question of the extent to which Americans work nonstandard schedules over the course of their working lives.

This article takes a first look at nonstandard work schedule experiences over the course of the working lives of a national sample of Americans. The project associated with the article has two major goals: to provide descriptive information about Americans' nonstandard work schedule experience over their worklife; and to analyze the social and economic determinants of movement in and

out of nonstandard worktimes and the consequences for adults and children. What follows are findings in satisfaction of the first part of the project; more intensive analytic work is slated to be performed at a later date.

The descriptive information presented here deals with three dimensions of employment and work schedule behavior over the life course: work schedule status among those employed at each age from 18 to 39 years; a breakdown by age of those who ever worked a nonstandard schedule; and the percentage of employment episodes, by age, that lead to nonstandard work schedules. The focus throughout is on differences by gender, race or ethnicity, and education. An additional analysis restricts nonstandard hours to nondaytime hours.

The general hypothesis posited in this article is that nonstandard work schedules, however defined, are common among U.S. workers over their working lives, cumulatively exceeding by far the 1-in-5 ratio noted earlier that was based on a cross-sectional sample. As with subgroup differences, cross-sectional findings among the employed foster the expectation that men will show moderately higher worklife levels of nonstandard work schedules than women will on all three dimensions considered. Also, minorities (Blacks and Hispanics) are expected to show moderately higher levels than non-Black non-Hispanics,<sup>4</sup> and those of low education

Harriet B. Presser is a Distinguished University Professor, Department of Sociology, University of Maryland, College Park, MD; Brian W. Ward is a lecturer, African American Studies Department, also at the College Park campus of the University of Maryland. Email: Presser@umd.edu or bward1@umd.edu

are anticipated to show the highest levels of all educational groups.

### Previous research

The findings presented here build on Presser's earlier book on shift work, as well as on the limited research into this topic carried out by others. In that book, Presser sought to bring to the fore the importance of this neglected aspect of worktime in the Nation.<sup>5</sup> Relying on the May 1997 Current Population Survey (CPS), the book documents the characteristics of individuals who work shifts (or weekends), as well as the nonstandard work schedule patterns of couples. In addition, several chapters, based on two waves of the National Survey of Families and Households (NSFH, 1986–87 and 1991–93), are devoted to the implications of nonstandard schedules on family life. The book argues that nonstandard work schedules challenge U.S. families, particularly those with children. Such schedules undermine the stability of marriages, increase the amount of housework to be done, reduce family togetherness for important rituals such as dinnertime, and require elaborate childcare arrangements. Still, they have some benefits. Most notably, when married fathers and mothers work different shifts, fathers typically spend more time with their children and thus may get to know them better; the children may benefit from more time with their fathers as well. Furthermore, childcare costs less when parents share it and rely less on others. Finally, parents of school-age children who work late shifts are able to be at home when their children go to school and come home. Nevertheless, this research suggests that the advantages and disadvantages, while affecting those in all economic strata, are not evenly distributed. The disadvantages affect certain vulnerable families and workers more than others. Low-educated employed mothers with children are especially likely to work nonstandard schedules and to have complex childcare arrangements involving multiple providers and informal caregivers. These arrangements generate a high risk of breaking down and threatening job stability.

The preceding findings point to the important social implications of studying shift work among Americans. However, many issues remain unaddressed because of the cross-sectional nature of most of the data. The few national longitudinal studies that have been conducted are limited in time perspective. In one such study that examined changes in the work schedules of people who were in both the May 1977 and the May 1978 CPS supplements, Daniel Hamermesh found considerable movement out of nonstandard work hours over this 1-year period.<sup>6</sup> In an-

other, Presser utilized longitudinal NSFH data for 1986–87 and 1992–94 to study the consequences of nonstandard work hours on families.<sup>7</sup> However, the measures of shift work differed in the two interviews, precluding a study of changes in its practice over time.

Limited research by others has shown some negative effects of shift work on adults' psychological, physical, and sociological well-being.<sup>8</sup> Among the effects on marital and family life with which shift work has been associated are difficulties in scheduling family activities, less time in family roles, and higher levels of family conflict and adjustment.<sup>9</sup> In addition, shift work was found to be associated with increased marital disagreements,<sup>10</sup> lower marital quality, and higher levels of marital instability.<sup>11</sup> A number of recent studies that have examined the relationship between parental work schedules and child well-being have found negative associations between parents (mothers and/or fathers) working nonstandard hours and children's cognitive or behavioral outcomes.<sup>12</sup> Some of these studies are longitudinal in design, usually focusing on the first few years of a child's life. A 2008 article by Daniel Miller and Wen-Jui Han is a notable exception: examining the first 14 years in the life of children and the cumulative years their mothers worked nonstandard schedules during that time, these authors found that the mothers' schedules were related to the children's being overweight.<sup>13</sup> Also, Han, Miller, and Jane Waldfogel found that maternal employment at night—at any time and in any amount—from the child's birth until the child was 11 or 12 was associated with adolescent risky behavior, particularly among boys.

Clearly, there is far more to learn, both descriptively and analytically, about people who work nonstandard schedules: who they are, what determines their decision to work late and variable shifts, and what the consequences may be for themselves, their spouses, and their children over time. Only a life course perspective, and only a dataset that incorporates the relevant variables, can provide such knowledge. Accordingly, this article presents descriptive findings about nonstandard work schedules over the course of one's worklife for a national sample of Americans. The focus of the article is on gender, racial or ethnic, and educational differences, and the findings should lay some groundwork for the design of future longitudinal analyses of nonstandard work schedules that can address more fully the determinants and consequences of adopting such schedules.

### Description of the sample

The dataset used in the study was the National Longitudinal Survey of Youth (NLSY, or, more specifically, NLSY79),

conducted by the U.S. Department of Labor. The NLSY79 comprises a large cohort of Americans ages 14 to 22 when first interviewed in 1979, with repeated interviews annually from 1979 to 1994 and then biennially thereafter. This rich body of data includes work schedule and employment histories; educational, marital, and fertility histories; and, among those married, abundant demographic, social, and psychological information about respondents and their spouses.

The subsample selected for the study consisted of 7,217 respondents interviewed at ages 14 to 18 in 1979; the survey followed this cohort up through 2004. Dropping the oversampled poor Whites and those in the military reduced the subsample to 6,304. By 2004, attrition over the 25-year period reduced the sample size to 4,910, a remarkably high number given the long-term nature of this longitudinal survey. The approach taken in the study was to examine age-specific rates of nonstandard work schedule behavior while the cohort was 18 to 39, with the number of cases declining at each age. This age range was dictated by the fact that all respondents ages 14 to 18 in 1979 were at least 39 years old in 2004.

Another methodological consideration was that, because the NLSY shifted to biennial surveys from 1994 to 2008, not all respondents reported their work schedule at every age. Thus, the percentage ever working nonstandard schedules by age 39 was underestimated, although that fact should not notably alter the associated gender, race or ethnicity, and educational differences. This conclusion was reached after separate analyses were conducted for the even-numbered interview years during the entire period from 1980 through 2004 and the results compared with the full data set that included both annual and biennial interviews over the same period. Another reason the percentage ever working nonstandard schedules by age 39 was underestimated was that only their main job at the time of the survey was considered, not other jobs, including those at which they worked between surveys.

The sample used excludes the oversample of poor Whites that was discontinued in 1991 and the special oversample of military respondents that was discontinued in 1985. The percentages and means reported were weighted with year-2004 weights. Identical analyses were carried out with weights for the appropriate year in which the respondent was a specific age, and the results were similar.

Those on active duty in the military in the basic sample were not asked the work schedule questions. Because workers may be on active duty at some ages but not others, these individuals were included in the sample, but were coded as working a standard schedule while on ac-

tive duty. The alternative would have been to drop them from the sample and miss their work schedule behavior when they left the military at older ages. The upshot is that, although the number of military personnel in the sample is relatively small, the analysis underestimates the prevalence of nonstandard employment by not having information about the work schedules of those on active military duty, because it is expected that they are especially likely to work nonstandard schedules.

## Definitions of nonstandard work schedules

Given the multiplicity of different hours that Americans generally start and end their daily work, defining a nonstandard work schedule is inherently arbitrary—and thus problematical. Moreover, in the NLSY, questions relating to work schedule behavior were not consistent over the years.

To overcome these limitations, two alternative measures of work schedule behavior were used: one based on the respondent's self-report of his or her work shift and the other based on a precise reporting of the respondent's beginning and ending worktimes.

With regard to the first measure, in most years (1979–85 and 1990–2004) respondents were asked whether they usually worked a regular day shift, a regular evening shift, a regular night shift, or varying hours. Those who said that they worked a schedule other than a regular day shift were identified as working a *nonstandard schedule*. Note that, because those who reported varying work hours were not asked whether they worked primarily during the daytime, in the evening, or at night, some people who, by the preceding definition, worked a nonstandard schedule might have been working mostly during the daytime.

The second measure is based on a clock definition of starting and ending times that respondents worked on most days during the previous week of the survey. For the years 1986–89, work schedule questions directed respondents toward an answer that would specify starting and ending worktimes. In addition, a question asked respondents whether they worked a rotating schedule, meaning that their hours changed on a regular basis from one shift to another—for example, from daytime to evening or nighttime hours. Respondents were defined as working a *nonday schedule* (1) if most of the hours they worked the previous week did not fall between 8 a.m. and 4 p.m.—that is, if they worked mostly in the evening or at night—or (2) if they did not work a rotating schedule.<sup>14</sup> “Work a rotating schedule” is a more specific response than “hours vary” and was more prevalent among nondaytime workers. However, in 1983 the NLSY did not ask about rotating

schedules, even though responses stating only beginning and ending times were leading to an underestimate of nondaytime workers.

Because the literature uses both definitions when referring to nonstandard work schedules, this article reports findings for both measures, recognizing the limitations noted. The definitions refer to the main job for those with two or more jobs for all years surveyed.

## Findings

At age 18, 53.5 percent of the sample were employed as civilians; an additional 1.9 percent were on active duty. There was a general increase in employment with age, so that, by age 39, 82.1 percent were employed; only 0.5 percent were on active duty.

Charts 1–5 are limited to employed civilians ages 18 to 39. Chart 1 shows the percentage of employed persons working at nonstandard times at each age in this range. The chart indicates that nonstandard work schedules are most common early in one's worklife. At age 18, more than one-half (58.8 percent) of those employed worked at nonstandard times; about one-fourth of all workers (24.7 percent) worked nondaytime shifts. The decline with age in nonstandard work schedules is seen to be steeper when one considers the broader definition that includes daytime workers whose hours vary than when one considers only those who specifically work evenings, nights, or rotating schedules. Thus, by age 25, the definitional difference narrows: one-fourth of employed 25-year-olds worked at nonstandard times, broadly defined, and one-fifth worked specifically nonday shifts. There are fluctuations in percentages in moving from age 25 to age 39, but the lowest percentage is at age 39, when 20.9 percent of those employed worked at nonstandard times and 12.0 percent worked specifically nondays.

Gender-related differences in nonstandard work schedules among the employed are small, with men generally having somewhat higher percentages working nonstandard schedules than women. As shown in chart 2, the biggest differences are for those employed at age 18, when 59.7 percent of men and 57.8 percent of women report nonstandard schedules and 27.1 of men and 22.0 percent of women report nonday shifts. There is somewhat more fluctuation by age in women's than men's nonstandard work schedules, generally defined, than for nonday shifts specifically.

Racial and ethnic differences in nonstandard work schedules among the employed are shown in chart 3. These differences, too, are most notable among the employed at young ages. At age 18, it is non-Black non-Hispanics,

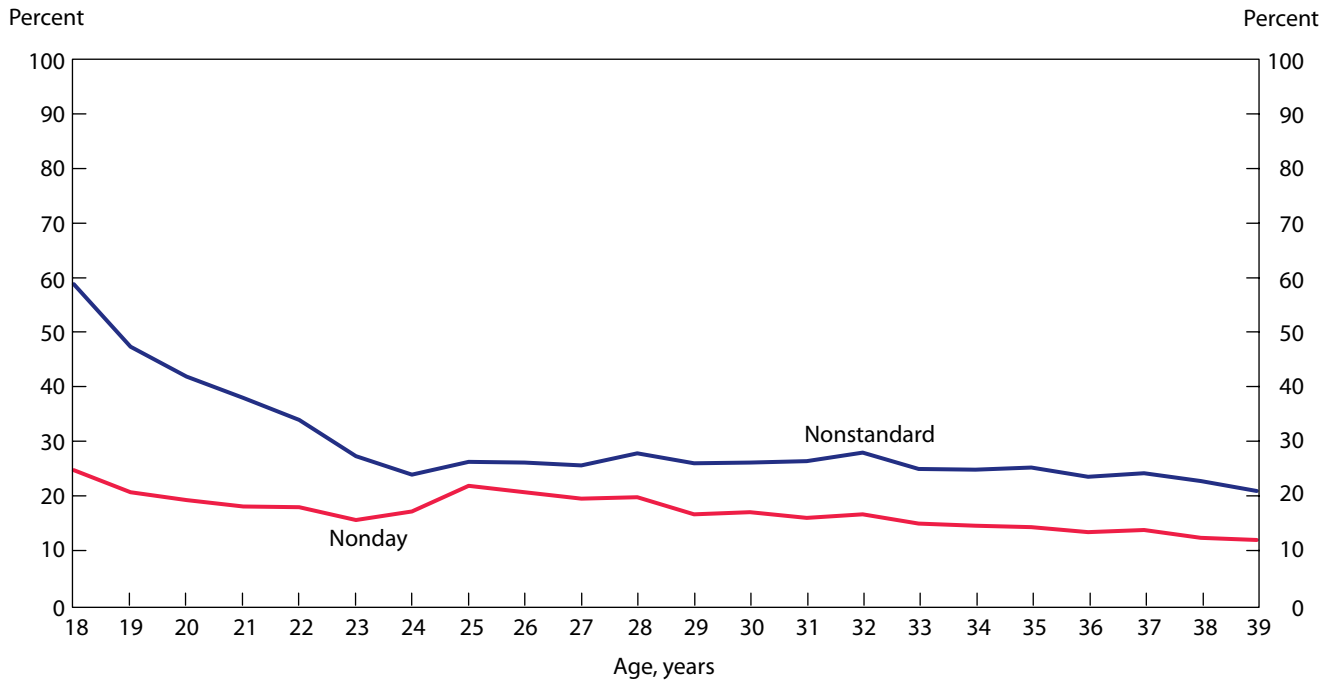
rather than Blacks and Hispanics, who are most likely to be working nonstandard schedules. The difference is most pronounced for Hispanics, 44.7 percent of whom worked nonstandard schedules, compared with 60.2 percent of non-Black non-Hispanics. (55.5 percent of Blacks did so). As regards nonday employment specifically, at age 18 Blacks led with 27.5 percent working that schedule, followed by non-Black non-Hispanics at 24.5 percent and Hispanics at 22.1 percent.

As the cohort ages, racial and ethnic differences among those employed are less marked than at age 18. For nonstandard work schedules generally, all groups show a substantial decline in percentage by age 23, but from that age on, employed Blacks are the most likely to work at nonstandard times, broadly defined, as well as nondaytime hours specifically. This ordering remains over the life course, and by age 39, among the employed, 24.0 percent of Blacks, 23.9 percent of Hispanics, and 20.2 percent of non-Black non-Hispanics work nonstandard schedules. The difference between the latter group and the other two is even greater for specifically nondaytime schedules at that age: 16.7 percent of Blacks and 16.6 percent of Hispanics worked such schedules, compared with 10.9 percent of non-Black non-Hispanics.

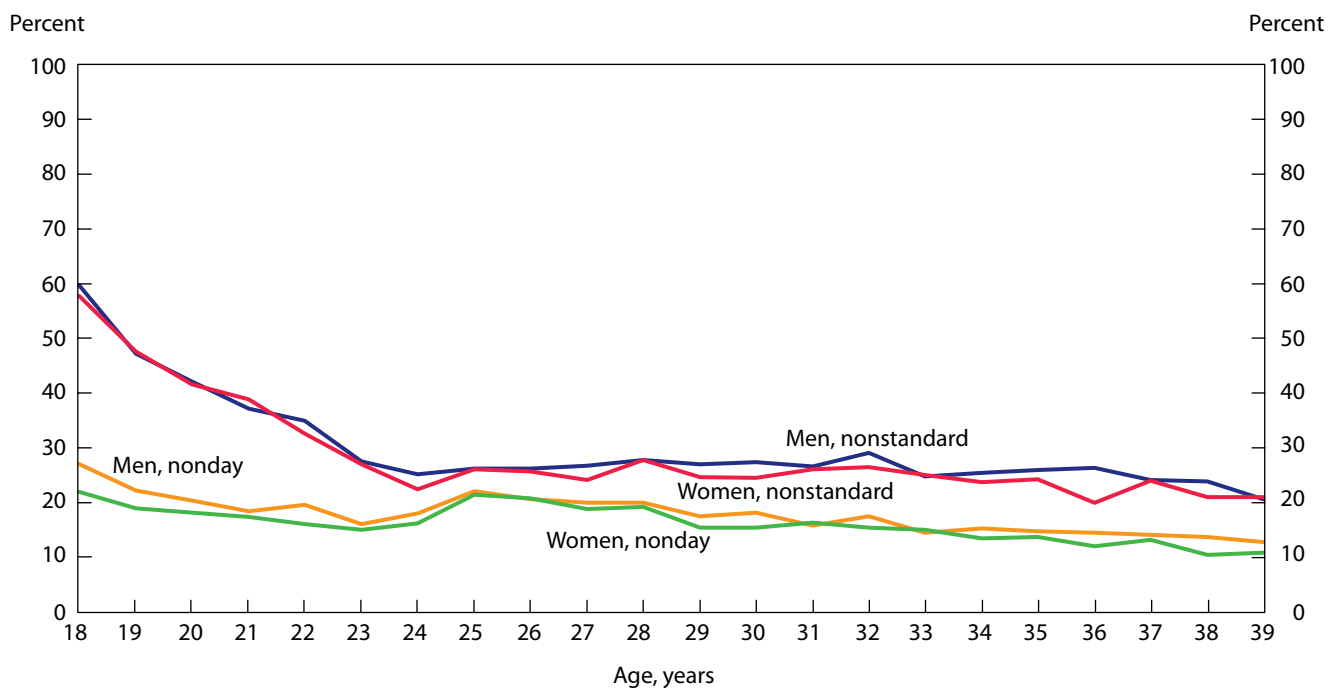
Being young is also associated with marked differences in work schedule behavior by educational level at age 22. (Age 22 was selected because it closely approximates the age at which education was completed for most of the cohort.) Chart 4 shows data for nonstandard work schedules, broadly defined. Among the employed, about three-fourths of 18-year-olds who have or will have some college experience worked at nonstandard times, as opposed to about two-fifths of those with less than a high school diploma.<sup>15</sup> Indeed, it may be the possibility of combining daytime school hours with work that spurs those with more education to work nonstandard hours at age 18. Many of the jobs they hold while in school are part time. (See table A–1 in the appendix for age differences in whether a person is employed full or part time by work schedule.) By age 23, the educational differences have narrowed, and those with less than a high school education show the highest percentage working at nonstandard times and those with a college degree the lowest. By age 39, 23.7 percent of high school graduates and 22.8 percent of those with less than a high school diploma worked nonstandard schedules, compared with 18.4 percent of those with some college education and 19.4 percent of those with college degrees.

Chart 5 shows that educational differences are less marked at young ages for nondaytime employment spe-

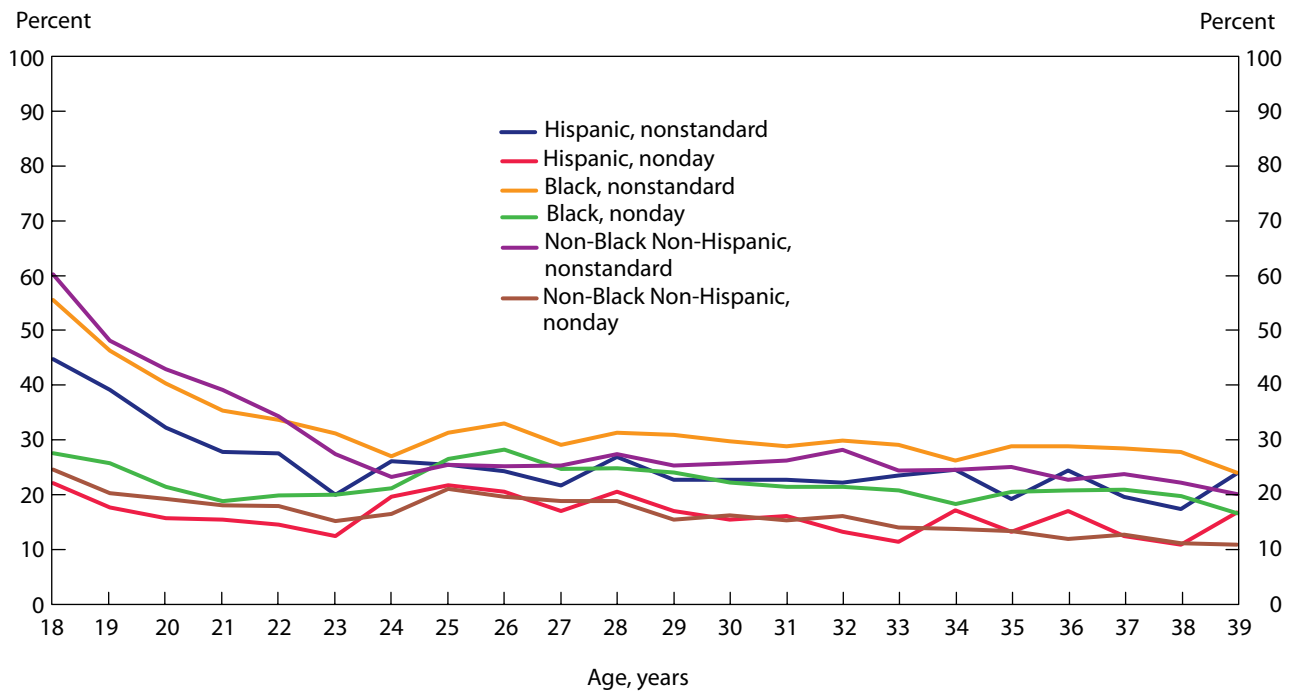
**Chart 1.** Percentage of employed persons who worked a nonstandard or a nonday schedule at each age from 18 to 39 years, NLSY79, 1979–2004, cohort ages 14 to 18 years in 1979



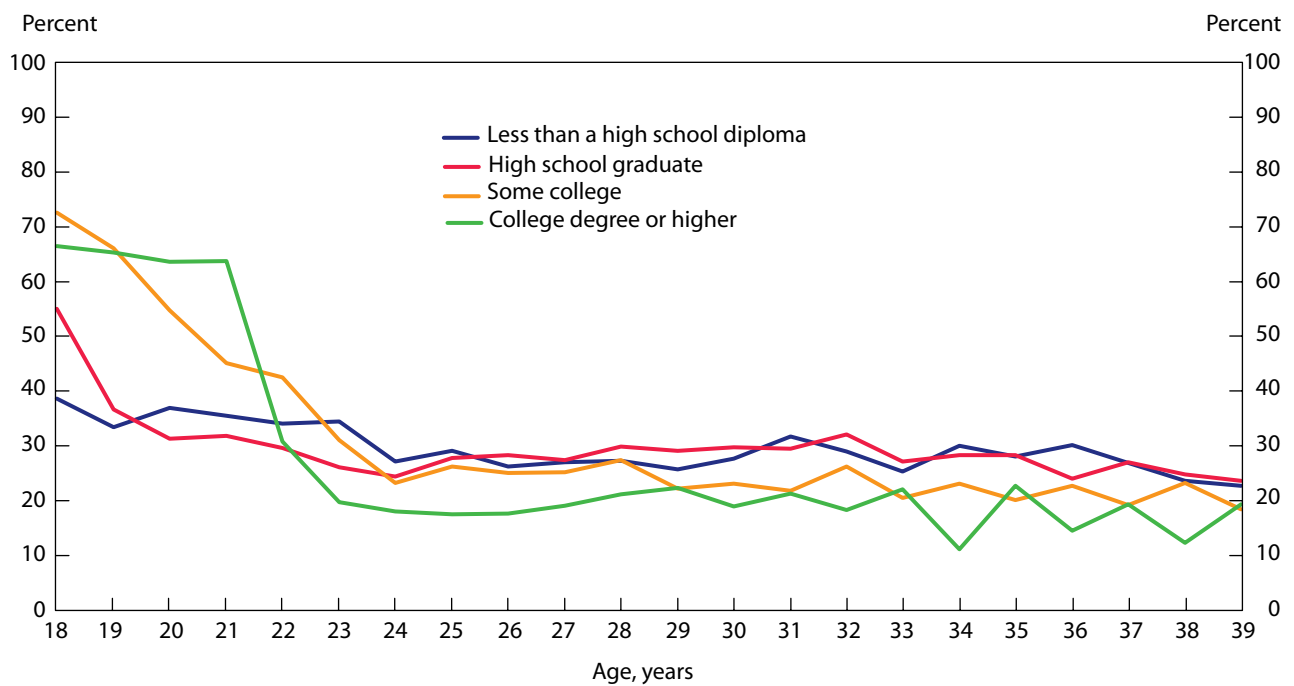
**Chart 2.** Percentage of employed persons who worked a nonstandard or a nonday schedule at each age from 18 to 39 years, by gender, NLSY79, 1979–2004, cohort ages 14 to 18 years in 1979



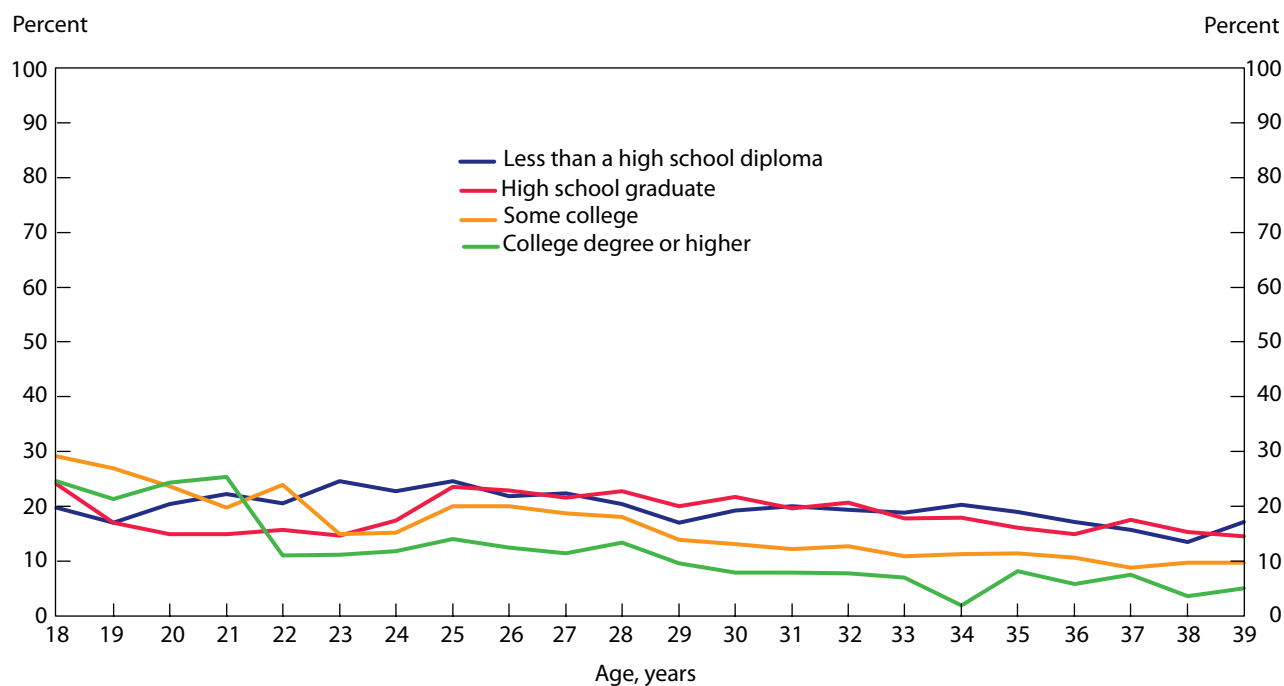
**Chart 3.** Percentage of employed persons who worked a nonstandard or a nonday schedule at each age from 18 to 39 years, by race and ethnicity, NLSY79, 1979–2004, cohort ages 14 to 18 years in 1979



**Chart 4.** Percentage of employed persons who worked a nonstandard schedule at each age from 18 to 39 years, by education at age 22, NLSY79, 1979–2004, cohort ages 14 to 18 years in 1979



**Chart 5. Percentage of employed persons who worked a nonday schedule at each age from 18 to 39 years, by education at age 22, NLSY79, 1979–2004, cohort ages 14 to 18 years in 1979**



cifically than for nonstandard schedules broadly defined. However, the pattern remains the same: among persons employed at age 18, those who have or will have at least some college show the highest percentage working non-daytime schedules and those with less than high school the lowest percentage. Between ages 21 and 22, the pattern changes, to reveal a big dip in nonday employment for those with a college degree. By age 39, 17.2 percent of those employed with less than a high school diploma worked nondaytime schedules, compared with 14.6 percent of high school graduates, 9.7 percent of those with some college education, and only 5.1 percent of those with college degrees.

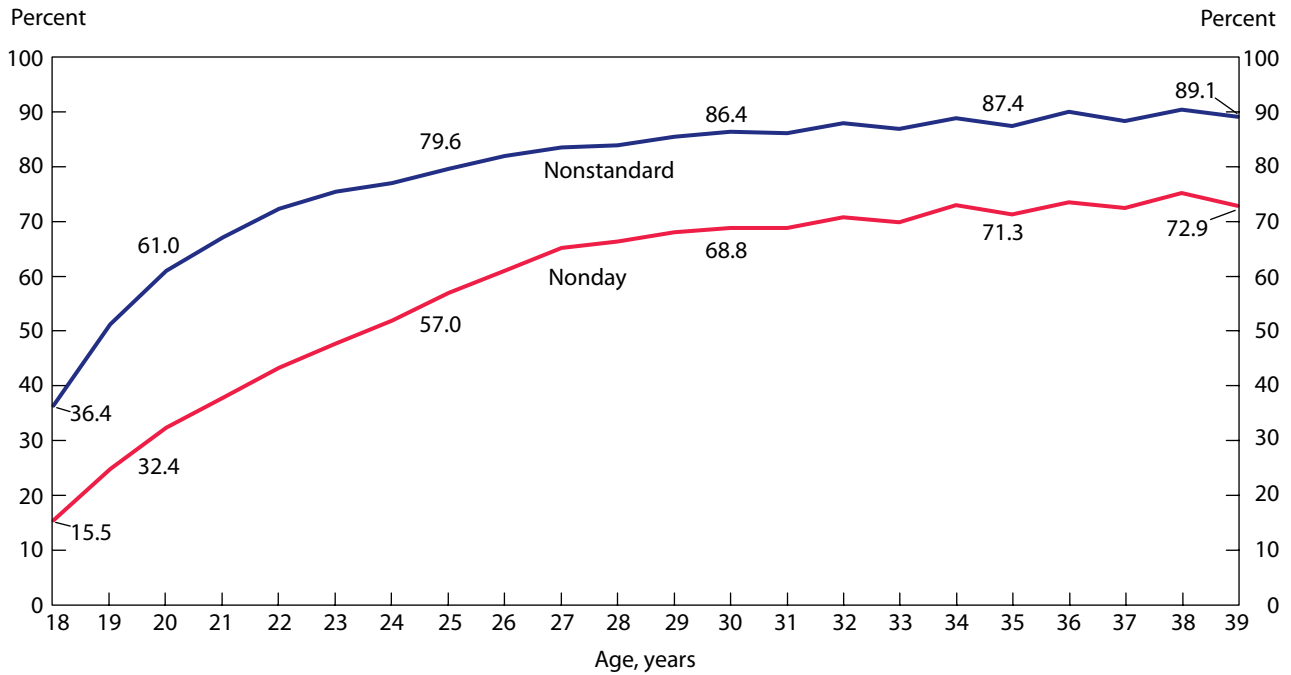
Thus far, the percentages reported have been for a particular nonstandard work schedule at a specific age and do not reveal the cumulative work schedule experience of individuals over time. As shown in chart 6, by age 39 the percentage of the full cohort (regardless of employment status—employed, not employed, working full time, working part time, and so forth—each year) who ever worked a nonstandard schedule, broadly defined, between ages 18 and 39 is extremely high: 89.1 percent. Even limiting the definition to only nonday schedules reveals a percentage

that is still strikingly high: 72.9 percent. Most experience with nonstandard work schedules, broadly defined, is attained by age 30 (86.4 percent, compared with 68.8 percent for nondaytime work specifically).

Excluding nonstandard schedules worked by respondents who were enrolled in school makes a big difference in experience with such schedules at the younger ages, but does not change the percentages substantially for those in their midtwenties. Chart 7 shows that, by age 39, 87.2 percent of the cohort worked a nonstandard schedule, broadly defined, at some time, and 71.3 percent had worked nondays. These are remarkably high percentages.<sup>16</sup>

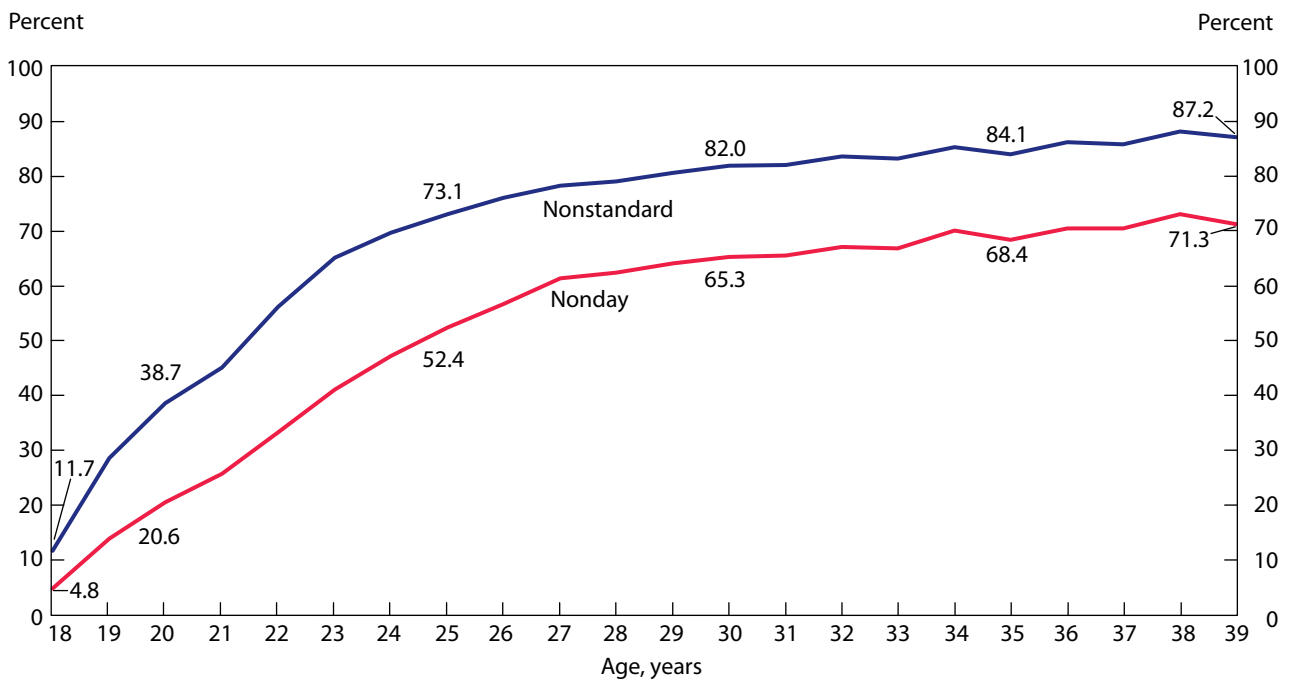
Members of the cohort ages 18 to 39 are not always employed at each age; that is, some have more employment episodes over their worklives than others. It is thus appropriate to consider the percentage working at nonstandard times relative to the number of employment episodes undertaken from ages 18 to 30.<sup>17</sup> As previously noted, these episodes refer to main jobs held at the time of the survey only and thus underestimate total experience with nonstandard work schedules. The findings are shown in table 1, for all nonstandard and nonday work undertaken during those ages, and in table 2, which excludes

**Chart 6.** Percentage of cohort who ever worked a nonstandard or nonday schedule at each age from 18 to 39 years, NLSY79, 1979–2004, cohort ages 14 to 18 years in 1979



NOTE: Values shown indicate percentages for selected ages based on common demographic intervals of 5 years after age 20.

**Chart 7.** Percentage of cohort who ever worked a nonstandard or nonday schedule at each age from 18 to 39 years, not counting nonstandard or nonday schedules when the person was enrolled in school, NLSY79, 1979–2004, cohort ages 14 to 18 years in 1979



NOTE: Values shown indicate percentages for selected ages based on common demographic intervals of 5 years after age 20.



such work schedules for those enrolled in school while employed.<sup>18</sup>

Table 1 shows that the percentage of the cohort with some work experience who never worked a nonstandard schedule, whether the latter is defined narrowly (nonday) or broadly (to include “time varies”), is small: 27.0 per-

cent and 12.8 percent, respectively. On the other end of the continuum, only 5.1 percent of those who were ever employed always worked nondays but 10.6 percent always worked a broadly defined nonstandard schedule. Substantial proportions also are evident for those who had more than zero, but less than 50 percent, of employment

**Table 1. Percentage of employment episodes that were nonstandard or nonday from ages 18 to 30 years for those with some employment experience during those ages, NLSY79, 1979–2004, cohort ages 14 to 18 years in 1979**

All employment episodes	Total	Men	Women	Hispanic	Black
<b>Percentage, x, working a nonstandard work schedule</b>					
Total	100.0 (n = 6,015)	100.0 (n = 3,110)	100.0 (n = 2,905)	100.0 (n = 1,176)	100.0 (n = 1,788)
0	12.8	11.6	14.0	16.7	14.1
0 < x < 50	48.5	50.0	47.0	50.4	40.0
50 ≤ x < 100	28.2	29.1	27.2	23.1	30.2
100	10.6	9.4	11.8	9.8	15.7
<b>Percentage, x, working a nonday work schedule</b>					
Total.	100.0 (n = 6,015)	100.0 (n = 3,110)	100.0 (n = 2,905)	100.0 (n = 1,176)	100.0 (n = 1,788)
0	27.0	25.1	29.1	30.0	23.1
0 < x < 50	51.4	54.3	48.4	49.1	44.8
50 ≤ x < 100	16.5	16.7	16.3	15.5	22.5
100	5.1	3.9	6.3	5.4	9.6
	<b>Non-Black Non-Hispanic</b>	<b>Less than a high school diploma</b>	<b>High school graduate</b>	<b>Some college</b>	<b>College degree or higher</b>
<b>Percentage, x, working a nonstandard work schedule</b>					
Total	100.0 (n = 3,051)	100.0 (n = 950)	100.0 (n = 2,460)	100.0 (n = 1,450)	100.0 (n = 468)
0	12.2	17.9	14.6	7.7	8.7
0 < x < 50	49.8	37.5	45.7	53.9	63.8
50 ≤ x < 100	28.2	27.6	27.4	31.6	22.2
100	9.7	17.0	12.2	6.9	5.3
<b>Percentage, x, working a nonday work schedule</b>					
Total	100.0 (n = 3,051)	100.0 (n = 950)	100.0 (n = 2,460)	100.0 (n = 1,450)	100.0 (n = 468)
0	27.5	26.9	28.1	22.8	34.1
0 < x < 50	52.7	43.3	47.7	59.6	58.2
50 ≤ x < 100	15.5	18.7	18.8	14.4	6.6
100	4.3	11.1	5.3	3.1	1.1

NOTE: Because of rounding, percentages may not sum to 100.0 percent.

episodes in which they worked a nonstandard or nonday schedule, as well as those whose number of employment episodes of nonstandard or nonday work ranged from 50 percent to less than 100 percent.

As expected, when nonstandard schedules worked by a person who is enrolled in school are excluded (see table 2), the percentage who never experience such employment is

seen to be higher: 38.0 percent worked no nondays, and 25.9 percent worked no nonstandard schedules, broadly defined. Still, substantial proportions are left with some experience thereof, and 5.4 percent and 10.4 percent worked only nonday and nonstandard schedules, respectively.

As regards gender differences, tables 1 and 2 show that women are somewhat more likely than men both to never

**Table 2. Percentage of employment episodes that were nonstandard or nonday from ages 18 to 30 years for those with some employment experience during those ages, not counting nonstandard or nonday schedules when the person was enrolled in school, NLSY79, 1979–2004, cohort ages 14 to 18 years in 1979**

All employment episodes	Total	Men	Women	Hispanic	Black
<b>Percentage, x, working a nonstandard work schedule</b>					
Total	100.0 (n = 5,934)	100.0 (n = 3,071)	100.0 (n = 2,863)	100.0 (n = 1,159)	100.0 (n = 1,757)
0	25.9	24.3	27.5	25.7	21.7
0 < x < 50	39.5	42.1	36.9	44.8	37.1
50 ≤ x < 100	24.2	24.3	24.1	19.3	26.6
100	10.4	9.4	11.5	10.2	14.7
<b>Percentage, x, working a nonday work schedule</b>					
Total	100.0 (n = 5,934)	100.0 (n = 3,071)	100.0 (n = 2,863)	100.0 (n = 1,159)	100.0 (n = 1,757)
0	38.0	36.3	39.8	37.8	29.7
0 < x < 50	40.5	43.6	37.2	41.8	40.4
50 ≤ x < 100	16.1	15.8	16.5	15.1	20.4
100	5.4	4.3	6.6	5.3	9.6
	<b>Non-Black Non-Hispanic</b>	<b>Less than a high school diploma</b>	<b>High school graduate</b>	<b>Some college</b>	<b>College degree or higher</b>
<b>Percentage, x, working a nonstandard work schedule</b>					
Total	100.0 (n = 3,018)	100.0 (n = 946)	100.0 (n = 2,444)	100.0 (n = 1,422)	100.0 (n = 465)
0	26.6	19.3	19.9	30.5	44.5
0 < x < 50	39.5	36.7	41.6	40.8	36.0
50 ≤ x < 100	24.2	27.2	26.7	21.1	15.5
100	9.7	16.7	11.8	7.7	4.0
<b>Percentage, x, working a nonday work schedule</b>					
Total	100.0 (n = 3,018)	100.0 (n = 946)	100.0 (n = 2,444)	100.0 (n = 1,422)	100.0 (n = 465)
0	39.4	28.7	32.5	44.0	58.5
0 < x < 50	40.4	42.1	43.2	38.4	33.4
50 ≤ x < 100	15.5	18.5	18.9	13.3	6.7
100	4.7	10.7	5.4	4.3	1.4

NOTE: Because of rounding, percentages may not sum 100.0 percent.

work and to always work nonstandard times (whether narrowly or broadly defined). Otherwise, gender-related differences are small in the in-between range. With respect to race or ethnicity, Blacks clearly are most likely to always have nonstandard schedules (regardless of definition) when employed. Hispanics and non-Black non-Hispanics show substantially lower percentages of those who always worked such schedules, however defined and regardless of whether the worker is or is not enrolled in school. When it comes to never having worked such schedules, however, for the broad (but not narrow) definition, and only including such employment when enrolled in school, it is non-Black non-Hispanics who show the lowest levels, albeit close to that of Blacks.

Education (by age 22) shows a very marked contrast between those with a high school diploma or less and those with some college experience, and the pattern varies with whether nonstandard employment is or is not counted when the worker is enrolled in school. When such employment is counted, those with college experience are seen to be much more likely to have at least some episodes of nonstandard employment, broadly defined, than those with a high school diploma or less. When nonstandard employment while one is enrolled in school is not counted, nonstandard employment, broadly defined, is much *less* likely among those with college experience than those with a high school diploma

or less. For nonday employment specifically, this reversal in pattern is evident only for those with some college (but no college degree). These findings suggest that college students are especially likely to benefit from the flexibility of nonstandard hours, broadly defined.

To adjust for the fact that the interviews became biennial from 1994 to 2004 and that respondents varied in age when this occurred, analyses were carried out for only even-numbered years since 1980, giving all respondents the same (but a reduced) number of potential employment episodes. Similar patterns were found.

The descriptive analysis thus far reveals bivariate relationships of gender, race or ethnicity, and education to nonstandard and nonday work schedules. This is an important first finding in a consideration of nonstandard work schedules over the course of one's working life. The next question to ask is whether each of these variables is a determinant of a person's ever working a nonstandard schedule, broadly or narrowly defined and controlling for the other two variables. To answer this question, regressions were run on whether one ever worked a nonstandard or nonday schedule by age 30, with and without counting nonstandard and nonday schedules when the person was enrolled in school. The results of the regressions are shown in table 3. (Here, we are examining neither the extent of such employment

**Table 3. Logit regressions on the variable "ever worked a nonstandard or nonday schedule by age 30," counting and not counting nonstandard and nonday schedules when enrolled as a student, NLSY79, 1979–2004, cohort ages 14–18 years in 1979 (N = 4,961)**

Category	Nonstandard work schedule				Nonday work schedule			
	Model 1a	Model 2a	Model 1b	Model 2b	Model 1a	Model 2a	Model 1b	Model 2b
Women	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)
Men	<sup>1</sup> .192 (.079)	.134 (.081)	<sup>2</sup> .200 (.077)	.147 (.079)	<sup>2</sup> .300 (.108)	.215 (.112)	<sup>2</sup> .288 (.096)	<sup>1</sup> .222 (.098)
Non-Black non-Hispanic	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)
Black	.056 (.081)	<sup>1</sup> .168 (.083)	.085 (.079)	<sup>1</sup> .191 (.081)	<sup>2</sup> -.293 (.104)	-.160 (.107)	<sup>1</sup> -.184 (.094)	-.066 (.096)
Hispanic	<sup>2</sup> -.263 (.095)	<sup>1</sup> -.235 (.096)	<sup>2</sup> -.252 (.093)	<sup>1</sup> -.226 (.094)	<sup>3</sup> -.518 (.121)	<sup>3</sup> -.481 (.122)	<sup>3</sup> -.462 (.111)	<sup>3</sup> -.431 (.111)
Less than a high school diploma (0–11th grade)	.029 (.114)	.145 (.117)	.094 (.113)	.206 (.116)	-.240 (.134)	-.105 (.137)	-.110 (.129)	.016 (.132)
High school graduate <sup>4</sup>	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)	(ref.)
Some college <sup>4</sup>	<sup>1</sup> .245 (.098)	<sup>1</sup> .224 (.099)	.015 (.094)	-.005 (.095)	<sup>3</sup> .762 (.147)	<sup>3</sup> .732 (.148)	.171 (.118)	.144 (.119)
College degree or higher (4 or more years of college)	<sup>2</sup> -.371 (.129)	<sup>2</sup> -.397 (.129)	<sup>3</sup> -.414 (.127)	<sup>3</sup> -.439 (.127)	<sup>1</sup> .422 (.205)	.385 (.206)	.199 (.172)	.167 (.173)
Number of employment episodes by age 30	( <sup>5</sup> )	<sup>3</sup> .064 (.013)	( <sup>5</sup> )	<sup>3</sup> .061 (.012)	( <sup>5</sup> )	<sup>3</sup> .073 (.017)	( <sup>5</sup> )	<sup>3</sup> .068 (.015)
Intercept	<sup>3</sup> .681 (.075)	.146 (.124)	<sup>3</sup> .567 (.073)	.054 (.122)	<sup>3</sup> 1.641 (.098)	<sup>3</sup> 1.047 (.154)	<sup>3</sup> 1.405 (.090)	<sup>3</sup> .848 (.141)

<sup>1</sup>  $p < .05$ .

<sup>2</sup>  $p < .01$ .

<sup>3</sup>  $p < .001$ .

<sup>4</sup> Including those with a GED diploma.

<sup>5</sup> Model does not control for this variable.

NOTE: Estimates shown are not standardized; standard errors follow in parentheses. Models 1a and 2a model nonstandard and nonday schedules regardless of whether the person was enrolled in school. Model 1b and 2b do not model either nonstandard or nonday schedules when the person was enrolled in school. (Ref.) = reference category.

over the worklife nor the age at which the employment occurred.) For each approach (with and without counting nonstandard and nonday schedules when the person was enrolled in school), two models are presented for each type of work schedule, with and without consideration of the number of employment episodes.<sup>19</sup>

The table shows that, for those models which count nonstandard and nonday schedules when the person was enrolled in school (hereafter, the “full count”; see models 1a and 2a), over the course of one’s worklife up to age 30, men are significantly more likely than women to have experienced nonstandard work schedules, whether broadly or narrowly defined. The difference becomes statistically insignificant for the broad definition when the number of employment episodes is controlled for, but not for nonstudent nonday employment (model 2b), a schedule that men are more likely than women to have experienced.

With regard to race or ethnicity, for the full count the broad definition shows Blacks with significantly *more* nonstandard work experience only upon adjusting for differences in the number of employment episodes and *less* likely to have nonday employment experience only upon *not* adjusting for the number of such episodes. These relationships obtain even when student nonstandard employment and nonday employment are not counted. Hispanics are significantly less likely than non-Black non-Hispanics to have worked nonstandard and nonday schedules according to these regressions with controls, whether such schedules are broadly or narrowly defined and whether such employment undertaken while one is enrolled in school is or is not counted.

For education (at age 22), the findings are mixed. For the full count (models 1a and 2a), those with a college degree are less likely to have experienced nonstandard work, broadly defined, and more likely to have experienced nonday work than those with just a high school diploma. Those with some college are significantly more likely to have experienced both nonstandard and nonday work, either broadly or narrowly defined. The negative relationship of a college degree to nonstandard work experience, broadly defined, obtains when such employment while one is enrolled in school is not counted. The positive relationship of a college degree to nonday work experience (without the control for the number of employment episodes) no longer obtains when such employment while one is enrolled in school is not counted.

The results presented in this section indicate that a life course perspective on the basic demographic determinants of work schedule behavior that are examined herein is complex. Results vary by which definition of nonstandard employment is considered (broad or narrow) and whether

nonstandard employment undertaken while one is enrolled in school is counted. Clearly, further analysis is needed to explain these variations.

THIS FIRST LOOK AT NONSTANDARD WORK SCHEDULES over the course of one’s worklife reveals an extremely high percentage with such experience during the ages of 18 to 39. Indeed, by age 39 almost 90 percent of all respondents have had some experience with nonstandard schedules, broadly defined. For nonday employment specifically, the percentage is still more than 70 percent. These percentages remain high even when nonstandard employment while one is enrolled in school is not counted.

Perhaps the chief implication of the findings presented in this article is that results based on cross-sectional studies stand in need of some supplementation. Over the course of people’s worklives, gender accounts for only small differences, with men showing somewhat higher or equal levels of nonstandard employment than women, whether such employment is broadly or narrowly defined. As regards race or ethnicity, its relationship to nonstandard work experience depends on age and, again, whether such employment is broadly or narrowly defined. At the young ages, it is non-Black non-Hispanics who are most likely to work nonstandard schedules, broadly defined, and Blacks who are most likely to work nonday employment schedules specifically (excluding those whose hours vary). The differences narrow with age for both work schedules. When it comes to education, it is the young college educated who are especially likely to work at nonstandard times. The difference, however, between that group and groups with other levels of education narrows when the type of work is nonday employment. Finally, whereas participation in nonstandard schedules, broadly defined, drops markedly after ages 18 to 23 and then is fairly stable, there is remarkable stability for all ages as regards nonday employment.

The regression analyses that were run in the study presented in this article, both with and without counting nonstandard employment while one is enrolled in school, revealed some complex relationships between the three basic demographic variables: gender, race or ethnicity, and education. More detailed studies could include an analysis of the movement in and out of nonstandard schedules over one’s worklife from a multivariate perspective. Such a study might reveal some of the determinants of nonstandard work hours and the implications of a nonstandard work schedule on personal and family life.<sup>20</sup> Clearly, what is needed is a broader and more dynamic view of such an important and pervasive social phenomenon than is afforded by the usual cross-sectional examination. □

## Notes

ACKNOWLEDGMENT: The research that led to the publication of this article was supported by the Alfred P. Sloan Foundation. The authors are grateful to Steve Martin for statistical consultation

<sup>1</sup> See Harriet B. Presser, *Working in a 24/7 Economy: Challenges for American Families* (New York, Russell Sage Foundation, 2003); and Terrence M. McMennamin, "A Time to work: recent trends in shift work and flexible schedules," *Monthly Labor Review*, December 2007, pp. 3–15, <http://www.bls.gov/opub/mlr/2007/12/art1full.pdf> (visited June 30, 2011).

<sup>2</sup> Presser, *Working in a 24/7 Economy*.

<sup>3</sup> See Juliet Schor, *The Overworked American* (New York, Basic Books, 1991); John P. Robinson and Geoffrey Godbey, *Time for Life: The Surprising Ways Americans Use Their Time* (University Park, PA, Pennsylvania State University Press, 1997); Jerry A. Jacobs and Kathleen Gerson, *The Time Divide: Work, Family, and Gender Inequality* (Cambridge, MA, Harvard University Press, 2004); and Suzanne Bianchi, John P. Robinson, and Melissa A. Milkie, *Changing Rhythms of American Families* (New York: Russell Sage Foundation, 2006).

<sup>4</sup> The ethno-racial category "Non-Black non-Hispanics" includes those whose race was coded "White" or "other." The latter grouping includes Asians, Eskimos, and Pacific Islanders.

<sup>5</sup> Presser, *Working in a 24/7 Economy*.

<sup>6</sup> Daniel S. Hamermesh, *Workdays, Workhours, and Work Schedules: Evidence from the United States and Germany* (Kalamazoo, MI, W. E. Upjohn Institute for Employment Research, 1996).

<sup>7</sup> Presser, *Working in a 24/7 Economy*.

<sup>8</sup> See Diane R. Gold, Suzanne Rogacz, Naomi Bock, Tor D. Tosteson, Timothy M. Baum, Frank E. Speizer, and Charles A. Czeisler, "Rotating Shift Work, Sleep, and Accidents Related to Sleepiness in Hospital Nurses," *American Journal of Public Health*, July 1992, pp. 1011–14; and Nancy P. Gordon, Paul D. Cleary, Claire E. Parker, and Charles A. Czeisler, "The Prevalence and Health Impact of Shiftwork," *American Journal of Public Health*, October 1986, pp. 1225–28.

<sup>9</sup> Graham L. Staines and Joseph H. Pleck, *The Impact of Work Schedules on the Family* (Ann Arbor, MI, University of Michigan, Institute for Social Research, 1983).

<sup>10</sup> Lynn White and Bruce Keith, "The Effect of Shift Work on the Quality and Stability of Marital Relations," *Journal of Marriage and the Family*, May 1990, pp. 453–62.

<sup>11</sup> See Harriet B. Presser, "Nonstandard Work Schedules and Marital Instability," *Journal of Marriage and the Family*, February 2000, pp. 93–110, and *Working in a 24/7 Economy*; Kelly D. Davis, W. Benjamin Goodman, Amy E. Pirretti, and David M. Almeida, "Nonstandard Work Schedules, Perceived Family Well-Being, and Daily Stressors," *Journal of Marriage and the Family*, November 2008, pp. 991–1003; and Ariel Kalil, Kathleen M. Ziol-Guest, and Jodie Levin Epstein, "Nonstandard Work and Marital Instability: Evidence from the National Longitudinal Study of Youth," *Journal of Marriage and the Family*, October 2010, pp. 1289–1300.

<sup>12</sup> See Karen Bogen and Pamela Joshi, "Bad Work or Good Work: The Relationship of Part-Time and Nonstandard Work Schedules to Parenting and Child Behavior in Working Poor Families," paper presented at the NICHD conference titled "Working Poor Families: Coping as Parents and Workers," 2002; Wen-Jui Han, "Maternal Nonstandard Work Schedules and Child Cognitive Outcomes," *Child Development*, January 2005, pp. 137–54; Jody Heymann, *The Widening Gap: Why America's Working Families Are in Jeopardy and What Can Be Done About It* (New York, Basic Books, 2000); Pamela Joshi and Karen Bogen, "Nonstandard Schedules and Young Children's Behavioral Outcomes among Working Low-income Families," *Journal of Marriage and the Family*, February 2007, pp. 139–56; and Emily Rosenberg and Christopher R. Morett, "The Effect of Parents' Joint Work Schedules on Infants' Behavior Over the First Two Years of Life: Evidence from the ECLSB," *Journal of Maternal and Child Health*, November 2009, pp. 732–44.

<sup>13</sup> Daniel P. Miller and Wen-Jui Han, "Maternal Nonstandard Work Schedules and Adolescent Overweight," *American Journal of Public Health*, August 2008, pp. 1495–1502.

<sup>14</sup> For the years 1990 to 2004, both the "self-defined" and "clock" questions were asked. There was little difference in the numbers reporting a regular day shift; most of the differences reported were among those designating evening and night shifts, which are combined in this article.

<sup>15</sup> Includes a General Educational Development (GED) high school equivalency diploma.

<sup>16</sup> An alternative approach to removing the youth effect on whether a person ever worked nonstandard hours counted only nonstandard work from ages 22 to 39. This analysis (not shown) produced percentages for that age range which were similar to those obtained when the younger ages were included.

<sup>17</sup> The analysis of this aspect of one's worklife is limited to a ceiling of age 30 in order to maximize the sample size, considering that almost all of a person's experience with nonstandard work has occurred by that age.

<sup>18</sup> The focus here is on the *percentage* of episodes that were nonstandard, rather than the number of episodes, because, as was observed earlier, data are available only for every other year from 1991 to 2004; also, employment data are missing for some individuals for some years but not others. Moreover, there are no data between the survey's annual or biennial interviews. Accordingly, as noted, estimates of the number of episodes are underestimated with the available data.

<sup>19</sup> In the models that consider the number of employment episodes, that variable is underestimated. (See note 18.)

<sup>20</sup> A key determinant of nonstandard work schedules is one's occupation. For cross-sectional analyses of this variable, see the following works by Presser: *Working in a 24/7 Economy*; "Race-Ethnic Differences in Nonstandard Work Schedules," *Work and Occupations*, November 2003, pp. 412–39; "Job, Family, and Gender: Determinants of Nonstandard Work Schedules Among Employed Americans," *Demography*, November 1995, pp. 577–98; and "Job Characteristics of Spouses and Their Work Shifts," *Demography*, November 1984, pp. 575–89.

**APPENDIX: Age difference in whether a person is employed full or part time, by work schedule**

<b>Table A-1. Weighted percent distribution of those employed, those working nonstandard schedules, and those working nonday schedules who work part time or full time at ages 18, 30, and 39</b>				
<b>Age</b>	<b>Status</b>	<b>Employed</b>	<b>Nonstandard work schedule</b>	<b>Nonday work schedule</b>
18	Part time	61.4	74.9	76.1
	Full time	38.6	25.1	23.9
	Total	100.0	100.0	100.0
	<i>N</i> (unweighted)	2,984	817	1,838
30	Part time	12.7	20.6	23.5
	Full time	87.3	79.4	76.5
	Total	100.0	100.0	100.0
	<i>N</i> (unweighted)	3,991	792	1,179
39	Part time	14.0	16.2	26.7
	Full time	86.0	83.8	73.3
	Total	100.0	100.0	100.0
	<i>N</i> (unweighted)	1,765	283	444
NOTE: Because of rounding, percentages may not sum to 100.0 percent.				